Manitoba Public Insurance (MPI)

2024 GRA Intervener Evidence

MPI Information Requests to Consumers' Association of Canada (Manitoba) (CAC)

October 4, 2023

MPI (CAC) 1

Part and Chapter:	**Oliver Wyman Report – September 20, 2023**	**Page No.:**	**31**
PUB Approved Issue No:			
Topic:	**Future Trend**		
Sub Topic:	**Property Damage (Third Party Deductible Transfer) Alternative Trend Model**		

Preamble to IR (If Any):

Oliver Wyman provides Figure 25 outlining its alternative trend modelling for frequency, severity and loss cost for the Property Damage (Third Party Deductible Transfer) coverage, based on a log scale.

At Appendix 3h of the 2024 General Rate Application (GRA), MPI provides the following table at page 38:

Appendix 3h
Table 1
Property Damage (Third Party Deductible Transfer)

Frequency

Period	Ultimate Frequency	Use in Loss Trend	Time	Mobility	Adj Ultimate Frequency
2009	4.2998%	Y	14		4.2998%
2010	4.9529%	Y	13		4.9529%
2011	4.3116%	Y	12		4.3116%
2012	4.8528%	Y	11		4.8528%
2013	4.8995%	Y	10		4.8995%
2014	4.1653%	Y	9		4.1653%
2015	4.1974%	Y	8		4.1974%
2016	4.2109%	Y	7		4.2109%
2017	4.2920%	Y	6		4.2920%
2018	4.1003%	Y	5		4.1003%
2019	3.7330%	Y	4		3.7330%
2020	2.4385%	Y	3	(29.78)	2.4385%
2021	3.3263%	Y	2	(22.14)	3.3263%
2022	3.1447%	Y	1	(16.68)	3.1447%

Selections | Regression: | log_linear

Starting Period	Years of Data	Loss Trend	R^2	Adjusted R^2	Time p-value	Mobility p-value	Time Parameter	Mobility Parameter	Intercept
2009	14	-1.40%	0.86	0.84	0.07	0.00	1.41%	1.34%	-325.90%
2010	13	-1.89%	0.88	0.86	0.03	0.00	1.91%	1.25%	-329.19%
2011	12	-1.63%	0.87	0.85	0.10	0.00	1.64%	1.30%	-327.50%
2012	11	-2.18%	0.89	0.86	0.07	0.01	2.21%	1.21%	-330.83%
2013	10	-1.76%	0.87	0.85	0.21	0.01	1.78%	1.27%	-328.46%
2014	9	-0.54%	0.89	0.87	0.71	0.00	0.54%	1.42%	-322.14%
2015	8	-0.63%	0.88	0.86	0.75	0.01	0.63%	1.41%	-322.57%
2016	7	-0.52%	0.87	0.85	0.85	0.03	0.53%	1.42%	-322.14%
2017	6	-0.04%	0.85	0.83	0.99	0.06	0.04%	1.44%	-320.43%
2018	5	1.78%	0.84	0.81	0.74	0.12	-1.77%	1.48%	-315.53%
2019	4	3.97%	0.81	0.77	0.67	0.29	-3.89%	1.40%	-312.89%
2020	3	-62.36%	1.00	1.00	N/A	N/A	97.70%	16.86%	-162.54%
2021	2	0.00%	1.00	1.00	N/A	N/A	0.00%	-1.03%	-363.09%
2022	1	0.00%	1.00	1.00	N/A	N/A	0.00%	0.00%	-345.95%

Question:

a) Can Oliver Wyman describe its process in determining the appropriate trending period to use for both frequency and severity?

b) Please provide one chart with both Collision frequency and Property Damage (Third Party Deductible Transfer) frequency for the period 2009 to 2022.

c) Does Oliver Wyman observe a change in trend for Collision frequency beginning with 2014? If not, please explain why.

d) Would Oliver Wyman agree that the p-value for the alternative frequency trend (i.e., 0.715) is insignificant?

e) Would Oliver Wyman agree that the p-value for the alternative severity trend (i.e., 0.983) is insignificant?

f) Would Oliver Wyman agree that the adjusted R^2 value for the alternative severity trend (i.e., -0.143) is not good?

g) With reference to the table at 2024 GRA Appendix 3h provided above, would Oliver Wyman agree that it is suggesting selection of a trend that has one of the worst combinations of the available p-value and R^2 value? If so, how does Oliver Wyman expect that its selected regression model will perform well at predicting future values?

