NOVA SCOTIA RISK SHARING POOL

AUGUST 2016 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

Related Bulletin: F16-073 Nova Scotia RSP August 2016 Operational Report

Related Quarterly Valuation Highlights:

Actuarial Quarterly Valuation Highlights Risk Sharing Pools as at June 30, 2016

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FACILITY Association

ACTUARIAL HIGHLIGHTS

RSP NOVA SCOTIA

OPERATIONAL REPORT

AUGUST 2016

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1 Summary

1.1 Valuation Schedule (Fiscal Year 2016)

The August 2016 Operational Report incorporates the results of an updated valuation (as at June 30, 2016) – the impact of the implementation of the valuation is discussed in section 1.2. The table immediately below summarizes the implemented valuations and future scheduled valuations for fiscal year 2016.

NOVA SCOTIA RISK SHARING POOL
FISCAL YEAR 2016 – SCHEDULE OF VALUATIONS

Valuation Date	Discount Rate (per annum)	Operational Report	Description of Changes
Sep. 30, 2015 (completed)	0.70% mfad: 25 bp	Oct. 2015	updated valuation (roll forward): accident year 2015 loss ratio decreased 2.2 points to 95.1%; discount rate decreased by 20 basis points; no change to selected margins for adverse deviations
Dec. 31, 2015 (completed)	0.64% mfad: 25 bp	Mar. 2016	updated valuation: accident year 2015 loss ratio decreased 4.9 points to 90.2%; accident year 2016 loss ratio decreased 5.1 points to 94.7%; discount rate decreased by 6 basis points; no change to selected margins for adverse deviations
Mar. 31, 2016 (completed)	0.61% mfad: 25 bp	May 2016	updated valuation (roll forward): accident year 2016 loss ratio increased 0.5 points to 95.2%; discount rate decreased by 3 basis points; no change to selected margins for adverse deviations
Jun. 30, 2016 (completed)	0.56% mfad: 25 bp	Aug. 2016	updated valuation: accident year 2016 loss ratio decreased 0.4 points to 94.8%; discount rate decreased by 5 basis points; selected claims development margins for adverse deviations were updated
Sep. 30, 2016		Oct. 2016	update valuation (roll forward):

Under the proposed schedule for fiscal year 2016, the "off-half" valuation quarters ending March 31, 2016 and September 30, 2016 would not reflect a full valuation update of assumptions, but would rather "roll-forward" key assumptions from the previous valuation.

1.2 New Valuation

A valuation of the Nova Scotia Risk Sharing Pool ("RSP") as at June 30, 2016 has been completed since last month's Operational Report and the results of that valuation have been incorporated into this month's Report. The valuation was completed by the Facility Association's internal actuarial group in conjunction with, and approved by, the appointed actuary, under the hybrid model for actuarial services. Additional detail will be provided in an "Actuarial Highlights – Quarterly

Valuation" report to be posted to the FA website at the same time as this report.

The valuation implementation impact is summarized in the tables immediately below.

Summary of Impact ($000s) of Implementing Result of Valuation as at June 30, 2016[1]

NS	unfav / (fav) for the month and ytd					
	IMPACT in $000s from changes in:					
	ults & payout patterns			dsct rate	margins	
	Nominal [1]	apv adj. [2]	sub-tot [3]	apv adj. [4]	apv adj. [5]	TOTAL [6]
PAYs	(250)	(45)	(295)	41	(638)	(892)
CAY	(40)	(12)	(52)	15	(150)	(187)
Prem Def	198	14	212	11	(130)	93
TOTAL	(92)	(43)	(135)	67	(918)	(986)

As indicated in the table above, the incorporation of the new valuation had an estimated ***$1.0 million favourable impact*** on the month's net result from operations, subtracting an estimated 10.1 points (see table below) from the **year-to-date Combined Operating Ratio** to end at **129.8%**.

Summary of Impact (% YTD EP) of Implementing Result of Valuation as at June 30, 2016

NS	ytd EP 9,754 (actual)					
	IMPACT unfav / (fav) as % ytd EP from changes in:					
	ults & payout patterns			dsct rate	margins	
	Nominal [1]	apv adj. [2]	sub-tot [3]	apv adj. [4]	apv adj. [5]	TOTAL [6]
PAYs	(2.6%)	(0.5%)	(3.0%)	0.4%	(6.5%)	(9.1%)
CAY	(0.4%)	(0.1%)	(0.5%)	0.2%	(1.5%)	(1.9%)
Prem Def	2.0%	0.1%	2.2%	0.1%	(1.3%)	1.0%
TOTAL	(0.9%)	(0.4%)	(1.4%)	0.7%	(9.4%)	(10.1%)

The impact of the nominal changes is shown in column [1] of the two preceding summary tables. The change in the selected nominal ultimates was favourable by $0.1 million overall. This reflects the impact attributable to the change in the selected ultimate loss ratio (i.e. for each accident year, it is the product of life-to-date earned premium for the accident year and the change in the selected ultimate loss ratio).

The prior accident years overall showed a $0.3 million favourable variance, which is attributed to recorded activity process variance. This favourable change is 1.0% of the prior accident years' nominal unpaid balance of $24.9 million determined at the end of last month (July 2016). As a smaller pool, it is subject to higher levels of process variance, driving volatility in the ultimate

[1]In these tables, "PAYs" refers to prior accident years, "CAY" refers to the current accident year, and "Prem Def" refers to the provision for premium deficiency or the deferred policy acquisition asset (as applicable). "Nominal" refers to changes excluding any actuarial present value adjustments, whereas "apv adj." refers to actuarial present value adjustments.

The columns under the heading "ults & payout patterns" reflect the impact of changes in the valuation selected ultimates and claims payment patterns (i.e. based on unchanged selection of discount rates and margins for adverse deviation). The column "dsct rate" reflects the impact of the change in the selected discount rate and the column "margins" reflects the impact of any changes in selected margins for adverse deviations.

selection.

The current accident year and premium deficiency impacts are a result of the changes in the selected loss ratios for accident years **2016** (down 0.4 points from 95.2% to **94.8%**) and for accident year **2017** (up 2.4 points from 95.0% to **97.4%**). Again, as a smaller pool, one can expect more volatility around projections of current and future expected loss ratios.

The impacts related to actuarial present value adjustments are split into the impact prior to any change in the selected discount rate and margin changes (at the level they were selected i.e. coverage and accident half-year), the impact of then updating the discount rate, and finally the impact of any changes to the margins (at the level they were selected). The changes in actuarial present value adjustments are shown in the summary tables in columns [2], [4], and [5].

Column [2] recognizes that changing the nominal selections also changed the unpaid estimates (including changes to the relative mix by government line, which had an impact on the weighted-average margins for adverse deviations or "MfADs"). It also reflects the fact that we updated the projected emergence of claims payments, resulting in a change in the projected cash flows. These changes generated a favourable change of $43 thousand in the actuarial present value adjustments, prior to any changes in the selected discount rate and/or MfADs.

