New Brunswick Insurance Board

DECISION

IN THE MATTER:
Of a rate revision application for the ECONOMICAL MUTUAL INSURANCE COMPANY
With respect to automobile insurance rates for
PRIVATE PASSENGER VEHICLES

Hearing Date: November 26-27, 2019
Heard at Saint John, New Brunswick

PANEL:	Ms. Marie-Claude Doucet	Chair
	Ms. Francine Kanhai	Member
	Ms. Heather Stephen	Member
APPEARANCES:		
Applicant:	**Economical Mutual Insurance Company**	
	Ms. Nadia MacPhee	Legal Counsel
	Mr. Michel Trudeau	Actuary Pricing Manager – Personal Insurance
Intervenors:	**Office of the Attorney General**	
	Mr. Michael Hynes	Legal Counsel
	Mr. Denis G. Thériault	Legal Counsel
	Mr. Rajesh Sahasrabuddhe	Consulting Actuary
	Consumer Advocate for Insurance	
	Ms. Michèle Pelletier	Consumer Advocate

Decision Rendered: January 20, 2020

Summary

[1] Pursuant to subsection 267.5(1) of the *Insurance Act,* R.S.N.B., 1973 c. I-12 (the "Act"), the New Brunswick Insurance Board (the "Board") convened a Panel of the Board (the "Panel") to conduct an oral hearing (the "Hearing") on November 26 and 27, 2019 at the Delta Hotel, in Saint John. The purpose of the Hearing was to consider the rate revision application (the "Filing"), requesting approval for an average rate increase of 11.9%, submitted by Economical Mutual Insurance Company (the "Applicant" or "Economical") with respect to automobile insurance rates for private passenger vehicles (PPV) in New Brunswick.

[2] In compliance with subsection 19.71(3) of the *Act,* the Board provided to the Office of the Attorney General ("OAG"), all documents relevant to the Hearing. Pursuant to subsection 19.71(4) of the *Act*, the OAG intervened, called their own expert witness, presented written and oral submissions, questioned the Applicant by way of written interrogatories and cross-examined the Applicant's witness during the Hearing. The Consumer Advocate for Insurance ("CAI") intervened as well, adopting the position of the OAG, presented an oral submission and cross-examined the Applicant's witness during the Hearing.

[3] On December 17, 2019, following the Hearing, the Panel ordered the Applicant to provide revised overall indications resulting from the following combination of changes:

1) For Third Party Liability – Bodily Injury (TPL-BI), in line with the model presented by Oliver Wyman (OW):
    a. Modify the frequency trend at -6.3% per annum;
    b. Adjust the frequency pre-2013H2 by the scalar of +34.9%; and
    c. Modify the severity trend to 5.0% per annum.

2) For Third Party Liability-Property Damage (TPL-PD) and Direct Compensation Property Damage (DCPD):
    a. Modify the frequency trend to 0% per annum; and

   b. Maintain the severity trend to 5.7% per annum.

3) For Collision, in line with OW's model:
   a. Modify the frequency trend to 0.6% per annum; and
   b. Modify the severity trend to 1.8% per annum.

4) Modify the expense to exclude the 57.2% of VYNE Platform Costs related to Software Amortization.

[4] The required changes as per above result in a decrease to its overall indication for a rate increase, from 11.9% to 6.1%.

[5] The Panel, after examining the evidence and submissions made by all parties, and after consideration of the testimony provided by witnesses and cross-examinations, determines that the indication proposed by the Applicant must be modified.

[6] The Applicant is ordered to incorporate changes to the Filing as particularized in paragraph [3] above and is **approved to adopt the revised average rate change of + 6.1%.**

[7] The approved rates will be effective on March 1, 2020 for new business and May 4, 2020 for renewals.

Exhibits

[8] In the Hearing process, the Panel accepted the following exhibits from the Applicant and the OAG as part of the Record of Hearing:

EXHIBIT	DESCRIPTION	DATE
1	Original Filing Passenger Rate Filing	May 7, 2019
2	Round 1 Questions from KPMG	May 23, 2019
3	Round 1 Response to KPMG and Amendment 1	May 29, 2019
4	Round 2 Questions from KPMG	June 18, 2019
5	Round 2 Response to KPMG and Amendment 2	June 25, 2019
6	Request for Clarification on Response to KPMG Questions dated June 18, 2019	July 8, 2019
7	Response to Request for Clarification on Response to KPMG Questions dated June 18, 2019	July 9, 2019
8	KPMG Actuarial Review Summary	July 9, 2019
9	Round 1 Questions from NBIB	July 24, 2019
10	Round 1 Response to NBIB	July 29, 2019
11	Amendment 3	August 1, 2019
12	Round 1 Questions from OAG	Sep. 27, 2019
13	Round 1 Response to OAG	Oct .2, 2019
14	Round 2 Questions from OAG	Oct. 18, 2019
15	Round 2 Response to OAG	Oct. 23, 2019
16	Final Written Submission from the OAG	Nov. 8, 2019
17	Final Written Submission from Economical	Nov. 12, 2012
18	Written Response by Economical to NBIB Query	December 2, 2019
19	Written Response by OAG to NBIB Query	December 2, 2019

20	Written Response by Economical to NBIB Follow-Up Query	December 11, 2019

1. Introduction

[9] The Board is mandated by the Legislature with the general supervision of automobile insurance rates in the Province of New Brunswick. In order to fulfill that mandate, the Board exercises the powers prescribed by the *Act*. One key responsibility for the Board is to ensure that rates charged or proposed to be charged are just and reasonable. Under the *Act*, each insurer carrying on the business of automobile insurance in the province must file with the Board the rates it proposes to charge at least once every 12 months from the date of its last filing. An insurer must appear before the Board when:

a. The Insurer files for a rate change more than twice in a 12-month period, or

b. The Insurer files rates where the average rate increase is more than 3% greater than the rates charged by it within the 12 months prior to the date on which it proposes to begin to charge the rates, or

c. When the Board requires it to do so.

Procedural History

[10] The Applicant filed a rate revision application for the PPV category on May 7, 2019. The overall indication of the Filing was +11.8% and the Applicant sought an overall average rate increase of the same rate.

[11] In the process of responding to questions from the Board and the Board's actuaries, the Applicant submitted amendments to the Filing dated May 29, 2019, June 24, 2019 and August 1, 2019, ultimately increasing its rate indication to 11.9%.

