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: January 15, 2019
Heard at Saint John, New Brunswick

PANEL:	Ms. Marie-Claude Doucet	Chair
	Ms. Francine Kanhai	Member
	Ms. Katherine Munro	Member
APPEARANCES:		
Applicant:	**Economical Mutual Insurance Company**	
	Ms. Nadia MacPhee	Legal Counsel
	Mr. Gavin Brown-Jowett	Actuary Vice President, Personal Insurance Product Pricing and Underwriting
Intervenors:	**Office of the Attorney General**	
	Mr. Michael Hynes	Legal Counsel
	Mr. Denis G. Thériault	Legal Counsel
	Ms. Paula Elliott	Consulting Actuary
	Consumer Advocate for Insurance	
	Ms. Michèle Pelletier	Consumer Advocate

Decision Rendered: February 5, 2019

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 to conduct an oral hearing (the “Hearing”) on January 15, 2019 at the hearing room of the New Brunswick Energy and Utilities Board, 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 13.96% after capping, 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 Office of 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 January 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):

   a. Maintain the frequency trend to -6.7% per annum for the period up to June 30, 2013;

   b. Modify the frequency trend to -3.0% per annum for the period up to December 31, 2016 in line with the end of the industry data included in the trend analysis;

   c. Modify the future frequency trend to -0.75% per annum for the period up to April 1, 2020 to reflect the revised effective date of the rate change;

d. Maintain the severity trend at +6.5% per annum for the period up to June 30, 2013;

e. Modify the severity trend at +6.5% per annum for the period up December 31, 2016; and

f. Modify the future severity trend to +1.625% for the period up to April 1, 2020.

2) For coverages other than TPL-BI, modify the cut-off date of past trends to December 31, 2016 and the end-date for the future trends to April 1, 2020.

3) Maintain the selected loss development factors based on Economical data for private passenger vehicles (ppv) only as per amended filing dated November 30, 2018;

4) Maintain the corrected return on investment (ROI) as per amended filing dated November 30, 2018; and

5) Maintain the revised complement of credibility as per amended filing dated January 14, 2019.

[4] The required changes as per above result in a decrease to its overall indication from 17.53% to 16.80%.

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

[6] The Applicant is ordered to incorporate changes to the rate application as noted in paragraph [3] above and is **approved to adopt the proposed average rate change of + 13.96% after capping.**

[7] The approved rates will be effective on March 1, 2019 for new business and April 1, 2019 for renewals.

Exhibits

In the hearing process, the Panel accepted the following exhibits from the Applicant and the OAG as part of the record as shown below:

EXHIBIT	DESCRIPTION	DATE
1	Original Private Passenger Rate Filing	May 7, 2018
2	Round 1 Question from NBIB	May 18, 2018
3	Response to NBIB Round 1	May 24, 2018
4	Round 1 Questions from KPMG	June 29, 2018
5	Round 1 Responses to KPMG	July 9, 2018
6	Round 2 Questions from KPMG	July 27, 2018
7	Round 2 Responses to KPMG	August 3, 2018
8	Round 3 Questions from KPMG	August 14, 2018
9	Round 3 Responses to KPMG	August 14, 2018
10	Round 4 Questions from KPMG	August 20, 2018
11	Round 4 Response to KPMG	August 27, 2018
12	KPMG Actuarial Review Summary	Sept. 12, 2018
13	Round 1 Questions from OAG	Nov. 9, 2018
14	Round 1 Response to OAG	Nov. 19, 2018
15	Round 2 Questions from OAG	Nov. 23, 2018
16	Round 2 Response to OAG	Nov. 30, 2018
17	Economical Final Submission	Dec. 18, 2018
18	OAG Final Submission	Dec. 18, 2018
19	Document entitled “TPL Credibility Weighted Rate Indication Issue” from the OAG	Jan. 11, 2019
20 a.	Response Submission on the Complement of Credibility Issue from Economical	Jan. 14, 2019
20 b.	Prior Indication Rebalancing from Economical	Jan. 14, 2019
20 c.	Restated Current Indication from Economical	Jan. 14, 2019

1. Introduction

[8] 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

[9] The Applicant filed a rate revision application for the PPV category on May 7, 2018. The overall indication of the rate filing was +20.64%.