Claims payment emergence patterns were updated and cash flows were reviewed against the selected risk-free yield curve, derived from Government of Canada benchmark bond yields monthly series using values for June 2016. Column [4] accounts for the change in the **discount rate** selected (decreased 5 basis points to **0.56%**), indicating an unfavourable impact of $67 thousand. The impact *related only to claims liabilities* (i.e. PAYs plus CAY) was $56 thousand (projected $60 thousand impact at December 31, 2016) – this compares to the $35 thousand change one would estimate as the impact by interpolation using the interest rate sensitivity table provided in last month's Actuarial Highlights.

Column [5] accounts for any changes to selected MfADs. The selected **investment rate MfAD** was **left unchanged at 25 basis points**. However, selected **claims development MfADs were updated** for some accident years and coverages, resulting in an estimated **overall favourable impact of $0.9 million**.

Consideration was given to recent legal decisions and changes in legislation / regulation as outlined in the section 1.4.

1.3 Appointed Actuary and Hybrid Actuarial Services Model

Liam McFarlane of Ernst & Young LLP is Facility Association's Appointed Actuary (effective as of June 1, 2013).

Facility Association operates under a "hybrid" model in relation to the management and provision of actuarial services. Under this model, actuarial services are performed by both Facility Association's internal staff and its external actuarial consulting firm. The hybrid model approach maximizes the efficiency of resource allocation while providing access to additional expertise and capacity as needed.

1.4 Consideration of Recent Legal Decisions and Changes in Legislation / Regulation

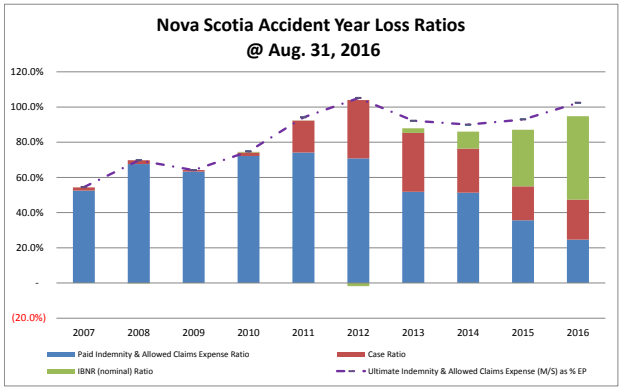
Consideration and assessment of potential impacts of legal decisions and changes in legislation /

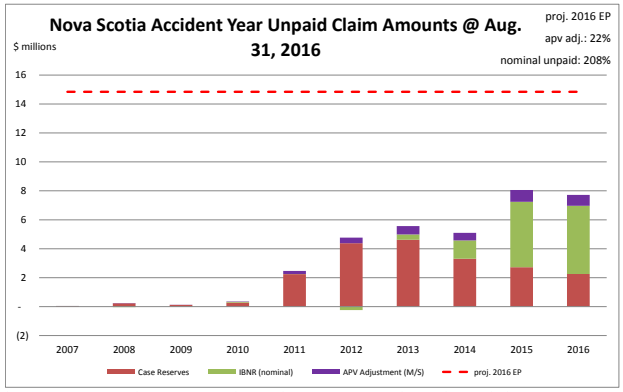
regulation constitutes a regular part of the valuation process. Descriptions of some of the more recent changes are provided below.

Nova Scotia Bill 86, known as the "**Fair Auto Insurance Reforms**" (FAIR) was introduced on November 9, 2011. FAIR was implemented in two phases. Regulations related to FAIR Phase I (effective April 1, 2012) was published in the Royal Gazette Part 11, on January 13, 2012. These include provisions for enhanced mandatory benefits under Section B (these include medical, rehabilitation, funeral, death and loss of income benefits), prohibiting premium increases if no claim is made, assistance for volunteer Fire Departments, and periodic review of Auto Insurance Law. FAIR Phase II (effective April 1, 2013) includes provisions for diagnostic and treatment protocols for minor injuries, introduction of direct compensation for property damage, and limited liability and new priority of pay rules for rental companies. With the current valuation, reform adjustments (originally introduced with the June 30, 2014 valuation) were explicitly taken into account with the updated industry trend analysis (completed using industry data as at December 31, 2015), impacting the selection of ultimates.

1.5 Current Provision Summary

The charts immediately below show the current levels of claim liabilities[2] booked by accident year. The left chart displays life-to-date payments, case reserves, IBNR, and the total including actuarial present value adjustments against accident year earned premium. The right chart shows the associated dollar amounts for the components of the claim liabilities and the current projected amount of 2016 full year earned premium (the red hash-mark line) to provide some perspective.





"M/S" refers to "Member Statement" values – that is, actuarial present value adjustments at the selected discount rate.

The current actuarial present value adjustments balance ($3.3 million – see table at the top of the next page) represents 22% of the earned premium projected for the full year 2016 (see the upper right corner of the right chart above). If our current estimates of the nominal unpaid amounts prove to match actual claims payments, the actuarial present value adjustments will be released into the net operating result over future periods.

[2]Claim liabilities refer to provision for unpaid indemnity and allowed claims expenses. Allowed claims expenses are first party legal and other expenses as listed in the RSP Claims Guide. Claims expenses paid through the member company expense allowance are NOT included in this discussion.

claim liabilities ($000s)	amt	%
case	20,208	59.2%
ibnr	10,638	31.1%
M/S apv adjust.	3,317	9.7%
M/S total	34,163	100.0%

The table to the left breaks down the Member Statement (M/S) claim liabilities total into component parts, showing that the majority of the claim liabilities for this pool is in case reserves. Approximately 87% of the IBNR balance relates to accident years 2015 and 2016 (see Exhibit B). Approximately 91% of the M/S total claim liabilities are related to accident years 2012-2016 inclusive (i.e. the most recent 5 accident years) – this is a relatively high percentage, reflecting the relatively recent start time for this pool (2007).

The tables immediately below summarize the premium liabilities and the total policy liabilities.

premium liabilities ($000s)	amt	%
unearned prem	8,594	93.3%
prem def/(dpac)	(177)	(1.9%)
M/S apv adjust.	796	8.6%
M/S total	9,213	100.0%

policy liabilities ($000s)	amt	%
claim	30,846	71.1%
premium	8,417	19.4%
M/S apv adjust.	4,113	9.5%
M/S total	43,376	100.0%

2 Activity During the Month of August 2016

2.1 Recorded Premium and Claims Activity

The table immediately below summarizes the extent to which premiums and claims amounts recorded during the month differ from projections reflected in the prior month's Operational Report[3].

