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MEMO

TO: Board of Commissioners of Public Utilities
Ms. Cheryl Blundon
Board Secretary
P.O. Box 21040
St. Johns, Newfoundland and Labrador
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DATE: November 26, 2019

FROM: Paula Elliott,
Rajesh Sahasrabuddhe

COPY:

SUBJECT: Facility Association Taxi Rate Filing Application

Dear Ms. Blundon,

In accordance with your request, Oliver, Wyman Limited (Oliver Wyman) reviewed the Taxi, Jitney and Liveries (hereafter referred to as Taxi) rate application submitted by Facility Association (hereafter referred to as FA). Attached is a report of our findings.

* * * * *

Please direct all questions related to this report to the undersigned.



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REVIEW OF TAXI RATE APPLICATION
SUBMITTED BY FACILITY ASSOCIATION

BOARD OF COMMISSIONERS OF PUBLIC UTILITIES

NOVEMBER 26, 2019

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1. Summary of Findings

1.1. FA Proposal

Facility Association (FA) proposes to change its average rates which it estimates will result in an overall rate level change for all coverages combined of +3.9%. The proposed average changes vary by coverage and are presented in Table 1 below.

1.2. FA Indication

Indicated Rate Change

FA presents its estimate of its rate level change need on three bases, each with a different return on equity (ROE)/cost of capital (COC)¹ target and a different pre-tax return on investment rate (ROI) assumption:

1. ROE target of 12%; an assumed ROI of 1.33%
2. ROE target of 12%; an assumed ROI of 2.8%
3. No cost of capital (target COC of 0%); an assumed ROI of 2.8%

The target ROE at 12% and assumed ROI at 1.33% (i.e., #1, above) represents FA's best estimate of its rate level change need. Two bases are presented with an ROI at 2.8% as FA understands the Board's Guideline ROI range is 2.8% to 4.0%. The two ROI at 2.8% bases are presented with FA's own ROE target of 12% and the other with the COC set at 0% as the Board does not accept a cost of capital provision in the FA rates. The following table presents these indications as provided by FA, along with the proposed changes.

Table 1: Indicated and Proposed Rate Changes

Coverage ²	Indications based on			Proposed
	12% ROE & 1.33% ROI	0.0% COC & 1.33% ROI	0.0% COC & 2.80% ROI	
Third Party Liability	+20.3%	+14.2%	+3.7%	+3.7%
Accident Benefits	+21.3%	+15.9%	+5.3%	+5.3%
Uninsured Auto	+25.5%	+19.9%	+9.0%	+9.0%
Collision	+16.3%	+13.8%	+3.4%	+3.4%
Comprehensive	+17.7%	+15.3%	+4.8%	+0.8%
Specified Perils	+5.0%	+2.8%	-6.6%	+0.8%
Total	+20.3%	+14.4%	+3.9%	+3.9%

¹ The rate indications based on a COC target exclude investment income expected to be earned on the capital; whereas the rate indications based on a ROE target include the investment income expected to be earned on the capital.

² FA's physical damage coverage rates are based on a percentage of its private passenger rates and the individual multipliers would be adjusted accordingly.

With the exception of comprehensive and specified perils FA is proposing a rate level change for each of the coverages that is the same as its estimate of its overall rate level change need based on the indicated change with a 0% target COC and an assumed 2.8% ROI. In the case of comprehensive and specified perils, the proposed change is based on an average of the indication for these coverages.

As the Board’s Guideline minimum ROI is 2.8% and the Board’s prior Decision was 0% COC for FA, for simplicity, for the remainder of this document we only discuss the FA rate indications assuming a target 0% COC, and an assumed ROI of 2.8%.

Proposed Premiums

FA estimates the proposed average premium increase (for all coverages combined) is approximately \$297 per vehicle. The following table presents the current rate level average premiums and the proposed average premiums for TPL, AB, UA, and for all coverages combined.

Table 2: Current and Proposed Average Premium

Coverage	Current Average Premium	Proposed Average Premium	Proposed Average Change (\$)
Third Party Liability	\$6,632	\$6,877	\$ 245
Accident Benefits	\$540	\$569	\$ 29
Uninsured Auto	\$264	\$288	\$ 24
Total ³	\$7,625	\$7,922	\$ 297

TPL, AB and UA premiums comprise approximately 95% of FA’s total written premiums at the current rate level, with the balance (5%) for the physical damage premiums.

In addition to the changes to base rates by coverage, FA proposes changes to its territory differentials and expanding its driving record differentials from the current 0 to 3, to 0 to 6. We find these proposed rating factors to be supported, and therefore reasonable.

We find FA’s proposed overall rate level change of +3.9% to be higher than we calculate based on other assumptions consistent with the Board’s prior Decisions on FA’s taxi applications and Board Guidelines.

³ Total represents a weighted average based on the premium distribution and includes the physical damage coverages that are not shown in the table.

2. Background

Facility Association submitted its Taxi rate application to the Board dated September 16, 2019 for an overall proposed rate level change of +3.9% with a target effective date of June 1, 2020 for new business and renewals. Oliver Wyman received a copy of the rate application on September 16, 2019 from FA. On October 2, 2019, we provided our questions on the rate application to FA, and received FA's responses on October 18. On October 31 we provided follow-up questions to FA and received its responses on November 7. On November 21, FA submitted an amendment to its supporting documentation regarding the historical industry data to determine its loss trend rates. We now have sufficient information to prepare this report.

After a long hiatus, FA filed for a rate increase in 2012. This resulted in an approved rate change of +50.1% effective August 2013. Based on the most recent data reported by FA in this rate application, FA's average earned premium was \$2,054 in 2012, and has increased to \$6,461 in 2018 - an increase of 215% or +\$4,407 since 2012. (The 2018 average earned premium only partially reflects the Board approved rate change in March 2018 of +18.6%.)

A comparison of 2012 and 2018 average earned premiums by major coverage is presented in Table 3 below:

Table 3: Increase in Average Earned Premium 2012 versus 2018

Coverage	2012 Average Earned Premium	2018 Average Earned Premium	Change (\$)
Third Party Liability	\$1,879	\$5,627	\$3,748
Accident Benefits	\$39	\$479	\$ 440
Uninsured Auto	\$7	\$200	\$ 193
Total ⁴	\$2,054	\$6,461	\$4,407

FA's recently approved average rate level changes are listed below:

- August 2013: +50.1%
- September 2015: +19.3%
- June 2016: +28.9%
- March 2017: +25.7%
- March 2018: +18.6%
- June 2019: +3.7%.

The cumulative effect of all these changes is an increase of +257%.

⁴ Total represents a weighted average based on the premium distribution and includes the physical damage coverages that are not shown in the table.

