



NOVA SCOTIA RISK SHARING POOL

APRIL 2017 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

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ACTUARIAL HIGHLIGHTS

RSP NOVA SCOTIA

OPERATIONAL REPORT

APRIL 2017

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1 Summary

1.1 Valuation Schedule (Fiscal Year 2017)

The April 2017 Operational Report leverages actuarial assumptions consistent with last month (that is, it does not reflect the results of an updated valuation). The table immediately below summarizes the implemented valuations and future scheduled valuations for fiscal year 2017.

NOVA SCOTIA RISK SHARING POOL FISCAL YEAR 2017 – SCHEDULE OF VALUATIONS			
Valuation Date	Discount Rate (per annum)	Operational Report	Description of Changes
Sep. 30, 2016 (completed)	0.51% mfad: 25 bp	Oct. 2016	updated valuation (roll forward): accident year 2016 loss ratio remained at 94.8%; discount rate decreased by 5 basis points; no change to selected margins for adverse deviations
Dec. 31, 2016 (completed)	1.01% mfad: 25 bp	Mar. 2017	updated valuation: accident year 2016 loss ratio decreased 5.0 points to 89.8%; accident year 2017 loss ratio decreased 1.0 points to 96.5%; discount rate increased by 50 basis points; no change to selected margins for adverse deviations
Mar. 31, 2017		May 2017	update valuation (roll forward):
Jun. 30, 2017		Aug. 2017	update valuation:
Sep. 30, 2017		Oct. 2017	update valuation (roll forward):

Under the proposed schedule for fiscal year 2017, the “off-half” valuation quarters ending March 31, 2017 and September 30, 2017 would not reflect a full valuation update of assumptions, but would rather “roll-forward” key assumptions from the previous valuation.

1.2 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.

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

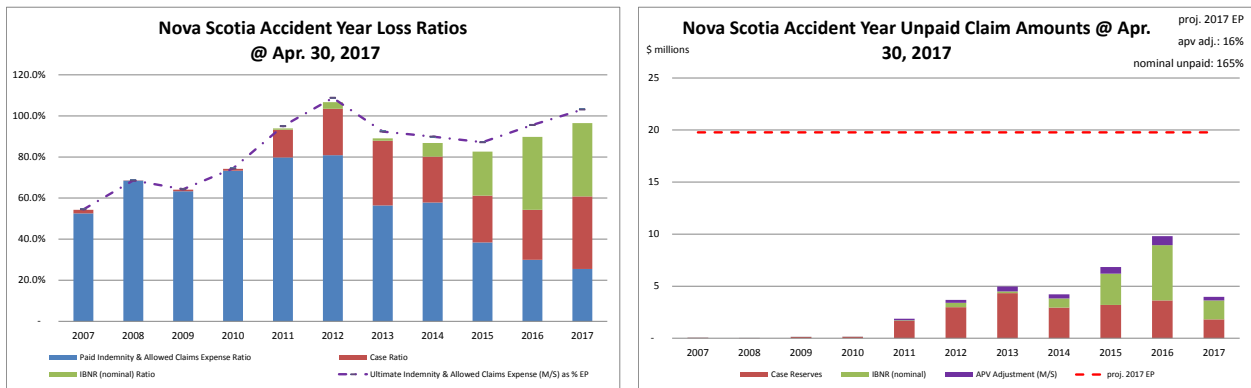
Consideration and assessment of potential impacts of legal decisions and changes in legislation / regulation constitutes a regular part of the valuation process. Descriptions of some of the more

recent changes are provided below (there have been no changes in these descriptions since last month’s Highlights).

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 most recent valuation (December 31, 2016), reform adjustments (originally introduced with the June 30, 2014 valuation) were explicitly taken into account with the industry trend analysis (completed using industry data as at December 31, 2015¹), impacting the selection of ultimates.

1.4 Current Provision Summary

The charts immediately below show the current levels of claim liabilities² 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 2017 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 (\$3.2 million – see table at the top of the next page) represents 16% of the earned premium projected for the full year 2017 (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.

¹As per our usual practice, we did not perform a trend analysis based on June 30 industry private passenger data for Nova Scotia (we usually only perform trend analyses for Nova Scotia private passenger using Dec 31 industry data).

