

1 MPI did not determine the DSR level relativities for PIPP separately for passenger  
2 vehicles and light trucks, rather the DSR level relativities were determined for these  
3 two vehicle types together.

4 MPI then fitted curves to the combined DSR level relativities using regression analysis  
5 to ensure a smooth increasing relativity line as the DSR level decreases from 15 to -  
6 20. MPI fitted curves to achieve the best possible goodness-of-fit to the observed  
7 data, as measured by the R-squared. MPI fitted curves separately for the Other than  
8 PIPP DSR level relativities and PIPP DSR level relativities. *Figure DSR App 13-1* and  
9 *Figure DSR App 13-2* below show the fitted curves.

**Figure DSR App 13- 1 Other than PIPP DSR Level Relativities**

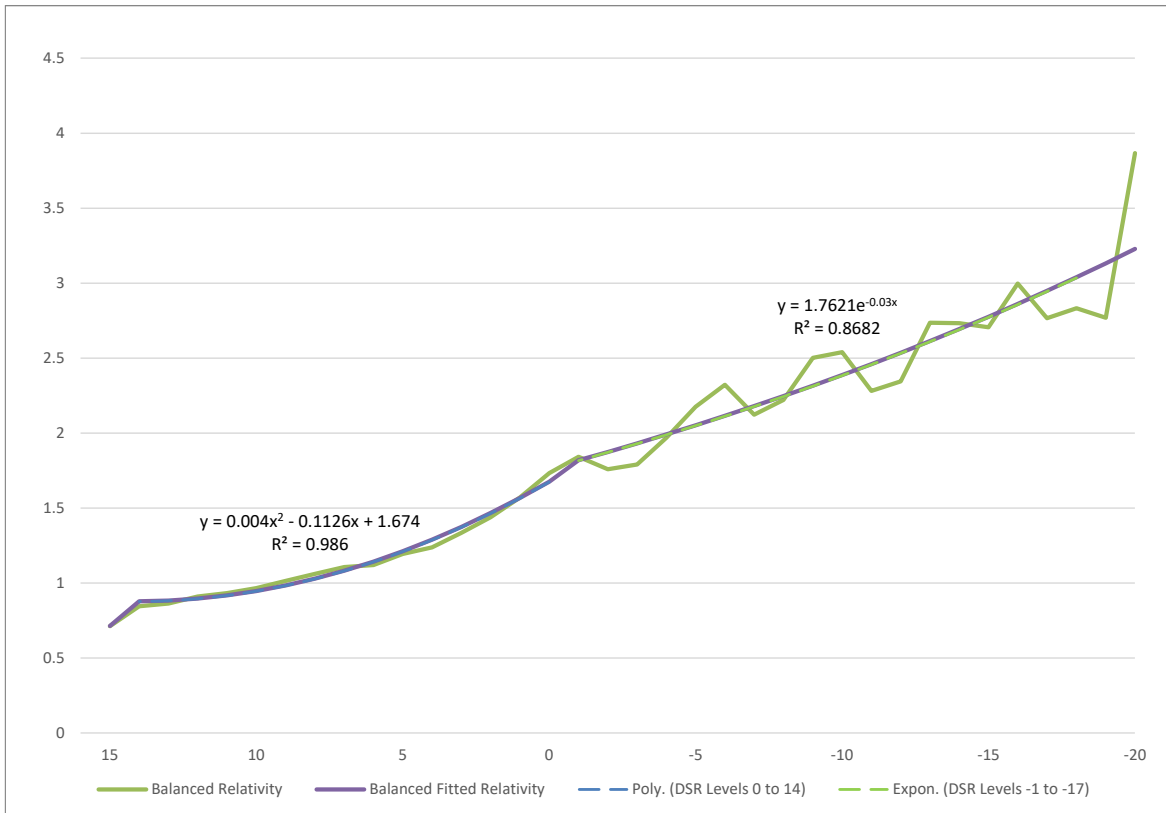
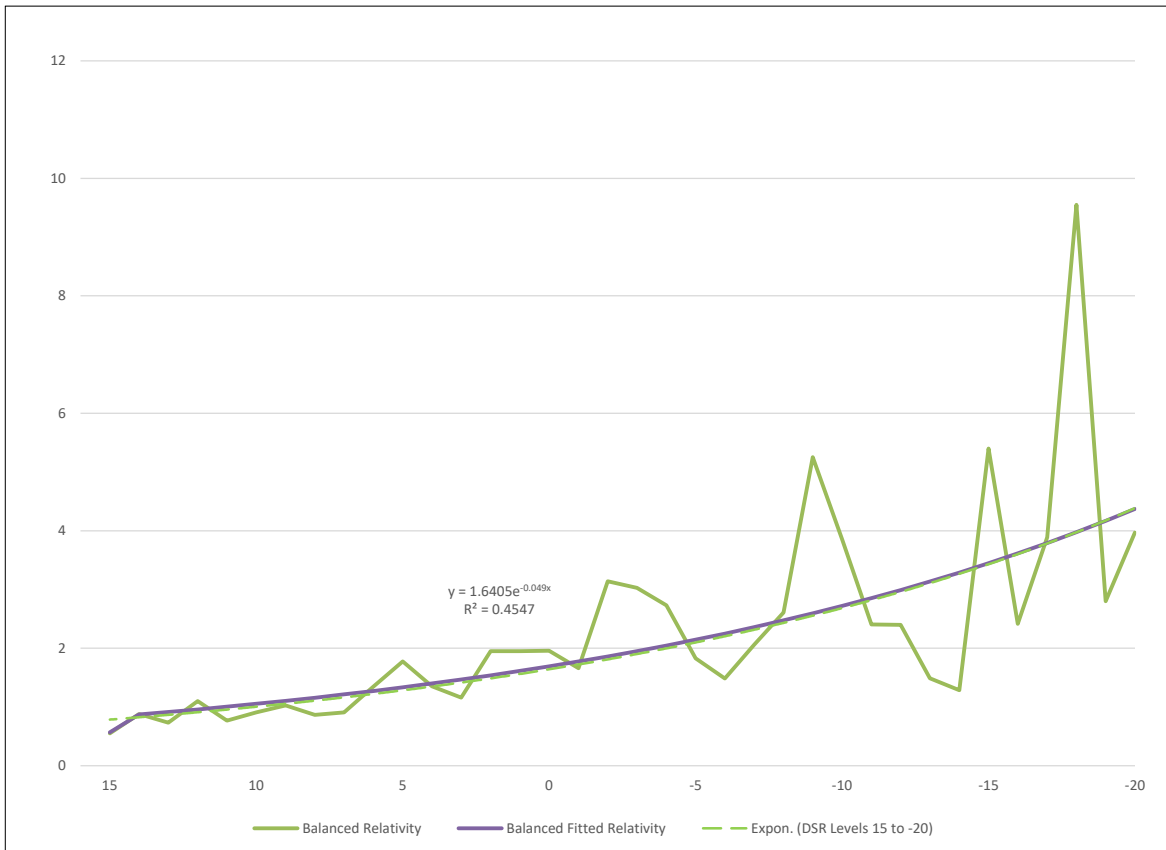