3. Determining Rate Level Needs

As support for FA's proposed changes, FA calculates and presents a rate level need by coverage based on its Newfoundland and Labrador (NL) loss experience arising from the latest five accident years (2014 to 2018) ending December 31, 2018 as compiled by GISA. We refer to this five-year period as the experience period⁵. We reviewed the rate level indications developed by FA, and in so doing have examined all aspects of the ratemaking procedure. The following are the key assumptions in FA's rate application.

- *Selection of Ultimate Losses (Loss Development)* – FA relies upon its non-PPV (commercial, motorcycles, snow vehicles, taxis, etc.) NL experience in selecting development factors that it applies to its reported incurred losses for taxis. (FA's reported incurred losses do not include allocated loss adjustment expenses.) We discuss the selection of ultimate losses in Section 4.
- *Selection of Ultimate Claim Counts (Claim Count Development)* – FA relies upon its non-PPV NL experience in selecting development factors that it applies to its reported claim counts for taxis. We find these selections to be reasonable.
- *Loss Trends* – FA selects loss trend rates based on its review of insurance industry commercial vehicles data as of June 30, 2018 to project its historical loss experience to the average accident date of its proposed rate program. We discuss FA's selected loss trend rates in Section 5.
- *Premium Trends and On-Level Factors* – FA adjusts its premiums to take into consideration its rate level changes in the recent past and premium drift. We find these adjustments to be reasonable.
- *Experience Period Weights* - For each coverage, FA combines its experience over the five accident years by assigning a 20% weight to each year. We find the weights to be reasonable and consistent with its prior filing.
- *Loss Adjustment Expense (LAE)* – FA's LAE provision (for both internal and external claim settlement related expenses) is based on the contractual arrangement between FA and its servicing carriers, which, in turn, is based upon the FA's loss ratio results. We find these estimates to be in line with the contractual arrangements and, therefore, accept them as reasonable. However, the actual LAE costs are not provided by FA to support these provisions.
- *Health Levy (HL)* – FA has not included a provision for the HL. This is consistent with FA's treatment of the HL in prior taxi filings.
- *Full Credibility Claim Count Standards* – FA selects full credibility claim count standards consistent with its prior filing and approved by the Board.
- *Complement of Credibility* - To the extent that FA determines its own loss experience is not statistically credible, FA assigns the balance of credibility to the prior credibility weighted loss ratio adjusted for (1) the net loss/premium trend rate since the effective date of its most

⁵ FA presents 10 years of data, but only 5 years are included in the experience period.

recent prior rate change and (2) the prior approved rate change. We discuss the complement of credibility in Section 5.5.

- *Expense Provision* - FA assumes a total expense provision of 21.72% allocated as follows:

Table 3: FA Expense Provisions

Expense Provision	Percent of Premium
<u>Variable Expenses</u>	18.17%
Standard Commissions	3.00%
Premium Tax	5.00%
Servicing Carrier Fee	1.00%
Miscellaneous Regulatory Fees	0.17%
Servicing Carrier Operating Costs	9.00%
<u>Fixed Expenses</u>	3.55%
Driving Record Abstracts	1.45%
Central Office Expenses	2.10%

The 3% commission rate is based on the (new) rate introduced by Government effective August 2019. The 5% premium tax rate is set by the provincial government. The servicing carrier fee of 1% and servicing carrier operating costs of 9% are based on a compensation agreement between the FA Board and its servicing carriers, rather than the actual costs and expenses of the servicing carriers for processing taxi policies. The fixed expense costs are based on estimates by FA, taking into consideration its most recent actual costs and proposed rate level change. Despite some reservations regarding Driving Record Abstract fees, as stated by the Board in the A.I.3 (2019) Decision, it accepted FA's expense provision as it was less than the Board's Guideline of 28%. We, therefore, do not discuss FA's total expense provision, +21.72%, further.

- *Contingent Commissions* – In calculating its rate level change need, FA does not include a contingent commission provision. We find this assumption to be consistent with the Board's Guidelines.
- *Finance Fee Revenues* - FA does not take into consideration the fees paid by policyholders for the monthly payment plans offered. We discuss the finance fee revenues in Section 6.
- *Profit Provision (Cost of Capital)* – Although FA believes its rate level needs should provide for a target 12% ROE, since FA acknowledges the Board's approval of FA's prior rate change based on a target COC of 0% it presents its rate indications based on a 0% COC.
- *Investment Income on Cash Flow (ROI)* – Although FA estimates its ROI to be 1.33%, since FA acknowledges the Board's minimum ROI is 2.8% it presents its rate indications based on an ROI of 2.8%.
- *HST Adjustment* – FA accounts for the change in the HST rate July 1, 2016 (from 13% to 15%) through its determination of loss trend rates. We find this to be reasonable in the circumstances.

In the following sections we discuss assumptions for the Board's consideration regarding:
(1) ultimate loss amount, (2) loss trend rates, (3) complement of credibility, and (4) finance fee revenues.

4. Actuarial Commentary: Selection of Ultimate Losses

4.1. Ultimate Loss Amounts

FA's selected ultimate losses by accident year and coverage are its Appointed Actuary's (AA) selected ultimate NL non-PPV losses by accident half-year and coverage, evaluated as of June 30, 2019.

These non-PPV losses include the FA claim experience from all vehicles that are not private passenger vehicles, therefore it is not exclusively taxi claim experience. FA states that over the last ten years (2009 to 2018) the reported loss amount is \$54 million for all non-PPV vehicles of which \$35 million (or approximately 65%) is for taxis alone. Due to the limited volume of taxi experience, FA finds it necessary to use its non-PPV experience to select ultimate losses for taxis. As this is the same approach FA used in its prior taxi filing, and given the limited taxi experience, we find this approach to be reasonable. However, the use non-PPV loss experience adds to the uncertainty of FA's estimate of its overall rate level change need (+3.9%) for taxis.

Actuarial Methods

FA's AA considers the following loss estimation methods in his analysis.

