

Nova Scotia**Private Passenger Vehicles****Oliver Wyman Selected Loss Trend Rates****Based on Industry Data Through December 31, 2017****Selected Trend Rates - Summary**

The following table presents our selected past and future annual loss cost trend rates as of December 31, 2017. We discuss and present our methodology and assumptions in selecting our trend rates in this report.

Coverage	Past Loss Cost	Future Loss Cost
Bodily Injury	+6.0%	+6.0%
Property Damage & DCPD	+3.0%	+7.0%*
AB – Disability Income	+1.5%	+1.5%
AB – Medical/Rehab	+6.5%	+6.5%
AB – Funeral	-11.0%	-11.0%
AB – Death	-7.0%	-7.0%
AB-Total	+4.5 %	+4.5%
Collision	-0.5%	+5.5%*
Comprehensive	+6.0%	+5.5%
Specified Perils	+6.0%	+5.5%
All Perils	+10.0%	+10.0%
Underinsured Motorist	+6.0%	+6.0%
Uninsured Auto	+7.5%	+7.5%

*Beginning April 1, 2013

Introduction

Loss trend rates are factors that are used to determine rate level indications. They are applied to the experience period incurred losses to adjust for the cost levels that are anticipated during the policy period covered under the proposed rate program.

The application of trend rates is, essentially, a two-step process. The data in the experience period under consideration must be adjusted to reflect changes in cost conditions that have taken

place (i.e., “past trend”), and then the data must be further adjusted to reflect changes in cost conditions that are expected to take place between the present time and the time during which the new premiums will be in effect (i.e., “future trend”).

Therefore, past trend rates should reflect the underlying trend patterns that occurred during the experience period, which we have assumed to be the three to five years ending December 31, 2017. Future trend rates should reflect those same patterns that occurred during the experience period, as well as the likelihood that those patterns may change.

We select trend rates based on historical Industry Nova Scotia claim experience as published by the General Insurance Statistical Agency (GISA). The Industry data is organized by half-year, and in this report we refer to the first half of an accident half year as XXXX-1 or XXXX.1 and the second half of the accident year as XXXX-2 or XXXX.2. So, for example, the accident half-year spanning July 1, 2017 through December 31, 2017 is referred to as 2017-2 or 2017.2.

The claim experience includes allocated loss adjustment expenses, and we include a provision for unallocated loss adjustment expenses (ULAE) based on the factors published by GISA.¹

We derive indicated annual loss trend rates based on an exponential regression model using Industry historical accident year loss and loss adjustment expense data that we project to ultimate cost level (when all claims are reported and settled) using the Industry loss development factors we select.

Estimation of Industry Ultimate Loss and Claim Amounts

The Industry Nova Scotia experience upon which the loss trend rates are based must be adjusted to an ultimate claim count and loss amount level. We do so through the application of what are referred to as development factors to the reported claim counts and claim amounts as of December 31, 2017. We select development factors based on a review of the Industry Nova Scotia loss development patterns; we do this by coverage. The data we use to select loss development factors and claim count development factors is the 2017-2 AUTO7001 Industry

¹ As GISA only provides an annual factor, in our June 30th reviews, we assume the prior year ULAE factor is a reasonable estimate for the subsequent half-year.

Nova Scotia accident half-year² reported incurred loss and allocated loss adjustment expense (ALAE) and claim count data.³

With the 2017-2 data release, based on the data reported by insurers, GISA has made a major correction⁴ to the reported claim counts for 2013-1 and subsequent periods. As a result, a comparison of the estimated ultimate number of claims in this review to the prior review is not appropriate for the periods 2013-1 to 2017-1. For example, in the case of Bodily Injury, the accident half-year 2013-2 reported claim count as of 48 months was 1,251 in the prior AUTO7501 (as of June 30, 2017) exhibit and was amended to 1,379 in the AUTO7001 (as of December 31, 2017) exhibit; an increase of +10.2%.

Generally, we select the weighted average of the last six development factors, adjusted, where appropriate, to reflect seasonality evident in the 6 to 12 month development period,⁵ as we consider this selection to be a reasonable balance between responsiveness and stability.⁶ We refer to these selections as our default selections. For coverages with smaller data volumes, we select longer time periods as our default; e.g., for Specified Perils, Death Benefits, and Funeral, we use a twenty-point weighted average.

Although in the past we examined the claim count and claim amount development triangles for each of the top ten private passenger automobile insurer groups in Nova Scotia, and excluded the data for some insurers, we do not do so in this review for the following reasons: (a) we found the difference in our selected factors with or without the exclusions was not sufficiently different so as to materially affect the calculated loss trend rates; (b) the nature of reserving (i.e., when to open a claim file and how to set case reserve amounts) is constantly changing amongst companies; and (c) there is insufficient information to distinguish between changes that are due to reserve policy versus random changes.

² We use the terms “accident half-year” and “semester” (i.e., first semester or second semester; or the June semester or December semester) interchangeably in this report.

³ Our selections are based on the Incurred Method.

⁴ Readers should refer to the GISA exhibits for a full a description of all major data corrections and changes.

⁵ The 6-12 month development period refers to the six months following the end of the particular accident half-year. For example, the 6-12 month development period for the 2016-2 accident half-year is the period spanning January 1, 2017 through June 30, 2017. Other development periods referenced in this report (e.g., 12-18) are similarly defined.

⁶ If seasonality is evident, our default selection is the weighted average of the December 2013, December 2014, December 2015, and December 2016 semester 6-12 month development factors.

Our selected cumulative factors and basis for selection (e.g., weighted average of the last six development factors) are presented in Appendix A. Some minor exceptions to our default selections are for smoothing, or recognition of a changing pattern over the more recent time periods. A summary of our selected ultimate loss costs, severity amounts, and frequency by accident half-year are presented in Appendix B. A summary of our selected factors, estimated ultimate losses and claim counts, as well as a comparison to the selections made in our prior review, are presented in Appendices C and D.

We note that the selection of development factors has an effect on the selected loss trend rates and other key assumptions, factors, and provisions. As a result of the claim experience that has emerged and the development factors we select, as presented in the chart below, our estimates of ultimate loss costs, frequencies, and severities by accident year have changed from those we presented in the prior review.⁷ Some of these changes are attributable to the data correction made by insurers in their reporting to GISA as noted above. The most notable change is for Bodily Injury as follows:

AY	Prior Report				Current Report		
	Loss Cost	Severity	Frequency		Loss Cost	Severity	Frequency
2012	\$ 177.70	\$ 42,371	4.19		\$ 177.35	\$ 42,204	4.20
2013	\$ 179.17	\$ 42,582	4.21		\$ 181.25	\$ 38,764	4.68
2014	\$ 179.87	\$ 47,477	3.79		\$ 186.65	\$ 44,504	4.19
2015	\$ 208.27	\$ 49,445	4.21		\$ 216.20	\$ 46,978	4.60
2016	\$ 210.64	\$ 53,048	3.97		\$ 220.70	\$ 50,492	4.37
201701	\$ 194.42	\$ 54,184	3.59		\$ 214.50	\$ 49,561	4.33
2017					\$ 240.79	\$ 52,817	4.56

being analyzed. In addition, we consider models with and without certain data points to improve our understanding of the sensitivity of the calculated loss trend rate to the inclusion or exclusion of those points.

Time Period Considered

In this review, we present and consider the claim experience by accident half-year, spanning the twenty-year period from 1998-1 to 2017-2.

Previously we presented claim experience for the latest fifteen-year period, and now include the additional five years as additional information. While we provide this additional five years of older experience data for information purposes, we continue generally to select trend rates considering the claim experience over the more recent years.

Seasonality

Some coverages exhibit what is referred to as “seasonality” – where claim costs (number of claims or claim amounts) incurred during the first half of a year are generally higher/lower than claim costs incurred during the second half of a year. In the coverage-by-coverage discussion that follows, we state whether or not a seasonality parameter is applied. We note, however, that we find that seasonality may be significant for some, but not all time periods; or significant for loss cost, or severity, or frequency, but not for all three. Hence, for most coverages we present the measured trends with and without applying seasonality.