Figure DSR App 13- 2 PIPP DSR Level Relativities



1 MPI then used the fitted curves to determine the average loss costs for each DSR  
 2 level. MPI did this separately for Other than PIPP and PIPP. For PIPP, MPI only applied  
 3 the fitted curve to the portion of loss costs assigned to the vehicle (i.e., the non-“pool”  
 4 loss costs (see *Ratemaking Chapter RM.4.3 Major Classification Required Rates* for  
 5 details on “pool” costs). MPI assumed that the “Pool” costs did not vary with DSR level  
 6 (i.e., the same average loss costs are used for all DSR levels). By coverage:

7  $Average\ Loss\ Cost\ for\ DSR\ Level\ j = Fitted\ Relativity\ at\ DSR\ Level\ j * Average\ Loss$   
 8  $Cost\ for\ the\ Coverage$

9 MPI then determined the total average loss costs for each DSR level.

1 *Total Average Loss Cost for DSR Level j = Sum Average Loss Cost for DSR Level j*  
2 *for All Coverages + PIPP "Pool" Average Loss Costs + Average Fixed Expenses*  
3 *(i.e., not varying by DSR level)*

4 Finally, MPI determined the overall DSR level relativities for each DSR level.

5 *Overall DSR Level Relativity for DSR Level j = Total Average Loss Cost for DSR*  
6 *Level j / Total Average Loss Cost for All DSR levels; where*

7 *Total Average Loss Cost for All DSR Levels = Sum Average Loss Cost for All*  
8 *Coverages + PIPP "Pool" Average Loss Costs + Average Fixed Expenses (i.e., not*  
9 *varying by DSR level)*

10 *Figure DSR App ~~31~~-3* below presents the derivation of the overall DSR level relativities  
11 for all DSR levels.