²Claim 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	20,873	58.4%
ibnr	11,674	32.7%
M/S apv adjust.	3,169	8.9%
M/S total	35,716	100.0%

The table to the left breaks down the Member Statement (M/S) claim liabilities total into component parts, showing that the largest component of the claim liabilities for this pool is case reserves. Approximately 61% of the IBNR balance relates to accident years 2016 and 2017 (see Exhibit B). Approximately 84% of the M/S

total claim liabilities are related to accident years 2013-2017 inclusive (i.e. the most recent 5 accident years).

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

premium liabilities (\$000s)

	amt	%
unearned prem	7,876	93.9%
prem def/(dpac)	(124)	(1.5%)
M/S apv adjust.	634	7.6%
M/S total	8,386	100.0%

policy liabilities (\$000s)

	amt	%
claim	32,547	73.8%
premium	7,752	17.6%
M/S apv adjust.	3,803	8.6%
M/S total	44,102	100.0%

2 Activity During the Month of April 2017

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 Report³.

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

Accident Year	Earned Premium		Paid Indemnity & Allowed Claims Expense		Case increase / (decrease)		Recorded increase / (decrease)	
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	(1)	(1)	345	205	3,385	(65)	3,731	141
2015	(1)	(1)	22	(40)	160	190	182	150
2016	(8)	(8)	81	(9)	(86)	(76)	(5)	(85)
2017	1,320	8	451	72	248	(61)	699	11
TOTAL	1,310	(2)	899	229	3,708	(12)	4,607	217

(Recorded transaction amounts exclude IBNR & other actuarial provisions)

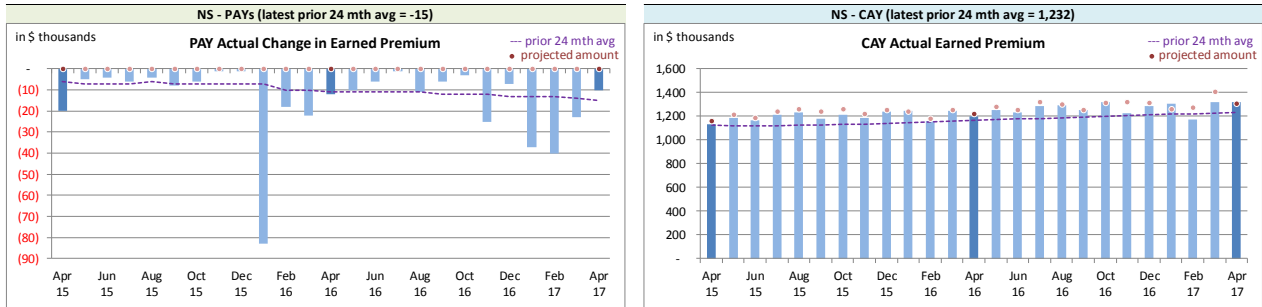
Claims transaction activity is generally volatile and changes from one month to the next are anticipated due to this natural “process variance” (this is particularly true where volumes are low). Each month, the projection variances are reviewed for signs of projection bias and to identify potential ways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

³There 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.

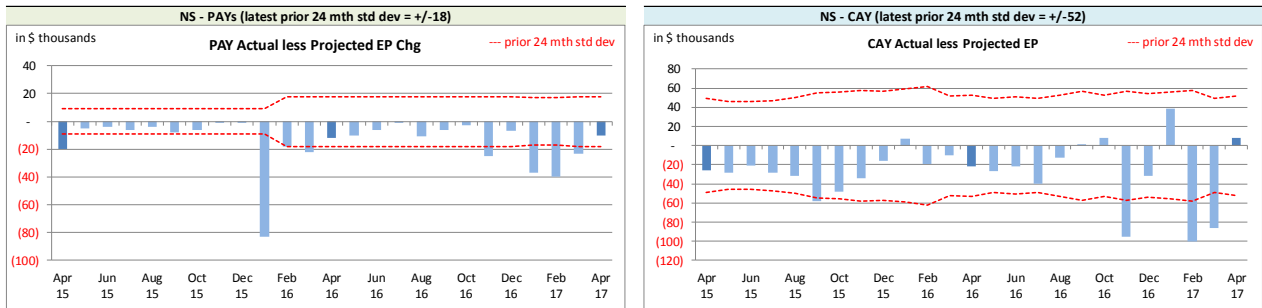
Nova Scotia RSP Actual Earned Premium by Calendar Month



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)	(15)	1,232
std dev	18	52
A-P <> std dev	7	4
% <> std dev	28.0%	16.0%
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 prior accident years’ bias⁵, with actuals generally lower than projected. However, the

⁴Premium 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.