[10] Based on the capping procedure applied, the Applicant sought an overall average rate increase of 13.96%.

[11] The Board issued a Notice of Hearing on October 1, 2018 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 intention to intervene in the rate hearing.

[12] 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 to the Board.

[13] As the result of the interrogatories, the Applicant submitted further amendments to its filing dated November 19, 2018, November 30, 2018 and January 14, 2019, ultimately decreasing its rate indication on January 14, 2019 to 17.53%.

[14] The Panel allowed the examination and cross-examination of actuarial witnesses by the parties during the oral hearing held January 15, 2019. Mr. Gavin Brown-Jowett, a Fellow of the Casualty Actuarial Society and Fellow of the Canadian Institute of Actuaries, testified as the expert witness for Economical. Ms. Paula Elliott, a Fellow of the Casualty Actuarial Society and Fellow of the Canadian Institute of Actuaries, appeared as the expert witnesses for the OAG.

[15] No other witness appeared before the Board in this rate Application.

[16] Finally, the Panel heard brief closing submissions from the Applicant, the OAG and the CAI following the cross-examinations.

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 with an overall indication of +20.64% and proposed to select an average rate change of +13.96% (after capping). The applicant amended its rate

application on August 27, 2018 reaching an overall rate indication of +20.28% prior to capping. It also submitted an amendment on November 30, 2018, reducing its overall rate indication to +19.89%. These amendments reflect a revised pre-tax return on investment of 3.52% and the use of loss development factors based on personal auto data only. A last amendment was submitted on January 14, 2019 changing complement of credibility so as to better reflect the Applicant's fixed expense structure. The following sets out the amended indicated changes to the existing rates by coverage before capping (Exhibit 20c, page 5):

	Before Capping
Bodily Injury (BI)	+ 17.9%
Property Damage (PD)	+ 17.9%
Property Damage – Direct Compensation (DCPD)	+ 25.5%
Accident Benefits (AB)	+ 11.9%
Uninsured Auto (UA)	+ 0.7%
Collision	+ 14.9%
Comprehensive	+ 19.2%
Specified Perils	- 11.0%
Underinsured Motorist (UM) – SEF44	- 2.3%
Total	**+ 17.53%**

[19] The rates contained in the Filing are produced assuming a target return on equity of 12%, a pre-tax return on investment of 3.52% and a 2:1 premium to surplus ratio. Proposed average rates would increase from the current average of approximately $697 to approximately $819 (before capping).

[20] In its Final Submission made to the Board, which pre dated the final amendment, Economical provided the following reasoning for requesting the rate increase it is seeking (Exhibit 17, page 947 of the Record):

> […] the rate change required with this filing for achieving rate adequacy is +19.89%. This represents a major deficiency for Economical in New Brunswick and is resulting in significant underwriting losses for the company. This overall deficiency is further evidenced by the uncontrollable growth that Economical has experienced in the past 5 months (…) due to very low premiums. Over this time period our annualized growth rate for policies in force is over 22%, with a total of 55,632* current exposures. Reviewing actual competitor quotes over the same time period, Economical's premium is the lowest for 39% of policies quoted. For this reason, Economical proposes to increase only its base rates with this application.
>
> ** As of end of October 2018*

[21] The Applicant submits that the Filing was prepared utilizing sound actuarial methods and practices and that the assumptions contained therein are reasonable and that the Filing has been completed in accordance with the filing guidelines issued by the Board.

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 its evidence through questioning of its witness, actuary Ms. Paula Elliott, and to cross-examine Mr. Gavin Brown-Jowett, the witness for Economical, at the Hearing.