Figure DSR App 13- 3 Overall Relativities by DSR Level

Line No.	Fitted Relativity			Average Loss Cost				Overall Relativity	
	DSR	Colli, Comp, PD & BI	PIPP	Colli, Comp, PD & BI	PIPP		Other Costs & Expenses		
					Non-Pool	Pool	Total		
1	15	0.7127	0.5674	\$568.68	\$131.80	\$67.52	\$41.13	\$809.13	0.7105
2	14	0.8777	0.8703	\$700.32	\$202.14	\$67.52	\$41.13	\$1,011.11	0.8879
3	13	0.8830	0.9126	\$704.54	\$211.96	\$67.52	\$41.13	\$1,025.15	0.9002
4	12	0.8962	0.9569	\$715.10	\$222.27	\$67.52	\$41.13	\$1,046.02	0.9185
5	11	0.9174	1.0034	\$732.02	\$233.07	\$67.52	\$41.13	\$1,073.74	0.9429
6	10	0.9466	1.0522	\$755.29	\$244.40	\$67.52	\$41.13	\$1,108.34	0.9732
7	9	0.9837	1.1034	\$784.91	\$256.29	\$67.52	\$41.13	\$1,149.84	1.0097
8	8	1.0288	1.1570	\$820.88	\$268.74	\$67.52	\$41.13	\$1,198.27	1.0522
9	7	1.0818	1.2133	\$863.20	\$281.81	\$67.52	\$41.13	\$1,253.66	1.1008
10	6	1.1428	1.2723	\$911.87	\$295.51	\$67.52	\$41.13	\$1,316.03	1.1556
11	5	1.2118	1.3341	\$966.90	\$309.88	\$67.52	\$41.13	\$1,385.42	1.2165
12	4	1.2887	1.3990	\$1,028.27	\$324.94	\$67.52	\$41.13	\$1,461.86	1.2837
13	3	1.3736	1.4670	\$1,096.00	\$340.74	\$67.52	\$41.13	\$1,545.38	1.3570
14	2	1.4665	1.5383	\$1,170.07	\$357.30	\$67.52	\$41.13	\$1,636.03	1.4366
15	1	1.5673	1.6131	\$1,250.50	\$374.67	\$67.52	\$41.13	\$1,733.82	1.5225
16	0	1.6760	1.6915	\$1,337.28	\$392.89	\$67.52	\$41.13	\$1,838.82	1.6147
17	-1	1.8183	1.7737	\$1,450.82	\$411.99	\$67.52	\$41.13	\$1,971.46	1.7311
18	-2	1.8741	1.8600	\$1,495.33	\$432.02	\$67.52	\$41.13	\$2,035.99	1.7878
19	-3	1.9316	1.9504	\$1,541.19	\$453.02	\$67.52	\$41.13	\$2,102.86	1.8465
20	-4	1.9908	2.0452	\$1,588.46	\$475.04	\$67.52	\$41.13	\$2,172.16	1.9074
21	-5	2.0519	2.1446	\$1,637.19	\$498.13	\$67.52	\$41.13	\$2,243.97	1.9704
22	-6	2.1148	2.2489	\$1,687.41	\$522.35	\$67.52	\$41.13	\$2,318.41	2.0358
23	-7	2.1797	2.3582	\$1,739.16	\$547.75	\$67.52	\$41.13	\$2,395.56	2.1036
24	-8	2.2465	2.4729	\$1,792.51	\$574.37	\$67.52	\$41.13	\$2,475.53	2.1738
25	-9	2.3155	2.5931	\$1,847.49	\$602.30	\$67.52	\$41.13	\$2,558.44	2.2466
26	-10	2.3865	2.7191	\$1,904.16	\$631.58	\$67.52	\$41.13	\$2,644.39	2.3220
27	-11	2.4597	2.8513	\$1,962.56	\$662.28	\$67.52	\$41.13	\$2,733.50	2.4003
28	-12	2.5351	2.9899	\$2,022.76	\$694.48	\$67.52	\$41.13	\$2,825.89	2.4814
29	-13	2.6129	3.1353	\$2,084.81	\$728.24	\$67.52	\$41.13	\$2,921.70	2.5656
30	-14	2.6930	3.2877	\$2,148.75	\$763.64	\$67.52	\$41.13	\$3,021.05	2.6528
31	-15	2.7756	3.4475	\$2,214.66	\$800.77	\$67.52	\$41.13	\$3,124.08	2.7433
32	-16	2.8608	3.6151	\$2,282.59	\$839.70	\$67.52	\$41.13	\$3,230.94	2.8371
33	-17	2.9485	3.7909	\$2,352.61	\$880.52	\$67.52	\$41.13	\$3,341.78	2.9344
34	-18	3.0390	3.9752	\$2,424.77	\$923.32	\$67.52	\$41.13	\$3,456.74	3.0354
35	-19	3.1322	4.1684	\$2,499.14	\$968.21	\$67.52	\$41.13	\$3,576.01	3.1401
36	-20	3.2282	4.3711	\$2,575.80	\$1,015.28	\$67.52	\$41.13	\$3,699.73	3.2488
37	<b>All DSR Levels*</b>			<b>\$797.89</b>	<b>\$232.27</b>	<b>\$67.52</b>	<b>\$41.13</b>	<b>\$1,138.82</b>	