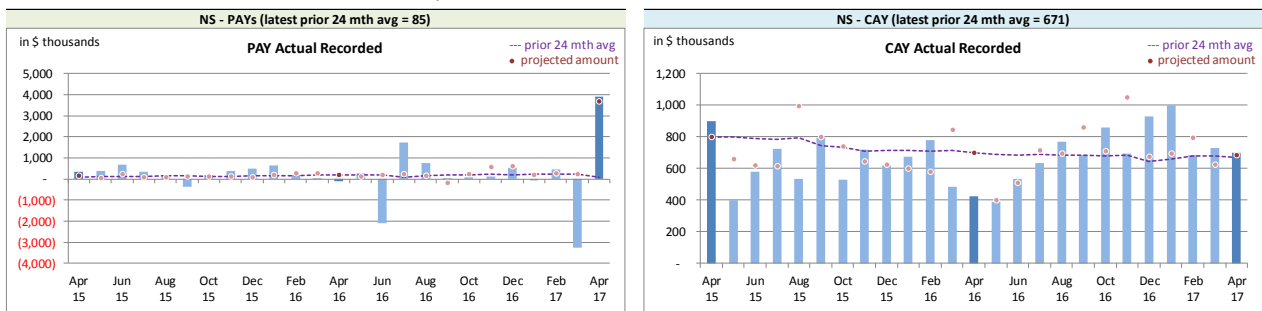
⁵The prior accident years (PAYS) variances will show bias as the projection upload forces all earned premium projections to be attributed to the current accident year.

magnitude is not high relative to monthly premium, and the variances are within the prior 24-month standard deviation slightly more often than indicated by a normal distribution (see table at the bottom of the previous page). In addition to the prior accident years’ bias, the CAY has also shown bias, with actuals being generally lower than projected. Starting with the August 2016 projections, we have modified our projections processes in an attempt to account for CAY bias. 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

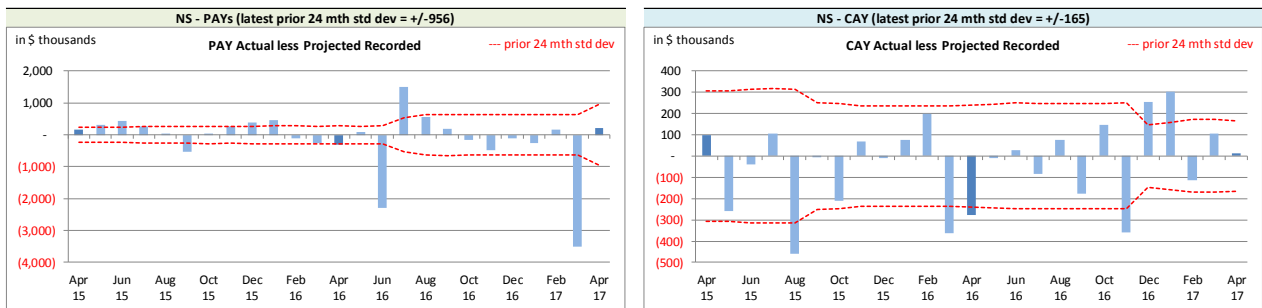
Actual **recorded** activity (**paid** and case reserve changes) over the last 25-month period are shown in the charts immediately below, including the “prior 24-month average” level.

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)	85	671	
std dev	956	165	
A-P <> std dev	10	6	
% <> std dev	40.0%	24.0%	
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 (40%) with variances in excess of one standard deviation suggests the projection process performs worse than simply projecting based on a 24-month average.