Nova Scotia RSP Actual vs Projected Summary: Recorded Transaction Amounts ($ thousands)

Table 01	Earned Premium		Paid Indemnity & Allowed Claims Expense		Case increase / (decrease)		Recorded increase / (decrease)	
Accident Year	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	(0)	(0)	592	363	53	260	646	624
2014	(2)	(2)	139	93	11	23	150	116
2015	(10)	(10)	57	(18)	(94)	(159)	(37)	(177)
2016	1,291	(13)	475	159	297	(85)	772	75
TOTAL	1,280	(24)	1,264	598	266	39	1,530	637

(Recorded transaction amounts exclude IBNR & other actuarial provisions)

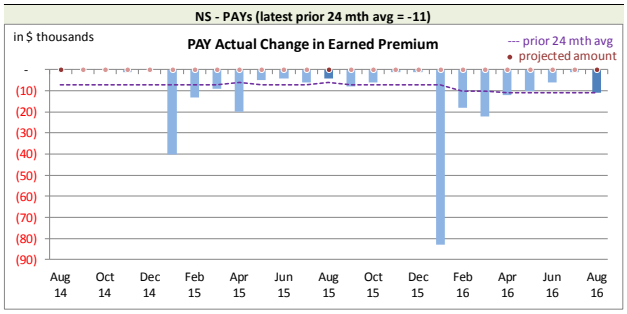
Claims transaction activity is generally volatile and changes from one month to the next are anticipated due to this natural "process variance" (this is particularly true where volumes are low). Each month, the projection variances are reviewed for signs of projection bias and to identify potential ways to reduce the level of the variance. Commentary from our review is provided in the sub-sections that follow.

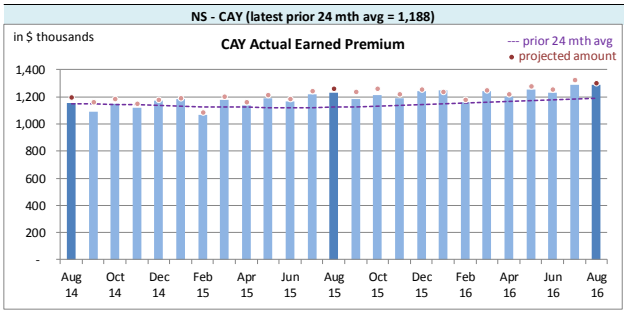
[3]There may be rounding differences in values in this document compared with the associated Bulletin and/or Operational Report.

2.1.a Actual vs. Projected (AvsP): Earned Premium

The charts immediately below show actual **earned premium**[4] activity in each of the most recent 25 calendar months, along with a "prior 24-month average" to show how each month's actual compares with the average amount of the preceding 24 calendar months.

*Nova Scotia RSP Actual **Earned Premium** by Calendar Month*

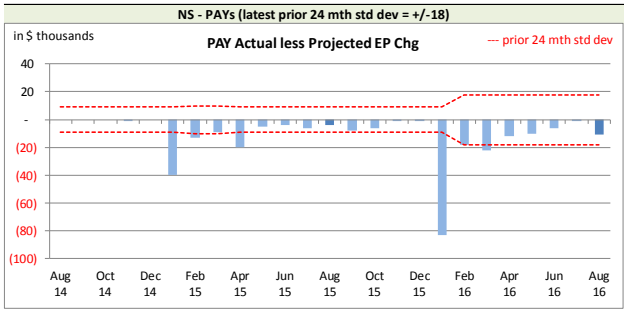


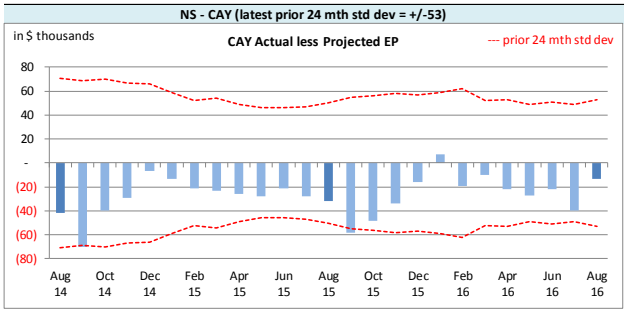


Earned premium changes during a given calendar month in relation to prior accident years tend to be at modest levels, although relatively high levels seem to occur in January each year.

The associated variance between the actual changes and the projections from the previous month are shown in the charts immediately below. **Earned premium** change projections are all attributed to the current accident year as the projection upload does not accept **earned premium** changes for other accident years. We do not see this limitation as being significant for our purposes, but it does mean that the actual less projection variance will equal the actual **earned premium** change in relation to prior accident years.

*Nova Scotia RSP Actual vs. Projected Summary: **Earned Premium** Variances by Calendar Month*





On Latest $ thousands		
Earned Premium	PAYs	CAY
Mthly Avg EP Chg (prior 24 mths)	(11)	1,188
std dev	18	53
A-P <> std dev	5	2
% <> std dev	20.0%	8.0%
norm <> std dev	31.7%	31.7%

We project **earned premium** changes from known unearned premium and projected written premium levels, but upload the total projections as current accident year (CAY). This process has generated bias[5], with actuals generally lower than projected. However, the magnitude is not

[4]Premium is earned on a daily basis based on the transaction term measured in days. As a result, months with 31 days earned relatively more than those with 30 days, and February earns the least.

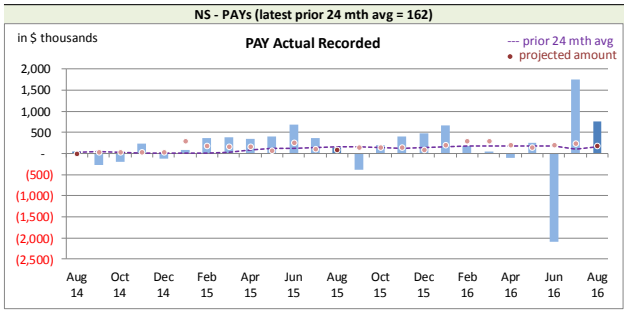
[5]The prior accident years (PAYs) variances will show bias as the projection upload forces all earned premium projections to be attributed to the current accident year.

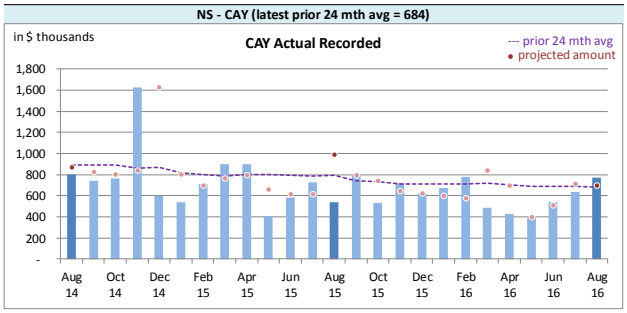
high relative to monthly premium, and the variances are within the prior 24-month standard deviation more often than indicated by a normal distribution (see table at bottom of previous page). We are in the process of modifying our projections processes in an attempt to account for bias in the current process. Over time, we may consider other projection approaches to narrow monthly variance levels further, but it is not currently deemed a priority.

2.1.b AvsP: Recorded Indemnity & Allowed Claims Expense

Actual **recorded** activity (**paid** and case reserve changes) over the last 25-month period are shown in the charts immediately below, including the "prior 24-month average" level.