[12] The Board issued a Notice of Hearing on August 8, 2019 and convened a Panel of the Board to conduct an oral hearing on the matter. The OAG and the CAI both provided notice of their respective intentions to intervene in the Hearing.

[13] Prior to the Hearing, the OAG submitted two sets of interrogatories to the Applicant, to which answers were provided. Furthermore, pre-Hearing written submissions were provided by the Applicant and the OAG.

[14] The Panel allowed the examination and cross-examination of actuarial witnesses by the parties during the Hearing held on November 26 and 27, 2019. Mr. Michel Trudeau, a Fellow of the Casualty Actuarial Society and Fellow of the Canadian Institute of Actuaries, testified as the expert witness for Economical. Mr. Rajesh Sahasrabuddhe from OW, a Fellow of the Casualty Actuarial Society and an Associate of the Canadian Institute of Actuaries, appeared as the expert witnesses for the OAG.

[15] No other witness appeared before the Panel at this Hearing.

[16] Finally, the Panel heard brief closing submissions from the Applicant, the OAG and the CAI following the *viva voce* evidence.

2. Evidence and Positions of the Parties

Economical Mutual Insurance Company

[17] The Applicant's Filing forms the main portion of its submission and the evidence before the Panel.

[18] Economical presented a Filing to the Board requesting an overall average rate increase of +11.9% based on its indication. The following sets out the amended indicated and proposed changes to the existing rates (Exhibit 11, page 830 of the Record):

	Indicated Rate Change	Selection After Capping
Third Party Liability - Bodily Injury (TPL-BI)	+ 4.6%	+ 4.7%
Third Party Liability - Property Damage (TPL-PD)	N/A	N/A
Direct Compensation Property Damage (DCPD)	+ 30.0%	+ 29.7%
Accident Benefits (AB)	+ 14.3%	+ 14.4%
Uninsured Auto (UA)	+ 1.9%	+ 0.4%
Collision	- 0.4%	- 0.6%
Comprehensive	+ 22.9%	+ 22.9%
Specified Perils	- 3.6%	+ 22.3%
Underinsured Motorist (UM) – SEF44	- 1.4%	+ 0.2%
Total	**+ 11.9%**	**+ 11.9%**

[19] The indicated rates contained in the Filing are estimated assuming a target return on equity (ROE) of 12%, a pre-tax return on policyholders' fund of 2.32%, a pre-tax return on stockholder fund of 1.93% and a 2:1 premium to surplus ratio (Exhibit 11, page 838 of the Record). Proposed average rates would increase from the current average of approximately $859 to approximately $961 (Exhibit 11, page 829 of the Record).

[20] In its Final Written Submission made to the Board, Economical provided the following reasoning for requesting the rate increase it is seeking (Exhibit 17, pp. 1,236 and 1,239 of the Record):

> [5] There are many emerging issues and trends which are driving the cost of auto insurance up across the country. Distracted driving, the prevalence of sensors in vehicles with the associated increase in labor costs and inclement weather are all factors contributing to the rise in the loss cost countrywide as well as in the province of New Brunswick. These phenomena have been witnessed by the entire industry and as a result we are seeing a major increase in the severity of physical damage claims.
>
> […]

> [19] The complex regulatory environment in the province combined with rapidly deteriorating trends as well as the rate deficit carried-over from past filings led Economical to have extremely inadequate rates in the province. This filing is Economical's attempt to minimize its financial losses as a further step towards target profitability in the province. Economical has a long history of cooperating with the provincial regulators and providing fair premiums to our policyholders in the province of New Brunswick. When past rate indications showed decreases, we took those decreases and passed the savings to policyholders. Economical is now in a position where it is negatively impacted financially and we hope that all parties understand that incurring large annual underwriting losses is not sustainable and in no one's interest to maintain a competitive and financially sound insurance market for New Brunswick motorists.
>
> [20] Finally, Economical reiterates that its selected rates are derived from indications calculated using just, reasonable and sound actuarial methods and practices. Economical also urges the Board to recognize that the assumptions included therein are within the range of reasonable values and ultimately in the best interest of our policyholders.

[21] The Applicant submitted that the Filing was prepared utilizing sound actuarial methods and practices that the assumptions contained therein are reasonable and that the Filing has been completed in accordance with the Board's RFG 1 Rate Filing Guidelines (hereinafter referred to as the "Filing Guidelines").

Office of the Attorney General

[22] The OAG was provided with the Filing and all related documents. The OAG was also given the opportunity to further query the Applicant through a written interrogatory process, which provided for two rounds of interrogatory questions and answers. At the conclusion of the interrogatory process, and prior to the Hearing, the OAG made a final written submission to the Board summarizing its position. Finally, the OAG was provided an opportunity to present evidence through questioning of its witness, actuary Mr. Rajesh Sahasrabuddhe, and to cross-examine Mr. Michel Trudeau*,* witness for Economical, at the Hearing.

[23] The OAG's Final Written Submission challenged the Applicant's position on the following issues (Exhibit 16, pp. 1,199-1,121 of the Record):

1) Application of *Minor Injury Regulation* (MIR) adjustment factor;
2) Basis of the loss trend selections;
3) Application of weights to loss trends;
4) Selection of TPL-BI loss trends;
5) Selection of TPL-PD and DCPD loss trends;
6) Selection of Collision loss trends;
7) Selection of Comprehension loss trends; and
8) Expenses, with a significant increase in operating costs in relation to the implementation of the VYNE system, as raised by the Board's consulting actuaries, KPMG.

[24] The OAG summarized its general findings and conclusions in its Final Written Submission as follows (Exhibit 16, page 1,193 of the Record):

> We reviewed the rate level indications developed by Economical, and, in so doing, examined all aspects of Economical's ratemaking procedure. There are several aspects of Economical's analysis of its rate level needs where we believe that alternate calculations and/or assumptions should be considered by the Board.
>
> Following Economical's general methodology for determining its rate level needs, but with alternate assumptions, judgments, and calculations that we believe to be more appropriate**, we find its overall rate level change need to be less than the +11.9% change proposed by Economical**. In this report, we present the basis for our conclusion.
>
> Our findings are based on the information contained in the application, responses provided by Economical to our questions, and our review of insurance industry statistical experience in New Brunswick as published by the General Insurance Statistical Agency (GISA).