[23] The OAG's final submission challenged the Applicant's position on the following issues (Exhibit 18, pp. 997 and 998 of the Record):

> It is our opinion that in determining whether the rates proposed by Economical are just and reasonable, the Board should give consideration to the reasonableness of alternate assumptions and adjustments to Economical's rate level indication calculations that we discuss in this report. Absent any additional information provided by Economical:

1) We find Economical's selected trends for Bodily Injury, DCDP, and Collision to be too high. We find other trend rates based on the same Industry experience that Economical analyzed more reasonable in this circumstance; […]

2) We find Economical's complement of credibility approach which includes an adjustment for Economical's estimate of rate inadequacy from its prior filing (which we did not review) to be flawed and result in rates that may be too high. […]

3) We find Economical's target pre-tax ROE of 16.9% (12% after-tax) and target pre-tax ROI of 3.52% to be equivalent to a profit provision of $6.69 for every $100 of premiums. […]

[24] 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 application.

Consumer Advocate for Insurance

[25] At the Hearing, the CAI presented the Panel with oral submissions and challenged the Rate Application submitted by the Applicant.

[26] 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.

[27] 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. The CAI reiterated the statement made by Economical that the reason the Applicant did not request a rate increase over 3% percent in the previous years' rate filings, despite their indication supporting it, was due to their lack of resources. In response, Mrs. Pelletier submitted that the consumers of our Province certainly do not have the resources of Economical. The CAI finally submittedthat the

Board should request the Applicant to adopt the alternatives presented by the OAG's and give the benefit to the insurance consumers of New Brunswick.

3. Analysis and Reasons

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

[29] 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 methodology used in light of the limited data available.

[30] The Panel recognizes the actuarial expertise of the witnesses of the Applicant and the OAG for the purpose of the present Rate Application. The Panel's decision reflects that neither expert 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 contrary positions, and finds that the Applicant failed to meet its burden of proof.

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

[32] The Panel addresses each issues individually below:

1) Selected Loss Trend Rates

[33] 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 by separately selecting, and then combining, frequency and severity trend rates, representing past experience and future expected results. The frequency and severity trends are then combined to determine loss cost projection factors.

[34] In its loss trend analysis, the Applicant used a regression model applied to industry PPV experience in order to determine and select its past and future frequency, severity and loss cost trends. The Applicant used half years' accident experience for the BI coverage and full year experience for all other coverages, including collision and DCPD.

- ***Bodily Injury***

[35] The Applicant and the OAG used different models to support their respective positions in terms of frequency and severity trend rates for BI. In the regression analysis of its estimate of Industry PPV ultimate claim counts over a 15-year period ending December 31, 2016, the Applicant's selected model segmented this period in three time periods in order to include a parameter for the July 2013 Minor Injury Regulation (MIR) reform. On this basis, Economical selects frequency and severity trends for each period as follows:

Bodily Injury	***July 1, 2007 to June 30, 2013***	***July 1, 2013 to June 30, 2017***	***July 1, 2017 onward***
Frequency	-6.7%	-3.3%	-0.8%
Severity	+6.5%	+8.4%	+2.1%
Loss Cost	-0.6%	+4.8%	+1.3%

- *Bodily Injury - Frequency*

[36] Based on its model, Economical measures a past trend of -6.7% with an adjusted R-square of 71% for the period 2007-1[1] to 2013-1 (Exhibit 14, p. 541 of the Record). Economical selects a cut-off at 2013-2[2] and measures a trend of -6.0% with an adjusted R-square of 36% through its fitted model (Exhibit 14, p. 544 of the Record). Economical however judgmentally selects a BI frequency trend rates of -3.3% for the period of 2013-2 to 2016-2 and -0.8% for the period 2017-1 onward. Though the Panel was not provided with the mechanics for the judgement selection of -0.8%, this trend rate is equivalent to 25% of the past trend rate for period 2013-2 to 2016-2.

[37] The OAG disputes the trend rate change beginning 2013-2 as selected by Economical and argues the same trend rate should be applied to the entire past period (2007-1 to 2016-2). OW's model measures the frequency trend over the period of 2003-2 to 2016-2 including parameters for seasonality and for the 2013 MIR reform and concludes the upward shift in the frequency level is a result of the reform (Exhibit 18, page 975 of the Record).

[38] The OAG points out Economical's poor statistical fit to the second period due to the following regression results: low adjusted R-squared of 36% and p-values greater than 5% (Exhibit 18, page 973 of the Record). While the OAG does not recommend to project snowfall, the OAG submits that merit should be given to the consideration of the statistics from regression models with and without data point 2015-1 (where there was reportedly a large amount of snowfall). The OAG's proposed BI frequency model indicates a -7.0% past trend rate.