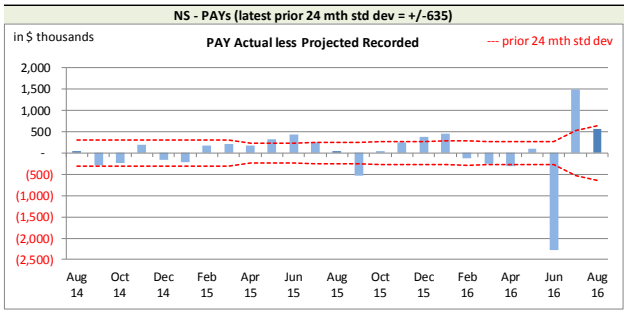
*Nova Scotia RSP Actual **Recorded** by Calendar Month*

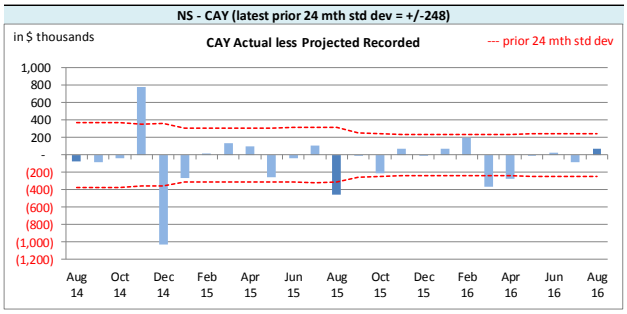




Recorded activity variances from the previous month's projections are shown in the charts immediately below, including the "prior 24-month standard deviation" levels.

*Nova Scotia RSP Actual vs Projected Summary: **Recorded** Variances by Calendar Month*





On Latest $ thousands		
Recorded	PAYs	CAY
Mthly Avg Recorded (prior 24 mths)	162	684
std dev	635	248
A-P <> std dev	9	5
% <> std dev	36.0%	20.0%
norm <> std dev	31.7%	31.7%

With respect to **recorded** indemnity & allowed claims expense activity, caution must be exercised in reviewing the variances as this is a small pool and single claim transactions that are normal course for the business may look "unusual" and generate relatively "significant" variances that in nominal value terms are not that significant. That said, for prior accident years' (PAYs) **recorded** variances (left chart above), the percentage of months (36%) with variances in excess of one standard deviation suggests the projection process performs slightly worse than simply projecting based on a 24-month average. We have also noticed that 13 of the last 19 months have shown PAY **recorded** activity in the $300 thousand plus level, whereas this would be considered unusual prior to 2015. This is creating repeated variances outside the one-standard deviation band (9 of the last 16 months are outside of

this band). We believe part of the increase is related to the normal "maturation" of the RSP, which was not fully reflected in the projections until recently.

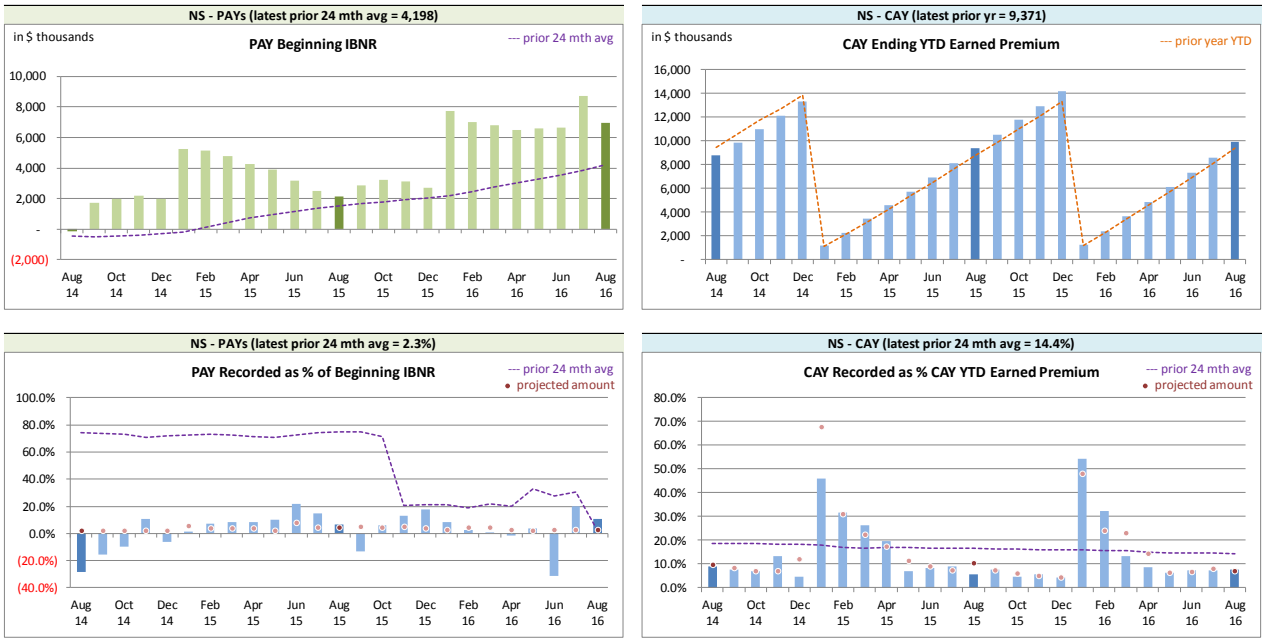
As noted last month, a member is in the process of completing a comprehensive review of their open claims transactions as reported to the FA RSP system. Our review last month (July 2016) noted that correcting transactions were posted to reverse claim closures (and associated case reserve takedowns) posted by this member during the prior month (June 2016). Correcting transactions to reverse the prior claim closures continued to be posted in the current month (August 2016). Our investigation and discussion with the member, in conjunction with review by the FA internal audit team, continues to ensure our records are accurate in relation to their own records on their RSP claims portfolio.

The current accident year (CAY) **recorded** variances (right chart at bottom of previous page), with 20% of months with variances in excess of a 24-month standard deviation suggests the projection process performs not much better than simply projecting based on a 24-month average. We do not see evidence of bias in the variances.

The method for establishing IBNR adjusts automatically for changes in **earned premium** and **recorded** claims activity level (see sections 2.2 and 3).

We have included, for reference, additional charts at the top of the next page related to levels influencing **recorded** activity. Note in particular the increase in the level of PAY beginning IBNR. Part of this will be as a response to valuations and showing up as a beginning IBNR change one month after the valuation is implemented (i.e. April, June, September, and November), and part will also reflect the maturity level of the RSP.