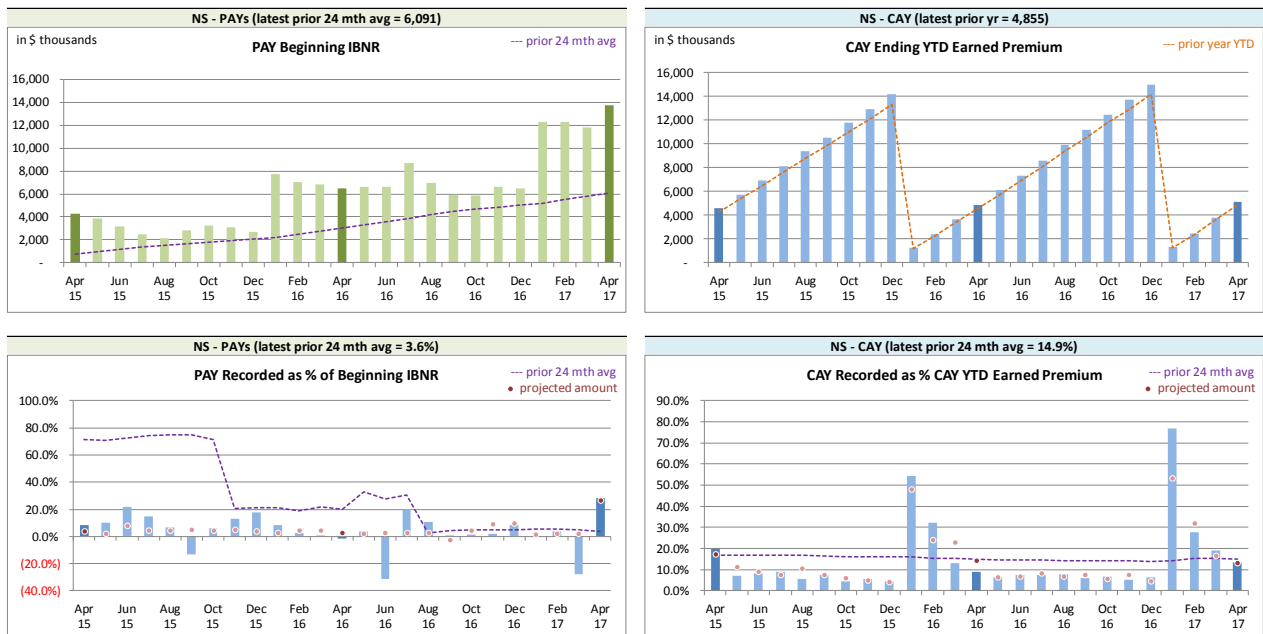
As noted for the past few months, a member is in the process of completing a comprehensive review of their open claims transactions as reported to the FA RSP system. Our review over the three months July-September 2016 noted that correcting transactions were posted to reverse claim closures (and associated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

As noted last month, one member company performed a claims system conversion, resulting in the closing of several open claims (with no associated payments) on the “old” system, with the case reserve take downs in total amounting to \$3.5 million in March. The closure amounts have been confirmed as correct with the member, and these claims were reopened this month (on the new system) as expected. Our investigation and discussion with the member continues to ensure our records are accurate in relation to their own records on their RSP claims portfolio.

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 immediately below related to levels influencing **recorded** activity. Note in particular the increase in the level of PAYs 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 influence⁶ Recorded activity by Calendar Month



⁶Our 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.

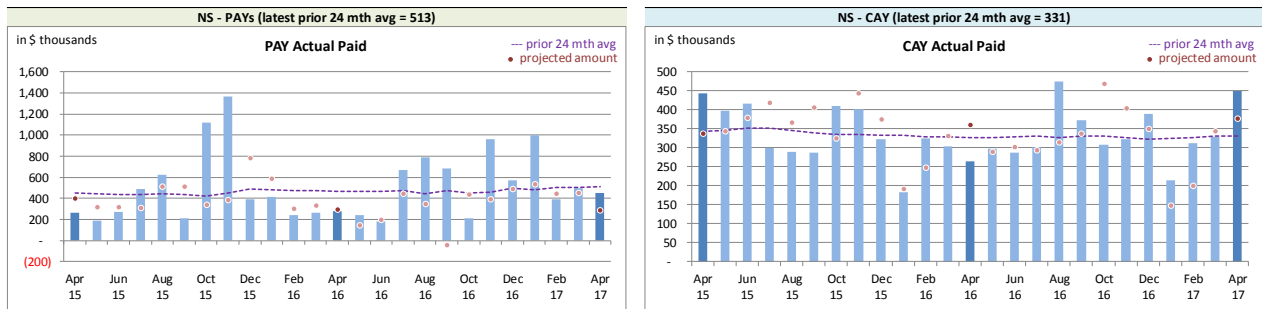
We track beginning prior accident years' IBNR as **recorded** activity “comes out of” IBNR. Changes in the prior accident years' beginning IBNR (see left chart above) occur for several possible reasons:

- 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

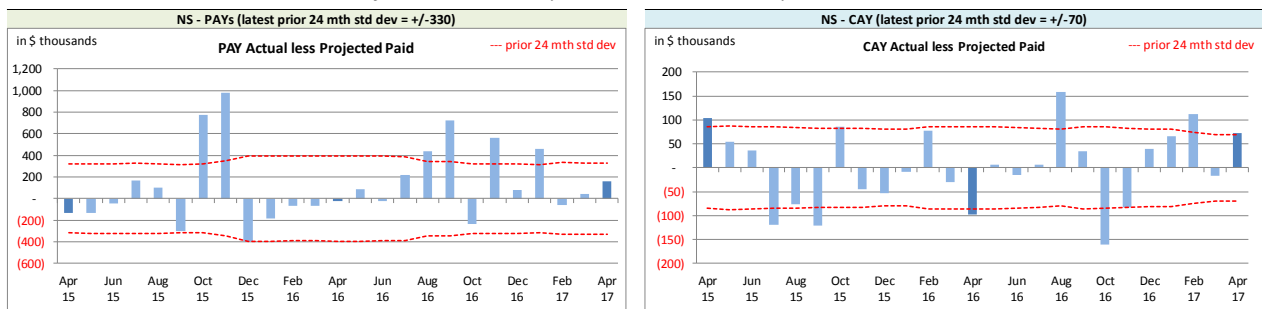
The charts immediately below show actual **paid** activity in each of the most recent 25 calendar months, along with a “prior 24-month average” to show how each month's actual compares with the average amount of the preceding 24 calendar months.

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)		513	331
std dev		330	70
A-P <> std dev		7	9
% <> std dev		28.0%	36.0%
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

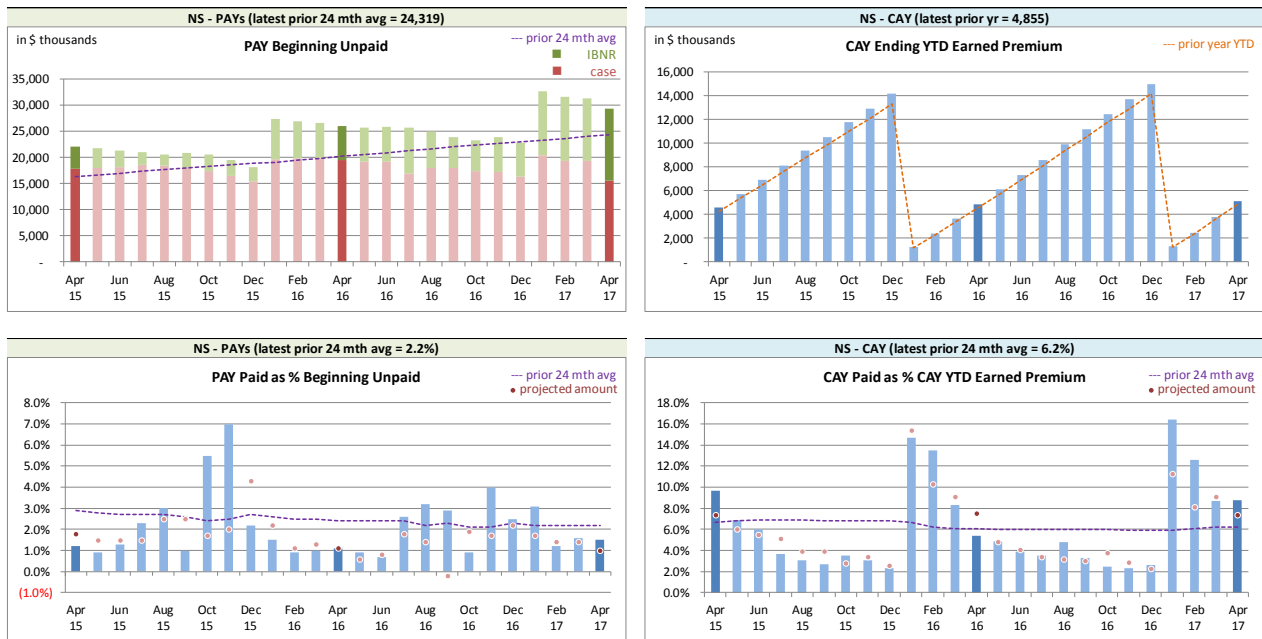
generate relatively “significant” variances that in nominal value terms are not that significant. With 28% of months with prior accident years (PAYs) **paid** variances in excess of a prior 24-month standard deviation (see chart at bottom of previous page), this suggests the projection process has performed little better than one based simply on a 24-month average. Additionally, bias may be creeping into the projections (with actuals higher than the projections for eight of the past ten months). We will look for ways to address this issue.