Rationale for Question:

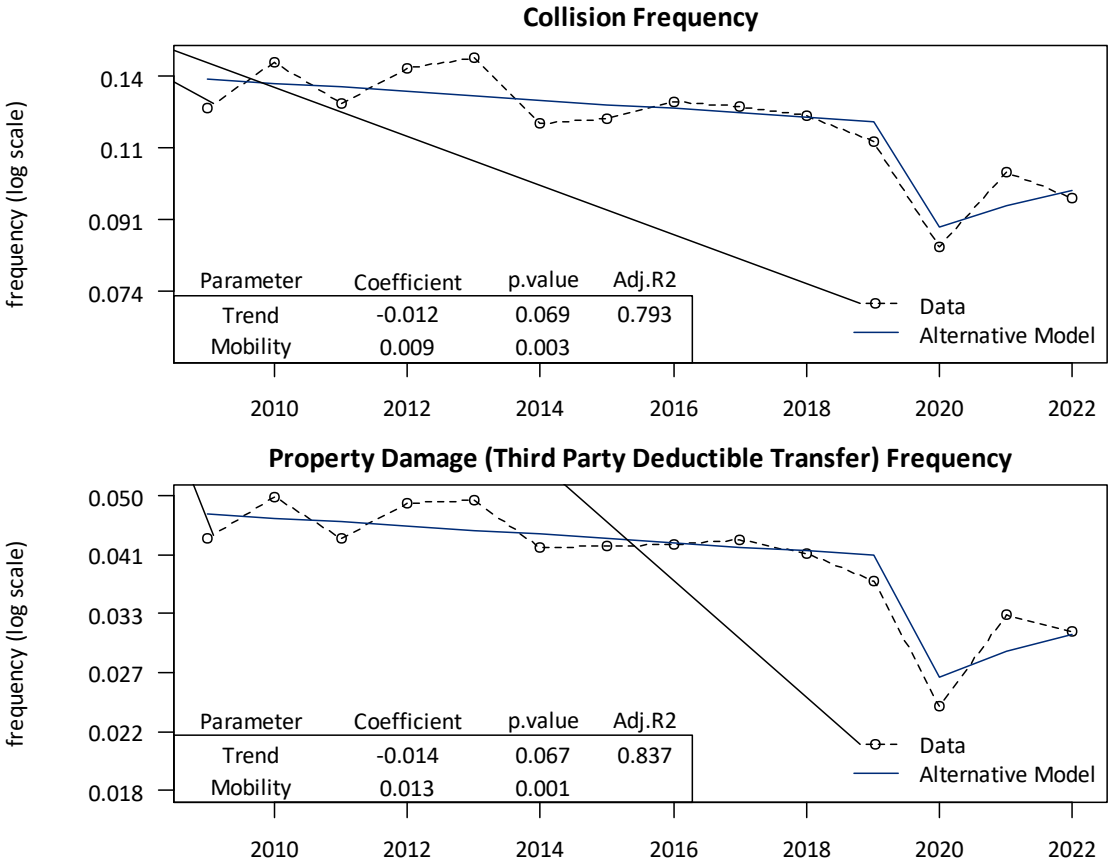
To better understand the basis for the suggestions of Oliver Wyman on this issue.