[39] On the issue of seasonality, in the rounds of questions and answers preceding the Hearing and at the Hearing, Economical recognizes that the BI coverage is subject to seasonality and indicates it would address this enhancement in its future rate applications (Exhibit 14, page 440 of the Record).

[40] The Panel finds both methodologies employed to derive the frequency trends for period 2007-1 to 2013-1 by the Applicant and the OAG to be acceptable. The Panel accepts as reasonable

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

the time segmentation selected by the Applicant and the past frequency trend rate of -6.7% for period 2007-1 to 2013-1 it measured through its model.

[41] As for the period of 2013-2 to 2016-2, the Applicant's expert testified during the hearing that the -3.3% was obtained by judgmentally selecting 50% of its fitted value, recognizing the shortness of the experience period and the uncertainty of the trend estimate post reform. The Applicant's key consideration is to ensure coherent frequency and severity trend assumptions as a whole to obtain sensible loss cost trend that reflect the actual history (depicted in Exhibit 1, page 195 of the Record). The Panel finds both methodologies employed to derive the frequency trends for period 2013-2 to 2016-2 by the Applicant and the OAG to be acceptable. The Panel recognizes that the trend selection depends on the application of professional actuarial judgment and practice. The Panel considered the Applicant's judgmental selection to take 50% of the value for the second period but finds it would be more reasonable to select 50% of the Applicant's measured value of -6.0%. The Panel therefore orders the Applicant to modify its past frequency trend to -3.0% for the period of 2013-2 to 2016-2[3].

[42] With respect to the future BI frequency trend, the OAG judgmentally selects -3.5%, being half of the past trend of -7.0%. The OAG supports this application of judgment based on a prior Decision of a separately constituted panel of the Board, whereby that Panel had ordered the Applicant to select half of its' past trend rate for its' future period (Exhibit 18, page 978 of the Record). The Panel wishes to point out that every filing is assessed and decided based on its evidence and own merits and that this Panel is not bound by prior Decisions.

[43] As for Economical's future trend selection of -0.8%, without providing the Panel with the details as to how this specific number was selected, Mr. Brown-Jowett testified at the Hearing that this selection was based on the observation of the flattening of the data and the credibility weighting between 0% and the trend factor stemming from its model.

[3] In line with the end of the industry data included in the trend analysis

[44] The Applicant did not fully demonstrate the methodology underlying the use of credibility and its appropriateness in the context of trend selections. The Panel recognizes the simple weighting of trend factors stemming from various models as a possible actuarial practice. The Panel also finds it has not received enough support from Economical on its judgement application to select 25% of its past frequency trend for the period of 2013-2 to 2016-2 for its future trend. However, based on the evidence presented as a whole, the Panel finds that the selection of the future trend of -0.75% (25% of the revised selected trend for the 2013-2 to 2016-2 period) to result in a reasonable loss cost trend. The Panel therefore orders the Applicant to modify its future BI frequency trend selection to -0.75% per annum for the period of up to April 1, 2020, reflecting the revised effective date of the rate change.

- *<u>Bodily Injury – Severity</u>*

[45] As for frequency, Economical's severity model reflects the use of three experience periods: (1) 2007-1 to 2013-1; (2) 2013-2 to 2016-2; (3) 2017-1 and onward. For the BI severity trend rate, the Applicant selects a past trend rate of +6.5% with an adjusted R-square of 47% for the period of 2007-1 to 2013-1(Exhibit 14, page 542 of the Record). For the second period (2013-2 to 2016-2), the Applicant measures a trend rate of +13.0% with an adjusted R-square of 32%, but judgmentally selects a trend rate of +8.4% (Exhibit 14, page 545 of the Record). For the future severity trend (2017-1 and onward), the Applicant applies judgement to select the rate of +2.1%.

[46] The OAG disagrees with the Applicant's trend selections. According to OW's modeling, the increases observed in the data are the result of shifts-up in severity, as opposed to a gradual increase in the trend rate. According to its model, OW observes severity upward shifts of 31.1%, 40.7% and 31.2% at 2009-1, 2013-2 and 2015-2, respectively (Exhibit 18, page 982 of the Record). OW therefore selected a severity trend rate of 0% for all periods, except for the one-time shifts it observed at 2009-1, 2013-2 and 2015-2.