The current accident year (CAY) **paid** variances (right chart at bottom of previous page) do not appear to indicate bias. Toward the end of 2015 and the beginning of 2016, it seemed that bias may have been creeping into the projections (with actuals higher than the projections), however, corrective measures were taken and any potential bias seems to be gone. That said, at 36% of projections outside of one standard deviation (see table at bottom of previous page), the projection process has performed worse than simply projecting based on the previous 24-month average.

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 PAYs beginning unpaid. This is somewhat expected, given the maturity level of the RSP.

Nova Scotia RSP Levels that influence⁷ 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 above) occur for several possible reasons:

⁷Our 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.

- 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 IBNR⁸, 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 April 2017 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

Accident Year	IBNR		actuarial present value adjustments				IBNR + actuarial present value adjustments	
	Actual	Actual less Projected	Discount Amount		Provisions for Adverse Deviations		Actual	Actual less Projected
			Actual	Actual less Projected	Actual	Actual less Projected		
Prior	1,540	(142)	(292)	6	1,613	(24)	2,861	(160)
2015	3,004	(151)	(149)	(1)	788	5	3,643	(147)
2016	5,302	78	(268)	-	1,138	1	6,172	79
2017	1,828	(3)	(116)	2	455	(9)	2,167	(10)
TOTAL	11,674	(218)	(825)	7	3,994	(27)	14,843	(238)

The IBNR provision is \$0.2 million lower than projected last month, counterbalancing the recorded claims activity and adjusting for the earned premium variance impacts indicated in section 2.1.

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 April 2017 Operational

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

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 mainly due to the unearned premium variance.

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:	(124)	(3)	634	21	510	18
balance as % unearned premium:	(1.6%)	-	8.0%	0.1%	6.5%	0.1%
actual unearned premium:	7,876					
less projected:	234					

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 loss⁹ 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 at the top of the next page summarizes the calendar year-to-date results for indemnity & allowed claims expenses¹⁰, 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 98.6% rather than 96.5% (the valuation ultimate ratio for accident year 2017), 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.)

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).

¹⁰Allowed 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.

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	(1,401)	(28.0%)	(743)	(14.8%)	(2,144)	(42.8%)	(51)	13.7%
CAY	4,944	98.6%	339	6.8%	5,283	105.4%	1,351	(0.8%)
TOTAL	3,543	70.7%	(404)	(8.1%)	3,139	62.6%	1,300	13.0%

(“% EP” based on 2017 calendar year-to-date earned premium; ratios may not total due to rounding)

The prior accident years (PAYs) changes from last month are due to the release of the actuarial present value adjustments with claims payments. 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.

For the current accident year (CAY), 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.

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

		Amounts in \$000s				
IBNR + M/S actuarial present value adjustments	Accident Year	Actual Mar. 2017	Actual Apr. 2017	Projected May. 2017	Projected Jun. 2017	Projected Dec. 2017
	2007	4	4	4	4	4
	2008	2	2	2	2	2
	2009	16	16	16	16	16
	2010	16	16	16	16	15
	2011	980	215	212	210	195
discount rate	2012	1,123	698	687	677	615
1.01%	2013	2,225	633	624	617	573
	2014	2,259	1,277	1,256	1,234	1,116
interest rate margin	2015	3,828	3,643	3,510	3,382	2,769
25 basis pts	2016	6,182	6,172	6,004	5,739	4,482
	2017	1,515	2,167	3,180	4,092	4,414
	TOTAL	18,150	14,843	15,511	15,989	14,201
	Change		(3,307)	668	478	