[25] Finally, the OAG submitted to the Panel that should it find the alternative assumptions presented by its expert actuary more reasonable than those presented by the Applicant, the Applicant should be directed to revise the above noted rate level change indications and consider those amended indications in reaching its decision on the present Filing.

Consumer Advocate for Insurance

[26] At the Hearing, the CAI presented the Panel with oral submissions and challenged the Filing submitted by the Applicant.

[27] The CAI submitted that the rate increase requested by the Applicant is neither just nor reasonable and adopted the position of the OAG in relation to the Filing.

[28] In her oral submission, the CAI submitted that the insurance rates in New Brunswick have to be just and reasonable, including to the policyholders of New Brunswick, as automobile insurance is a mandatory product in our province and since New Brunswickers are required to use motor vehicles in their daily lives.

[29] The CAI argued in her oral submission that auto insurers must take measures to control their costs (i.e., control claims with respect to cost of repairs) and be more active in fraud prevention.

[30] The CAI finally suggested that the Board should request the Applicant to adopt the alternatives presented by the OAG and give the benefit of any uncertainty to the insurance consumers of New Brunswick.

3. Analysis and Reasons

[31] The Panel has reviewed all of the written evidence before it, the *viva voce* evidence provided during the Hearing, and the submissions of the parties.

[32] In giving their evidence, the witnesses for both parties testified to the validity of their assumptions and actuarial methodologies and, under cross-examination, answered questions challenging their positions, notably on the appropriateness of the actuarial approaches and methodologies adopted.

[33] The Panel recognizes the actuarial expertise of the witnesses of the Applicant and the OAG for the purpose of the present Filing. The Panel's decision reflects that neither expert's opinion was accepted *in toto*, and that each assumption and methodology decision is laced with layers of data, assumptions and judgement. As set out below with more particularity, on some issues the Panel accepted the Applicant's evidence as satisfying its evidentiary burden of just and reasonable, while in other respects the Panel accepted opposing positions, and finds that the Applicant failed to meet its burden of proof.

[34] In the present matter, the Panel of the Board determines that Economical must modify some of the assumptions, calculations and methodology used in its Amended Filing. The Applicant was therefore ordered to provide the Board with the calculations resulting from those amendments on December 17, 2019.

[35] The Panel addresses each issue individually below:

1) Loss Trends

[36] The selection of loss trend rates requires the analysis of past data and the application of professional judgement in order to select trend rates for each coverage. Loss cost trends can be derived by separately selecting frequency and severity trend rates reflecting past experience and future expected results. The selected frequency and severity trend rates are then combined to determine loss cost projection factors.

1.1 Basis of Trend Analysis

[37] In its loss trend analysis, the Applicant used a regression model applied to industry PPV experience as of December 31, 2017 in order to determine and select its past and future trends. The Applicant used historical half years' accident experience for the TPL-BI coverage and the historical full years' accident experience for all other coverages, including AB, DCPD, Collision and Comprehensive. As for the experience period utilized, the Applicant fit its DCPD, Collision and Comprehensive models to a period of 5 years, and its AB model to a period of 10 years. For the TPL-BI coverage, the Applicant's frequency model was fitted to an experience period of 10 years and its severity model to a period of 4.5 years.

[38] In its trend selection, the Applicant used judgement to adjust the results achieved with its selected trend regression models for all coverages.

1.2 Third Party Liability - Bodily Injury Trend Selection

[39] The Applicant and the OAG used different models to support their respective positions in terms of frequency and severity trend rates for TPL-BI. In the regression analysis of its estimate of Industry PPV ultimate claim costs, the Applicant used semi-annual data over a period of 10 years for frequency and over a period of 4.5 years for severity, both ending December 31, 2017. For frequency, the Applicant included a parameter for seasonality and a scalar parameter for the MIR reform. Furthermore, the Applicant used judgement to assign weights to its measured trends. On the basis of the above, Economical selected frequency and severity trends for past and future as follows (Exhibit 11, page 1,008 of the Record):

TPL-BI	***Measured***	***Selected – Past Trend***		***Selected – Future Trend***	
	Measured Past Trend Rate	***Weight Assigned to Indicated Past Trend***	***Selected Past Trend Rate***	***Weight Assigned to Indicated Past Trend***	***Selected Future Trend Rate***
Frequency	-4.6%	50%	-2.3%	12.5%	-0.6%

Severity	+12.0%	50%	+6.0%	12.5%	+1.5%
Loss Cost	+6.5%		+3.6%		+0.9%

[40] Based on its model, Economical measured a past frequency trend rate of -4.6%, with an adjusted R-squared of 54% for the period 2008-H1[1] to 2017-H2[2] (Exhibit 11, page 1,010 of the Record). The Applicant however judgmentally applied a 50% and a 12.5% weight to the measured past trend and selected a past trend rate of -2.3% and a future trend rate of -0.6%.

[41] For the severity, the Applicant measured a past trend rate of +11.7% with an adjusted R-squared of 22% for the period of 2013-H2 to 2017-H2 (Exhibit 11, page 1,014 of the Record). Similar to the approach used for the selection of the frequency trend rates, the Applicant used judgement to apply the same weights as it did for frequency (50% for past and 12.5% for future) to the measured past severity trend rate of +11.7%, rounded to 12%. The past severity trend rate selected by Economical is 6% and the future severity trend rate is 1.5%.

[42] The OAG disagreed with the Applicant's trend selection methodology and presented the Board with models for both frequency and severity it suggested are more appropriate. For frequency, the OAG's consulting actuary's model used industry data over a period of 20 years (1998-H2 to 2018-H1), included scalar parameters at 2003-H2 and 2013-H2, and a parameter for seasonality (fitting accident half years). The implied annual fitted frequency trend measured by OW (the OAG's consulting actuaries) results in a trend of -6.3% and is suggested to be applied for both the past and future. The adjusted R-squared resulting from the OW's model is 96% with p-values of 0.000 (Exhibit 16, page 1,206 of the Record).