[47] On this specific point, the Applicant's actuary, Mr. Brown-Jowett testified to the following during his cross-examination by Mr. Hynes:

Q. - I want to turn you to page 982 that is of the combined exhibits. So that is page 25 of the Oliver Wyman report, exhibit 18. Do you see the graph?
A. Yes.

Q. - And that was prepared obviously by Oliver Wyman?
A. Correct.

Q. - And again, the little circles there are the severity levels in each of the accident half years based on industry data in the province?
A. Yes.

Q. - Now I understand Oliver Wyman to be saying that there are shifts in that -- in those data. Is that sort of roughly -- generally what you understand them to be saying?
A. One time increases, yes.

Q. - So for example -- well let's start from the far left, the earliest years there. There is a little group of five data points. And then there is a drop, which I think is probably 2003, because we had the MIR reform. Would that be a downward shift in the data?
A. Yeah.

Q. - And so from 2003 to about -- I guess that's 2007, there is a collection of data points that -- would you agree with me that they look to be -- when we just take a look at them, they seem to be kind of generally flat and not going noticeably up or down over time?
A. It looks like -- like noise there, yeah.

Q. - You agree with what I said?
A. Yes.

Q. - And then we have an increase in about 2009. Would you identify that as being a shift in the data?
A. It's definitely a large increase in the data.

Q. - Yes. Because Oliver Wyman is saying that the -- as I understand that in 2009 the data shifted upward to a new level and that new level was -- the previous level had been flat and then the level after 2009 to about '13 was flat as well. Do you understand them to be saying that?
A. I understand them to be saying that.

Q. - In other words, there is roughly a no trend and then a shift and then no trend again?
A. Correct.

Q. - And that is a reasonable thing to say?
A. It is. However, this -- it did -- if you have a reason for saying it other than -- otherwise you could be getting into a situation where you are following the noise, so over-fitting your model. This seems to be a situation where the Oliver Wyman selection is based on we saw a large jump so we just recognized a large jump. That would be a very good indication of over-fitting.

Q. - Did you test it for over-fitting?
A. No, we didn't have access to the Oliver Wyman models.

Q. - So you don't know whether it is in fact over-fitting, you are just saying you would be concerned about that?
A. Absolutely.

[TRANSCRIPT of January 15, 2019, page 68-69]

[48] The Panel rejects OW's trend selections of 0%. In observing the data on severity, displayed at page 196 (Exhibit 1) and at page 982 (Exhibit 18) of the Record, the Panel concludes that there is an upward trend, as opposed to flattening of the data with an uncertain arbitrary future shift.

[49] The Panel accepts Economical's measured trend selection of +6.5% for the period of 2007-2 to 2013-1 as being reasonable. The Panel however, does not accept the Applicant's selections as proposed. In remaining consistent with the Panel's revised trend on frequency, the Panel orders the Applicant to modify its severity trend rate for the period of 2013-2 to 2016-2 to 3.3%, being 50% of the measured trend obtained using 3.5 years' history, and to modify the future severity trend rate for the period up to April 1, 2020 to +1.625%, being 25% of the revised selected trend of period 2013-2 to 2016-2. The resulting loss cost trend based on the modifications ordered is found to be appropriate.

- ***DCPD***

[50] For the DCPD coverage, the Applicant based its regression analysis, measuring separately frequency and severity trend rates, over five years of annual accident year data ending in 2016. Economical made the following trend selections for DCPD:

DCPD	***Past (up to June 30, 2017)***	***Future (July 1, 2017 onward)***
Frequency	+1.8%	0%
Severity	+5.3%	+5.3%
Loss Cost	+7.2%	+5.3%

[51] For the past frequency trend rate, the Applicant measured a trend rate of +3.6% with an adjusted R-square of 54% based on the five-year annual data ending in 2016 (Exhibit 1, p. 203 of the Record). It judgmentally selects tempered trends of +1.8% for its past trend and 0% for its future trend due to its model's poor statistical results. As for the severity trend rates, Economical selected its measured trend of +5.3% with an adjusted R-square of 93% based on the five-year annual data ending in 2016 (Exhibit 1, p. 203 of the Record). The selected severity trend is applied over the past and the future periods. On the basis of its selected frequency and severity trends, Economical calculated loss costs trends of +7.2% for the past, and +5.3% for the future.