- The **Link Ratio Method** (also known as the Incurred Loss Development Method) involves the review of changes in reported incurred loss amounts over time (loss development), the identification of loss development patterns, and the application of loss development factors that are reflective of those patterns to the reported incurred losses as of a particular point in time. We find this is a common method used by actuaries in rate applications. As noted above, the loss development factors that are selected and applied by the AA are based on FA's non-PPV claim experience.
- The **ELR Method** involves selecting a loss ratio for each accident year based on various considerations and applying those loss ratios to the corresponding earned premium. The ELR Method is more commonly used when there is considerable uncertainty as to the ultimate loss amounts and/or when the historical experience is too limited for purposes of identifying and selecting loss development factors. The ELR's selected by the AA are based on adjusting FA's NL non-PPV loss ratios for the more mature accident years to reflect subsequent trend and rate changes. Under the ELR Method the actual reported incurred loss experience for the specific accident year being estimated is not explicitly considered as it is under the Link Ratio Method.
- The **Bornhuetter-Ferguson (B-F) Method** is a weighted average of the results of the Link Ratio Method and the ELR Method. The weights are derived from the loss development factors that are selected under the Link Ratio Method and are proportional to the percent of the ultimate losses that are estimated to have been reported (so more weight is assigned to the results of the Link Ratio Method as accident years mature).
- The **Weighted Method** is also a weighted average of the results of the Link Ratio Method and the ELR Method. However, what differentiates this method from the B-F Method is that

the weights are judgmentally selected starting at 100%, and stepping down by accident half-year at a rate of 12.5% until reaching 0.0%

- The **Zero Incurred Method** is based on selecting the reported incurred loss amount as of the date of the valuation data as the ultimate incurred loss amount.

After consideration of the results of these methods, the AA selects its “best estimate”⁶ which in this case is generally the result of the Link Ratio Method for the older accident years and is either the result of the B-F method or Weighted Method for the more recent accident years. FA uses the AA’s ultimate loss selections in estimating its rate level needs.

Discussion

The AA does exercise considerable judgment in making his selections (as is the case with ultimate loss estimates made by all actuaries). We do not presume that the AA’s ultimate loss estimates are biased. However, another actuary with different judgments could make different selections from those made by FA’s AA.

Recommendation

We recommend that the Board consider that there is a range of reasonable loss selections that the AA could have made, and the impact of alternate selections on the rate level indications could be material. This, plus, as we noted earlier, the AA’s use of FA non-PPV claim and loss ratio experience (instead of FA taxi only claim experience, which is limited) adds to the uncertainty of FA’s estimated rate level change need.

⁶ The Canadian Institute of Actuaries standards guide the AA and provide a definition of “best estimate” where the best estimate is meant as an unbiased estimate that is neither too conservative or optimistic. Due to the numerous judgments in the process of selecting a best estimate, another actuary fulfilling the AA role for FA would not likely have the identical best estimate.

5. Actuarial Commentary: Loss Trends

The loss cost trend rates are used to adjust the actual claim experience that occurred in the experience period to the cost level of the period during which the proposed rate program is to be in effect.

The following table summarizes the CV loss cost trend rates⁷ selected by FA in its filing and by Oliver Wyman (and approved by the Board) as of June 30, 2018 and December 31, 2018.

Table 4: Summary of Loss Cost Trends

Coverage	FA Loss Cost Trend	Oliver Wyman Loss Cost Trend 2018-1	Oliver Wyman Loss Cost Trend 2018-2
Bodily Injury	-0.2%	-2.5%	-3.0%
Property Damage	+1.1%	+1.0%	+0.0%
Accident Benefits	0.0%	+7.0%	+8.5%
Uninsured Auto ⁸	0.0%	+7.0%	+8.5%
Collision	0.0%	+4.0%	+5.0%
Comprehensive	+5.5%	+4.0%	+5.0%

Basis of Trend Determination

The industry experience for taxis, which are categorized as public vehicles for statistical reporting purposes, is too limited for use in selecting loss trend rates. FA, therefore, bases its selected loss trend rates on the NL Industry commercial vehicle (CV) loss experience. As the Board has no guideline on the data to be used to select trend rates for taxis, and FA's use of industry CV experience for determining loss cost trends is consistent with its prior approach, we find the use of industry CV experience to be reasonable.

Based on industry CV experience in NL as of June 30, 2018, FA selects its CV loss cost trend rates for each coverage by separately selecting frequency and severity trend rates and then combining these selected trend rates to arrive at its selected loss cost trend rates.

Discussion

As presented in the table above, the CV loss cost trend rates selected by FA are lower than those selected by Oliver Wyman for accident benefits, UA, and collision; and higher for bodily injury, property damage and comprehensive.

We presented our rationale for the June 2018 CV trends rates that we selected in our Commercial Vehicle Loss Trend Report filed with the Board; and we do not repeat our rationale and support for our loss trend selections in this report. As we have stated in our trend reports to the Board, we find that the considerable volatility in the Industry CV experience makes the trend

⁷ These trend rates presented apply to the loss experience period (accident years 2014 to 2018); different rates may apply to earlier accident years.

⁸ The Board's Guideline loss trend rate for Accident Benefits is also used for Uninsured Auto due to the limited UA data.

patterns difficult to identify. As presented in Table 4 above, our more recent loss trend rates based on industry data as of December 31, 2018 are similar to those of June 30, 2018 – with bodily injury and property damage trend rates decreasing, while the trend rates for other coverages increasing.

The differences between the trend rates selected by Oliver Wyman and those selected by FA are generally due to different judgments regarding: (1) trend measurement period, (2) selected loss development factors, and (3) inclusion/exclusion of loss adjustment expenses.

We asked FA to provide the rate level indications using the Board's Guideline loss trend rates.

- FA estimates substituting the Board's Guideline loss trend rates as of June 30, 2018⁹ instead of those selected by FA, and no other changes in assumptions, decreases its overall rate level indication from +3.9% to +1.4%¹⁰.
- FA estimates substituting the Board's Guideline loss trend rates as of December 31, 2018 instead of those selected by FA, and no other changes in assumptions, decreases its overall rate level indication from +3.9% to +0.4%.

In the following sections we discuss specific differences in the bodily injury, property damage, accident benefits, collision and comprehensive loss trend rates.