[43] As for severity, OW's model also used the same time period of 20 years, included scalar parameters at 2003-H2 and 2015-H2 and fitted accident half years based on industry data up until June 30, 2018. The implied annual fitted severity trend measured by OW results in a trend of 5.0% and is also suggested to be used for both the past and future. The adjusted R-squared resulting from OW's

[1] First half year
[2] Second half year

model is of 87% with p-values of 0.000 (Exhibit 16, page 1,207 of the Record). Based on the frequency and severity trend models, a loss cost rate of -1.6% is selected by OW.

[44] In his testimony, Mr. Trudeau explained that while the magnitude of the severity (12%) and the frequency (-4.6%) trends is significant, they offset each other to result in a 7.6% indicated loss cost trend. To reflect the uncertainty due to the relatively short experience period and the volatility observed in the data, "credibility" weights were applied to establish selected past trend.

[45] On cross-examination, the Applicant's witness, Mr. Trudeau, also submitted that different "credibility" weights were applied to obtain selected future trend to reflect the applicant's view that the claims will reach a normalized level as the reform matures, people adapt to the system and the new capping level will start affecting the trends.

> Q. […] Did you credibility weight your BI loss costs trends?
> A. Our BI loss costs trends, yes, we did.
>
> Q. - Why is that?
> A. Well there is two parts. One of it is the size of the -- the size of the movement that we had, particularly on both the severity and -- well on both the severity and the frequency were quite significant. You know, we had -- based on the approach that we had, we had like a 12 percent trend on the severity. So, you know, the growth of claims was quite significant on the severity side. And then vice-versa, we had also a reduction, you know, of 4.6 percent on the claims -- the claim frequency. But the combinations of the two was giving us a trend of 7.6. When we did look at -- and the difficulty with this line is because it's relatively new. Like we only have four and a half years of, you know, of exposure. Yet under the new system, we felt that what we had was maybe too much of volatility on the severity end of it, and therefore, we did make an adjustment for that. And what we ended up doing is, you know, we are left with -- okay, we have observations that are telling us that on the strength of four and a half years of observations that the average annual growth rate of a claim cost -- cost of a claim would go at a 12 percent per annum. That's actually in this day and age, a lot of people would already question if that makes sense. And we did the same. And consequently, what we did in this particular case is we adjusted the severity by only -- by reducing the indications that we had, the 12 percent per annum to 6 percent. So we took a reduction of 50 percent of that trend.

Q. - Is that for the past trend or the future trend?
A. That's for the past trend.

Q. - What did you do for the future?
A. For future, we do expect that things would actually even further level off, and we ended up selecting a trend of one and a half percent. That's on the severity.

Q. - Okay. And what kind of credibility weighting is that?
A. We took a credibility weighting at that point of 25 percent of the trend. We only took 25 percent of the trend that we had calculated for the past trend for future. So basically what we are assuming is there will be a normalized level, because we have a new system. People are adapting to the system. And ultimately, in our view, we will see that, you know, the effect of the cap that are being imposed and so on, we are optimistic that they will work and they will positively affect the trend that we are seeing.

[Transcript of November 26, 2019, pp. 29-30]

[46] On the judgmental application of weights to justify trend selections, the OAG argued that the divergence in the Applicant's selected past and future frequency and severity trend rates from its model indications is not supported. The OAG also contends that the Applicant's use of the term "credibility" suggests that a basis is used to measure the predictive value, which Economical did not provide. Finally, the OAG submitted that the selected "credibility" weight lacked statistical support.

[47] The OAG submitted that the "credibility" weights used by the Applicant in selecting trends were based on judgment. The OAG criticized this application of judgment to be subjective and non-compliant with Section 1140.01 of the Canadian Institute of Actuaries (CIA)'s Standards of Practice, which states:

> *The actuary should exercise reasonable judgment in applying these standards. A judgment is reasonable if it is objective and takes account of*
>
> - *The spirit and intent of the standards;*
> - *Precepts of ethical and professional conduct intended to guide the conduct of the actuary;*

- *Common sense; and*
- *Constraints on time and resources. [Effective February 1, 2018]*

[48] In cross-examination, Mr. Trudeau admitted that the "credibility" weights modifying the measured trends were not supported by quantitative analyses and a result of the application of informed subjectivity (Transcript of November 26, 2019, pp. 61-65).

[49] In addition, the OAG disputed the Applicant's treatment of the MIR Reform. The OAG argued that a more appropriate model considering the MIR should include a scalar reform parameter in the trend models that rely upon the data that has emerged since the 2003 and 2013 MIR reforms were introduced, and that the scalar should be located based on the data. The OAG's interpreted the Applicant's model to reflect an ongoing impact of the MIR into the future and treated it as a trend. The OAG rather sees the impact of the MIR as a one-time lift in the data, as opposed to an ongoing impact into the future.

[50] The OAG also suggested that the average severity level did not increase coincidently to the MIR reform (second half of 2013), but that the increase only materialized in the second half of 2015 due to multiple possible factors (i.e., learning curve to the assessment of which claimants would meet or not meet the new definition, increased interest in claimants' cases by the legal community, learning curve with respect to the assessment of how much of the additional $5,000 non-pecuniary award available should be paid on each claim). The Panel was not provided with compelling evidence to support the argument of the OAG, and therefore does not attribute any weight to the speculation.

[51] The OAG also maintained that the experience period underlying the models is relatively limited. The use of 10 years for frequency and 4.5 years for severity does not take into account the trends transpiring from the data. The OAG submitted that the use of such short experience periods results in an overly sensitive model, which would fit the noise, as opposed to the signal of data emerging in a longer experience period.

[52] On the question of the time periods used for its models, Mr. Trudeau explained the rationale during the Hearing as follows:

> The main [item] is because, as you know, the minor injury regulations that were implemented in 2013 for the second half, you know, in July, they obviously change the environment for, you know, the settlement of injury and how awards were to be treated for non-pecuniary damages particularly. And therefore, what we did look is that on the severity side of it, we could see more of an impact that would be affected by the change that actually took place. So we basically relied more on the last four and a half years of experience that we have seen to determine our severity trend for the claim severity. For the frequency side, we actually continued to look at the 10-year period, because it's a long-tail line of business, as I indicated before, to try to look at the tendency and the development of how claim frequency was emerging.
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> [Transcript of November 26, 2019, page 27]

[53] Finally, the OAG raises the issue that the Applicant's trend analyses does not include the latest available data released by the General Insurance Statistical Agency (GISA) in November 2018. The OAG argued the practice to be non-compliant with the Board's Rate Filing Guidelines which provide that "*loss trends should be based on a review of the most recent available New Brunswick Industry-wide experience*".