[52] Economical has been using this methodology consistently in previous years' filings and suggests it is appropriate to use a period of five years to develop its' trends due to the short tail nature of this coverage and the ability to discern a trend quicker notably than for longer tail coverages (ie. BI). At the Hearing, Mr. Brown-Jowett testified that he found the use of five years of annual data to be more appropriate than the use of ten years, indicating that the older data, ranging from ten to five years ago, is not as relevant as the most recent data, notably due to the difference in vehicles on the roads and safety factors. Mr. Brown-Jowett testified he would be very concerned that the use of an additional five years of data would not be predictive of the future.

[53] The OAG disagreed with the Applicant's methodology to use only five years of annual data, and argued it is too short a period and revealed volatile data. The OAG additionally argued that the Applicant's frequency model, based on only five data points, produced a p-value of 9% (outside of the commonly accepted value of "less than 5%" acceptance threshold for parameter significance). Other concerns raised by the OAG on the use of five data points were the potential unusual value in 2015 "likely due to weather" and the fact that the first data point included in the Applicant's model has a high degree of influence, which is claimed to be undesirable (Exhibit 18, page 984 of the Record).

[54] The OAG's suggested model, reviewing frequency and severity accident half-year data for the ten-year period through December 31, 2016, measures trend rates of 0.0% and 3.3% for frequency and severity respectively. The OAG argued the validity of its model on its statistical results (Exhibit 18, pp. 986 to 988 of the Record). However, during the hearing, while being cross-examined by the Applicant's Counsel, Ms. Elliott testified to the following:

> Q. - Ms. Elliott, you mentioned earlier that runs in the model are not a desirable feature of a fitted regression. Is that correct?
> A. Yes. That's one of the things that you would look at to observe the data and that you look at the data point and that is the fitted value versus the actual value. You get the difference. And then you look at those differences to see if there is a pattern of that. It's -- it's certainly more helpful looking at the accident half year data. You have a few more points to look at with that type of data.
>
> Q. - The full year or half year, you generally don't want to see runs in a model?
> A. That's correct.
>
> Q. - I am going to take you to page 987 of the combined exhibit. We can just scroll down a bit to the graph. From what I understand, this is a graph that you prepared for DCPD severity?
> A. Correct. Yes.
>
> Q. - And looking at this, your line, your fitted trend is blue, correct?
> A. That's correct.
>
> Q. - Do you agree there are runs in this model?
> A. Yeah, definitely there are consecutive periods that are, in this case, below the line. What we are looking at here with the model and competing models, both of them have over the horizon some run. And again, it would be better if we had

half year data to see it more closely with it. And our conclusion, as we stated with the model, was that we wanted to be consistent with the time period selected with the frequency to match that up with the severity time period. In terms of -- you know, just linking -- and I understand the point that you are making, the runs that are in the bodily injury severity that are presented by Economical for their regression. And one of the points that we are making there was that the sort of thinking of looking at the data and the approach that there were lifts and flat periods.

[…]

Q. - Sure. I was asking you in this model, your model for DCPD severity if there are runs in it?

A. Yes. There are periods where the data is consecutive above and below the line. That's correct.

[55] The Panel finds both methodologies employed by the Applicant and the OAG to be acceptable. However, the Panel is satisfied with, and accepts, the rationale provided by the Applicant's expert witness for the use of five years of annual data for the development of trends for the DCPD coverage and finds its application of actuarial judgement in the selection of its past and future trends for DCPD to be well supported and reasonable in the circumstances.