38 \*2021 GRA, Compliance Filing Jan 12, 2021, Figure 7:

39 Amounts for Private Passenger

40 Amounts for 'Colli, Comp, PD and BI' and 'PIPP' include claims costs and expenses

41 Amount for 'Other Loss Cost and Exp' includes the following:

42 Fixed expenses - operating expenses, regulatory/appeal, road safety, commission flat fees, fleet rebates, anti-theft discount, reinsurance,  
43 and premium taxes and commissions on driver premiums

44 Fixed other income sources - driver premiums and service fees

#### 4. Results and Implications

1 *Figure DSR App ~~13~~-4* below shows the DSR discount percentages (for DSR levels 1 to  
2 15) and DSR surcharge dollars (for DSR levels -1 to -20) based on the overall DSR  
3 level relativities presented in *Figure DSR App ~~13~~-3*. MPI calculated the discounts and  
4 surcharges by comparing the relativity at each DSR level to the relativity at DSR level  
5 0 (i.e., the base DSR level).

## Figure DSR App 13- 4 Calculated Discounts and Surcharges

Line No.	DSR	Overall Relativity	Calculated Discount (a)	Current Discount	Variance	Calculated Surcharge (b)	Current Surcharge
1	15	0.7105	56.0%	37.0%	19.0%		
2	14	0.8879	45.0%	32.0%	13.0%		
3	13	0.9002	44.2%	31.0%	13.2%		
4	12	0.9185	43.1%	30.0%	13.1%		
5	11	0.9429	41.6%	29.0%	12.6%		
6	10	0.9732	39.7%	27.0%	12.7%		
7	9	1.0097	37.5%	25.0%	12.5%		
8	8	1.0522	34.8%	25.0%	9.8%		
9	7	1.1008	31.8%	25.0%	6.8%		
10	6	1.1556	28.4%	20.0%	8.4%		
11	5	1.2165	24.7%	15.0%	9.7%		
12	4	1.2837	20.5%	15.0%	5.5%		
13	3	1.3570	16.0%	10.0%	6.0%		
14	2	1.4366	11.0%	10.0%	1.0%		
15	1	1.5225	5.7%	5.0%	0.7%		
16	0	1.6147					
17	-1	1.7311				\$157.16	\$200.00
18	-2	1.7878				\$211.73	\$200.00
19	-3	1.8465				\$268.27	\$300.00
20	-4	1.9074				\$326.86	\$400.00
21	-5	1.9704				\$387.59	\$450.00
22	-6	2.0358				\$450.53	\$500.00
23	-7	2.1036				\$515.77	\$650.00
24	-8	2.1738				\$583.39	\$800.00
25	-9	2.2466				\$653.50	\$900.00
26	-10	2.3220				\$726.17	\$1,000.00
27	-11	2.4003				\$801.52	\$1,200.00
28	-12	2.4814				\$879.65	\$1,400.00
29	-13	2.5656				\$960.66	\$1,600.00
30	-14	2.6528				\$1,044.67	\$1,800.00
31	-15	2.7433				\$1,131.79	\$2,000.00
32	-16	2.8371				\$1,222.15	\$2,200.00
33	-17	2.9344				\$1,315.87	\$2,400.00
34	-18	3.0354				\$1,413.08	\$2,600.00
35	-19	3.1401				\$1,513.93	\$2,800.00
36	-20	3.2488				\$1,618.55	\$3,000.00
37						<b>Average Undiscounted Premium (c)</b>	<b>\$1,554.87</b>