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 Mar. 2017	Actual Apr. 2017	Projected May. 2017	Projected Jun. 2017	Projected Dec. 2017
	54.3%	2007	1	1	1	1	1
	68.6%	2008	1	1	1	1	1
	64.2%	2009	5	5	5	5	5
	74.3%	2010	3	3	3	3	3
	93.8%	2011	834	69	68	67	61
	106.7%	2012	829	424	416	408	361
	89.0%	2013	1,749	163	160	157	139
	86.8%	2014	1,850	874	857	840	744
	82.6%	2015	3,187	3,004	2,884	2,769	2,236
	89.8%	2016	5,304	5,302	5,143	4,886	3,823
	96.5%	2017	1,253	1,828	2,751	3,570	3,262
		TOTAL	15,016	11,674	12,289	12,707	10,636
		Change		(3,342)	615	418	

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

EXHIBIT C

Discount Rate & Margins for Adverse Deviations

TABLE EXHIBIT C

	Amounts in \$000s				
	Actual Mar. 2017	Actual Apr. 2017	Projected May. 2017	Projected Jun. 2017	Projected Dec. 2017
Premium Liabilities					
(1) unearned premium (UP)	7,309	7,876	8,399	9,836	17,330
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	106.3%	106.5%	106.6%	106.8%	107.8%
(3) expected future costs {(1) x (2)}	7,773	8,386	8,950	10,501	18,678
(4) premium deficiency / (deferred policy acquisition cost)	464	510	551	665	1,348
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	98.3%	98.4%	98.5%	98.7%	99.6%
(6) expected future costs {(1) x (5)}	7,187	7,752	8,275	9,707	17,268
(7) premium deficiency / (deferred policy acquisition cost)	(122)	(124)	(124)	(129)	(62)

EXHIBIT D
Projected Year-end Policy Liabilities

The table below presents the projected policy liabilities as at December 31, 2017, broken down by component.

Nova Scotia ending 2017		Projected Balances as at Dec. 31, 2017 (\$000s)							
		nominal values			actuarial present value adjustments (apvs)				TOTAL
Acc Yr	Case	IBNR	Total Unpaid	discount	investment PFAD	development PFAD	Total apvs		
2007	37	1	38	(1)	-	4	3	41	
2008	12	1	13	-	-	1	1	14	
2009	110	5	115	(1)	-	12	11	126	
2010	129	3	132	(2)	1	13	12	144	
2011	1,536	61	1,597	(29)	6	157	134	1,731	
2012	2,781	361	3,142	(72)	19	307	254	3,396	
2013	4,013	139	4,152	(91)	21	504	434	4,586	
2014	2,783	744	3,527	(74)	18	428	372	3,899	
2015	2,933	2,236	5,169	(124)	31	626	533	5,702	
2016	2,961	3,823	6,784	(204)	54	809	659	7,443	
PAYs (sub-total):	17,295	7,374	24,669	(598)	150	2,861	2,413	27,082	
CAY (2017)	9,113	3,262	12,375	(396)	99	1,449	1,152	13,527	
claims liabilities:	26,408	10,636	37,044	(994)	249	4,310	3,565	40,609	
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PFAD	development PFAD	Total apvs	TOTAL*	
premium liabilities:	17,330	(62)	17,268	(458)	118	1,750	1,410	18,678	
*Total may not be sum of parts, as apvs apply to future costs within UPR									
policy liabilities:			54,312	(1,452)	367	6,060	4,975	59,287	

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, 2017 from the valuation), followed by the selected discount rate and the associated margin for investment income.