Reform (Level Change) Parameter

The purpose of a reform or level change parameter is to isolate and, in a sense, remove the impact that reforms or other events had on the level of claim costs. This better allows the true underlying claim cost trend to be identified. The regression model we use to analyze severity, frequency, and loss cost trend patterns allows the inclusion of a parameter to reflect the impact that reforms or other events have had on claim counts and amounts.

- For Bodily Injury, we give special consideration to the 2008-1 to 2010-1 period where challenges to the Minor Injury Regulations (MIR) may have had an impact on the claims experience, which was then followed by the changes to the MIR in April 2010. In particular:
 - o We consider a possible change in reporting pattern that might have occurred beginning January 2008 as a result of challenges to the Minor Injury Regulations - in particular, the

Decision by the Supreme Court of Nova Scotia to uphold the Minor Injury Regulation released on December 15, 2009, and the Supreme Court of Canada's Decision on May 27, 2010 to refuse leave to appeal the Decision.

- o We consider Bill 52, an amendment to the Automobile Accident Minor Injury Regulations of the Insurance Act, enacted on April 28, 2010.
- We consider the Fair Act Insurance Reforms enacted on April 1, 2012, which introduced higher maximum benefit levels for Accident Benefits sub-coverages.
- Effective April 1, 2013, the DCPD coverage was introduced in Nova Scotia. We consider this change in our selected trend rates for both Property Damage (which includes DCPD) and Collision.

We note that in those cases where we select a reform or level change parameter, the reform/level change is to be applied to the data (severity, frequency, or loss cost – as appropriate) prior to the time period when the change is identified to have begun. In so doing, the reform/level change parameter adjusts the data prior to the change to the same “level” as the data following the change.

Data Points

We give special consideration to data points that we consider to have a material impact on the measured trends. Of note is that for certain coverages, most notably for DCPD and Collision, there were large increases (spikes) in frequency in the 2015-1 accident period. We believe these increases to be at least in part (perhaps mostly) attributed to the relatively high amount of snow precipitation in the first quarter of 2015. We consider the possible impact of weather during 2015-1 in our individual coverage discussion sections below.

Statistical Tests

We test the various trends that we model for statistical significance based on Adjusted R-squared values, *p*-values, and confidence intervals. As respects the Adjusted R-squared, we generally refer to values greater than 80% to be “high,” values between 40% and 80% to be “moderate,” and values below 40% to be “low.” We consider *p*-values under 5% to be “significant.” The confidence interval range presented represents a 95% probability level range.

Future Trend Rates

In selecting future trend rates, we adjust our selected past trend rates if there is evidence of new patterns emerging. If no future trend rate is noted in the discussion below, it should be assumed that our selected future trend rate is equal to our selected past trend rate.

A discussion of our selected trend rates follows. The various trend patterns that we review and associated statistical results are summarized in Appendix E for each of frequency, severity, and loss cost.

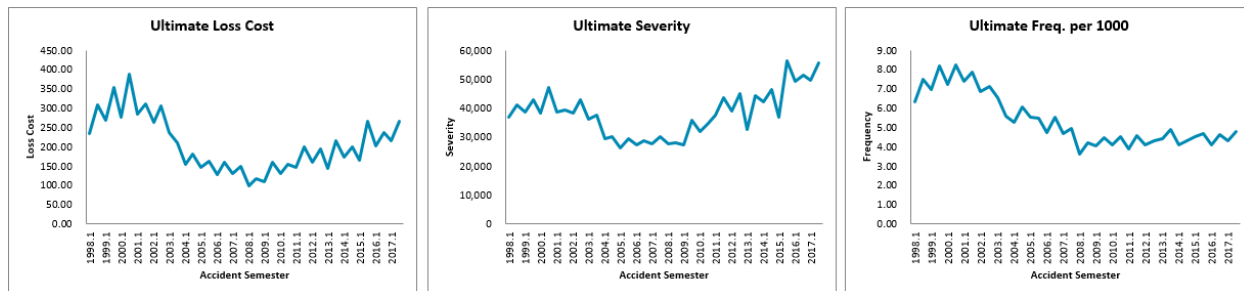
Our Selected Trend Rates

Bodily Injury

Based on our analysis as of June 30, 2017, we selected a past and future loss cost trend rate of +4.5% and a reform parameter of 1.23 at April 2010.

We estimate that during 2017-2 compared to the prior corresponding accident half year (2016-2) the frequency rate, the average severity, and the loss cost changed by approximately +3.6%, +8.3%, and +12.2%, respectively. We estimate that the loss cost for the accident year ending December 31, 2017 increased by 9.1% over the loss cost for the accident year ending December 31, 2016.

The following graphs display our estimates of the actual loss cost (average claim cost per vehicle), average severity (average claim cost per claim), and frequency rate (average claim incidence rate) over the period 1998-1 through 2017-2.



As depicted by the above graphs, subject to variability, severity sharply declined following the 2003 reforms, but remained relatively flat from 2005 through 2009-1, after which, severity has been increasing. Frequency has exhibited a declining pattern beginning in 2000, including a sharp decline in 2008 and a flatter (or slightly increasing) trend beginning 2009. Loss cost sharply declined following the 2003 reforms through to accident year 2008, when it experienced an approximate 21% decline from 2007 to 2008. The 2008 loss cost represents the low point over the last twenty years. Loss cost has exhibited an increasing trend since 2008.

An increase in the minor injury cap (from an unindexed \$2,500 to an indexed \$7,500) took effect on April 28, 2010. Although, as discussed below, our selected loss trend is based on the post reform period, when reviewing data including pre-reform observations we include a parameter in our model to measure the impact of the April 2010 reforms.⁸ We also note that indexing of the \$7,500 minor injury cap is likely affecting the severity and loss cost trends.

We further note that although we expected the April 1, 2012 increase in the Accident Benefits sub coverage limits to reduce the Bodily Injury claim costs (all else being equal), at this stage there is no clear evidence of this. As in our prior review, we do not adjust the data for this expected decrease in the Bodily Injury claim costs. The effect on Bodily Injury as a result of the changes to the Accident Benefits sub coverage limit changes is discussed in our report prepared for the Board titled “2011 Automobile Insurance Review Options- Cost Impact,” dated July 8, 2011.

In prior reports, we stated that the cause of the sharp frequency decline in 2008 is not clear. Given the unexplained sharp decline, we continue to consider 2008 to be a low point and note that it coincides with a change in the Bodily Injury loss cost trend pattern (from negative to positive).

As discussed above, there are changes in our estimate of the ultimate loss cost from our prior review. These changes contribute to higher loss trend rates that we measure in this review. For example, the measured loss cost trend over the period 2012-1 to 2017-1 was +4.9% in our prior review and is +6.8% in this current review.

⁸ We only present measured trends based on data after the introduction of the 2003 reforms; thus, no corresponding adjustment is needed for the impact of the 2003 reforms

The measured severity, frequency, and loss cost trends, associated Adjusted R-squared values, *p*-values, and confidence intervals over various trend measurement periods ending 2017-2 and 2017-1 (in consideration of the relatively higher degree of uncertainty surrounding the estimated loss cost for 2017-2), including a parameter for the April 2010 reforms, with and without seasonality, and with and without the 2010-2 data point which we find to be low⁹ for severity, are presented in Appendix E.

We make the following observations about these measured trends.

The severity trends, beginning 2011-1 through 2014-1, ending 2017-2 and 2017-1, with seasonality (which we find to be significant), generally fall in the range of approximately +4.5% to +7.5% with moderate Adjusted R-squareds and significant *p*-values for time, with trends ending 2017-1 modestly higher than those ending 2017-2.