- ***Collision***

[56] Similarly, to its DCPD trend analysis, the Applicant based its regression analysis for the Collision coverage using a five years of annual data ending in 2016. Economical made the following trend selections for this specific coverage:

Collision	***Past (up to June 30, 2017)***	***Future (July 1, 2017 onward)***
Frequency	+1.4%	0%
Severity	+4.4%	+4.4%
Loss Cost	+5.9%	+4.4%

[57] For the frequency trend rate, the Applicant measured a trend rate of +2.8% with an adjusted R-square of 20% based on the 5-year annual data ending in 2016 (Exhibit 1, p. 207 of the Record). It judgmentally selects tempered trends of +1.4% for its past trend and 0% for its future trend due to its model's poor statistical results. As for the severity trend rates, Economical selected its measured trend of +4.4% with an adjusted R-square of 90% based on the 5-year annual data ending in 2016. The selected severity trend is applied over the past and the future periods. On the basis of its selected frequency and severity trends, Economical calculated loss costs trends of +5.9% for the past, and +4.4% for the future.

[58] As for the DCPD coverage, in prior years' filings Economical consistently used a period of five years to develop its trends for the Collision coverage. Again, the use of the five-year period is due to the short tail nature of the coverage and the ability to discern a trend quicker than for long tail coverages that take time to develop. At the Hearing, Mr. Brown-Jowett testified that the Applicant found the use of five years of annual data to be more appropriate than the use of ten years indicating that the older data, ranging from ten to five years ago, is not as relevant as the most recent data, notably due to the difference in vehicles on the roads and types of accidents. Mr. Brown-Jowett testified he would be very concerned that the use of an additional five years of data would not be predictive of the future.

[59] The OAG also disagreed with the use of five years of annual data arguing it to be too short and volatile, particularly for frequency. It argued the fitted frequency model produced a p-value of 25%, which falls outside the commonly accepted "less than 5%" acceptance threshold for statistical significance of a parameter. The OAG's suggested model, reviewing frequency and severity accident half-year data for the ten-year period through December 31, 2016, measured trend rates of 0.0% and 2.4% for frequency and severity respectively. The OAG argues the validity of its model on its statistical results (Exhibit 18, pp. 990 and 991 of the Record).

[60] Similarly, to the DCPD coverage, the Panel finds both approaches adopted by the Applicant and the OAG to be valid. However, the Panel is satisfied with, and accepts, the rationale provided by the Applicant's expert witness for the use of five years of annual data for the

development of trends for the Collision coverage and finds its application of actuarial judgement in the selection of its past and future trends for Collision to be well supported and reasonable in the circumstances.

2) Complement of Credibility

[61] In the determination of the rate level change required, the Applicant assesses the credibility of its own five-year experience data for each of the coverages. In its assessment, the Applicant determined its coverages (excluding DCPD, Collision and Comprehensive) not to be fully credible. Consequently, for the coverages found to be only partially credible, Economical applies the balance of credibility weight to the net trends since the prior rate change between the prior effective date and proposed effective date, as well as an adjustment for any residual between the prior indicated rate change and approved rate change.

[62] While the Applicant's prior approved rate change was based on a new expense allocation method of assigning all fixed expenses to TPL, the methodology used in the present filing is based on the old expense allocation methodology that assigned the fixed expenses evenly to the various coverages, then reassigned the fixed expenses as subsequent step (Exhibit 11, p. 400 of the Record).

[63] The OAG suggested that the Applicant's calculation for the adjustment of the residual was materially flawed. On this issue, the OAG submitted as follows:

> We find it unreasonable for Economical to make a change to allocation of its expenses – to ensure it recovers its full fixed expense provision – without an equally important change to its calculations model to ensure its rate indications are accurate. We find Economical's approach used in this filing to be a calculation error that is material.
>
> [Exhibit 18, page 996 of the Record]

[64] The OAG submitted the change in methodology with respect to the allocation of fixed expenses from the previous filing to the current filing created an inconsistency. This resulted in the indicated rate change for TPL to be increased and the indicated rate change for all other rate changes to be decreased (Exhibit 19, page 1).