RESPONSE:

a) Generally, we plot the data and visually review the patterns. Then we fit the model that we *expect* (based on the visual review) will fit the data best and

review the regression statistics. We then fit a series of alternative models and review the associated regression statistics to identify weaknesses in our visual analysis.

b) The following figure presents the requested collision and property damage (third-party deductible transfer) frequency models.



c) We agree that there is a reduction in costs between 2013 and 2014. This could be modeled as a "level change' as the loss costs pattern is generally flat and consistent on either side of the change. Furthermore, we noted that the proposed model fit the changes in 2016 and subsequent reasonably well, and, as a result, accepted MPI's frequency model.

d) We assume that this question relates to property damage (third party deductible transfer). We agree that the p-value is insignificant; however, we don't find that unusual given that the indication is very close to 0, which is the null hypothesis of the significance test.

e) We assume that this question relates to property damage (third party deductible transfer). We agree that the p-value is insignificant; however, we don't find that unusual given that the indication is very close to 0 (in fact equal to 0 within three decimal places), which is the null hypothesis of the significance test.

f) We assume that this question relates to property damage (third party deductible transfer). We agree that the R-squared indicates that the model does not explain the data; however, we don't find that unusual given that the time does not appear to be a good predictor of changes in loss costs (resulting in the observations noted in d) and e)).

g) The reason for the poor metrics relates to the lack of explanatory power of time as a predictor of changes in loss costs. It is our view that the metrics identified in d) through e) offer compelling evidence of the lack of trend rate and that, therefore 0% is a best predictor of future changes in the MPI projection period.

RATIONALE FOR REFUSAL TO FULLY ANSWER THE QUESTION:

MPI (CAC) 2

Part and Chapter:	**Oliver Wyman Report – September 20, 2023**	**Page No.:**	**5**
PUB Approved Issue No:			
Topic:	**Rate Level Changes**		
Sub Topic:			

Preamble to IR (If Any):

Oliver Wyman states:

> *"MPI estimates average claim cost for the 2024/25 rating year based on its projections for accident years incepting April 1, 2024, 2025 and 2026."*

While MPI, at Page 9, lines 3-6 of Part VI – Claims Forecasting Chapter of the 2024 General Rate Application (GRA), states:

> *"As discussed in Part VII Rate Indication Chapter, accident years (AY) 2024 and 2025 (spanning from April 1 to March 31) are used for determining the indicated rates for 2024/25 rating year. This is because the 2024/25 rating year spans from April 1, 2024 to March 31, 2026."* (Emphasis Added)

Question:

a) Would Oliver Wyman agree that MPI averages claims costs for the 2024/25 rating year based on two accident years spanning April 1, 2024 to March 31, 2026, and not the accident years incepting April 1, 2024, 2025 and 2026?

b) If the response to part a) above is no, why not?

c) Please confirm what accident years were used on the impact analysis in Table 7.

Rationale for Question:

To resolve the apparent inconsistency between the statement of fact set out at page 5 of the Oliver Wyman Report at the statement of fact contained at Page 9 of Part VI – Claims Forecasting Chapter of the 2024 GRA.

RESPONSE:

a) We agree.

b) Not applicable

c) We confirm that only accident years 2024 and 2025 were used on in our replication of MPIs model used to develop the impact analysis in Table 7.

RATIONALE FOR REFUSAL TO FULLY ANSWER THE QUESTION:

CAC to insert rationale for refusal here.

MPI (CAC) 3

Part and Chapter:	**Oliver Wyman Report – September 20, 2023**	**Page No.:**	**6**
PUB Approved Issue No:			
Topic:	**Rate Level Changes**		
Sub Topic:	**MPI Accident Year Weights**		

Preamble to IR (If Any):

Oliver Wyman states:

> *"We generally observe that MPI's frequency regression models overpredict (i.e., the fitted model values exceed the actual data values) the 2020 observation and underpredict (the fitted model values are less than the actual data values) the 2021 observation."*

And

> *"We find the older 2017 experience may be less reflective of the more recent emerging data."*

Question:

a) Explaining the basis for its answer if it is in the negative, would Oliver Wyman agree that:

   i. Unless the value of R^2 is equal to 1.00, every regression model will overpredict and underpredict observations?

   ii. Actual data points rarely sit on a fitted line?

b) Compared to 2017, why does Oliver Wyman deem experience of 2020 to be more reflective of the emerging data based on the weights Oliver Wyman assigned?