The measured frequency trends over the same time period as noted for severity with seasonality (which we find to be significant), cluster around +0.5% to +1.0%¹⁰ with low Adjusted R-squareds and *p*-values for time that are not significant. We therefore consider the loss cost trends directly.

The loss cost trends, beginning 2011-1 through 2014-1, ending 2017-2 and 2017-1, with seasonality (which we find to be significant), generally fall in the range of approximately +5.5% to +7.5% with moderate-high Adjusted R-squareds and significant *p*-values for time.

We select a loss cost trend rate of **+6.0%**, based on the trends beginning 2011-1 and 2011-2, (rounded); one and a half percentage points higher than our prior selection.

Property Damage (and DCPD)

DCPD was introduced on April 1, 2013. The data we analyze includes the combined Property Damage and DCPD experience.

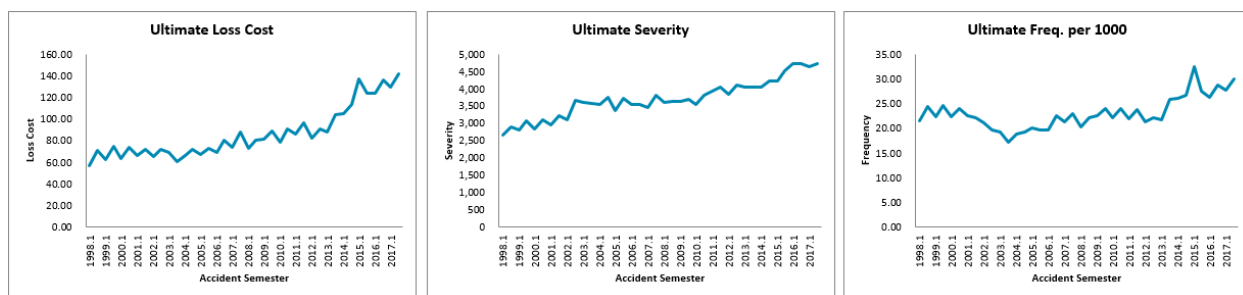
⁹ Although the minor injury reforms with a higher cap amount were introduced effective April 1, 2010, the 2010-2 severity estimate is less than the 2009-1 severity estimate. For this reason, we consider the measured severity trend rates with and without this data point.

¹⁰ These measured frequency trend rates are higher than our prior review; and we attribute some of this change to the correction to the claims count data made by GISA.

Based on our analysis as of June 30, 2017, we selected a past loss cost trend of +3.0% through to April 1, 2013 and a loss cost trend rate of +9.0% for the period beginning April 1, 2013; with no reform parameter.

We estimate that during 2017-2 compared to the prior corresponding accident half year (2016-2) the frequency rate, the average severity, and the loss cost changed by approximately +4.0%, -0.2%, and +3.7%, respectively. We estimate that the loss cost for the accident year ending December 31, 2017 increased by 3.9% over the loss cost for the accident year ending December 31, 2016.

The following graphs display our estimates of the actual loss cost (average claim cost per vehicle), average severity (average claim cost per claim), and frequency rate (average claim incidence rate) over the period 1998-1 through 2017-2.



The historical data points (as depicted in the above graphs) show that, subject to variability: (a) following a period of relative flatness (2003 to 2010-1) severity has exhibited an upward trend, (b) following a period of a relatively flat trend between 2007 and the first half of 2013, frequency increased in the second half of 2013, and has since been rising, including a sharp spike in the first half of 2015, which may be related to the noted weather conditions, and (c) loss cost has exhibited an upward trend, including a relatively large increase in the second half of 2013 and a spike in the first half of 2015 that may be weather related. We assume that the introduction of DCPD in April 2013 caused a shift in claims from Collision to DCPD and this explains the increase in frequency and loss cost in 2013.

The measured severity, frequency, and loss cost trends, associated Adjusted R-squared values, *p*-

As in our prior review, we separately measure the trend rates before and after DCPD was introduced in April 2013, as there is an apparent change in the trend rate beginning 2013.

For the period before DCPD was introduced we consider the loss cost trends, as they have higher Adjusted R-squared values than the separate severity and frequency trends. The measured loss cost trends, beginning 2002-2 through to 2006-1 ending 2012-2, with seasonality, which we find to be significant, range from +3.0% to +3.5%, with high Adjusted R-squareds and significant *p*-values for time; with the trends at the lower end of the range from the more recent shorter time periods. We select a loss cost trend through of **+3.0%**, the same as our prior selection, to apply to the Property Damage loss experience before the introduction of DCPD.

We consider the trend rates after DCPD was introduced based on combined¹¹ Property Damage and DCPD experience.

As the measured frequency trends after DCPD was introduced have *p*-values for time that are not significant, we consider the loss cost trends where the statistical support is stronger (high Adjusted R-squareds and significant *p*-values).

The measured loss cost trends over the period beginning 2012-2 through 2014-1, ending 2017-2, excluding 2015-1,¹² with seasonality, range from approximately +7% to +9%, with very high Adjusted R-squareds and significant *p*-values for time, and relatively narrow confidence intervals. The lower trend rates are based on the shorter more recent time periods. We select a loss cost trend rate of **+7.0%** for the period beginning April 1, 2013; a two percentage point decline from our prior selection.

We select a past loss cost trend of **+3.0%** through to April 1, 2013 and a loss cost trend rate of **+7.0%** for the period beginning April 1, 2013.

Accident Benefits – Disability Income

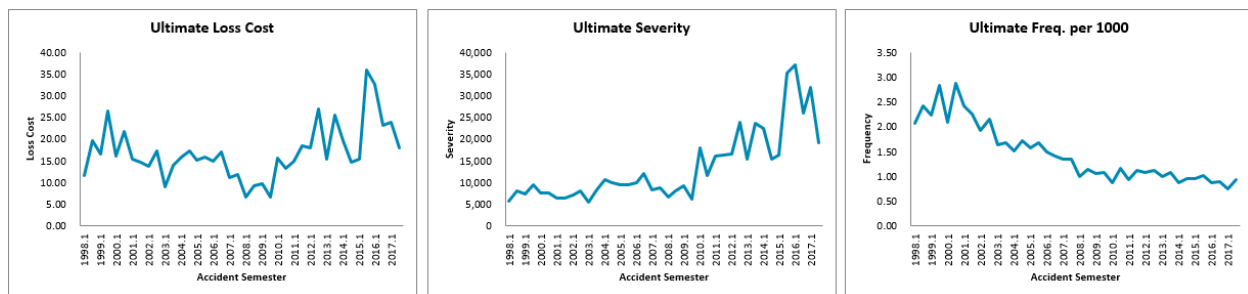
Based on our analysis as of June 30, 2017 we selected a past and future loss cost trend rate of +0.0% with a level change parameter (for the reform) at April 2012 of 1.43.

¹¹ DCPD loss cost is approximately 95% of the total Property Damage and DCPD loss cost.

¹² The Adjusted R-squared excluding 2015-1 are materially higher than when including 2015-1.

We estimate that during 2017-2 compared to the prior corresponding accident half year (2016-2) the frequency rate, the average severity, and the loss cost changed by approximately +4.3%, -25.8%, and -22.6%, respectively. We estimate that the loss cost for the accident year ending December 31, 2017 decreased by 25.1% over the loss cost for the accident year ending December 31, 2016.

The following graphs display our estimates of the actual loss cost (average claim cost per vehicle), average severity (average claim cost per claim), and frequency rate (average claim incidence rate) over the period 1998-1 through 2017-2.



The historical data points indicate a considerable amount of variability, particularly for severity and loss cost (due to severity). Severity has generally exhibited an increasing pattern beginning in 2009, including several sharp spikes in 2015-2 and 2016-1. Frequency has exhibited a downward trend. Loss cost, following a steep decline in 2008 and 2009, has generally been increasing; and, like severity, has experienced several sharp spikes.