5.1. Bodily Injury

FA Bodily Injury Frequency Model

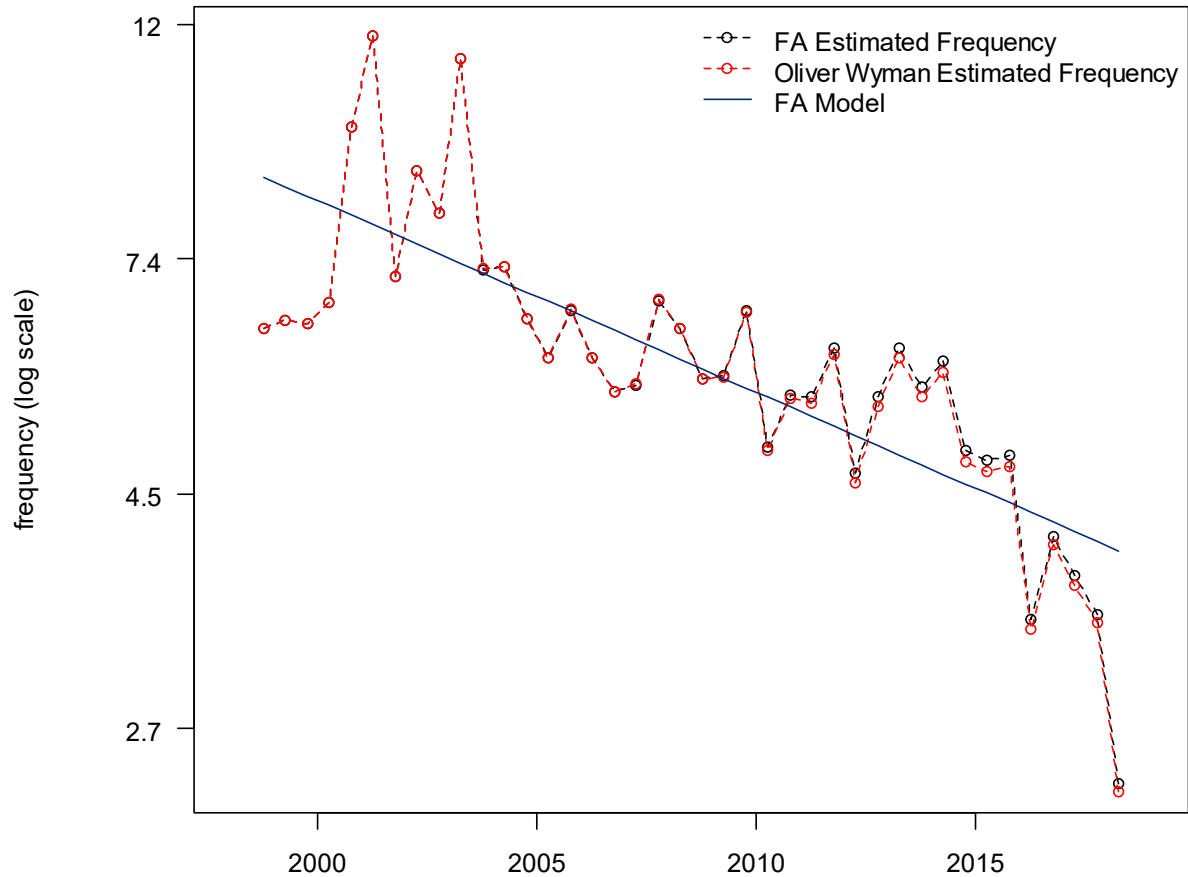
FA's selected annual past and future trend rate of -4.0% is based on a model fit to semi-annual accident year data 1998-H2 to 2018-H1. In Figure 1, we present FA's selected bodily injury frequency model. As presented in Figure 1, we note there is no significant difference between FA's estimated ultimate frequency values and ours, both evaluated as of June 30, 2018. However, our selected annual past and future frequency trend rate is -5.0%¹¹.

⁹ The June 30, 2018 Board Guideline loss trend rates were available at the time of the FA report preparation.

¹⁰ In FA's calculation test we requested, FA estimates the comprehensive rate indication increases, despite the Board's guideline trend rate at +4.0% is less than FA's at +5.5%. Hence, it appears FA used the incorrect trend factor for comprehensive in this test; but due to the low volume this is immaterial to the overall rate indication calculation.

¹¹ Our selected annual frequency trend only considers accident periods after the introduction of the 2004 reforms.

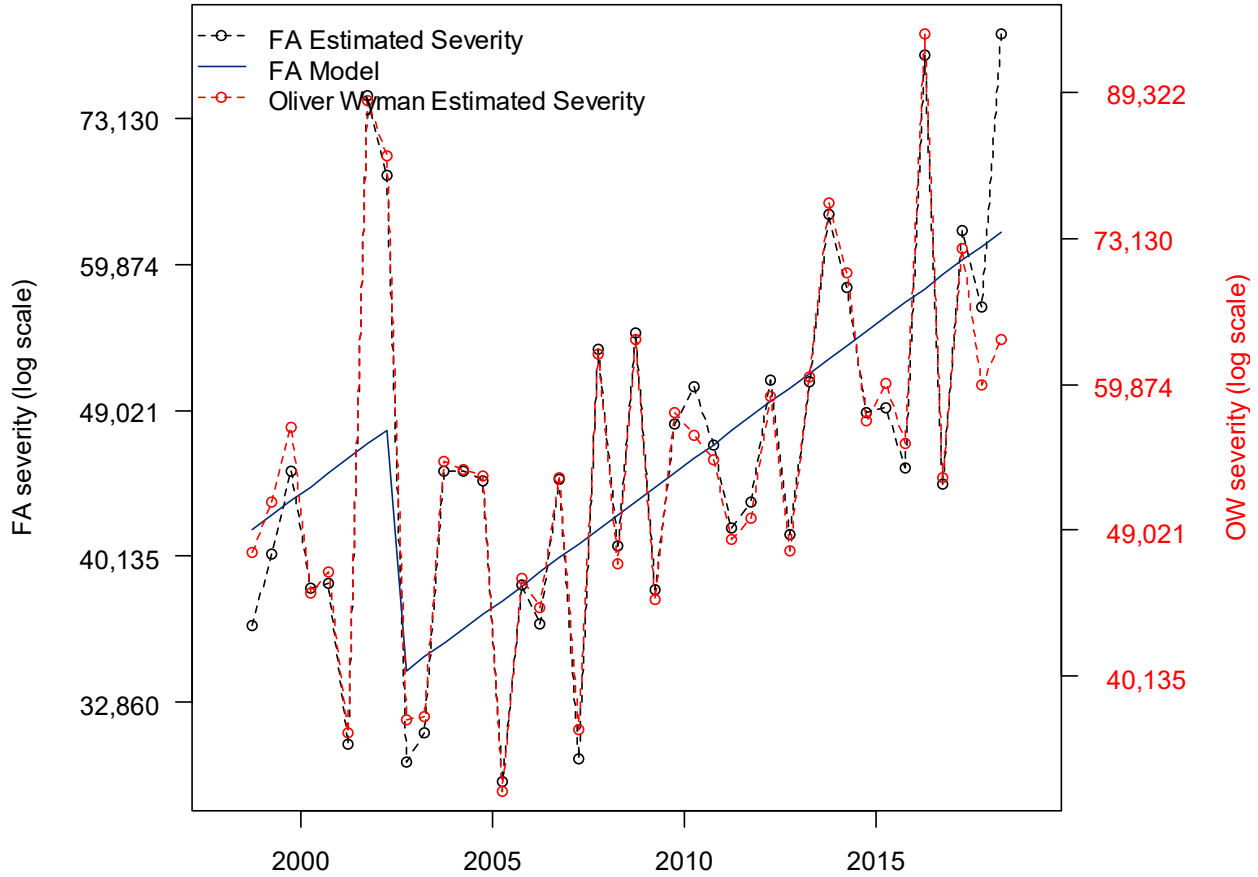
Figure 1: FA Bodily Injury Frequency Model



FA Bodily Injury Severity Model

FA's selected annual past and future trend rate of +4.0% is based on a model fit to semi-annual accident year data 1998-H2 to 2018-H1, including a scalar parameter at 2002-H2. In Figure 2, we present FA's selected bodily injury severity model. FA's estimates of the ultimate severity does not include loss adjustment expenses, while Oliver Wyman does. This causes our severity estimates to be consistently higher than FA's; but with little effect on the differences in measured trend rate. As shown in Figure 2, our estimates track consistently with FA's, with the exception of the most recent two immature data points.