Rationale for Question:

To better understand the basis for the finding and conclusions of Oliver Wyman on this issue.

RESPONSE:

a) We agree with i. and ii.

b) Adjustments to the historical experience notwithstanding, it is our view that, as 2020 is more recent than 2017, it is more likely to be predictive of experience in the 2024/25 rating year.

RATIONALE FOR REFUSAL TO FULLY ANSWER THE QUESTION:

CAC to insert rationale for refusal here.

MPI (CAC) 4

Part and Chapter:	**Oliver Wyman Report – September 20, 2023**	**Page No.:**	**7**
PUB Approved Issue No:			
Topic:	**Rate Level Changes**		
Sub Topic:	**MPI Accident Year Weights**		

Preamble to IR (If Any):

At Table 4, Oliver Wyman provides its suggested Accident Year Weights and states:

> *"…For the remaining coverages, where MPI gives 0% weight to 2020, and 20% for 2017, we suggest:*
>
> *…*
>
> - *25% weight for 2020 and 2021 combined, based on an allocation of that weight between 2020 and 2021 that considers the relative likelihood of those observations, given the observations for all other years."*

Question:

a) What is the intention of allocating the 25% between accident year 2020 and 2021 based on the likelihood of the loss cost occurring?

b) If the response in part a) is to temper loss costs that are "relatively too high or too low", could the alternative accident year weighting approach of tempering accident year weights be applied to other years (i.e., 2018, 2019, and 2022) to temper loss costs that are too high or too low?

c) If the response to part b) is negative, why not?

d) In what circumstance, outside of 2020 and 2021, would Oliver Wyman recommend the alternative accident year weighting approach of tempering accident year weights based on the likelihood of the loss cost occurring?

e) Based on the alternative accident year weighting approach of tempering accident year weights, does Oliver Wyman believe that MPI is just as likely or even more likely to experience a year like 2020 than a year like 2021 for the Collision and Property Damage?

Rationale for Question:

To better understand the basis for the suggestions of Oliver Wyman on this issue.

RESPONSE:

a) As noted in our report, we recognize that there is additional uncertainty with the estimates for 2020 and 2021. We reduced the aggregate weight applied to these estimates in recognition of that uncertainty. (The *total* weight for 2020 and 2021 is equal to the *individual* year weights we suggest for 2018, 2019, and 2022.) We used likelihood-based approach in recognition of the uncertainty.

b) Although the tempering approach *could be* applied to other years, those other periods are not subject to the additional uncertainty associated with the observations for 2020 and 2021. As noted in our response to a), that additional uncertainty is the rationale for using this approach.

c) Not applicable.

d) In general, we would suggest such consideration if certain data points in the experience period have more uncertainty than others.

e) Our calculations indicate that 2020 is more similar to the observations 2009-2019, and 2022, than 2021. As such, the model implies that 2020 is more likely than 2021.

RATIONALE FOR REFUSAL TO FULLY ANSWER THE QUESTION:

CAC to insert rationale for refusal here.

MPI (CAC) 5

Part and Chapter:	**Oliver Wyman Report – September 20, 2023**	**Page No.:**	**6**
PUB Approved Issue No:			
Topic:	**Rate Level Changes**		
Sub Topic:	**MPI Accident Year Weights**		

Preamble to IR (If Any):

Oliver Wyman states at Footnote 3:

> *"We review commercial rate filings in Alberta, Ontario, New Brunswick, Newfoundland and Labrador, and Nova Scotia. In those provinces, we have reviewed rate applications filed by large commercial insurers including Intact, Aviva, Economical, Desjardin and Co-Operators, among others. In addition to our review of the MPI GRA, we review the rate filings of the crown corporations in British Columbia and Saskatchewan."*