Effective April 1, 2012, the Disability Income weekly benefit was increased from \$140 to \$250, and for unpaid housekeepers from \$70 to \$100. Our estimates of the reform parameter are wide ranging depending upon the time period selected for the measurement. We believe this is a reflection of the high degree of variability in the Disability Income severities.

The measured severity, frequency, and loss cost trends, associated Adjusted R-squared values, *p*-values, and confidence intervals over various trend measurement periods, with and without season

around +6% for the trends beginning 2000 to 2003. The associated reform parameter clusters around 1.5, which is similar to our measurements in our prior study, but higher than we previously selected in our prior study at 1.43. The severity trends rates we measured over other time periods generally had low Adjusted R-squareds and/or insignificant *p*-values. We select a severity trend rate of +6.0%.

The measured frequency trends with seasonality (which is significant) over the same time periods we considered for severity generally range from approximately -5.0% to -6.0%, with high Adjusted R-squareds and significant *p*-values for time and seasonality. If an April 2012 reform parameter is included, the frequency trend rates are larger negatives, ranging from approximately -7% to -8% with high Adjusted R-squareds and significant *p*-values for time, seasonality and the reform. However, over the more recent time periods beginning 2012-2 and 2013-1 ending 2017-2, the measured frequency trend is approximately -4.5%, with moderate Adjusted R-squareds and significant *p*-values for time and seasonality. We note that the majority of the experience that will be considered in upcoming rate applications will be after the April 2012 reforms. We select a frequency trend of -4.5%.

Given the variability in the data around what appears to be an increasing pattern, we suggest it supports a small but positive loss cost trend rate. As a result, with a selected severity trend rate of +6.0% and frequency trend rate of -4.5%, we select a past loss cost trend rate of +1.5% (rounded), with a level change parameter at April 2012 of 1.5; higher than our prior selection.

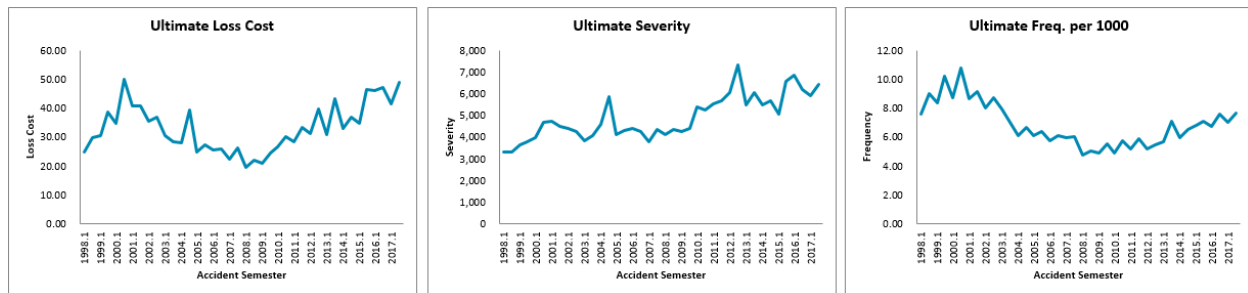
As we see no clear statistical evidence of a recent change in trend pattern, we select a future loss cost trend of +1.5%.

Accident Benefits – Medical/Rehab

Based on data as of June 30, 2017, we selected a past and future loss cost trend rate of +5.5% with level change parameters (for reforms) at April 2010 of 1.22 and April 2012 of 1.15.

We estimate that during 2017-2 compared to the prior corresponding accident half year (2016-2) the frequency rate, the average severity, and the loss cost changed by approximately +0.4%, +3.5%, and +4.0%, respectively. We estimate that the loss cost for the accident year ending December 31, 2017 decreased by 2.9% over the loss cost for the accident year ending December 31, 2016.

The following graphs display our estimates of the actual loss cost (average claim cost per vehicle), average severity (average claim cost per claim), and frequency rate (average claim incidence rate) over the period 1998-1 through 2017-2.



The historical data points indicate a considerable amount of variability, particularly for severity and loss cost (due to severity). Severity has generally exhibited an upward trend, but with relatively sharp spikes. Frequency has trended upward since 2009. Loss cost has generally been increasing since 2008, with several spikes.

The measured severity, frequency, and loss cost trends, associated Adjusted R-squared values, p -values, and confidence intervals over various trend measurement periods, with and without seasonality, and with level changes for the reforms are presented in Appendix E.

We attribute the severity and loss cost increases in 2010 to the April 2010 reforms and in 2012 to the April 2012 reforms. Due to the volatility of the claim experience and the short time gap between the April 2010 and April 2012 reforms, the degree to which these reforms separately contributed to severity and loss cost increases is not clear. In our prior review, we assumed that the April 2010 and April 2012 reforms led to 22% and 15% increases in claim costs, respectively. Based on this assumption, along with our regression analysis, we selected a severity trend rate of 0.0% mainly due to the weak statistics that did not provide a discernable trend rate. However, we believe that the severity trend rate is mildly positive but that the statistical support for that conclusion is not yet evident. Note that, as discussed below, we develop our selected trend rate based on an analysis of loss costs and we offer this observation solely to assess the consistency of that selection with our view of separate severity and frequency trend rates. Given this, and that the majority of the experience that will be considered in

upcoming rate applications will be after the April 2012 reforms, we consider the severity trend rate based on the experience after the April 2012 reforms.

The severity trends, without seasonality (which we generally find not to be significant), beginning 2012-2 ending 2017-2 have low Adjusted R-squareds and p -values that are not significant for time.

The frequency trends beginning 2012-2 ending 2017-2, with moderate Adjusted R-squareds and significant p -values for time and seasonality, are approximately +4.5%.

Given the weak statistics for the severity trend, we consider the trend rates for loss cost directly. Only the measured loss cost trends beginning 2012-2 and 2013-1, ending 2017-2, at +6.3% and +7.3%, respectively, have p -values that are significant for time and seasonality.

We, therefore, select a past loss cost trend of +6.5% (rounded, based on the larger body of recent post-reform loss cost data). The selected loss cost trend is one percentage point higher than our prior selection.

As we see no clear statistical evidence of a recent change in trend pattern, we select a future loss cost trend the same as the past.

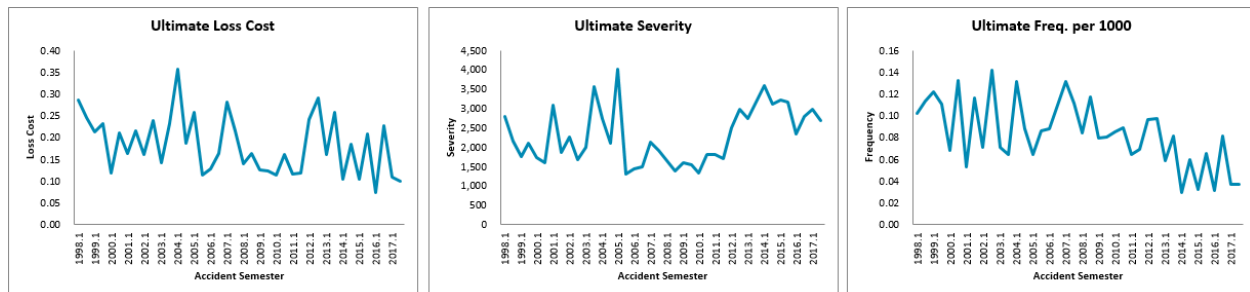
Accident Benefits – Funeral

Based on data as of June 30, 2017 we selected a past and future loss cost trend rate of -11% with a level change (for reform) parameter at April 2012 of 2.50.

We estimate that during 2017-2 compared to the prior corresponding accident half year (2016-2) the frequency rate, the average severity, and the loss cost changed by approximately -54.6%, -4.4%, and -56.6%, respectively. We estimate that the loss cost for the accident year ending December 31, 2017 decreased by 31.4% over the loss cost for the accident year ending December 31, 2016.

Effective April 1, 2012, the Funeral maximum benefit was increased from \$1,000 to \$2,500.