Nova Scotia RSP Levels that influence[6] ***Recorded*** *activity by Calendar Month*



We track beginning prior accident years' IBNR as **recorded** activity "comes out of" IBNR. Changes in the prior accident years' beginning IBNR (see upper left chart at bottom of previous page) occur for several possible reasons:

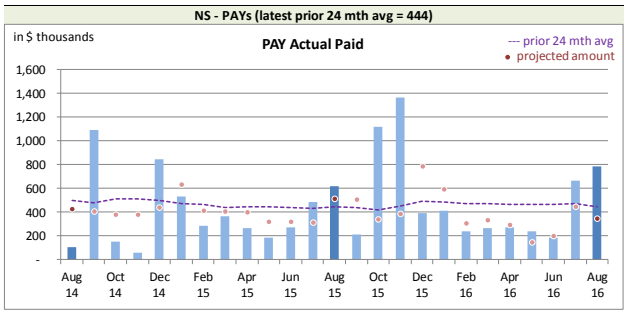
- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years' ultimate (will show up as a beginning IBNR change one month after the valuation is implemented, i.e. the change will generally show in April, June, September, and November).

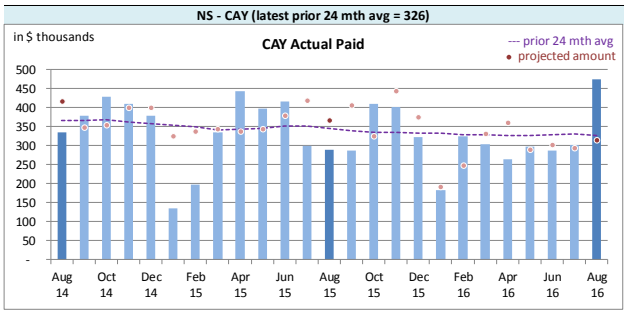
2.1.c AvsP: Paid Indemnity & Allowed Claims Expense

The charts at the top of the next page show actual **paid** activity in each of the most recent 25 calendar months, along with a "prior 24-month average" to show how each month's actual compares with the average amount of the preceding 24 calendar months.

[6]Our recorded activity projections for the prior accident years are based on selected ratios of recorded activity to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date IBNR to year-to-date selected ultimate (i.e. selected LR x earned premium), deriving year-to-date recorded as selected ultimate less IBNR. In both cases, the ratio selection is based on our review of the more recent recorded activity and recent AvsP analyses.

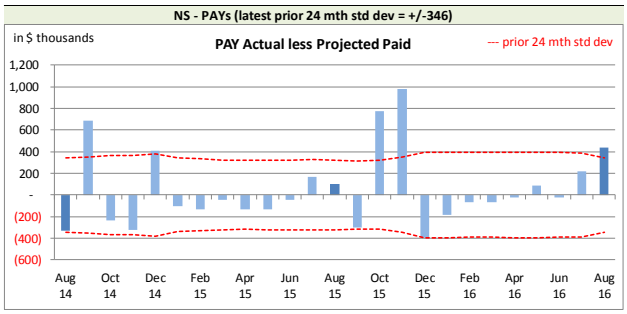
*Nova Scotia RSP Actual **Paid** by activity Calendar Month*

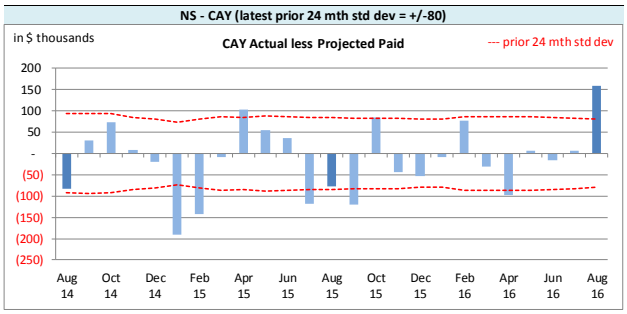




The charts immediately below show the actual less projected **paid** variances for the last 25 calendar months, along with bands for the "prior 24-month standard deviations" to show how the variances from projection compare with historical standard deviations.

*Nova Scotia RSP Actual vs Projected Summary: **Paid** Variances by Calendar Month*





On Latest $ thousands		
Paid	PAYs	CAY
Mthly Avg Paid (prior 24 mths)	444	326
std dev	346	80
A-P <> std dev	6	8
% <> std dev	24.0%	32.0%
norm <> std dev	31.7%	31.7%

With respect to **paid** indemnity & allowed claims expense activity, caution must be exercised in reviewing the variances as this is a small pool and single claim transactions that are normal course for the business may look "unusual" and generate relatively "significant" variances that in nominal value terms are not that significant. With 24% of months with prior accident years (PAYs) **paid** variances in excess of a prior 24-month standard deviation (left chart above), this suggests the projection process has performed somewhat better than one based simply on a 24-month average. We do not see evidence of bias in the projections.

The PAY **paid** variance for the current month was outside the one standard deviation band. The activity was reviewed and confirmed, with the variance attributed to process variance.

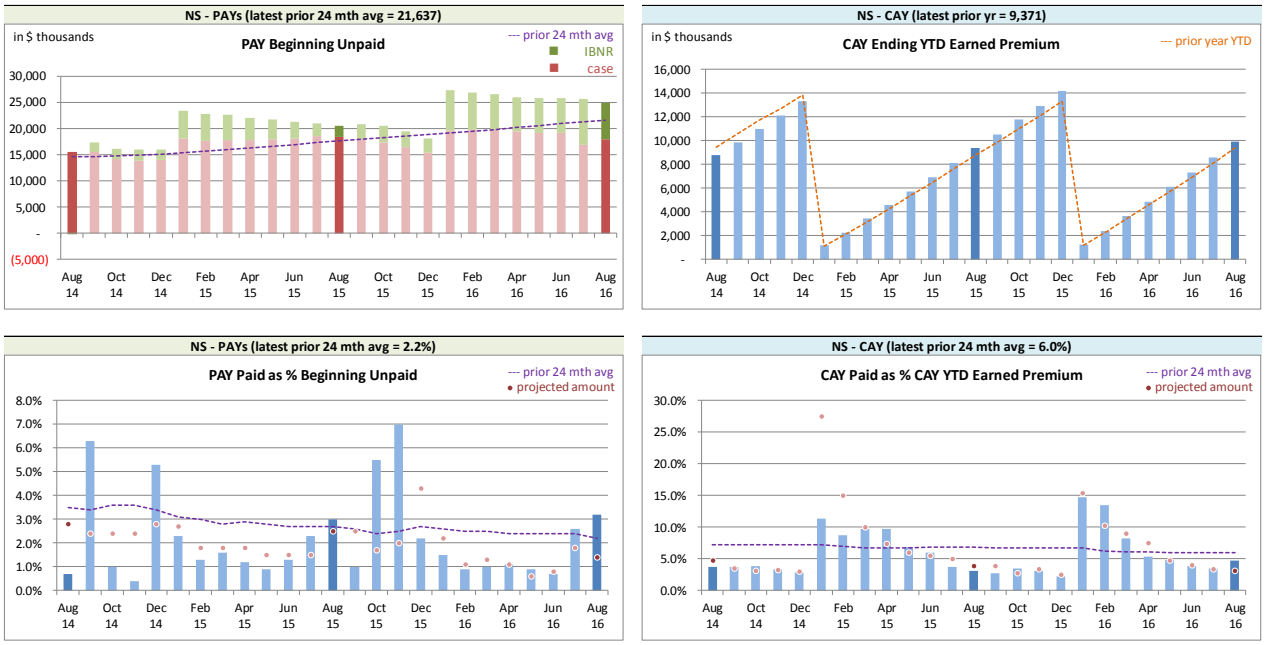
The current accident year (CAY) **paid** variances (right chart above) do not appear to indicate bias. However, at 32%, the percentage of months with variances in excess of a prior 24-month standard deviation suggests the projection process performs no better than projections based simply on a 24-month average. We also note that actuals have been lower than projected for 9 of the last 14 months (and 3 of those months had the variance outside of a standard deviation). For these months, actuals have been lower than the corresponding months in the prior year, and we also note that the key ratio we use (**paid** to ytd **earned premium**) has also been "unusually" low. We continue to monitor and

look for ways to improve projections.