Figure 2: FA Bodily Injury Severity Model



Oliver Wyman Findings

FA’s selected annual frequency and severity models result in trend rates that are not consistent with the Board’s Guideline loss trend rates as of June 30, 2018. In reviewing Figure 1 and Figure 2, we noted the following differences between the FA models and the trend models underlying the Boards selections.

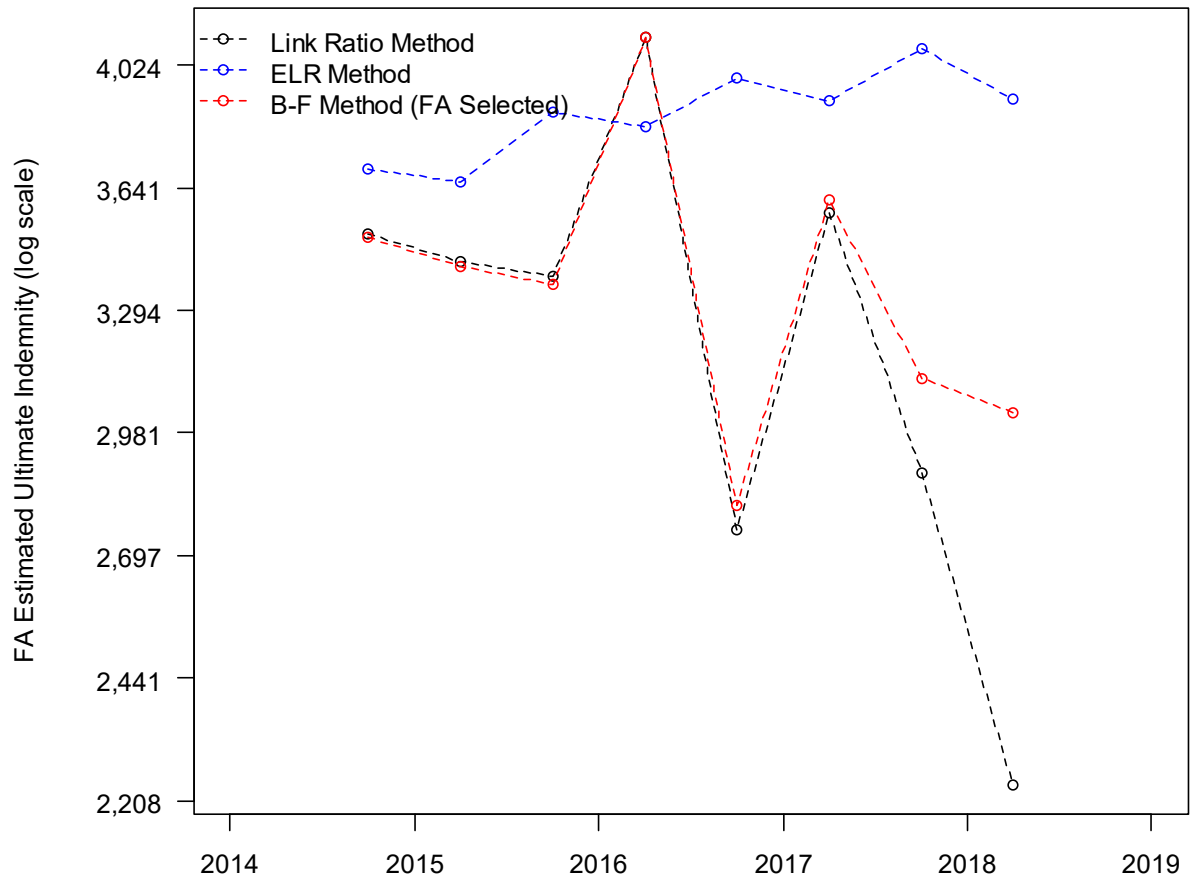
- As noted in Figure 2, FA’s estimate of ultimate indemnity for the 2017-H2 and 2018-H1 accident periods is substantially higher than Oliver Wyman’s estimate of ultimate indemnity and expense. This results from FA’s higher selected loss development factors and dependency on the B-F method.

We observe FA selects the B-F method as the basis for its estimated ultimate indemnity for 2014-H2 and subsequent. As noted in section 4.1 the B-F method is a weighted average of the results of the Link Ratio Method¹² and the ELR Method. In Figure 3, we present FA’s estimated ultimate indemnity for accident periods where the B-F method has been selected. We note the ELR method is consistently much higher than the Link Ratio method for all

¹² Link Ratio factors selected by FA and Oliver Wyman align more closely than those selected by FA based on the ELR and B-F Methods.

accident periods presented in the figure, except 2016-H1. This may indicate that FA's selected expected loss ratio underlying the ELR method, and B-F method, is conservative relative to recent loss experience. If FA had selected an expected loss ratio more consistent with its recent loss experience, then the estimated severity for the 2017-H2 and 2018-H1 accident periods would have been reduced and consequently resulted in a lower trend rate that is more consistent with the Board's approved selections.