The following graphs display our estimates of the actual loss cost (average claim cost per vehicle), average severity (average claim cost per claim), and frequency rate (average claim incidence rate) over the period 1998-1 through 2017-2.



The historical data points indicate a considerable amount of variability. Severity has generally exhibited an upward trend since 2005 with a sharp increase coincident with the reform in 2012. Frequency has generally trended downward.

Due to the volume and variability of the claim experience, we consider only the observed loss cost trends.

The measured loss cost trends, associated Adjusted R-squared values, p -values, and confidence intervals over various trend measurement periods, with and without seasonality, and with a factor of 2.50 for the April 2012 reform applied to the data are presented in Appendix E.

The measured loss cost trends with or without seasonality (which is significant for some time periods, not all) beginning 2002-1 through 2007-2 ending 2017-2, with a 2012-1 level change factor of 2.50, that have low to moderate Adjusted R-squareds and significant p -values for time, are in the approximate range of -10% to -14%. Given the low claim volume, we select the measured loss cost trend over the fifteen-year time period 2003-1 to 2017-2 at -11%, the same as our prior selection.

We select a past and future loss cost trend of **-11.0%**.

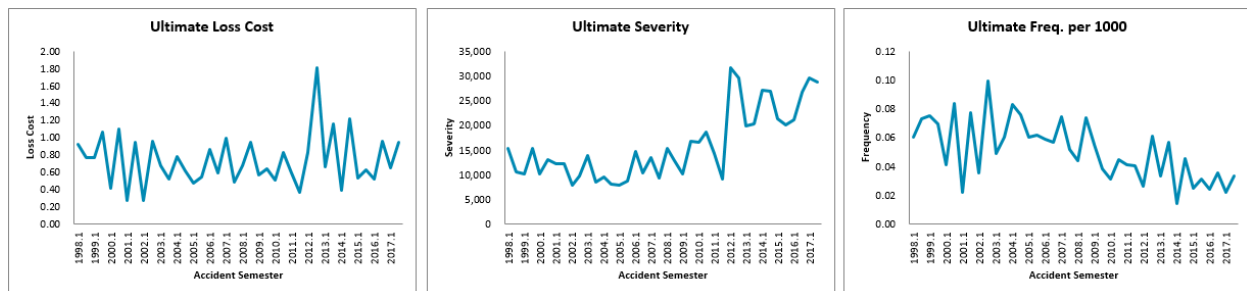
Accident Benefits – Death

Based on data as of June 30, 2017, we selected a past and future loss cost trend rate of -7.5% with a level change (for reform) parameter at April 2012 of 2.50.

We estimate that during 2017-2 compared to the prior corresponding accident half year (2016-2) the frequency rate, the average severity, and the loss cost changed by approximately -7.6%, +7.8%, and -0.4%, respectively. We estimate that the loss cost for the accident year ending December 31, 2017 increased by 8.9% over the loss cost for the accident year ending December 31, 2016.

Effective April 1, 2012, the maximum Death benefit was increased from \$10,000 to \$25,000 for spouses and head-of-household, and from \$2,000 to \$5,000 for dependents.

The following graphs display our estimates of the actual loss cost (average claim cost per vehicle), average severity (average claim cost per claim), and frequency rate (average claim incidence rate) over the period 1998-1 through 2017-2.



The historical data points indicate a considerable amount of variability. Severity has generally exhibited an upward trend with a sharp increase coincident with the reform. Frequency has generally trended downward.

Due to the volume and variability of the claim experience, we consider only the observed loss cost trends.

The measured trends, associated Adjusted R-squared values, *p*-values, and confidence intervals over various trend measurement periods, with no seasonality, and with a factor of 2.5 for the April 2012 reform applied to the data are presented in Appendix E.

The measured loss cost trends beginning 2002-1 through to 2007-2 ending 2017-2 without seasonality (which is generally not significant) have moderate Adjusted R-squareds and range from approximately -6% to -11%; with the larger negative trends coming from the more recent time periods. Given the low claim volume, we select the measured loss cost trend over the fifteen-year time period 2003-1 to 2017-2 at approximately -7.0%.

We select a past and future loss cost trend of **-7.0%**; a half-point increase from our prior selection of -7.5%.

Accident Benefits –Total

Based on our review of the trends for the Accident Benefits subcoverages described above, we select an approximate a loss cost trend of **+4.5%** (rounded) for this coverage; this is an increase from our prior selection of +3.5%.

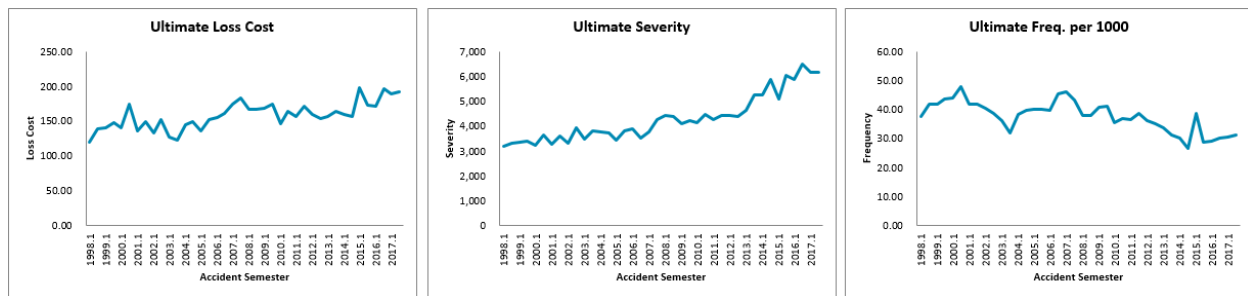
Collision

Based on data as of June 30, 2017, we selected a past loss cost trend rate of -0.5% through to April 1, 2013, and a loss cost trend rate of +5.0% for the period beginning April 1, 2013.

We estimate that during 2017-2 compared to the prior corresponding accident half year (2016-2) the frequency rate, the average severity, and the loss cost changed by approximately +3.4%, -5.2%, and -2.0%, respectively. We estimate that the loss cost for the accident year ending December 31, 2017 increased by 3.5% over the loss cost for the accident year ending December 31, 2016.

As we noted earlier, DCPD was introduced April 1, 2013 and as we discuss more fully below, the introduction of DCPD appears to have affected the Collision claim experience.

The following graphs display our estimates of the actual loss cost (average claim cost per vehicle), average severity (average claim cost per claim), and frequency rate (average claim incidence rate) over the period 1998-1 through 2017-2.



As noted in our prior report, the sharp increase in the 2015-1 frequency (+28.0%) over 2014-1 is likely attributed to a high snowfall level, and as a result, the decline in the 2016-1 frequency is attributed to a return to more average snowfall levels.

The historical data points show that, subject to variability, severity has generally exhibited an upward trend, rising more steeply since 2012. Frequency has generally declined since the 2007-2009 period, save for a 28% increase in the first half of 2015, which we assume is attributed to the noted weather conditions. Loss cost exhibited a period of relatively flat trend beginning around 2008, but an upward trend over the more recent time periods, including a spike in 2015-1.

As in our prior review, we measure the trend rates before and after DCPD was introduced (without a reform parameter) as we see evidence of a change in the trend pattern with the introduction of DCPD.

The measured severity, frequency, and loss cost trends, associated Adjusted R-squared values, *p*-values, and confidence intervals over various trend measurement periods, with and without seasonality, and with and without the 2015-1 data point are presented in Appendix E.

The measured severity trends beginning 2002-1 through 2006-2 ending 2012-2, before DCPD was introduced, with significant *p*-values for time and moderate Adjusted R-squareds, cluster close to +2.5%.

The measured frequency trends beginning 2005-1 through 2007-2, ending 2012-2 before DCPD was introduced, have the highest moderate Adjusted R-squareds

We select a loss cost trend rate of -0.5% (rounded; severity: +2.5%; frequency -3.0%) through to April 1, 2013, before DCPD was introduced.