The CAY **paid** variance for the current month was outside the one standard deviation band. The activity was reviewed and confirmed, with the variance attributed to process variance.

We have included, for reference, additional charts immediately below related to levels influencing **paid** activity. Both case and IBNR increases contribute to the increase of PAY beginning unpaid. This is somewhat expected, given the maturity level of the RSP.

Nova Scotia RSP Levels that influence[7] ***Paid*** *activity by Calendar Month*



We track beginning prior accident years' unpaid balance (case and IBNR) as **paid** activity "comes out of" the unpaid balance. Changes in the prior accident years' beginning unpaid balance (see upper left chart at bottom of previous page) occur for several possible reasons:

- to offset actual **paid** activity (may reduce case or IBNR or both);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years' ultimate (will show up as a beginning unpaid balance change one month after the valuation is implemented, i.e. the change will generally show in April, June, September, and November).

2.2 Actuarial Provisions

An "ultimate loss ratio matching method" (described in section 3) was used to determine the month's

[7]Our paid projections for the prior accident years are based on selected ratios of paid to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date paid to year-to-date selected ultimate indemnity (i.e. selected LR x earned premium). In both cases, the ratio selection is based on our review of the more recent recorded activity and recent AvsP analyses.

IBNR[8], and factors were applied to the nominal unpaid claims liability (case plus IBNR) to determine the discount amount (shown as a negative value to indicate its impact of reducing the liability) and the Provisions for Adverse Deviations. The loss ratios and the factors used to determine the current month's provisions and projections were based on the applicable valuation. The table immediately below summarizes variances in provisions included in the August 2016 Operational Report and the associated one-month projections from last month's Report.

Nova Scotia RSP Actual vs Projected Summary: IBNR and APV Amounts ($ thousands)

Table 02

			actuarial present value adjustments					
	IBNR		Discount Amount		Provisions for Adverse Deviations		IBNR + actuarial present value adjustments	
Accident Year	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	145	(758)	(149)	22	1,378	(449)	1,374	(1,185)
2014	1,263	(51)	(59)	10	583	(107)	1,787	(148)
2015	4,526	(15)	(116)	10	928	(189)	5,338	(194)
2016	4,704	(127)	(125)	11	877	(180)	5,456	(296)
TOTAL	10,638	(951)	(449)	53	3,766	(925)	13,955	(1,823)

The IBNR provision is $1.0 million lower than projected last month, counterbalancing the recorded claims activity and adjusting for the earned premium variance impacts indicated in section 2.1, and due to the valuation implementation.

Exhibit G shows the accident year IBNR amount change from last month to this month broken down into:

(i) the change projected last month;

(ii) the additional change due to variances in earned premium (because we apply a loss ratio to earned premium in determining ultimate level) and/or recorded claims (as IBNR is calculated as ultimate less recorded) differences; and

(iii) the additional change due to valuation implementation impacts (as applicable)

The variances associated with (ii) above are discussed in sections 2.1.a and 2.1.b.

The table at the top of the next page summarizes the variances in the provisions for premium deficiency liability / (deferred policy acquisition cost asset) included in the August 2016 Operational Report and the one-month projections from last month's Report. This RSP is in a deferred policy acquisition cost asset position (shown as a negative value) before actuarial present value adjustments and in a premium deficiency position (shown as a positive value) after actuarial present value adjustments. Actuarial present value adjustments increase the expected future policy obligations (costs) associated with the unearned premium and cause the write down of the asset value and the creation of the liability. The variances indicated are due to the unearned premium variance and due to the valuation implementation.

[8]For ease of discussion, "IBNR" is used in place of "provisions for incurred but not recorded (IBNR) and development".

Nova Scotia RSP Actual vs Projected Summary: Premium Deficiency / (DPAC) Amounts ($ thousands)

Table 03	Premium Deficiency / (Deferred Policy Acquisition Costs)		actuarial present value adjustments		Premium Deficiency / (DPAC) including actuarial present value adjustments	
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
balance:	(177)	191	796	(93)	619	98
balance as % unearned premium:	(2.1%)	2.3%	9.3%	(1.3%)	7.2%	1.0%
actual unearned premium:	8,594					
less projected:	135					

3 Ultimate Loss Ratio Matching Method

An "ultimate loss ratio matching method" continues to be applied to the current month and two projected months shown in the Operational Reports, with IBNR determined by accident year as follows:

(a) Earned premium to-date
(b) Ultimate loss[9] ratio per latest valuation
(c) Estimated ultimate incurred = (a) x (b)
(d) Recorded indemnity & allowed claims expense to-date
(e) IBNR = (c) – (d)

4 Calendar Year-to-Date Results

The table below summarizes the calendar year-to-date results for indemnity & allowed claims expenses[10], including IBNR.

In calculating the amounts as percentages of earned premium, the calendar year-to-date earned premium has been used, which includes not only the earned premium associated with the current accident year, but also earned premium adjustments related to prior accident years. Specifically, the current accident year (CAY) ratio in the table is 96.4% rather than 94.8% (the valuation ultimate ratio for accident year 2016), as the calendar year-to-date earned premium includes prior accident year earned premium adjustments. (Note that the ratios in this table may differ slightly from those shown in the Nova Scotia RSP Summary of Operations due to rounding.)

Nova Scotia RSP Calendar Year-to-Date Indemnity & Allowed Claims Expense Summary ($ thousands)

Table 04	YTD Nominal Values		YTD actuarial present value adjustment		YTD Total		Change from Prior Month YTD	
	Amount	% EP	Amount	% EP	Amount	% EP	Amount	LR pts
PAYs	(359)	(3.7%)	(928)	(9.5%)	(1,287)	(13.2%)	(1,008)	(9.9%)
CAY	9,402	96.4%	752	7.7%	10,154	104.1%	1,139	(2.3%)
TOTAL	9,043	92.7%	(176)	(1.8%)	8,867	90.9%	131	(12.2%)

("% EP" based on 2016 calendar year-to-date earned premium; ratios may not total due to rounding)

[9] "Loss" here refers to indemnity and allowed claims expenses, but does not include the claims expense allowance included in member company overall expense allowances ("Expense Allowance" in the Operational Report).