Question:

a) In its review of other rate applications, did Oliver Wyman discover any instances where the alternative accident year weighting approach, specifically as described on page 7, of tempering accident year weights was adopted?

b) If the response to part a) is positive, please identify those instances to the extent possible.

c) Prior to the recommendation contained in its report, has Oliver Wyman ever recommended the use of the alternative accident year weighting approach of tempering accident year weights to any regulator or Property & Casualty insurance company?

d) If the response to part c) is positive, please identify those instances to the extent possible.

e) Would Oliver Wyman agree with the following statement?

> *"While tempering the accident year weights to consider the impact of the COVID-19 pandemic lessens the use of the COVID-19 period, the determination of appropriate weights for each accident year and the COVID-19 unwinding factors adjustment for those years adds to the uncertainty of the indication."*

f) If the response to part e) is negative, please explain the basis for the response provided.

Rationale for Question:

To better understand the basis for the suggestions of Oliver Wyman on this issue.

RESPONSE:

a) Although we do not maintain a database of accident year weights, we can confirm that private/commercial insurers have adjusted accident year weights to recognize the uncertainty of estimates for accident periods affected by the COVID-19 pandemic.

b) As noted in our response to PUB (CAC) 2, we estimate that we review 75 rate filings annually. We do not catalog the approaches to accident year wights and are not able to comprehensively respond to the request without significant effort.

c) We evaluate the accident year weights in our review of rate filings and have recommended alternative accident year weights from those proposed by the filer.

d) As noted in our response to PUB (CAC) 2, we estimate that we review 75 rate filings annually. We do not catalog the approaches to accident year wights and are not able to comprehensively respond to the request without significant effort.

e) We cannot definitively respond as "adds to" in the statement implies a relative measure and as such, we would need to evaluate the hypothetical relative to an unstated baseline.

f) Not applicable as we are not stating that we either agree to disagree to the statement in part e).

RATIONALE FOR REFUSAL TO FULLY ANSWER THE QUESTION:

We can not definitively respond to part e) of the question as "adds to" in the statement implies a relative measure and as such, we would need to evaluate the hypothetical relative to an unstated baseline.

MPI (CAC) 6

Part and Chapter:	**Oliver Wyman Report – September 20, 2023**	**Page No.:**	**8**
PUB Approved Issue No:			
Topic:	**Rate Level Changes**		
Sub Topic:	**MPI Accident Year Weights**		

Preamble to IR (If Any):

At Figure 3, Oliver Wyman provides a comparison of certain MPI Selected Weights to Alternative Weights.

Question:

a) Please provide similar comparison charts as set out in Figure 3 for the Bodily Injury coverage.

b) In respect of the Property Damage coverage data points identified on Figure 3, does Oliver Wyman agree that, in 2021, MPI experienced Lost Cost levels that were most like its experiences in 2013 and 2017?

c) If the response to part b) is negative, please explain the basis for the response provided.