As the measured frequency trends after DCPD was introduced generally have *p*-values for time that are not significant, we consider the loss cost trends where the statistical support is stronger (moderate Adjusted R-squareds and significant *p*-values).

The measured loss cost trends beginning 2013-2 to 2014-1, ending 2017-2, with and without 2015-1, with significant *p*-values for the time, are approximately +5.0% to +6.5%. These trends have relatively narrow confidence intervals compared to the (higher) measured trend beginning 2014-2 ending 2017-2. We select a loss cost trend of +5.5% for the time period after DCPD was introduced.

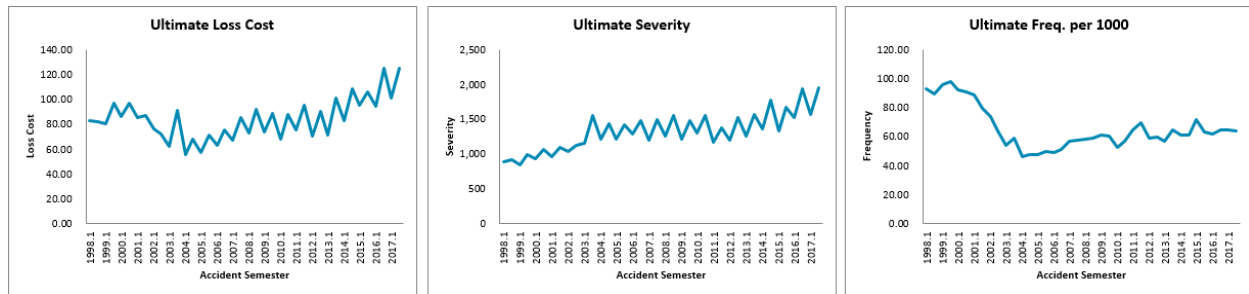
We, therefore, select a past loss cost trend of **-0.5%** through to April 1, 2013 and a past loss cost trend rate of **+5.5%** for the period beginning April 1, 2013; the same trend through April 1, 2013 and one-half point higher trend beginning April 1, 2013 than our prior selections.

Comprehensive

Based on data as of June 30, 2017, we selected a past and future loss cost trend rate of +7.0%.

We estimate that during 2017-2 compared to the prior corresponding accident half year (2016-2) the frequency rate, the average severity, and the loss cost changed by approximately -0.8%, +0.2%, and -0.6%, respectively. We estimate that the loss cost for the accident year ending December 31, 2017 increased by 2.6% over the loss cost for the accident year ending December 31, 2016.

The following graphs display our estimates of the actual loss cost (average claim cost per vehicle), average severity (average claim cost per claim), and frequency rate (average claim incidence rate) over the period 1998-1 through 2017-2.



The historical data points (as depicted in the above graphs) show that severity has generally exhibited a somewhat flat trend between 2003 and 2010, then an increasing trend thereafter. Frequency has been more variable, but generally increasing since 2005; like Property Damage and Collision, the Comprehensive frequency rose in the first half of 2015 (by 18%). Subject to variability, the loss cost has exhibited an upward trend since 2004, but with a somewhat flat trend between 2007 and 2012.

The measured severity, frequency, and loss cost trends, associated Adjusted R-squared values, *p*-values, and confidence intervals over various trend measurement periods, with and without seasonality, with and without the 2015-1 data point, are presented in Appendix E.

The measured severity trends with seasonality (which is significant) over the periods beginning 2011-1 through 2014-2 ending 2017-2 cluster close to +5.5% with strong regression statistics. We select a severity trend of +5.5%.

Although, as noted above, frequency has exhibited a positive trend since 2005, it has done so with considerable variability. The measured frequency trends, without seasonality (which is not significant), excluding 2015-1, over the periods beginning 2012-1 through 2014-2 ending 2017-2, cluster close to +1.75%; but the measured frequency trend regression statistics are weaker than for severity. Given these weaker statistics, we consider the trend rates for loss cost directly.

Looking at loss costs directly, the measured loss cost trend rates (with seasonality, which we find to be significant) beginning 2011-1 through to 2014-2, ending 2017-2, with or without 2015-1, which have the highest Adjusted R-squareds and *p*-values for time that are significant, range from approximately +5% to +7.5%, with the lower trend rates over the (shorter) more recent periods.

We select a past loss cost trend of **+6.0%**; one point lower than our prior selection.

As we see some statistical evidence of a recent change in trend pattern (lower), we select a future loss cost trend of **+5.5%**.

Specified Perils

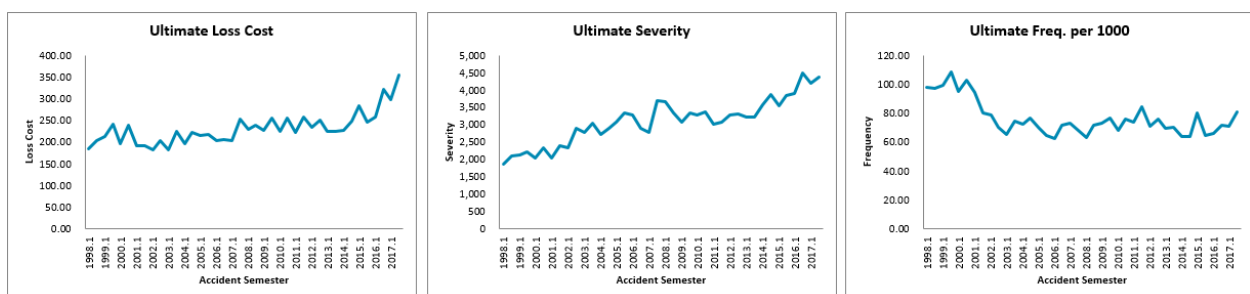
For reasons of data volume and the nature of the coverage, we select the same past and future loss cost trend rate as we do for Comprehensive, **+6.0%** for the past and **+5.5%** for the future.

All Perils

Based on data as of June 30, 2017, we selected a past and future loss cost trend rate of **+7.0%**.

We estimate that during 2017-2 compared to the prior corresponding accident half year (2016-2) the frequency rate, the average severity, and the loss cost changed by approximately +12.7%, -2.5%, and +9.8%, respectively. We estimate that the loss cost for the accident year ending December 31, 2017 increased by 12.5% over the loss cost for the accident year ending December 31, 2016.

The following graphs display our estimates of the actual loss cost (average claim cost per vehicle), average severity (average claim cost per claim), and frequency rate (average claim incidence rate) over the period 1998-1 through 2017-2.



The historical data points (as depicted in the above graphs) show considerable variability, with severity generally increasing – more sharply following 2011 - and frequency exhibiting a flatter trend pattern over the recent years (excluding 2015-1, with a +26% increase over 2014-1, which as noted earlier was likely affected

The measured severity, frequency, and loss cost trends, associated Adjusted R-squared values, *p*-values, and confidence intervals over various trend measurement periods, with and without seasonality, and with and without the 2015-1 data point, are presented in Appendix E.

The measured severity trends, without seasonality (which is not significant), beginning 2011-1 through 2014-2, ending 2017-2, range from approximately +6% to +7%, with moderate to high Adjusted R-squared values and significant *p*-values for time.

The measured frequency trends without seasonality (which is not significant), without the 2015-1 data point (for which the regression statistics are improved), have low Adjusted R-squared values and generally *p*-values for time that are not significant. We therefore consider the trend rates for loss cost directly.

Looking at loss costs directly, the measured loss cost trend rates (without seasonality, which we find not to be significant), with or without 2015-1, which have the highest Adjusted R-squareds and *p*-values for time that are significant, range from approximately +10% to +12%.

As a result, we select a past loss cost trend of **+10.0%**; a 3.0 percentage point increase over our prior selection.

Underinsured Motorist

For reasons of data volume and the nature of the coverage, we select as the past loss cost trend rate, the severity trend rate of **+6%** that approximately underlies our selected Bodily Injury severity trend rate. We also apply this selection to future loss cost trend.