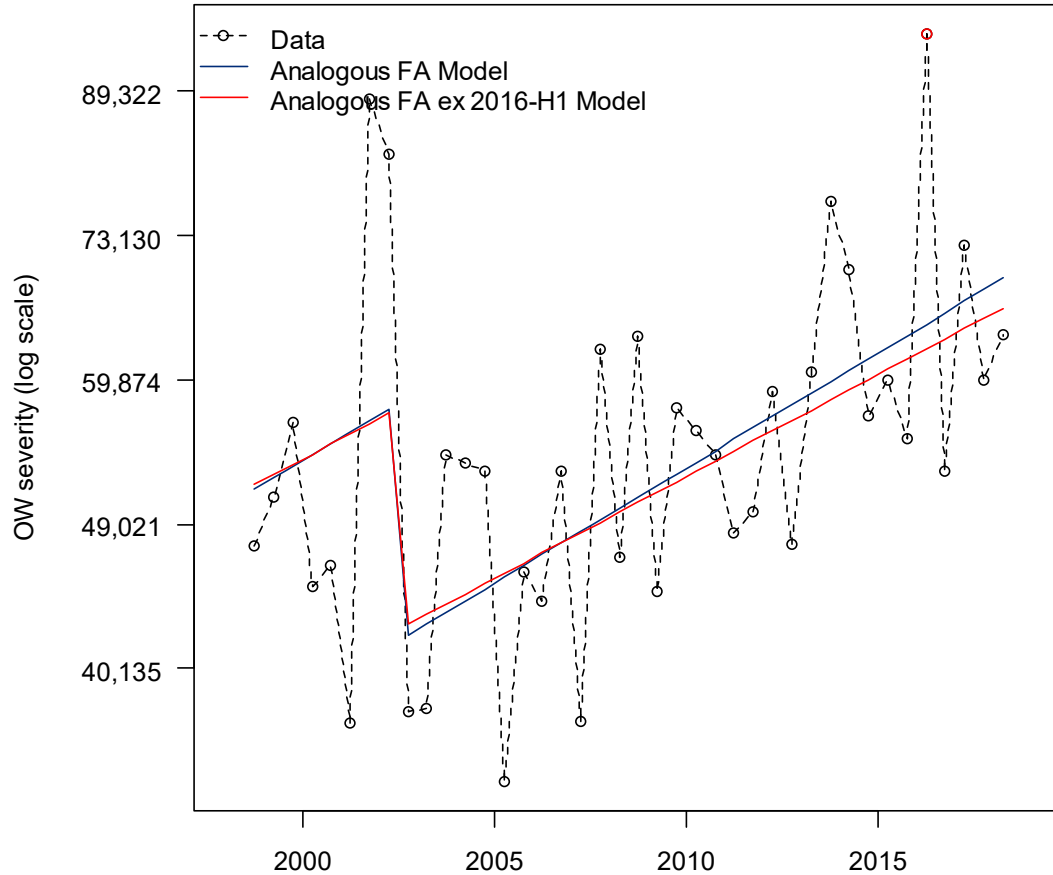
Figure 3: FA Selected Ultimate Indemnity



In IR#2 question 3, we asked FA to provide a bodily injury severity model analogous to FA's severity model, except excluding the unusually high 2016-H1 observation and immature 2018-H1 observation. FA reports that the implied annual trend rate associated with this model is +3.2%.

In Figure 4, we fit a model analogous with FA's selected model but with Oliver Wyman's estimates of severity as a sensitivity measure. The model, including the 2016-H1 data point, results in an implied annual trend associated of +3.2% ($p = 0.000$) (as compared to FA's selected severity trend of +4.0%). If the high 2016-H1 data point were excluded from the fit, the implied annual trend reduces to +2.9% ($p = 0.000$). We note the standardized residual of the 2016-H1 data point is large at 2.14.

Figure 4: FA Bodily Injury Severity Model – Fit to Oliver Wyman Estimated Severity



- FA’s selected annual trend rates are based on models fit to semi-annual accident year data 1998-H2 to 2018-H1. The Board’s selected trend rates are based on models that only consider accident periods after the introduction of the 2004 reforms. We observe frequency and severity are both more volatile prior to 2004 and a change in trend rate is visible (although not necessarily significant). We find the exclusion of pre-reform accident periods to be warranted to avoid the influence of pre-reform data in the trend models.
- Considering only accident periods subsequent to 2004 and excluding FA’s estimated 2016-H1 and 2018-H1 ultimate claims leads to frequency and severity trend models that are more consistent with the Board’s Guideline loss trend rates.

Summary

We believe the Board’s Guideline loss cost trend rate of -2.5%, based on combining a frequency trend rate of -5% and severity trend rate of +2.5% as presented in our June 30, 2018 report, is fully supported and more appropriate than FA’s 0.0% loss cost trend rate.

As provided by FA, substituting the Board’s Guideline bodily injury loss cost trend rate instead of FA’s selection, and no other changes in assumptions, decreases FA’s rate indication for bodily injury from +3.7% to -0.9%.

5.2. Property Damage

Summary

FA's selected property damage loss trend rate of +1.1% is not materially different than the Board's Guideline loss trend rate of +1.0%. Hence, while slightly different than our selection, we do not find FA's selection unreasonable; but continue to also find our selection reasonable.

5.3. Accident Benefits

Oliver Wyman Findings

In the case of Accident Benefits, where there is the largest difference, FA finds a change in loss cost level of +119% to have occurred at 2011-2, and when this level change is considered the indicated loss cost trend rate is 0% (no trend). As we state in our loss trend report, the Accident Benefits data is very volatile making it difficult to discern a trend pattern. Hence, while different than our selection, we do not find FA's selection unreasonable; but continue to also find our selection reasonable.

Summary

As provided by FA, substituting the Board's Guideline Accident Benefits loss trend rate instead of FA's selection, and no other changes in assumptions, increases FA's rate indication for Accident Benefits from +5.3% to +23.3%. Similarly, substituting the Board's Guideline Uninsured Auto loss trend rate instead of FA's selection, and no other changes in assumptions, increases FA's rate indication for Uninsured Auto¹³ from +9.0% to +21.2%.