[10] Allowed claims expenses are first party legal and other expenses as listed in the RSP Claims Guide. Claims expenses paid through the member company expense allowance are NOT included in this analysis.

The prior accident years (PAYs) changes from last month are due to the release of the actuarial present value adjustments with claims payments and due to the valuation implementation. The loss ratio change year-to-date reflects not only changes in the prior accident year levels, but also the increase in the calendar year-to-date earned premium with an additional month's earned premium and due to the valuation implementation.

For the current accident year, changes in the year-to-date total reflects the additional month's exposure and regular changes to actuarial present value adjustments as the year ages and due to the valuation implementation.

5 Current Operational Report – Additional Exhibits

Section 6 provides exhibits pertaining to the actuarial provisions reflected in the current month's Operational Report.

IBNR (including actuarial present value adjustments) presented in section 6, Exhibit A, were derived on a discounted basis, and therefore reflect the time value of money and include an explicit provision for adverse deviations in accordance with accepted actuarial practice in Canada.

IBNR presented in section 6, Exhibit B, does NOT include any actuarial present value adjustments. The "Total IBNR" from this exhibit is shown in the Operational Report as "Undiscounted IBNR".

The ultimate loss ratios detailed in section 6, Exhibit B, refer to the estimates derived on the basis of various actuarial methodologies applied to the experience of the Nova Scotia Risk Sharing Pool for the purposes of the most recent quarterly valuation. As discussed in section 3, IBNR reflected in the current month's Operational Report was derived as the difference between the estimated ultimate for the claims amount (i.e. earned premium x ultimate loss ratio) and the associated current recorded amounts (life-to-date payments plus current case reserves).

6 EXHIBITS

The exhibits listed below are provided on the pages that follow:

EXHIBIT A	IBNR for Member Sharing – includes Actuarial Present Value Adjustments
EXHIBIT B	IBNR
EXHIBIT C	Premium Liabilities
EXHIBIT D	Projected Year-end Policy Liabilities
EXHIBIT E	Discount Rate & Margins for Adverse Deviations
EXHIBIT F	Interest Rate Sensitivity
EXHIBIT G	Components of IBNR Change During Month

EXHIBIT A

IBNR for Member Sharing – includes Actuarial Present Value Adjustments

TABLE EXHIBIT A

IBNR + M/S actuarial present value adjustments

discount rate 0.56%

interest rate margin 25 basis pts

Amounts in $000s					
Accident Year	Actual Jul. 2016	Actual Aug. 2016	Projected Sep. 2016	Projected Oct. 2016	Projected Dec. 2016
2007	6	5	5	5	4
2008	19	(12)	(12)	(11)	(10)
2009	(10)	(12)	(12)	(12)	(13)
2010	119	90	89	87	85
2011	296	223	217	214	206
2012	753	143	136	134	129
2013	1,426	937	921	900	863
2014	1,975	1,787	1,808	1,758	1,683
2015	5,681	5,338	5,503	5,283	4,877
2016	5,089	5,456	5,873	6,485	4,214
TOTAL	15,354	13,955	14,528	14,843	12,038
Change		(1,399)	573	315	

Please see Exhibit G, page 1 for Components of Change during Current Month

EXHIBIT B

IBNR

TABLE EXHIBIT B — Amounts in $000s

IBNR

Ultimate Loss Ratio	Accident Year	Actual Jul. 2016	Actual Aug. 2016	Projected Sep. 2016	Projected Oct. 2016	Projected Dec. 2016
54.3%	2007	1	1	1	1	1
69.5%	2008	(31)	(32)	(31)	(30)	(28)
64.0%	2009	(21)	(21)	(21)	(21)	(21)
74.5%	2010	69	59	58	57	55
92.4%	2011	52	15	15	15	15
102.2%	2012	152	(238)	(236)	(231)	(221)
88.0%	2013	703	361	357	346	332
86.0%	2014	1,348	1,263	1,282	1,237	1,188
87.1%	2015	4,681	4,526	4,662	4,452	4,103
94.8%	2016	4,287	4,704	5,030	5,556	3,201
	TOTAL	11,241	10,638	11,117	11,382	8,625
	Change		(603)	479	265	

Please see Exhibit G, page 2 for Components of Change during Current Month

EXHIBIT C

Discount Rate & Margins for Adverse Deviations

TABLE EXHIBIT C

Premium Liabilities	Actual Jul. 2016	Actual Aug. 2016	Projected Sep. 2016	Projected Oct. 2016	Projected Dec. 2016
	Amounts in $000s				
(1) unearned premium (UP)	8,212	8,594	8,682	8,517	7,902
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	106.5%	107.2%	107.5%	107.9%	108.7%
(3) expected future costs {(1) x (2)}	8,744	9,213	9,333	9,190	8,591
(4) premium deficiency / (deferred policy acquisition cost)	532	619	651	673	689
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	95.9%	97.9%	98.2%	98.6%	99.3%
(6) expected future costs {(1) x (5)}	7,879	8,417	8,529	8,396	7,849
(7) premium deficiency / (deferred policy acquisition cost)	(333)	(177)	(153)	(121)	(53)

EXHIBIT D

Projected Year-end Policy Liabilities

The table below presents the projected policy liabilities as at December 31, 2016, broken down by component.

Nova Scotia	Projected Balances as at Dec. 31, 2016 ($000s)							
ending 2016	nominal values			actuarial present value adjustments (apvs)				
Acc Yr	Case	IBNR	Total Unpaid	discount	investment PfAD	development PfAD	Total apvs	TOTAL
2007	33	1	34	-	-	3	3	37
2008	210	(28)	182	(1)	1	18	18	200
2009	114	(21)	93	(1)	-	9	8	101
2010	255	55	310	(3)	2	31	30	340
2011	2,069	15	2,084	(27)	13	205	191	2,275
2012	4,045	(221)	3,824	(50)	23	377	350	4,174
2013	4,267	332	4,599	(55)	23	563	531	5,130
2014	3,138	1,188	4,326	(56)	26	525	495	4,821
2015	2,812	4,103	6,915	(111)	48	837	774	7,689
PAYs (sub-total):	16,943	5,424	22,367	(304)	136	2,568	2,400	24,767
CAY (2016)	6,189	3,201	9,390	(169)	75	1,107	1,013	10,403
claims liabilities:	23,132	8,625	31,757	(473)	211	3,675	3,413	35,170
	Unearned Premium	Premium Defiency / (DPAC)	Total Provision	discount	investment PfAD	development PfAD	Total apvs	TOTAL*
premium liabilities:	7,902	(53)	7,849	(123)	54	811	742	8,591
								*Total may not be sum of parts, as apvs apply to future costs within UPR
policy liabilities:			**39,606**	**(596)**	**265**	**4,486**	**4,155**	**43,761**

EXHIBIT E

Discount Rate & Margins for Adverse Deviations

The tables below present selected margins for adverse development by coverage (the total is a weighted average, based on the unpaid claims projection for December 31, 2016 from the valuation), followed by the selected discount rate and the associated margin for investment income.