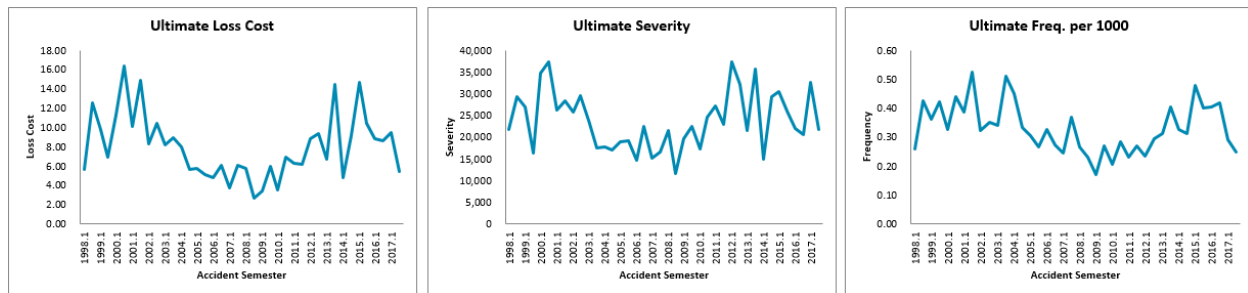
Uninsured Auto

Based on data as of June 30, 2017, we selected a past and future loss cost trend rate of +9.0%.

We estimate that during 2017-2 compared to the prior corresponding accident half year (2016-2) the frequency rate, the average severity, and the loss cost changed by approximately -40.8%, +5.8%, and -37.4%, respectively. We estimate that the loss cost for the accident year ending December 31, 2017 decreased by 15.3% over the loss cost for the accident year ending December 31, 2016. While these increases and decreases could be viewed as an indication of the inherent variability in the Uninsured Auto claim experience (due to the low claim volume),

it must also be noted that the degree of uncertainty surrounding the recent accident half year estimates is quite high.

The following graphs display our estimates of the actual loss cost (average claim cost per vehicle), average severity (average claim cost per claim), and frequency rate (average claim incidence rate) over the period 1998-1 through 2017-2.



The historical data points show considerable variability, with severity generally increasing – particularly beginning in 2005 – and frequency generally declining through 2009 and increasing thereafter. Correspondingly, loss cost has been generally increasing since 2009; with very large spikes in 2013-2 and 2015-1.

Due to the volume and variability of the claim experience, we consider only the observed loss cost trends.

The measured loss cost trends, associated Adjusted R-squared values, *p*-values, and confidence intervals over various trend measurement periods, with and without seasonality for loss cost, with and without the very high 2013-2 and 2015-1 data points are presented in Appendix E.

The measured loss cost trends, without seasonality (which is generally not significant) beginning 2006-1 through 2007-2, ending 2017-2, excluding the 2013-2 and 2015-1 data points, have the highest Adjusted R-squareds (which are low) and significant *p*-values for time. The measured trends range from +6% to +7

Selected Trend Rates - Summary

The following table presents our selected past and future annual loss cost trend rates **as of December 2017**.

Coverage	Past Loss Cost	Future Loss Cost
Bodily Injury	+6.0%	+6.0%
Property Damage & DCPD	+3.0%	+7.0%*
AB – Disability Income	+1.5%	+1.5%
AB – Medical/Rehab	+6.5%	+6.5%
AB – Funeral	-11.0%	-11.0%
AB – Death	-7.0%	-7.0%
AB-Total	+4.5 %	+4.5%
Collision	-0.5%	+5.5%*
Comprehensive	+6.0%	+5.5%
Specified Perils	+6.0%	+5.5%
All Perils	+10.0%	+10.0%
Underinsured Motorist	+6.0%	+6.0%
Uninsured Auto	+7.5%	+7.5%

*As of April 1, 2013

For comparison purposes, the following table presents our **prior** selected past and future annual loss cost trend rates **as of June 2017** presented in our prior report.

Coverage	Past Loss Cost	Future Loss Cost
Bodily Injury	+4.5%	+4.5%
Property Damage & DCPD	+3.0%	+9.0%*
AB – Disability Income	+0.0%	+0.0%
AB – Medical/Rehab	+5.5%	+5.5%
AB – Funeral	-11.0%	-11.0%
AB – Death	-7.5%	-7.5%
AB-Total	+3.5 %	+3.5%
Collision	-0.5%	+5.0%*
Comprehensive	+7.0%	+7.0%
Specified Perils	+7.0%	+7.0%
All Perils	+7.0%	+7.0%
Underinsured Motorist	+6.0	

Reforms

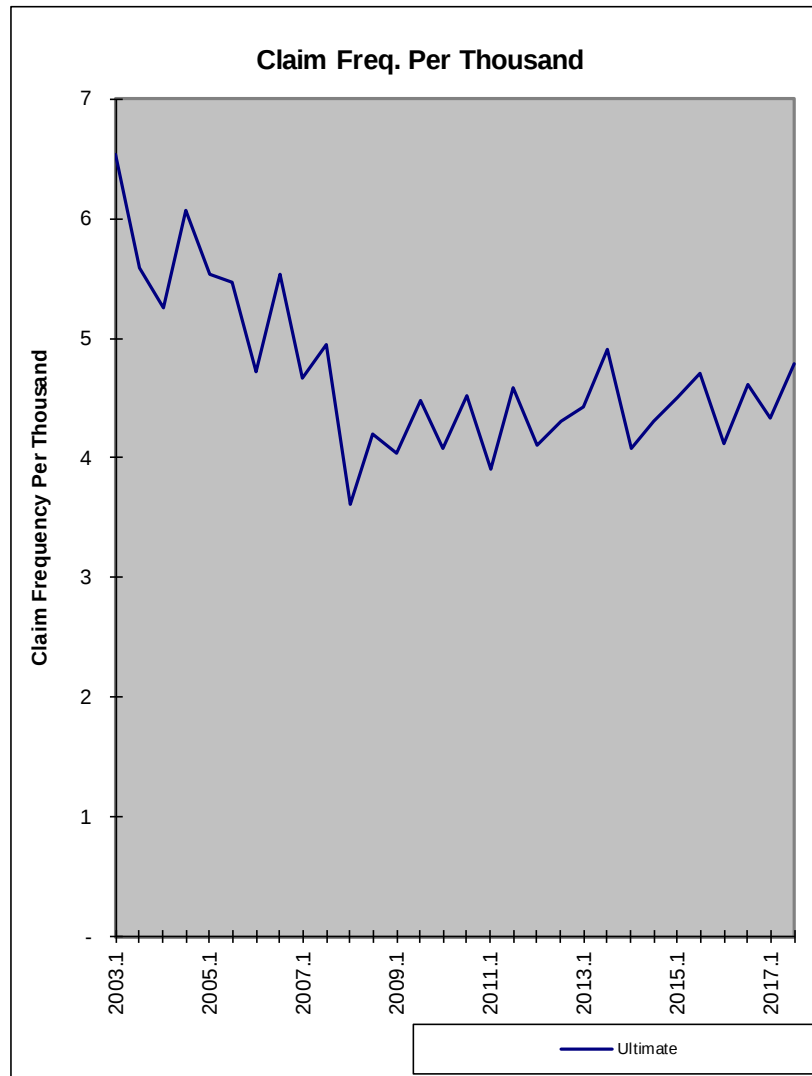
In accordance with Bill 52, Bodily Injury claims that occur on or after April 28, 2010 are subject to an indexed¹³ minor injury cap of \$7,500. Bill 52 changed both the amount of the cap and the definition of a minor injury. Following a Hearing on the matter, the Board accepted an initial reform adjustment factor of 1.17 for Bodily Injury, and ordered that the data be monitored as it emerges so as to measure the change, if any, in the loss trend rate and the actual change in loss costs due to Bill 52.