5.4. Collision

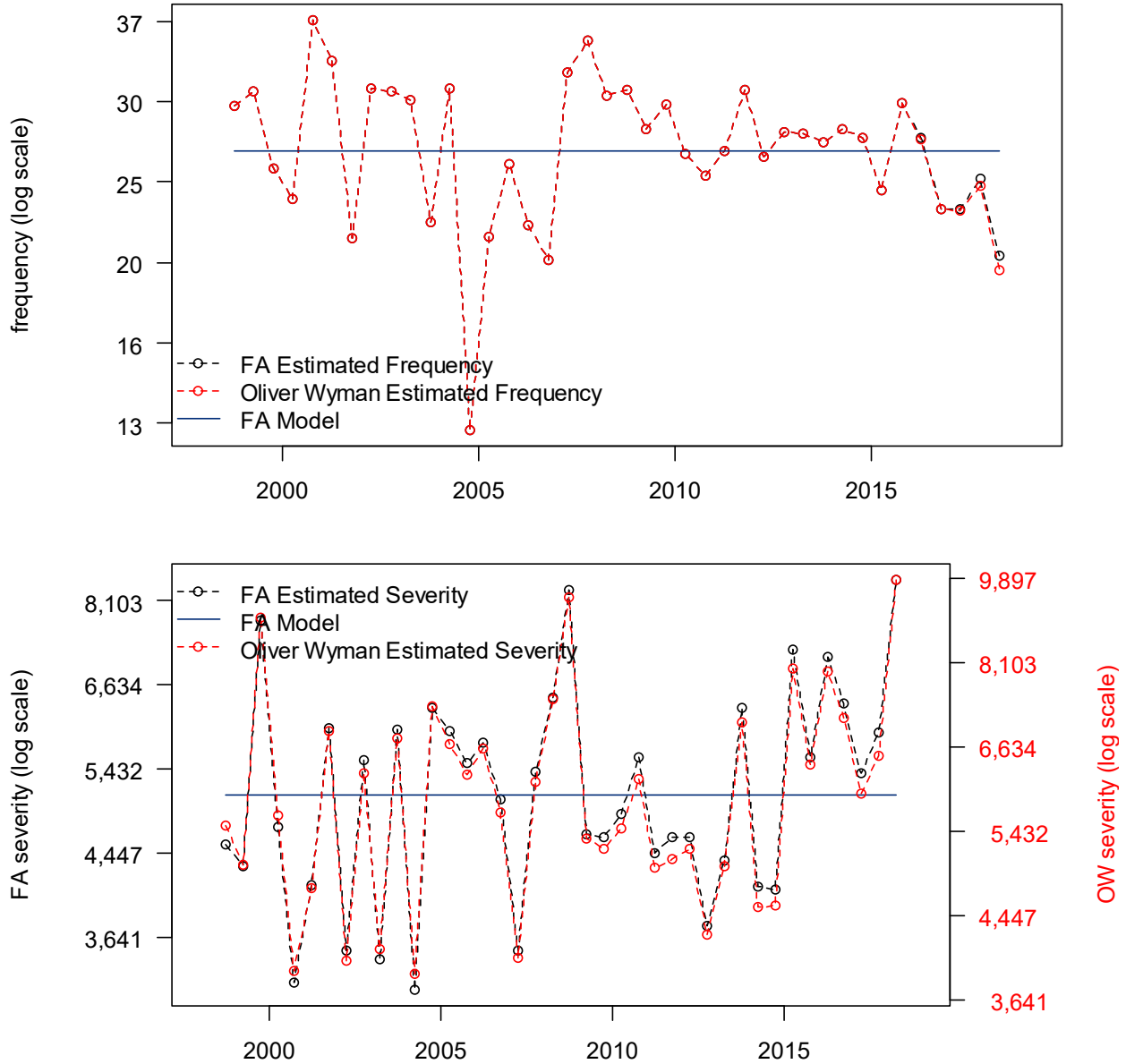
FA Collision Frequency and Severity Models

FA's selected annual past and future frequency and severity trend rates of 0.0% are based on intercept-only models fit to semi-annual accident year data 1998-H2 to 2018-H1. In Figure 5, we present FA's selected bodily injury frequency and severity models.

Other than the exclusion of loss adjustment expenses in FA's data, we note there is no significant difference between FA's and our estimated ultimate frequency and severity as of June 30, 2018.

¹³ Oliver Wyman's selected Accident Benefits trend rate is also used for Uninsured Auto

Figure 5: FA Collision Frequency and Severity Model



Oliver Wyman Findings

As noted in our June 2018 report, both severity and frequency trends are beginning to take shape. Measured trend rates over the 2011-1 to 2018-1 and 2011-2 to 2018-1 period have significant *p*-values and models have moderate adjusted R-squared statistics. However, we also observe the collision data is very volatile making it difficult to discern a trend pattern. Hence, while different than our selection, we do not find FA's selection unreasonable; but continue to also find our selection reasonable.

Summary

As provided by FA, substituting the Board's Guideline collision loss trend rate instead of FA's selection, and no other changes in assumptions, increases FA's rate indication for collision from +3.4% to +13.6%.

5.5. Comprehensive

Oliver Wyman Findings

FA selected annual past and future frequency trend rates of 0.0%, the same as our selection.

FA's selected annual past and future severity trend rate of +5.5% is based on a model fit to semi-annual accident year data 1998-H2 to 2018-H1. We observe the comprehensive data is very volatile. While different than our severity selection (+4.0%), we do not find FA's selection (+5.5%) unreasonable; but continue to also find our selection reasonable.

Summary

FA reports that substituting the Board's Guideline comprehensive loss trend rate instead of FA's selection, and no other changes in assumptions, increases the rate indication for comprehensive from +0.8% to +2.2%¹⁴.

5.6. Complement of Credibility

Discussion

To the extent that FA finds its own loss experience is not sufficiently credible, FA applies the balance of credibility weight to the prior filing credibility weighted loss ratio that it selected, adjusted for the approved rate change and the net trend rate since the prior filing effective date. Instead, we suggest that FA should use the prior credibility weighted loss ratio that the Board approved.

In its prior rate application, FA proposed a rate increase of +10.2%, which was greater than the Board approved (+3.7%). In part, the lower rate increase approved by the Board was due to the lower credibility weighted loss ratio based on assumptions that the Board found reasonable.

With FA's approach, it implicitly adjusts for rate inadequacy it believes resulted from the Board's prior approval of a lower credibility weighted loss ratio than FA estimated in the prior filing.

As stated in the two recent prior Board's Decisions A.I.4 (2017) and A.I. 3 (2019) regarding the FA taxi applications, the Board did not accept FA's adjustment for any rate inadequacy in its complement of credibility calculation. We understand the Board's position would be the same as its prior Decision. In the prior filing, the Board approved the use of the net trend rate as the basis for the complement of credibility.

Summary

We asked FA to provide its rate indications based on the credibility weighted loss ratio of the prior rate application that the Board approved (not the loss ratio that FA proposed). FA

¹⁴ We note this change is counterintuitive. A reduction in the selected annual loss cost trend should result in a reduction in the rate indication for comprehensive. However, as we do not consider FA's selected trend rate unreasonable, we do not discuss this issue further. All estimated changes to the rate indication are provided by FA.

calculates that making this change, and no other changes in assumptions, reduces FA's overall rate level change from +3.9% to +1.2%; a 2.7 percentage point reduction. This is effectively the same as using net trend as the basis for the complement of credibility – consistent with the Board's prior Decision.

6. Actuarial Commentary: Finance Fee Revenues

Discussion

As provided by FA, two of FA's larger servicing carriers for taxis charge a 3% finance fee for the monthly payment plan option; and a smaller carrier does not charge a finance fee. However, FA did not account for these revenues (nor any associated administration, bad debts or cash flow changes) in determining its rate level needs in this taxi rate application nor in the prior taxi application. FA's position is that finance fees are collected by the servicing carriers and not the FA.