Accident Year	Selected Claims Development MfADs (Dec. 31, 2016)			Total
	Third Party Liability	Accident Benefits	Other Coverages	
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%	12.5%	12.4%
2014	12.5%	10.0%	12.5%	12.4%
2015	12.5%	10.0%	12.5%	12.4%
2016	12.5%	10.0%	12.5%	12.3%
2017	12.4%	10.0%	6.9%	12.1%
prem liab	12.0%	10.0%	5.2%	10.6%
			discount rate:	1.01%
			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, 2017 from the latest valuation date (projections in exhibits A to D are also to Dec. 31, 2017, but are based on more up-to-date information). We have included both the current valuation selection (1.01%), the prior valuation assumption (0.51%) and the prior fiscal year end valuation assumption (0.51%) 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, 2017 projected Unpaid								
AY	0.51%	1.01%	1.51%	2.01%	2.51%	3.01%	0.51%	0.51%
2007	14	14	14	14	14	14	14	14
2008	29	29	29	29	28	28	29	29
2009	67	67	67	66	66	65	67	67
2010	233	231	230	228	226	225	233	233
2011	1,494	1,481	1,468	1,455	1,443	1,430	1,494	1,494
2012	2,718	2,687	2,657	2,628	2,600	2,572	2,718	2,718
2013	3,345	3,309	3,273	3,238	3,204	3,171	3,345	3,345
2014	3,550	3,513	3,477	3,442	3,407	3,373	3,550	3,550
2016	8,399	8,276	8,156	8,040	7,926	7,815	8,399	8,399
2017	16,982	16,711	16,445	16,188	15,937	15,694	16,982	16,982
Total	42,881	42,295	41,721	41,165	40,620	40,090	42,881	42,881
	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	0.51%	1.01%	1.51%	2.01%	2.51%	3.01%	0.51%	0.51%
Total	586	-	(574)	(1,130)	(1,675)	(2,205)	586	586
	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	0.51%	1.01%	1.51%	2.01%	2.51%	3.01%	0.51%	0.51%
2007	-	-	-	-	-	-	-	-
2008	-	-	-	-	(3.4%)	(3.4%)	-	-
2009	-	-	-	(1.5%)	(1.5%)	(3.0%)	-	-
2010	0.9%	-	(0.4%)	(1.3%)	(2.2%)	(2.6%)	0.9%	0.9%
2011	0.9%	-	(0.9%)	(1.8%)	(2.6%)	(3.4%)	0.9%	0.9%
2012	1.2%	-	(1.1%)	(2.2%)	(3.2%)	(4.3%)	1.2%	1.2%
2013	1.1%	-	(1.1%)	(2.1%)	(3.2%)	(4.2%)	1.1%	1.1%
2014	1.1%	-	(1.0%)	(2.0%)	(3.0%)	(4.0%)	1.1%	1.1%
2016	1.5%	-	(1.4%)	(2.9%)	(4.2%)	(5.6%)	1.5%	1.5%
2017	1.6%	-	(1.6%)	(3.1%)	(4.6%)	(6.1%)	1.6%	1.6%
Total	1.4%	-	(1.4%)	(2.7%)	(4.0%)	(5.2%)	1.4%	1.4%
	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	curr + 200bp	prior val assumption	prior fyr end assumption

EXHIBIT G

Page 1 of 2

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

RSP Nova Scotia
AccountCode Desc IBNR - Discour

M/S IBNR - in \$000s

AccYear	Values				Sum of Total Change	Sum of % Total Change	Sum of Current Month Final Amount
	Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation			
2007	4	-	-	-	-	-	4
2008	2	-	-	-	-	-	2
2009	16	-	-	-	-	-	16
2010	16	-	-	-	-	-	16
2011	980	(836)	71	-	(765)	(78.1%)	215
2012	1,123	(21)	(404)	-	(425)	(37.8%)	698
2013	2,225	(1,911)	319	-	(1,592)	(71.6%)	633
2014	2,259	(836)	(146)	-	(982)	(43.5%)	1,277
2015	3,828	(38)	(147)	-	(185)	(4.8%)	3,643
2016	6,182	(89)	79	-	(10)	(0.2%)	6,172
2017	1,515	662	(10)	-	652	43.0%	2,167
Grand Total	18,150	(3,069)	(238)	-	(3,307)	(18.2%)	14,843

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 Total Change	Sum of % Total Change	Sum of Current Month Final Amount
	Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation			
2007	1	-	-	-	-	-	1
2008	1	-	-	-	-	-	1
2009	5	-	-	-	-	-	5
2010	3	-	-	-	-	-	3
2011	834	(834)	69	-	(765)	(91.7%)	69
2012	829	(17)	(388)	-	(405)	(48.9%)	424
2013	1,749	(1,906)	320	-	(1,586)	(90.7%)	163
2014	1,850	(833)	(143)	-	(976)	(52.8%)	874
2015	3,187	(32)	(151)	-	(183)	(5.7%)	3,004
2016	5,304	(80)	78	-	(2)	-	5,302
2017	1,253	578	(3)	-	575	45.9%	1,828
Grand Total	15,016	(3,124)	(218)	-	(3,342)	(22.3%)	11,674