[54] To that effect, the Applicant confirmed at the Hearing that the 2018-H1 GISA data had been published six months prior to the submission of its Filing, and that Economical did look at the data, but did not include that data in its modelling.

[55] In light of the above noted arguments and evidence presented with respect to TPL-BI trends, the Panel made multiple findings on this specific issue. Firstly, on the matter of industry data to be used, the Panel finds that the Applicant contravened to the Board's Filing Guidelines by not using the most recent available data published by GISA. The Panel understands that the 2018-H1 data may not have been published at the time the Applicant began preparing the Filing, but it certainly had ample time and opportunity to integrate it to its modelling, as it filed its Rate Application months after publication of the data.

[56] With respect to statistical values, the Panel concludes that it cannot do a direct comparison to assess validity of the models strictly based on R-squared and p-values, given that different time periods (including vs. excluding 2018-H1 data point in analysis; using five and four and a half years vs. 20 years) were used to produce the models. The Panel therefore weighed the statistical values of the Applicant's and OW's models on a stand-alone basis to determine their robustness. On that basis, the Panel finds that the Applicant's models produced weak statistical fits and therefore finds that they could not be relied upon. The Panel understands the Applicant's attempt to adjust for the poor statistical results by applying judgement and impose "credibility" weights on the measured trends. However, the Panel finds that the Applicant did not provide adequate rationale to support the selected weights and that the Applicant was unable to demonstrate sufficient objectivity in the spirit of the CIA Standards of Practice.

[57] As for the time period employed in the TPL-BI loss trend analysis, the Panel understands the Applicant's use of judgement in an attempt to balance stability and reactiveness. However, the Panel must determine whether enough support was provided by the Applicant to support the use of only four and half and ten years of data respectively in modelling the severity and frequency for this coverage. The Panel finds that it was not provided with sufficient support by the Applicant to justify the use of such a short time period for the loss trend analysis of this long-tail coverage.

[58] Based on the evidence presented as a whole, the Panel finds that the Applicant failed to meet its burden to prove that its loss trend selections for TPL-BI, on frequency, severity and loss cost, are reasonable. The Panel recognizes that there are multiple reasonable TPL-BI loss trends models. The Panel was persuaded by alternatives presented by the OAG that its TPL-BI loss trend models were among the possible reasonable models. The Panel therefore orders the Applicant to modify the TPL-BI frequency trend to -6.3% per annum, adjust the frequency pre-2013H2 by the scalar of +34.9%, modify the severity trend to 5.0% per annum.

1.3 Third Party Liability - Property Damage and DCPD Trend Selection

[59] For the TPL-PD and DCPD coverage, the Applicant based its regression analyses on measuring severity and loss cost trend rates and then used those two measured trend rates to derive the past frequency trend rate (Exhibit 11, page 849 of the Record). In doing so, the Applicant used five years of annual experience ending on December 31, 2017. Economical made the following trend selections for TPL-PD and DCPD:

TPL-PD & DCPD	***Measured***	***Selected – Past Trend***		***Selected – Future Trend***	
	Measured Past Trend Rate	***Weight Assigned to Indicated Past Trend***	***Selected Past Trend Rate***	***Weight Assigned to Indicated Past Trend***	***Selected Future Trend Rate***
Frequency	+1.4%		+0.7%	50%	+0.7%
Severity	+5.7%	100%	+5.7%	100%	+5.7%
Loss Cost	+7.2%	100%	+7.2%		+6.4%

[60] For the past TPL-PD and DCPD severity trend, the Applicant measured a trend rate of +5.7% with an adjusted R-squared of 86% and selected that rate for past and future (Exhibit 11, page 1,016 of the Record). As for the loss cost trend rates, Economical selected a trend of +7.2% for the past with an adjusted R-squared of 58% but with a p-value above 5%, based on the five-year annual data ending in 2017 (Exhibit 11, page 1,015 of the Record). The implied frequency trend rate is calculated to be +1.4%. Due to the uncertainty that this past trend rate will continue into the prospective trend period, the Applicant judgmentally applied a 50% weight to the measured trend to select the future frequency trend (Exhibit 17, page 1,238 of the Record). The combination of future frequency trend and future severity trend results in a future loss cost trend of 6.4%.

[61] Economical has been consistently using a period of five years for the modelling of TPL-PD and DCPD in the rate applications submitted over the past years in order to be reactive to the new fleet of vehicles on the road. In his testimony, Mr. Trudeau testified that the short experience period allows the company to recognize the new vehicles coming in the market and to capture the recent effect on severity. He also observed that the DCPD frequency increase is more pronounced than the Collision trend (Transcript of November 26, 2019, pp.39-40).

[62] In its Final Written Submission (Exhibit 16, page 1,212 of the Record), the OAG indicated that it did not find significant difference between its severity trends and the Applicant's, and therefore did not raise issue with respect to this model.

[63] For the frequency, the OAG submitted that the Applicant's model presented several shortcomings. As it did for the TPL-BI coverage, the OAG suggests that the Applicant's application of a judgmentally selected weight to obtain the selected future trend is inappropriate and that the experience period underlying the model is relatively limited and does not include long-term trends in the data. The OAG suggested the use of half-year data, where available, to account for seasonality and that the Applicant's model fails to include the 2018-H1 data point. Furthermore, the OAG highlighted the p-value of 0.468 resulting from the Applicant's regression model for frequency, which as common practice would indicate that 0% frequency trend cannot be rejected. With respect to the Applicant's frequency model, Mr. Sahasrabuddhe testified as follows:

> […] there is an issue that we believe is evident in many of the remaining coverages. Again, with the exception of accident benefits and bodily injury frequency. That these models are fit to a very short time period. And then the p-values aren't always evaluated, or if they are, the fact that you don't have a significant trend is not rejected. So it's just sort of an overall approach where you take a short time period, and then, you know, you fit a model to that time period and then at times you either don't believe the result or you think that the result is not going to continue into the future. Whereas, we believe that really the optimal approach is to look at more data, understand what's happening in the data, and if the data contains no signal, then you should select a zero percent trend, because that means that you can't -- the modelling effort cannot discern a trend in the data. So that's the approach that -- those are our concerns with the Economical modelling, and again they apply to several of the coverages here.
>
> [Transcript of November 26, 2019, page 175 of the Record]

[64] The OAG therefore presented a frequency model proposing the use of accident half-year data for a ten-year period through June 30, 2018, including an intercept term. The implied annual trend associated with the OAG's fitted frequency model is of 0.0%, as the trend parameter was removed due to its insignificance (p-value above 5%).