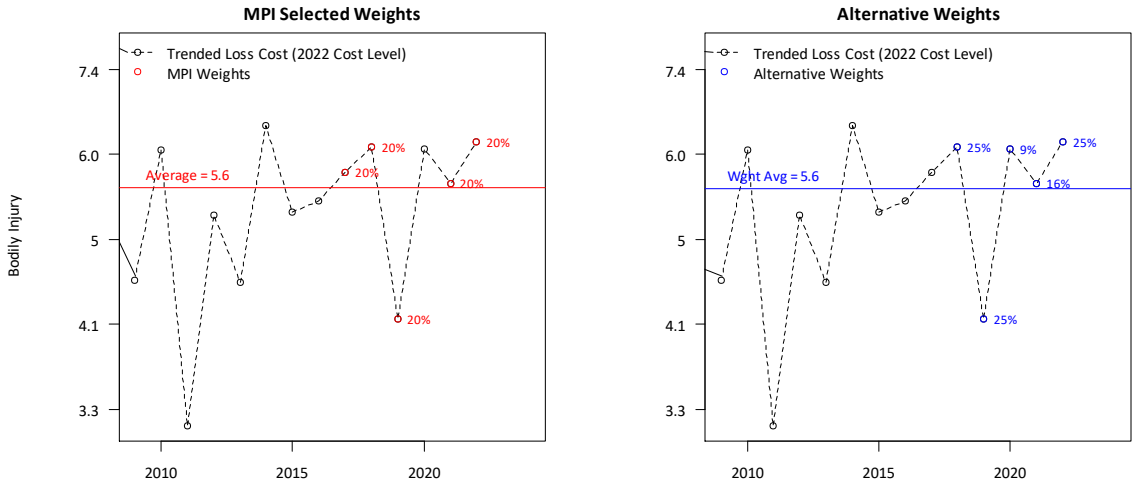
d) MPI has observed similar loss cost in 2013, 2017, and 2021 which is 21% of the last 14 accident years compared to 6% assigned to 2021 by Oliver Wyman. Was there any reasonableness check done on the calculated accident year weights for 2020 and 2021 against the actual occurrence of loss cost? If so, please describe the reasonableness check.

Rationale for Question:

To better understand the basis for the suggestions of Oliver Wyman on this issue.

RESPONSE:

a)



b) We agree that 2013 and 2017 are the most similar, albeit lower, experience period observations to 2021.

c) Not applicable.

d) Our "train" dataset for the accident includes accident years 2009 through 2019 and 2022 (twelve years total). 2021 is higher than any of those twelve years and only 2 of 12 are similar. In contrast 2009, 2010, 2011 and 2022 are reasonably similar to 2020. In addition, 2020 is not lower than all of the twelve years in the "train" dataset. Given the normality assumption and considering the information in this response, the weights are consistent with our expectations.

RATIONALE FOR REFUSAL TO FULLY ANSWER THE QUESTION:

CAC to insert rationale for refusal here.

MPI (CAC) 7

Part and Chapter:	**Oliver Wyman Report – September 20, 2023**	**Page No.:**	**11**
PUB Approved Issue No:			
Topic:	**Future Trend**		
Sub Topic:	**Rating Year 2024/25 Loss Cost Projection**		

Preamble to IR (If Any):

Oliver Wyman provides Figure 5 outlining the Accident Benefits – Weekly Indemnity MPI Rating Year 2024/25 Loss Cost Projection and concludes:

> *"It is our view that, absent compelling reasons, frequency and severity models should consider the same time period.*
>
> *…*
>
> *We appreciate the additional volatility (and resulting lower R^2) introduced by the additional data points. However, we don't consider this a compelling rationale for exclusion of those data points" while Page 14: "We recognize the changing pattern in the severity data before and after 2012. Therefore, we find it more reasonable that both models consider data between 2012 and 2022."*

Question:

a) Please provide two charts, one of Weekly Indemnity severity and one of Accident Benefits – Other (Indexed) severity.