In the Board's Decision (A.I. 3, 2019) for the prior FA taxi application, the Board stated: "In the Board's view, finance fee revenues should be reflected for in the rates since they are revenues collected by insurers in premiums paid monthly." As actual fee information and other associated costs were not provided by FA, the Board directed FA to include an offsetting 0.75% of premium provision for this payment plan option. The 0.75% provision was based on the private passenger vehicle net fee¹⁵ estimate.

In the Board's Decision (A.I. 3, 2019) it directed FA to provide the necessary supporting finance fee revenue information in its subsequent rate application. In response to our request for the supporting information, FA reiterated that it does not collect this information; but provided some private passenger vehicle information for New Brunswick where fees are 6% of premium. Hence, there is no new additional information to estimate these payment plan fees for taxis in Newfoundland and Labrador.

Recommendation

We find it appropriate that the FA should be consistent with the Board's prior Decision on finance fee revenues. Given this, we asked FA to make an adjustment for the net fees from payment plans in a manner similar to the Board's prior Decision of 0.75% of premium.

FA calculates that this change, and no other changes in assumptions, reduces the overall rate level indication from +3.9% to +2.9%; a reduction of 1.0 percentage point.

¹⁵ We use the term "net fee" to represent the fees collected, reduced by administration, bad debt and cash flow timing costs. In addition, we note that the Office of the Superintendent of Insurance finds a Minimum Capital Test (MCT) provision of 0% for any future scheduled monthly payment amounts. This MCT provision of 0% implies no additional capital is required for such monthly payment plans offered by insurers.

7. Summary

We reviewed the rate level indications as developed by FA and in so doing have examined all aspects of its ratemaking methodology. As provided by FA in response to our request, it calculates that in making changes to the following would lead to overall rate level indications that are less than the rate level need that the FA has proposed.

1. The Board’s Guideline loss trend rates as of June 2018 (-2.5 percentage points).
2. FA’s credibility complement basis to consider the credibility weighted loss ratio from the prior filing based on the Board’s Decision (-2.7 percentage points).
3. FA’s recognition of finance fee revenues (-1.0 percentage points).

The following table present FA’s calculations of its indicated and proposed changes and those it derives¹⁶ by making all three changes listed above, an overall rate level change of -2.1%, referred to as Alternative A. In addition, we present Alternative B, based on items 2 and 3 listed above only.

Table 5: FA Indicated, Proposed and Alternative Rate Changes

Coverage	FA Indicated Rate Change	FA Proposed Rate Change	Alternative A:1,2,3	Alternative B: 2,3
Third Party Liability	+3.7%	+3.7%	-4.4%	+0.1%
Accident Benefits	+5.3%	+5.3%	+18.7%	+1.1%
Uninsured Auto	+9.0%	+9.0%	+12.2%	+0.7%
Collision	+3.4%	+3.4%	+14.6%	+4.4%
Comprehensive	+4.8%	+0.8%	+1.6%	+4.0%
Specified Perils	-6.6%	+0.8%	-7.0%	-10.8%
Total	+3.9%	+3.9%	-2.1%	+0.3%

FA’s proposed overall rate level change of +3.9% is higher than the indications calculated based on combining the three alternatives listed above (loss trend, complement of credibility and finance fees), which result in an overall rate level change of -2.1%.

¹⁶ All calculations are estimates and subject to verification by FA.

8. Rating Factors:

Discussion

FA proposes to introduce changes to its territory and driving record rating factors.

A minimum bias approach was used for territory, driving record and class (77 for taxi) using the TPL and AB loss cost experience. To the extent the indicated differentials were not credible, the complement of credibility was applied to the current differentials (i.e., no change).

The credibility weighted territory differentials were rebased and the resulting rate level impact off-balanced. FA proposed to cap changes to within +/-25%. The proposed territory differentials resulted in decreases for territory 2 and 3. The TPL and AB coverages were off-balanced by the -5.7% and -2.7% weighted average decreases, respectively. We find the proposed changes in territory differentials to be supported.

In the case of TPL driving records, FA proposes to extend the current driving record 3 into driving records 3, 4 and 5; following the structure for private passenger vehicles (PPV). The current PPV distribution for driving records 3 to 5 was used for this analysis – which we find to be reasonable in the circumstances. Following a similar analysis as was performed for territory differentials, credibility weighted differentials were calculated for driving records 2 and 3 which indicate increases, and new lower (than prior driving record 3) differentials calculated for driving records 4 and 5. FA estimates a TPL off-balance factor of +4.4% for these changes. We find the proposed changes to be supported.

Recommendation

As FA has supported its proposed changes for its territory differentials, and driving record expansion and differentials, we recommend the Board approve these differential changes.

9. Distribution and Use

This report is subject to the following Distribution and Use restrictions:

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10. Considerations and Limitations

Our analysis is subject to the following limitations:

- **Entire Report** The conclusions are developed in the accompanying text and exhibits, which together comprise the report.
- **Data Verification** For our analysis, we relied on data and information made available to without independent audit. Though we have reviewed the data for reasonableness and consistency, we have not audited or otherwise verified this data. It should also be noted that our review of data may not always reveal imperfections. We have assumed that the data provided is both accurate and complete. The results of our analysis are dependent on this assumption. If this data or information is inaccurate or incomplete, our findings and conclusions may need to be revised.
- **Professional Opinion** The results contained in this report represent our professional opinion with respect to the items within the scope of the analysis and considering the limitations noted throughout this report.
- **Rounding and Accuracy** Our models may retain more digits than those displayed. In addition, the results of certain calculations may be presented in the exhibits with more or less digits than would be considered significant. As a result, it should be recognized that:
 - There may be rounding differences between the results of calculations presented in the exhibits and replications of those calculations based on displayed underlying amounts.
 - Calculation results may not have been adjusted to reflect the precision of the calculation.
- **Sources of Uncertainty** While this analysis complies with applicable Actuarial Standards of Practice and Statements of Principles, users of this analysis should recognize that our projections involve estimates of future events and are subject to economic and statistical variations from expected values. We have not anticipated any extraordinary changes to the legal, social, or economic environment that might affect the frequency or severity of claims. For these reasons, no assurance can be given that the emergence of actual losses will correspond to the projections in this analysis.

The sources of uncertainty affecting our estimates are numerous and include factors internal and external to FA. Factors internal to FA include items such as changes in claims settlement practices. The most significant external influences include but are not limited to changes in the legal, social or regulatory environment affecting the claims process. Uncontrollable factors such as general economic conditions also contribute to the variability. Even if there are no unanticipated changes, there is an inherent uncertainty in the actuarial central estimate. This variability arises from the random nature of the claims process.



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