[65] The Panel recognizes that there are multiple reasonable TPL-PD and DCPD frequency trend models. In assessing both models presented, the Panel finds the rationale provided by the OAG's expert witness in support of its frequency model to be more compelling than that of the Applicant. Furthermore, the Panel notes that Mr. Trudeau agreed on cross examination that where a model presents insignificant statistical values, such as a p-value above the customary threshold of 5%, that a reasonable conclusion resulting from this model would be that there is no trend (Transcript of November 26, 2019, page 218). Given the poor statistical fit of the Applicant's TPL-PD and DCPD frequency trend, the Panel orders the Applicant to modify its frequency trend rate to 0% per annum.

1.4 Collision Trend Selection

[66] Similar to its TPL-PD and DCPD trend analysis, the Applicant based its regression analysis for Collision on measuring severity and loss cost past trend rates and then using those two measured trend rates to derive the past frequency trend rate (Exhibit 11, page 849 of the Record). It used five years of annual data ending on December 31, 2017. Economical made the following trend selections for this specific coverage:

Collision	***Measured***	***Selected – Past Trend***		***Selected – Future Trend***	
	Measured Past Trend Rate	***Weight Assigned to Indicated Past Trend***	***Selected Past Trend Rate***	***Weight Assigned to Indicated Past Trend***	***Selected Future Trend Rate***
Frequency	+2.3%	0.0%	+0.0%	0.0%	+0.0%
Severity	+3.4%	100%	+3.4%	100%	+3.4%
Loss Cost	+5.8%	100%	+5.8%		+3.4%

[67] With respect to the Collision coverage, the Applicant measured a severity trend of +3.4% with an adjusted R-squared of 80% with a p-value below 5% and selected the measured trend rate for the past and future. As for the loss cost trend rates, Economical selected a trend of 5.8% for the past, to which is associated an adjusted R-squared of 74% and p-value of below 5% (Exhibit 11, page 1019 of the Record). The calculated implied past frequency trend rate is 2.3%. (Exhibit 11, page 1,020 of the Record) The Applicant judgmentally applied a 0% "credibility weight" on the implied past frequency

trend rate to obtain the future frequency trend rate of 0%. The Applicant's rationale for adjusting the future frequency trend rate is that they did not see sufficient support to justify a continued positive trend, certainly not at the level that was calculated for the past (Transcript of November 26, 2019, page 46). The combination of future frequency trend rate and future severity trend rate results in a future loss cost trend rate of 3.4%.

[68] For both the frequency and severity models, the OAG argued that the experience period underlying the models is relatively limited and omits to include long-term trend in the data. For the frequency model, the OAG submits that the Applicant's use of judgmentally selected weights to adjust the future frequency trend is unsupported. Furthermore, it contends that the model applies too much weight to the recent experience and results in an overly sensitive model that fits the noise as opposed to the signal and therefore produces a misleading trend rate with inferior goodness-of-fit statistics. The OAG underlined the p-value of the frequency model of 0.281, above 5%, which, as common practice, would indicate that 0% frequency trend cannot be rejected. During the Hearing, Mr. Trudeau conceded to these shortcomings identified by the OAG and agreed that it was unreasonable to rely on frequency trend models with no statistical significance (Transcript of November 26, pp. 123 - 125).

[69] The OAG presented alternative frequency and severity models. For frequency, OW suggested that a more appropriate model would use accident half-year data to account for seasonality, would include the latest available industry experience through June 30, 2018 and would fit all data points and include scalar parameters at 2001-H1 and 2005-H1. The resulting frequency trends for the period subsequent of 2005-H1 is +0.6% (Exhibit 16, page 1,215 of the Record). The adjusted R-squared achieved with this suggested model is 88% with all p-values less than 5%.

[70] For severity, the OAG submitted that a more appropriate model would fit to all data points, include seasonality and scalar parameters at 2001-H1 and 2005-H1, including industry data of 2018-H1 (Exhibit 16, page 1,216 of the Record). The annual severity trend rate measured by this model

reaches +1.8%. The adjusted R-squared associated with this model is of 95.2% with all p-values less than 5%.

[71] During the Hearing, Mr. Sahasrabuddhe explained the rationale for using a longer period to determine the trend for Collision, as well as the criteria that should be taken into account:

> […] for Collision frequency, there is some overlap in terms of our concern about the overly short time period, but I think the other aspect that's important when we review Collision frequency is that I think in previous hearings before the Board, there has been discussions about whether a short-tailed line should rely on a shorter trend period. I think that's been clarified a little bit in this hearing, because here you have a short-tailed line, a Collision line. It still has quite a bit of volatility to it. You know, you will see that Collision frequency was higher, and then it came down, and now it's back up a little bit, but then there was a point that was lower. And again, some of this is potentially weather-related, but if you were to look at this data, you would not argue for a shorter period. In fact, you would probably argue for a longer period that volatility or that up and down that you see in this data, the swings that you see really that should be the measure of how long a period you use. And so regardless -- or despite the fact that this is a short-tailed line, the data dictates you should use a longer period for measuring trend. And that's actually what you see in the model that we propose in figure 11, which really sort of -- sorry, it's page 1215 of the combined record. So again, this is our frequency model for Collision, and we don't view it as well it's a short-tailed line, so let's use a short period. We look at the data, understand the volatility in the data, and then fit a model that the more volatility you have, the volatility is a more technical word for noise, right. So you want to try to take the noise out and keep the signal in and that's when you need a longer period. And that's really what we would argue for here that yes, you have a short-tailed line, but you have a short-tailed line that has a lot of noise to it. And so let's fit a line -- let's fit a model over a longer period. And the decision criteria should -- we don't believe should ever be the length of the tail of the coverage and how long it takes for claims to settle. We believe the decision criteria should be the volatility and the period over which you see a continuing and persistent trend. In this case we think that that's, you know, over approximately the last 12, 13 years and that's the period that we should review. And again we feel that the best measure of that is just looking at it visually and understanding what's -- you know, how costs are changing.
>
> In comparison, if you were to imagine and looking at -- returning to figure 9 on page 1213, if you were to imagine that you didn't even look at the data points that were to the left of the solid blue line, you know, you might select that --

the model that Economical proposes, but we don't think that's the right way to look at it. That all that's happening here is there is a bit of noise and when you pick this short little period, you just pick up the noise that's occurring in that short little period and that generates a positive trend.