38 Notes:

39 (a) 1 - Overall Relativity for the respective DSR level / Overall Relativity for DSR level 0

40 (b) [Overall Relativity for the respective DSR level / Overall Relativity for DSR level 0 - 1]

41 \* Average Undiscounted Premium + \$45

42 (c) From the Rate Model; reflects the average for merit eligible passenger vehicles and light trucks  
43 based on 2022/23 approved rates

1 The discounts and surcharges calculated apply to vehicles insured by registered  
2 owners at the same DSR level. For example, a discount of 56.0% applies to vehicles  
3 insured by registered owners at DSR level 15. As stated in section 1, the discounts  
4 and surcharges reflect the collective loss experience of the drivers of vehicles  
5 registered to owners with the same DSR level. This implies the following:

- 6 • The discounts and surcharges do not reflect the relative risk of drivers at  
7 different DSR levels.
  
- 8 • The vehicle discount for a registered owner at DSR level 15 would be greater  
9 than 56.0% given that the discount was calculated including the loss  
10 experience of other drivers with a DSR level lower than 15 (i.e. drivers with  
11 worse driving behavior); conversely, DSR level 15 would be lower than 56.0%  
12 given that the discount was calculated including the loss experience of  
13 registered owners with a DSR level potentially higher than 15. Therefore, MPI  
14 did not adjust the vehicle discount for DSR 15 at this moment in time. Further,  
15 MPI currently does not have an indication for DSR 16 since their claims  
16 experience are not available until the end of the rating year 2022/23. As such,  
17 indications for the higher DSR levels will also have a one year lag.
  
- 18 • The surcharge for a registered owner with DSR level -20 would be greater than  
19 \$1,618.55 given that the discount was calculated including the loss experience  
20 of other drivers with a DSR level higher than -20.

21 *Figure DSR App 13-4* also compares the actuarially indicated discounts to the current  
22 discounts. For all DSR levels where discounts are applicable (DSR levels 1 to 15), the  
23 actuarially indicated discounts are higher than the current discounts. If MPI increased  
24 the current discounts to the actuarially indicated discounts for the population of  
25 vehicles (for merit eligible passenger vehicles and light trucks) as at November 1,  
26 2021, the estimated increase in the base rate would be 18.3%<sup>2</sup>. This offsets the  
27 revenue loss from providing higher discounts (i.e., to achieve revenue neutrality). The

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<sup>2</sup> The projected estimated increase in base rate for 2023/24 is 15.6%. This is based on the DSR simulation model discussed in *Revenues REV.2*. Refer to *DSR Driver Safety Rating Chapter* for additional scenarios.

1 new overall discounted average vehicle rate would remain the same in the indicated  
2 structure. However, average vehicle rates by DSR levels will change per *Figure DSR*  
3 *App 13-5* below.

4 *Figure DSR App 13-4* also shows the current surcharges for DSR levels -1 to -20.  
5 However, these surcharges are not directly comparable to the calculated surcharges.  
6 As stated earlier, the calculated surcharges apply to vehicles insured by registered  
7 owners at the same DSR level. However, the current surcharges are applicable at the  
8 driver level (i.e., based on the DSR level of the driver). The calculated surcharges  
9 represent the minimum surcharges for drivers at the same DSR levels.

10 *Figure DSR App 13-5* shows the changes in average rate by DSR level based on  
11 applying the higher calculated discounts offset by the 18.3% increase in the base rate  
12 required to achieve revenue neutrality. Registered owners at DSR levels 10 to 15  
13 would see lower average rates. All other registered owners would see higher average  
14 rates up to 18.3% for DSR levels 0 to -20.

#### Figure DSR App 13- 5 Changes in Average Rate

Line No.	DSR	Average Rate			
		Current	Indicated	Ind vs. Curr, \$	Ind vs. Curr, %
1	15	\$931	\$770	-\$162	-17.4%
2	14	\$1,050	\$1,004	-\$46	-4.3%
3	13	\$1,077	\$1,030	-\$48	-4.4%
4	12	\$1,095	\$1,053	-\$42	-3.9%
5	11	\$1,123	\$1,093	-\$30	-2.7%
6	10	\$1,160	\$1,133	-\$27	-2.3%
7	9	\$1,205	\$1,188	-\$17	-1.4%
8	8	\$1,213	\$1,247	\$34	2.8%
9	7	\$1,224	\$1,316	\$92	7.5%
10	6	\$1,310	\$1,387	\$76	5.8%
11	5	\$1,386	\$1,454	\$67	4.9%
12	4	\$1,398	\$1,547	\$149	10.6%
13	3	\$1,473	\$1,628	\$154	10.5%
14	2	\$1,492	\$1,745	\$253	16.9%
15	1	\$1,572	\$1,846	\$274	17.4%
16	0	\$1,616	\$1,911	\$296	18.3%
17	-1 to -20	\$1,621	\$1,918	\$297	18.3%
18	Total	\$1,174	\$1,174	\$0	0.0%