Selected Claims Development MfADs (Jun. 30, 2016)

Accident Year	Third Party Liability	Accident Benefits	Other Coverages	Total
2007	10.0%	10.0%	10.0%	10.0%
2008	10.0%	10.0%	10.0%	10.0%
2009	10.0%	10.0%	10.0%	10.0%
2010	10.0%	10.0%	10.0%	10.0%
2011	10.0%	10.0%	10.0%	10.0%
2012	10.0%	10.0%	10.0%	10.0%
2013	12.5%	10.0%	12.0%	12.4%
2014	12.5%	10.0%	10.7%	12.3%
2015	12.5%	10.0%	12.5%	12.3%
2016	12.4%	10.0%	7.1%	12.0%
2017	12.5%	10.0%	12.5%	12.5%
prem liab	12.0%	10.0%	5.1%	10.7%

discount rate:	0.56%
margin (basis points):	25

EXHIBIT F

Interest Rate Sensitivity

The tables below present sensitivity to the member statement claims liability as projected to Dec. 31, 2016 from the latest valuation date (projections in exhibits A to D are to Dec. 31, 2016 and based on more up-to-date information). We have included both the current valuation selection (0.56%), the prior valuation assumption (0.61%) and the prior fiscal year end valuation assumption (0.70%) for comparative purposes. A 25 basis point margin for investment return adverse deviation is used in all scenarios presented.

$ Format: $000s

	Actuarial Present Value of Provisions at Various Discount Rates - Dec. 31, 2016 projected Unpaid							
AY	0.06%	0.56%	1.06%	1.56%	2.06%	2.56%	0.61%	0.70%
2007	25	25	25	25	25	25	25	25
2008	337	336	334	332	330	329	335	335
2009	113	112	111	110	110	109	112	112
2010	343	341	338	335	332	329	341	340
2011	2,217	2,200	2,176	2,152	2,128	2,105	2,198	2,193
2012	3,789	3,761	3,718	3,677	3,637	3,597	3,756	3,749
2013	5,024	4,988	4,934	4,882	4,831	4,781	4,982	4,973
2014	4,804	4,766	4,709	4,655	4,602	4,549	4,760	4,750
2015	7,575	7,502	7,392	7,285	7,182	7,081	7,490	7,470
2016	10,694	10,581	10,413	10,250	10,092	9,938	10,564	10,534
Total	34,921	34,612	34,150	33,703	33,269	32,843	34,563	34,481
	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	curr + 200bp	prior val assumption	prior fyr end assumption

	Dollar Impact Relative to Valuation Assumption							
AY	0.06%	0.56%	1.06%	1.56%	2.06%	2.56%	0.61%	0.70%
Total	309	-	(462)	(909)	(1,343)	(1,769)	(49)	(131)
	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	curr + 200bp	prior val assumption	prior fyr end assumption

	Percentage Impact Relative to Valuation Assumption							
AY	0.06%	0.56%	1.06%	1.56%	2.06%	2.56%	0.61%	0.70%
2007	-	-	-	-	-	-	-	-
2008	0.3%	-	(0.6%)	(1.2%)	(1.8%)	(2.1%)	(0.3%)	(0.3%)
2009	0.9%	-	(0.9%)	(1.8%)	(1.8%)	(2.7%)	-	-
2010	0.6%	-	(0.9%)	(1.8%)	(2.6%)	(3.5%)	-	(0.3%)
2011	0.8%	-	(1.1%)	(2.2%)	(3.3%)	(4.3%)	(0.1%)	(0.3%)
2012	0.7%	-	(1.1%)	(2.2%)	(3.3%)	(4.4%)	(0.1%)	(0.3%)
2013	0.7%	-	(1.1%)	(2.1%)	(3.1%)	(4.1%)	(0.1%)	(0.3%)
2014	0.8%	-	(1.2%)	(2.3%)	(3.4%)	(4.6%)	(0.1%)	(0.3%)
2015	1.0%	-	(1.5%)	(2.9%)	(4.3%)	(5.6%)	(0.2%)	(0.4%)
2016	1.1%	-	(1.6%)	(3.1%)	(4.6%)	(6.1%)	(0.2%)	(0.4%)
Total	0.9%	-	(1.3%)	(2.6%)	(3.9%)	(5.1%)	(0.1%)	(0.4%)
	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	curr + 200bp	prior val assumption	prior fyr end assumption

6.1.a.1 EXHIBIT G

Components of Member Statement IBNR (i.e. "Discounted") Change During Month

RSP	Nova Scotia
AccountCode Desc	IBNR - Discount

M/S IBNR - in $000s

AccYear	Values Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation	Sum of Total Change	Sum of % Total Change	Sum of Current Month Final Amount
2007	6	-	-	(1)	(1)	(16.7%)	5
2008	19	1	(28)	(4)	(31)	(163.2%)	(12)
2009	(10)	-	-	(2)	(2)	20.0%	(12)
2010	119	(2)	94	(121)	(29)	(24.4%)	90
2011	296	(6)	(143)	76	(73)	(24.7%)	223
2012	753	(14)	(526)	(70)	(610)	(81.0%)	143
2013	1,426	(29)	(71)	(389)	(489)	(34.3%)	937
2014	1,975	(40)	(131)	(17)	(188)	(9.5%)	1,787
2015	5,681	(149)	170	(364)	(343)	(6.0%)	5,338
2016	5,089	663	(109)	(187)	367	7.2%	5,456
Grand Total	**15,354**	**424**	**(744)**	**(1,079)**	**(1,399)**	**(9.1%)**	**13,955**

6.1.a.2 EXHIBIT G

Components of IBNR (i.e. "Undiscounted") Change During Month

RSP	**Nova Scotia**
AccountCode Desc	**IBNR - Undiscounted**

IBNR - in $000s

AccYear	Values Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation	Sum of Total Change	Sum of % Total Change	Sum of Current Month Final Amount
2007	1	-	-	-	-	-	1
2008	(31)	1	(2)	-	(1)	3.2%	(32)
2009	(21)	-	-	-	-	-	(21)
2010	69	(1)	93	(102)	(10)	(14.5%)	59
2011	52	(1)	(147)	111	(37)	(71.2%)	15
2012	152	(3)	(493)	106	(390)	(256.6%)	(238)
2013	703	(18)	(76)	(248)	(342)	(48.6%)	361
2014	1,348	(34)	(117)	66	(85)	(6.3%)	1,263
2015	4,681	(140)	168	(183)	(155)	(3.3%)	4,526
2016	4,287	544	(87)	(40)	417	9.7%	4,704
Grand Total	**11,241**	**348**	**(661)**	**(290)**	**(603)**	**(5.4%)**	**10,638**