Q. - And for Collision severity at the bottom of page 1213, you were just telling, I believe, Economical selected plus 3.4 percent past and future. What were Oliver Wyman's conclusions in that regard?

A. Yes. So our model we present in figure 12, again, it's a situation where we believe that a longer period of time should be reviewed and -- I am sorry, that's on page 1216, and that the review of the longer period would indicate a trend rate of plus 1.8 percent. So, you know, a little bit lower, but again, more consistent with the data over a period in which the data shows inconsistency and some persistency. So, you know, we wouldn't -- again, as I said, it's not just the function of how long the tail is, but you know, what does the data look like? Where do you see a persistent trend? Where the trend is not persistent, do you have an explanation for it or not? Those are the types of factors that should be considered, not just well it's a short-tailed line, so I am going to pick five points. Yes, to us that's just a -- you know, there is no basis for that. You know, what's the difference between five and four, or five and six, right? There is no -- it appears to us that there is no presented basis for why you would pick one or the other.

[Transcript of November 26, 2019, pp. 179-182]

[72] At the Hearing, in cross-examination, Mr. Trudeau recognized the validity of OW's frequency model and conceded that OW's measured frequency trend rate of +0.6% was more reliable from a statistical standpoint that its own selected past frequency trend rate of 2.3% (Transcript of November 26, 2019, pp. 127-128). Furthermore, Mr. Trudeau agreed that OW's suggested severity model did explain the data very well and that it was an excellent model. Mr. Trudeau also agreed that there was a benefit to looking at data over a longer period of time (Transcript of November 26, 2019, page 127-130).

[73] In light of the evidence presented, the Panel finds that the Applicant did not adequately support the reasonability of its Collision models and therefore failed to meet its burden to demonstrate rates arising therefrom would be reasonable. The Panel recognizes that there are multiple reasonable trend models for Collision. The Panel finds that the OAG did present reasonable and well supported frequency and severity models. In the absence of other reasonable alternatives, the Panel requires the Applicant to adopt the models proposed by the OAG. The Panel however wants to highlight the

caveat that it may be appropriate in some instances to use a period shorter than the 20 years as proposed by the OAG, to determine loss trends for the Collision coverage. That issue may be addressed further in future hearings.

1.5 Comprehensive Trend Selection

[74] For the Comprehensive coverage, the Applicant based its regression analysis on measuring frequency and severity trend rates and combined the two to derive the loss cost trend rate. The Applicant used five-years of annual data ending on December 31, 2017 and made the following selections for this specific coverage:

	Measured	***Selected – Past Trend***		***Selected – Future Trend***	
Comprehensive	***Measured Past Trend Rate***	***Weight Assigned to Indicated Past Trend***	***Selected Past Trend Rate***	***Weight Assigned to Indicated Past Trend***	***Selected Future Trend Rate***
Frequency	+1.0%	+0.0%	+0.0%	+0.0%	+0.0%
Severity	+8.3%	100%	+8.3%	50%	+4.1%
Loss Cost	+9.4%		+8.3%		+4.1%

[75] The Applicant measured a frequency trend rate of +1.0% with an adjusted R-squared of -10% and a p-value of 48.3% and judgmentally applied weights of 0% to the measured past trend rate to determine the past and future frequency trend rates. As for severity, Economical selected its past trend as the measured trend rate from its regression model of +8.3%, to which is associated an adjusted R-squared of 93%, but judgmentally applied a 50% weight to select the future severity trend rate of 4.1% (Exhibit 11, page 1,022 of the Record). As was done for the TPL-PD & DCPD coverage, the Applicant applied this “credibility” weighting to determine the future severity trend as a result of the uncertainty that this past trend rate will continue into the prospective trend period. (Exhibit 17, page 1,238 of the Record). For loss cost, Applicant derived trend rates of +8.3% for the past, and +4.1% for the future.

[76] At the Hearing, Mr. Trudeau explained that Economical found it justifiable to apply a "credibility" weight to its past trend in selecting the future severity trend due to the fact that the Applicant does not expect the loss trend to deteriorate in the future at the same level as it did in the past, nor that this experience will be recurrent. Mr. Trudeau notably explained that Economical is taking significant anti-fraud measures, and therefore expects the Comprehensive experience to improve in the future (Transcript of November 26, 2019, pp. 50-51).

[77] With respect to the Applicant's trends for Comprehensive, the OAG presented the same concerns as for the other coverages, in particular that the Applicant's use of judgmentally selected weights to adjust the future trend is unsupported. Concern was also raised on the length of the experience period used to determine the trends, the fact that it did not account for seasonality and did not include the latest available data point (2018-H1). Additionally, the OAG highlighted that the frequency model presented by the Applicant resulted in a high p-value, which would commonly indicate that 0% trend cannot be rejected.

[78] While in disagreement with the Applicant's approach to determine the annual frequency trend, OW found the selected past and future trend rates of 0.0% to be consistent with its own analysis. The frequency model for Comprehensive was therefore not discussed further by the OAG or explored in more detail at the Hearing.

[79] For severity, OW proposed a model including a seasonality parameter and fitting accident half-years between 2009-H1 and 2018-H1. The severity trend measured by OW was of 4.5%, with an adjusted R-squared of 78.74%, and a p-value of 0.0%.

[80] In light of the strong statistical results associated with the Applicant's severity model, and the justification provided by the Applicant at the Hearing in support of adjusting its future trend rate by applying a weight of 50% to its past trend, the Panel finds that the Applicant has met its burden to demonstrate the reasonability of its model. The Panel therefore accepts the Applicant's selected frequency and severity trend rates for the Comprehensive coverage.