[65] In a written submission made by the Applicant on January 14, 2019, Economical admitted to having provided incorrect restated past and current filing's indication for reflecting the appropriate fixed expense allocation to TPL and other coverages (Exhibit 20a, page 1). The Applicant proposed to make the appropriate correction in order to properly reflect the fixed expense allocation method. Economical proposed doing so by applying a revised methodology:

> Economical's fixed expenses are known quantities with minor variability. With that in mind applying a credibility factor of 37.1% would be inappropriate. If we were to apply that factor in essence what we are proposing is that as a result of shifting an expense from one coverage to another Economical's overall expense need has reduced by 62.9%. […].
>
> Economical proposes to rebalance its previous indication to reflect the same adjustment that was made to the implemented rates. This rebalanced indication is then directly comparable to the premium changes Economical took with its previous filing including the reallocation of fixed expense.
>
> [Exhibit 20a, page 1]

[66] In light of this correction, the Applicant submitted a rebalanced indication, as well as a restated indication (Exhibits 20b and 20c). The correction measure taken by the Applicant is accepted by the Panel. The issue on the complement of credibility was therefore resolved prior to the Hearing and was not addressed by the parties at the Hearing.

3) Profit Provision

[67] For the calculation of its overall rate level change need, Economical includes a profit provision targeting a return on equity (ROE) of 12%, a premium to surplus ("P/S") ratio of 2 to 1, as well as a pre-tax return on investment (ROI) of 3.52%.

- ***Application of after-tax Return on Investment***

[68] In the rounds of questions, the OAG raised the issue that Economical used the after-tax ROI rate of 2.5% in the previous year's filing and used this rate in the current filing to calculate its discounts factors (for cash flow) instead of using the 3.52%. The OAG requested the Applicant to make an amendment and use the 3.52% ROI to calculate its discount factors and in its complement of credibility methodology. The Applicant agreed with the proposed amendment to use the pre-tax rate of 3.52% for discounting cashflow as opposed to the after-tax rate of 2.5% used in prior filings (Exhibit 14, page 436 and Exhibit 16, page 751 of the Record). The Panel accepts this amendment.

- ***Selection of Return on Equity***

[69] The OAG disagrees with the Applicant's selected ROE of 12%. In its final submission, the OAG suggested that the Board should consider the lower profit provisions of other provinces, such as Newfoundland and Labrador, Nova Scotia and Ontario. It also argued that a one percentage point decline in the target after-tax ROE, from 12% to 11%, would reduce the overall rate level indication by approximately 1 percentage point.

[70] The Panel takes this opportunity to reiterate that the Board evaluates each company's selection of ROE individually and on a case-by-case basis. In the present filing, the Panel finds the target after-tax ROE of 12% selected by the Applicant to be reasonable in the circumstances and in light of the current market conditions.

4. Decision

[71] 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. Maintain the frequency trend to -6.7% per annum for the period up to June 30, 2013;

    b. Modify the frequency trend to -3.0% per annum for the period up to December 31, 2016 in line with the end of the industry data included in the trend analysis;

    c. Modify the future frequency trend to -0.75% per annum for the period up to April 1, 2020 to reflect the revised effective date of the rate change;

    d. Maintain the severity trend at +6.5% per annum for the period up to June 30, 2013;

    e. Modify the severity trend at +6.5% per annum for the period up December 31, 2016; and

    f. Modify the future severity trend to +1.625% for the period up to April 1, 2020.

2) For coverages other than TPL-BI, modify the cut-off date of past trends to December 31, 2016 and the end-date for the future trends to April 1, 2020.

3) Maintain the selected loss development factors based on Economical data for PPV only as per amended filing dated November 30, 2018;

4) Maintain the corrected return on investment as per amended filing dated November 30, 2018; and

5) Maintain the revised complement of credibility as per amended filing dated January 14, 2019.

[72] The impact of these changes decreases the rate indications from an average increase of +17.53%, as per the Applicant's amendment of January 14, 2019, to an average increase of +16.80%.

[73] The Applicant is ordered to incorporate changes to the rate application as set out in paragraph 71 above and is **approved to adopt the proposed average rate change of +13.96%** pursuant to the application of capping mechanism.

[74] The approved rates will be effective on March 1, 2019 for new business and April 1, 2019 for renewal business.

Dated at Saint John, New Brunswick, on February 5, 2019.

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

WE CONCUR:

____
Francine Kanhai, Board Member

____
Katherine Munro, Board Member