We have reviewed the Industry Bodily Injury experience that has emerged since the Bill 52 reforms were introduced to determine if the initial reform factor of 1.17 should be amended.

We observe there to have been an increase in the severity level as a result of the introduction of Bill 52 in the first half of 2010. The measurement of the reform factor may change over time, depending upon the data included in the regression analysis. So as to avoid any distortion from the Bill 1 (2003-2) reforms, we calculate a reform factor for this change in the severity level based on the experience period beginning 2004-1. Including a parameter for seasonality, which we find to be significant, we measure a factor of 1.22 based on the time period 2004-1 to 2017-2 and 1.23 based on the time period 2004-1 to 2017-2 (excluding the 2010-2 data point and including seasonality), which exhibit the lowest *p*-values for the reform value.

The Bodily Injury frequency experience over the last fifteen years is presented in the graph below. As depicted in the graph, we do not observe there to have been a change in the frequency level as a result of the introduction of Bill 52 in the first half of 2010. The frequency rate shows a pattern of decline, with a steep decline in 2008. And although the frequency trend rate has been somewhat flatter (smaller negative trend rate) since 2009, just before the reforms were introduced, there is some evidence that this smaller negative trend rate since 2009 may be, in part, as a result of the reforms. We base this comment on an observed similar change (smaller negative trend rate) to the frequency in New Brunswick following the introduction of the minor injury reforms in July 2013.

¹³ As noted earlier, the \$7,500 minor injury cap is indexed. The cap increased to \$7,596 on January 1, 2012; to \$8,100 on January 1, 2013; to \$8,213 on January 1, 2014 \$8,352 on January 1, 2015, \$8,385 on January 1, 2016, \$8,486 on January 1, 2017 and \$8,579 on January 1, 2018.



In the case of Medical-Rehabilitation (Med-Rehab), based on our review of the experience to date, and integration of reform parameters within our loss trend models, we continue to find that there to have been an increase in Med-Rehab severity following the April 2010 Bodily Injury reforms. In our prior review we selected an April 2010 reform factor of 1.22.

In addition to the possible impact of Bill 52 on the Med-Rehab costs, the Fair Insurance Reforms introduce higher Accident Benefit limits effective April 1, 2012 as presented in the following table:

Benefit Category	Previous Benefit	New Benefit (as of April 1, 2012)
Medical and Rehabilitation Expenses	\$25,000	\$50,000
Funeral Expenses	\$1,000	\$2,500
Death Benefits		
Head of Household	\$10,000	\$25,000
Spouse of Head of Household	\$10,000	\$25,000
Dependent	\$2,000	\$5,000
Loss of Income	\$140/week	\$250/week
Principal Unpaid Housekeeper	\$70/week	\$100/week

However, we do not find the data to show any statistically significant measures for the change in benefit level for the April 2012 reforms at this time for Med-Rehab. This may be due to the inherent volatility of the data or because these two changes (April 2010 and April 2012) are so close together. For this reason, our April 2012 reform estimate remains at 1.15 as per our original estimate prepared in July 2011 for the Board.

In the case of Disability Income, as discussed above, and presented in Appendix E, we select a severity level change factor of 1.50 for the April 2012 reforms.

Given the limited data, our selected reform factors for Funeral and Death Benefits remain unchanged at 2.5 and 2.5, respectively.

As discussed in this report, there appears to have been a change in Collision beginning in 2013-1 due to the introduction of the DCPD coverage in April 2013. We find there to be an increase in the trend rate for both these coverages coincident with the introduction of DCPD.

Appendices A - E

Appendix A: Selected reported claim count and reported incurred claim amount development factors and basis for selection.

Appendix B: Estimate of the ultimate loss cost, severity and frequency by accident half-year; and period to period percentage changes.

Appendix C: Reported incurred claim amount, reported paid claim amount, estimated ultimate claim amount and comparison to prior review estimated ultimate claim amount by accident half-year.

Appendix D: Reported incurred claim count, estimated ultimate claim count and comparison to prior review estimated claim count by accident half-year.

Appendix E: Summary of loss trend regression analysis which includes modeled trend results for various time periods; with and without a seasonality parameter; with and without certain data points; with and without certain level change parameters.

- Bodily Injury: Pages 1 to 8
- Property Damage & DCPD: Pages 9 to 14
- Accident Benefits- Disability Income: Pages 15 to 17
- Accident Benefits- Medical-Rehabilitation: Pages 18 to 23
- Accident Benefits- Funeral: Pages 24 to 25
- Accident Benefits- Death Benefits: Pages 26 to 27
- Collision: Pages 28 to 33
- Comprehensive: Pages 34 to 37
- All Perils: Pages 38 to 41
- Uninsured Auto: Pages 42 to 44



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Province of Nova Scotia Private Passengers Vehicles (Excluding Farmers) Claim Count Development Summary Data as of 12/31/17												
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Maturity	Selected Age-to-Ultimate Development Factors											
	Third Party Liability - Body Injury	Third Party Liability - Total Property Damage	Accident Benefits - Death Benefits	Accident Benefits - All Disability Income	Accident Benefits - All Funeral	Accident Benefits - All Medical/Related Expenses	Collision	Comprehensive Theft	Specified Perils	All Perils	Uninsured Auto	Underinsured Motorist
6	1.084	1.030	0.897	0.848	0.997	0.901	0.955	1.128	1.000	1.035	1.130	1.251
12	1.001	1.004	0.912	0.928	0.965	0.961	0.997	1.009	0.988	1.001	0.972	0.957
18	1.012	1.002	0.955	0.961	0.991	0.994	0.999	1.002	0.983	1.000	0.952	0.847
24	1.009	1.001	0.988	0.986	0.993	0.998						

Province of Nova Scotia
Private Passengers Vehicles (Excluding Farmers)

Claim Court Development Selections
Date as of 12/31/17

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Selected Age-to-Ultimate Development Factors												
Maturity	Third Party Liability - Bodily Injury	Third Party Liability - Total Property Damage	Accident Benefits - Death Benefits	Accident Benefits - Disability Income	Accident Benefits - Funeral	Accident Benefits - All Miscellaneous Expenses	Collision	Comprehensive Total	Specified Perils	All Perils	Uninsured Auto	Underinsured Motorist
	Wght Avg. Last 4 Semesters ending in 12	Wght Avg. 6 Semester	Wght Avg. 20 Semesters	Wght Avg. 6 Semester	Wght Avg. 20 Semesters	Wght Avg. 6 Semester	Wght Avg. Last 4 Semesters ending in 12	Wght Avg. Last 4 Semesters ending in 12	Wght Avg. 20 Semesters	Wght Avg. Last 4 Semesters ending in 12	Wght Avg. All Semesters	Wght Avg. All Semesters
6	Wght Avg. 6 Semester	Wght Avg. 6 Semester										

Province of Nova Scotia
Private Passengers Vehicles (Excluding Farmers)
Reported Incurred Claim Amount and ALAE Loss Development Summary
Data as of 12/31/17

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Maturity	Selected Age-to-Limit Development Factors											
	Third Party Liability - Bodily Injury	Third Party Liability - Total Property Damage	Accident Benefits - Death Benefits	Accident Benefits - All Disability Income	Accident Benefits - Funeral	Accident Benefits - All Medical/Rehab Expenses	Collision	Comprehensive - Total	Specified Perils	All Perils	Uninsured Auto	Underinsured Motorist
6	2.136	0.983	0.998	2.888	0.936	0.834	0.937	1.051	1.136	0.950	2.262	4.396
12	1.632	1.017	0.941	2.817	0.934	1.068	0.989	1.000	0.983	0.994	1.619	2.714
18	1.516	1.012	0.969	2.456	0.960	1.070	0.994	0.998	0.969	0.997	1.390	1.876
24	1.387	1.009	0.994	1.994	0.976	1.042	0.996	0.998	0.963	0.998	1.225	1.599
30	1.272	1.009	0.993	1.653								