2) Operating Expense

[81] Since the previous year's filing, the operating Head Office expenses assumption has increased considerably, roughly tripling (Exhibit 1, page 32 of the Record). This is driven, in large part, by the acquisition, installation and operation of a new computerized platform, VYNE. Questions were raised by the Board's consulting actuaries of KPMG and further query was done in an attempt to obtain additional support for the increase.

[82] In its Final Written Submission (Exhibit 16, page 1,221 of the Record), the OAG argued that, ratemaking being a prospective exercise, it is not appropriate to include a one-time capital costs in the rate. The OAG submitted that a more reasonable approach would be for the Applicant to provide for "Head Office Expense" based on a multi-year average of costs that exclude one-time expenses.

[83] In her Oral Submission at the Hearing, the CAI argued that the Applicant has a responsibility to control its costs. The CAI highlighted that the implementation of the VYNE system should ease and enhance the brokers' operations and yet savings on the brokers' commission are not reflected in the Filing. Therefore, the CAI submitted that the Applicant should not be entitled to simply pass along the VYNE platform expense to the consumers.

[84] In response to additional queries by the Panel in order to obtain supplementary details on the implementation expense and maintenance expenses of the Applicant's VYNE system, the Applicant provided the following information as part of its Written Responses dated December 2, 2019 (Exhibit 18 of the Record) and December 11, 2019 (Exhibit 20 of the Record):

> The basis to allocate the cost of the VYNE operating system to each portfolio processing business on that system takes the proportional level of direct earned premiums of each portfolio relative to the aggregate level of direct earned premiums processed on the VYNE system. This basis of allocation results in 2.51% of the total allocated VYNE operating cost being allocated to the New Brunswick private passenger portfolio.
>
> [Exhibit 18, pp. 1-2]

[85] In the Written Response by Economical to NBIB Follow-Up Query (Exhibit 20 of the Record), the Applicant clarifies that for the purpose of selecting the expense assumptions, an amount associated with the VYNE system was allocated to the New Brunswick private passenger portfolio for fiscal year 2019. This was done using the allocation methodology described in the Applicant's Written Responses dated December 2, 2019 [Exhibit 18 of the Record]. The allocated amount includes specific proportions of the core VYNE costs related to:

a) Amortization of Hardware;

b) Amortization of Software (over a period of 10 years); and

c) Managed Service Contracts.

[86] With respect to the treatment of "Other Expenses", pursuant to section 4.f.vi. of the Board's Filing Guidelines, insurers are required to disclose and explain how they treat any non-recurring expenses that creates significant variances in one or more years. The Panel finds that the Applicant did comply with the Board's Guideline with respect to disclosing the treatment of the non-recurring implementation of the VYNE system. However, the Panel does have reservations regarding the magnitude and long-term impact of this expense on policyholders. The Panel therefore turned to the CIA Standards of Practice and the American Actuarial Standards Board (ASB) for further guidance.

[87] In its review of CIA's Standards of Practice, the Panel took note of Paragraph 2620.11 which states as follows:

> In selecting a provision for expense costs, the actuary would consider:
>
> - The various categories of expense costs that are incurred including, as may be applicable, residual market assessments, statutory assessments, policyholder dividends, and reinsurance costs;
> - That expense costs may not be directly proportional to premium; and
> - That one-time expense costs may need to be amortized.

[88] As for the American ASB, section 3.2 of Standard of Practice No. 29 specifies as follows on determining expense provisions:

> The actuary should determine the provisions for loss adjustment expenses; commission and brokerage fees; other acquisition expenses; general administrative expenses; and taxes, licenses, and fees that are appropriate for the policies to be written or coverages provided during the time the rates are expected to be in effect. In addition, where appropriate, the actuary should consider subdividing the expense categories. ***Expense provisions should reflect the conditions expected during the time these policies or coverages are expected to be in effect and should include all expenses expected to be incurred in connection with the transfer of risk***.

[89] In light of the additional information provided by the Applicant, the Panel understands that there are implementation costs and maintenance expenses related to the VYNE system. The Panel also recognizes that the Applicant opted for the amortization of the non-recurring VYNE implementation costs over 10 years, in line with the considerations outlined in the CIA's Standards of Practice. The Panel finds that the Applicant has not provided adequate evidence that the amortized VYNE system expenses are incurred in connection to the transfer of risk, as opposed to being a capital investment to achieve and further its business objectives. Consequently, the Panel requires the Applicant to modify the treatment of this expense to exclude the 57.2% of VYNE Platform Costs related to the software amortization.

[90] This decision relates to this Filing only. Subsequent filings will, of course, be considered and assessed by the Board or a Panel on their merits in light of all of the evidence available at that time. Should the Applicant request differing treatment of this expense in the future, it is expected that the Applicant would provide persuasive evidence on how the expense is connected to the transfer of risk from policyholders and demonstrate how such an expense is required, in the long-term perspective, for the effective operations of Economical, as well as for fulfilling its obligations toward the policyholders.

4. Decision

[91] For the reasons set out above, the Panel finds the Applicant's Filing not to be just and reasonable in its entirety and therefore orders the following changes to be made:

1) For TPL-BI:
   a. Modify the frequency trend at -6.3% per annum;
   b. Adjust the frequency pre-2013H2 by the scalar of +34.9%; and
   c. Modify the severity trend to 5.0% per annum.

2) For TPL-PD and DCPD:
   a. Modify the frequency trend to 0% per annum; and
   b. Maintain the severity trend to 5.7% per annum.

3) For Collision:
   a. Modify the frequency trend to 0.6% per annum; and
   b. Modify the severity trend to 1.8% per annum.

4) Modify the expense to exclude the 57.2% of VYNE Platform Costs related to Software Amortization.

[92] The impact of these changes decreases the rate indications from an average increase of +11.9% to an average rate increase of +6.1%.

[93] The Applicant is ordered to incorporate changes to the rate application as set out in paragraph 91 above and is **approved to adopt the overall average rate change of +6.1%** pursuant to the application of capping mechanism.

[94] The approved rates will be effective on March 1, 2020 for new business and May 4, 2020 for renewal business.

Dated at Saint John, New Brunswick, on January 20, 2020.

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Marie-Claude Doucet, Panel Chair
Chair, New Brunswick Insurance Board

WE CONCUR:

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Francine Kanhai, Board Member

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Heather Stephen, Board Member