- 1 *Figure DSR App ~~13~~-6* shows the indicated surcharges (based on the overall DSR level
- 2 relativities) after adjusting for revenue neutrality.

**Figure DSR App ~~13~~- 6 Actuarially Indicated Surcharges**

Line No.	DSR	Surcharge	
		Indicated	Current
1	-1	\$178	\$200
2	-2	\$242	\$200
3	-3	\$309	\$300
4	-4	\$378	\$400
5	-5	\$450	\$450
6	-6	\$525	\$500
7	-7	\$602	\$650
8	-8	\$682	\$800
9	-9	\$765	\$900
10	-10	\$851	\$1,000
11	-11	\$940	\$1,200
12	-12	\$1,032	\$1,400
13	-13	\$1,128	\$1,600
14	-14	\$1,228	\$1,800
15	-15	\$1,331	\$2,000
16	-16	\$1,438	\$2,200
17	-17	\$1,548	\$2,400
18	-18	\$1,663	\$2,600
19	-19	\$1,783	\$2,800
20	-20	\$1,906	\$3,000

1 MPI did not determine the DSR level relativities for PIPP separately for passenger  
2 vehicles and light trucks, rather the DSR level relativities were determined for these  
3 two vehicle types together.

4 MPI then fitted curves to the combined DSR level relativities using regression analysis  
5 to ensure a smooth increasing relativity line as the DSR level decreases from 15 to -  
6 20. MPI fitted curves to achieve the best possible goodness-of-fit to the observed  
7 data, as measured by the R-squared. MPI fitted curves separately for the Other than  
8 PIPP DSR level relativities and PIPP DSR level relativities. *Figure DSR App 3-1* and  
9 *Figure DSR App 3-2* below show the fitted curves.