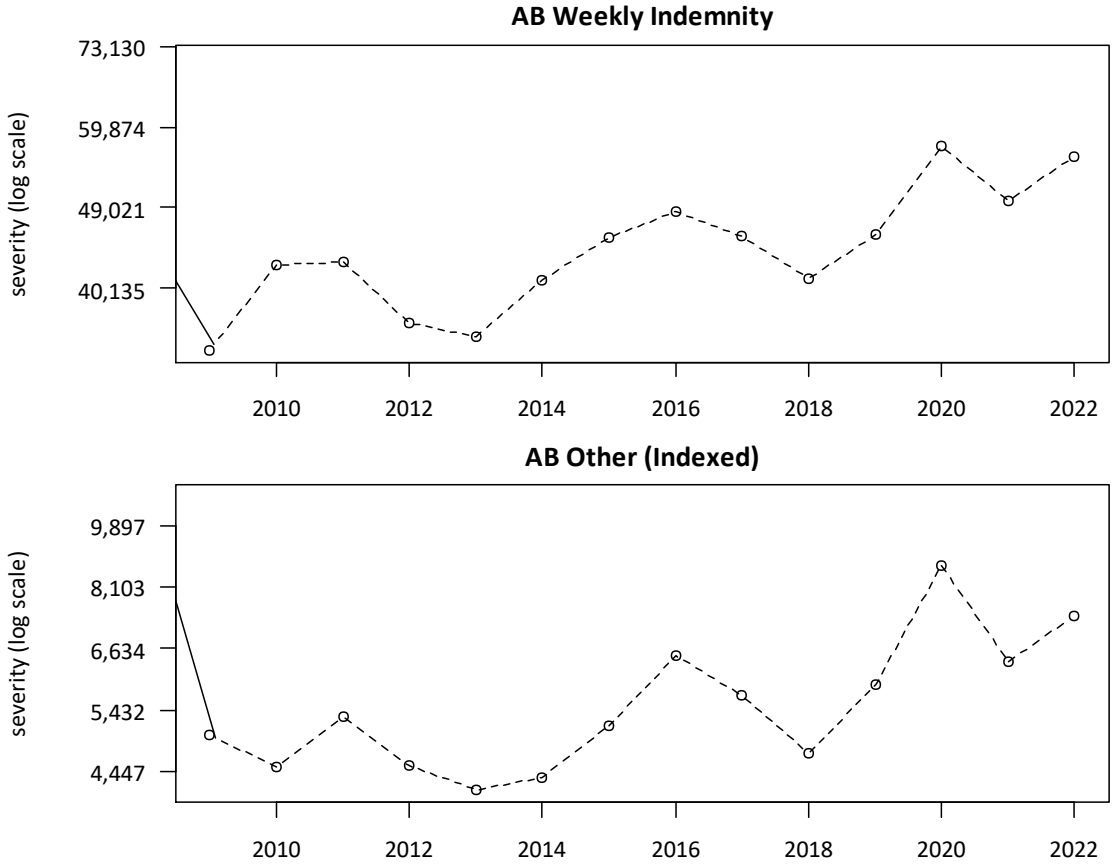
b) Does Oliver Wyman recognize a changing pattern in severity data before and after 2012 in Weekly Indemnity severity by applying the same criteria that it used in evaluating Accident Benefits – Other (Indexed) severity?

Rationale for Question:

To better understand the basis for the suggestions of Oliver Wyman on this issue.

RESPONSE:

a)



b) We do not observe a clear change in pattern in the AB Weekly Indemnity severity experience before and after 2012.

Subject to volatility, AB Weekly Indemnity severity has generally been increasing since 2009.

The AB Other (Indexed) severity experience was generally decreasing through 2014, then began to increase and displayed additional year/year variation, thereafter.

RATIONALE FOR REFUSAL TO FULLY ANSWER THE QUESTION:

CAC to insert rationale for refusal here.

MPI (CAC) 8

Part and Chapter:	**Oliver Wyman Report – September 20, 2023**	**Page No.:**	**33**
PUB Approved Issue No:			
Topic:	**Rating Year 2024/25 Loss Cost Projection**		
Sub Topic:	**Property Damage (Other) Ultimate MPI Adjusted Loss Cost**		

Preamble to IR (If Any):

Oliver Wyman suggests:

> *"We recommend MPI use the same time period for both frequency and severity models to reduce bias and maintain consistency. In Figure 28, we present our alternative model for frequency which is fit to accident years 2009 to 2022, which results in a -1.29% frequency trend."*

Question:

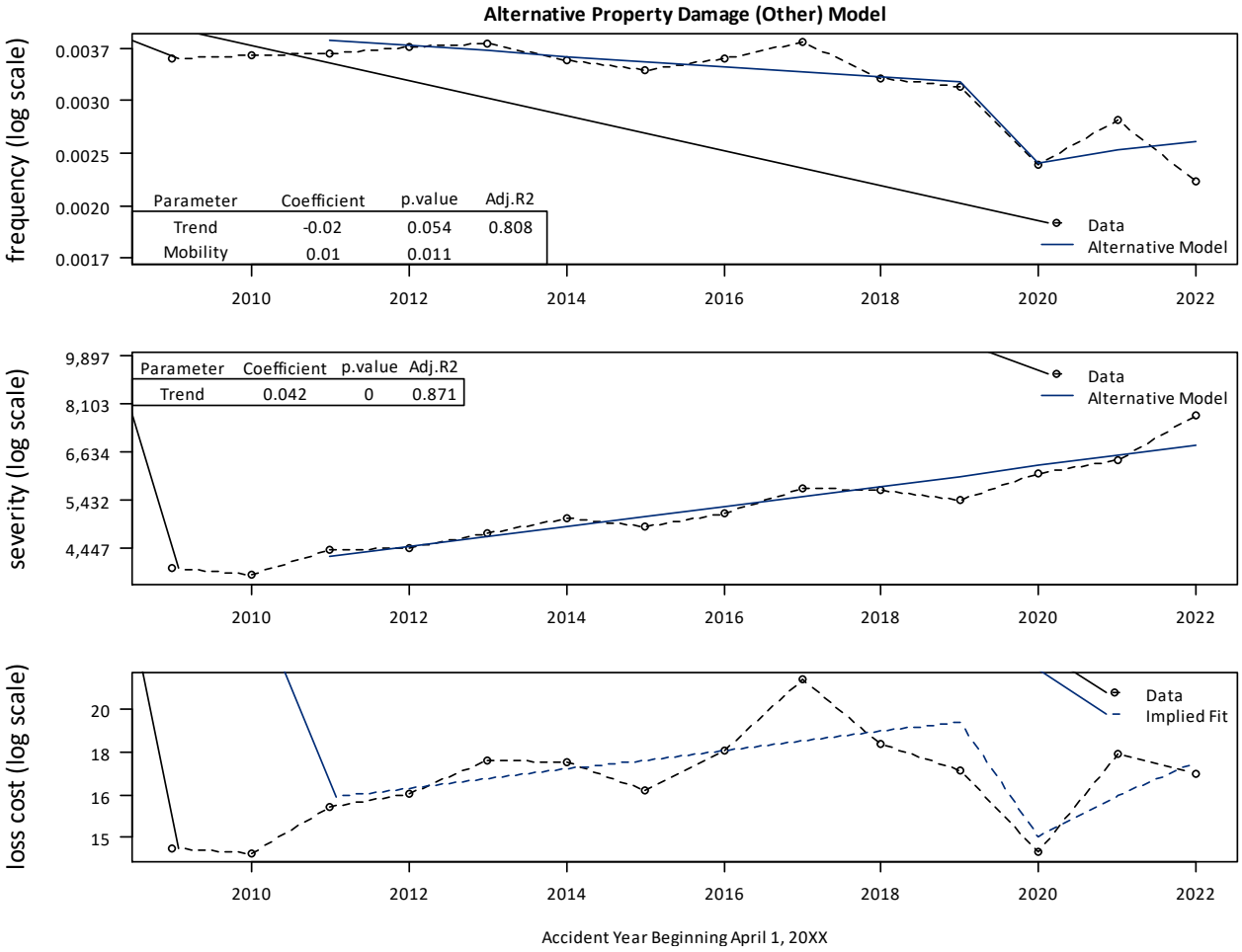
a) Please provide the regression model including fit statistics (such as adjusted R^2 and p-value) using the trending period 2011 to 2022 for both frequency and severity.

Rationale for Question:

To better understand the basis for the suggestions of Oliver Wyman on this issue.

RESPONSE:

The following figure presents the requested models.



RATIONALE FOR REFUSAL TO FULLY ANSWER THE QUESTION:

CAC to insert rationale for refusal here.