**Figure DSR App 3- 1 Other than PIPP DSR Level Relativities**

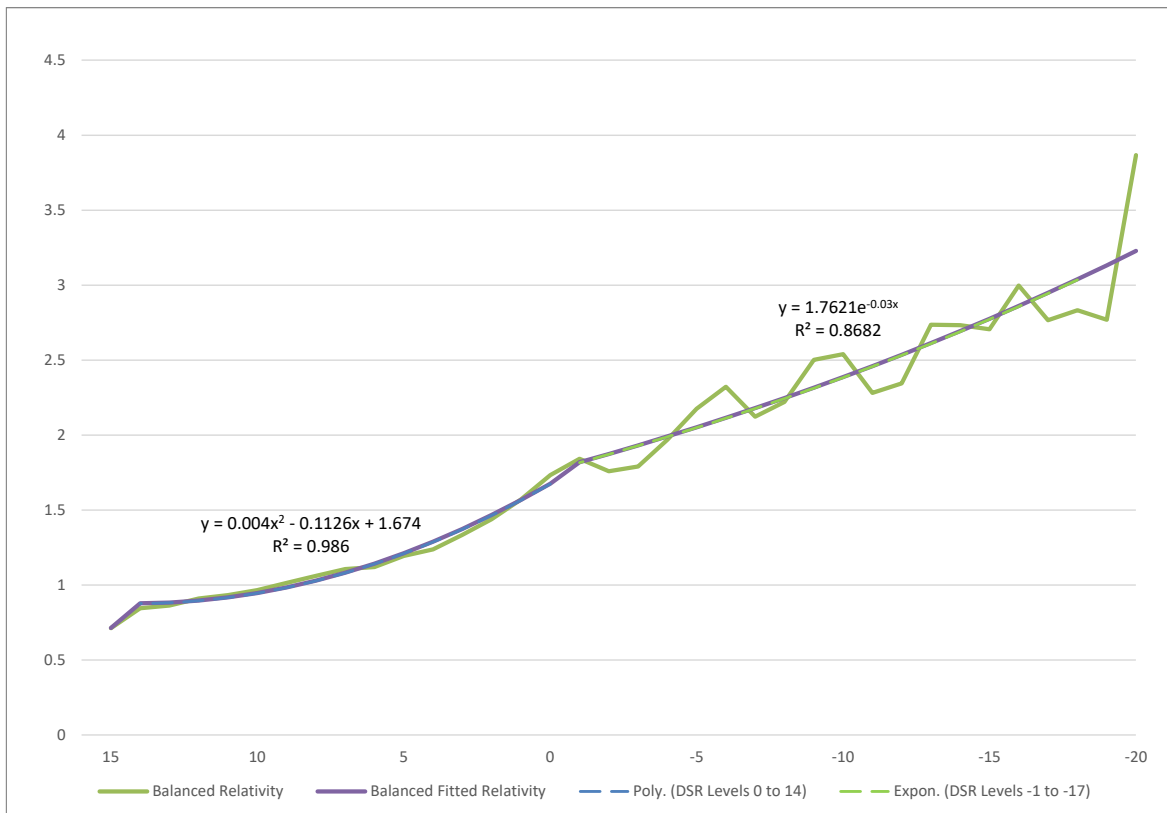
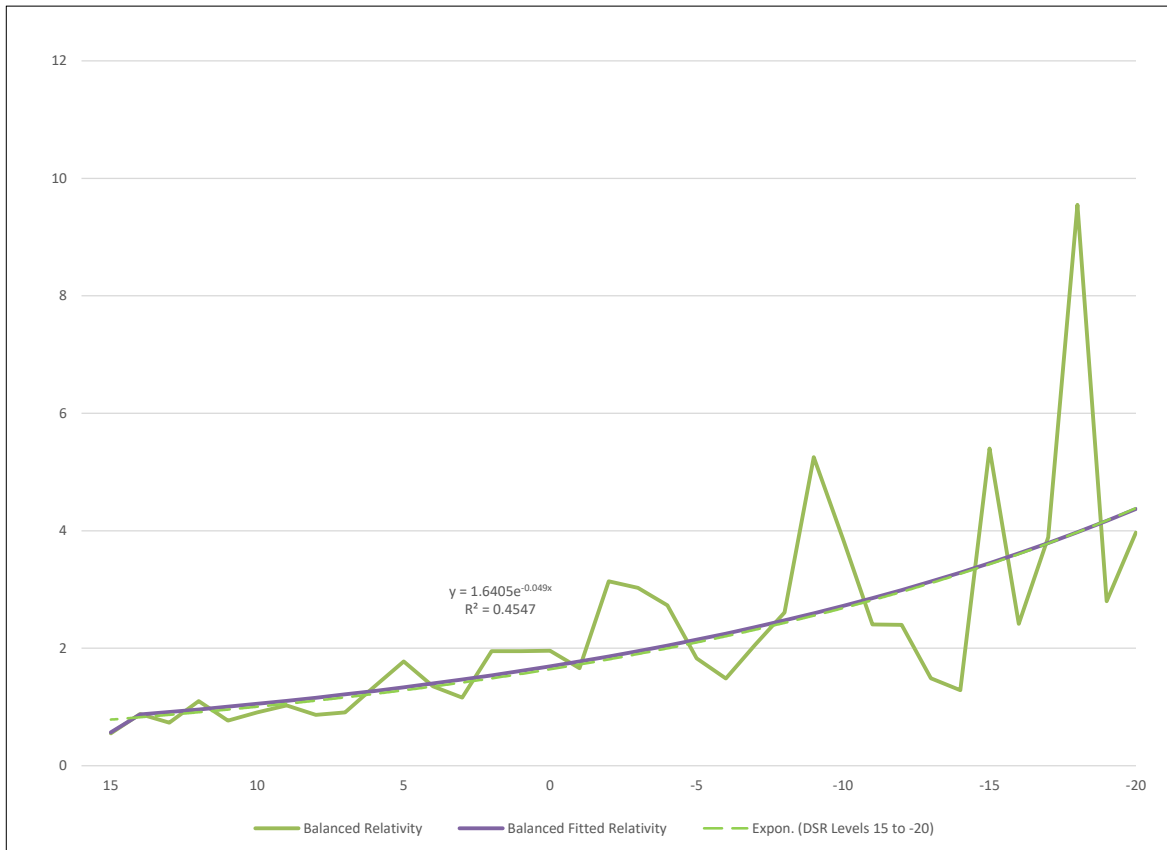


Figure DSR App 3- 2 PIPP DSR Level Relativities



1 MPI then used the fitted curves to determine the average loss costs for each DSR  
 2 level. MPI did this separately for Other than PIPP and PIPP. For PIPP, MPI only applied  
 3 the fitted curve to the portion of loss costs assigned to the vehicle (i.e., the non-“pool”  
 4 loss costs (see *Ratemaking Chapter RM.4.3 Major Classification Required Rates* for  
 5 details on “pool” costs). MPI assumed that the “Pool” costs did not vary with DSR level  
 6 (i.e., the same average loss costs are used for all DSR levels). By coverage:

7  $Average\ Loss\ Cost\ for\ DSR\ Level\ j = Fitted\ Relativity\ at\ DSR\ Level\ j * Average\ Loss$   
 8  $Cost\ for\ the\ Coverage$

9 MPI then determined the total average loss costs for each DSR level.

1 *Total Average Loss Cost for DSR Level j = Sum Average Loss Cost for DSR Level j*  
2 *for All Coverages + PIPP "Pool" Average Loss Costs + Average Fixed Expenses*  
3 *(i.e., not varying by DSR level)*

4 Finally, MPI determined the overall DSR level relativities for each DSR level.

5 *Overall DSR Level Relativity for DSR Level j = Total Average Loss Cost for DSR*  
6 *Level j / Total Average Loss Cost for All DSR levels; where*

7 *Total Average Loss Cost for All DSR Levels = Sum Average Loss Cost for All*  
8 *Coverages + PIPP "Pool" Average Loss Costs + Average Fixed Expenses (i.e., not*  
9 *varying by DSR level)*

10 *Figure DSR App 3-3* below presents the derivation of the overall DSR level relativities  
11 for all DSR levels.

**Figure DSR App 3- 3 Overall Relativities by DSR Level**

Line No.	Fitted Relativity			Average Loss Cost				Overall Relativity	
	DSR	Colli, Comp, PD & BI	PIPP	Colli, Comp, PD & BI	PIPP		Other Costs & Expenses		
					Non-Pool	Pool	Total		
1	15	0.7127	0.5674	\$568.68	\$131.80	\$67.52	\$41.13	\$809.13	0.7105
2	14	0.8777	0.8703	\$700.32	\$202.14	\$67.52	\$41.13	\$1,011.11	0.8879
3	13	0.8830	0.9126	\$704.54	\$211.96	\$67.52	\$41.13	\$1,025.15	0.9002
4	12	0.8962	0.9569	\$715.10	\$222.27	\$67.52	\$41.13	\$1,046.02	0.9185
5	11	0.9174	1.0034	\$732.02	\$233.07	\$67.52	\$41.13	\$1,073.74	0.9429
6	10	0.9466	1.0522	\$755.29	\$244.40	\$67.52	\$41.13	\$1,108.34	0.9732
7	9	0.9837	1.1034	\$784.91	\$256.29	\$67.52	\$41.13	\$1,149.84	1.0097
8	8	1.0288	1.1570	\$820.88	\$268.74	\$67.52	\$41.13	\$1,198.27	1.0522
9	7	1.0818	1.2133	\$863.20	\$281.81	\$67.52	\$41.13	\$1,253.66	1.1008
10	6	1.1428	1.2723	\$911.87	\$295.51	\$67.52	\$41.13	\$1,316.03	1.1556
11	5	1.2118	1.3341	\$966.90	\$309.88	\$67.52	\$41.13	\$1,385.42	1.2165
12	4	1.2887	1.3990	\$1,028.27	\$324.94	\$67.52	\$41.13	\$1,461.86	1.2837
13	3	1.3736	1.4670	\$1,096.00	\$340.74	\$67.52	\$41.13	\$1,545.38	1.3570
14	2	1.4665	1.5383	\$1,170.07	\$357.30	\$67.52	\$41.13	\$1,636.03	1.4366
15	1	1.5673	1.6131	\$1,250.50	\$374.67	\$67.52	\$41.13	\$1,733.82	1.5225
16	0	1.6760	1.6915	\$1,337.28	\$392.89	\$67.52	\$41.13	\$1,838.82	1.6147
17	-1	1.8183	1.7737	\$1,450.82	\$411.99	\$67.52	\$41.13	\$1,971.46	1.7311
18	-2	1.8741	1.8600	\$1,495.33	\$432.02	\$67.52	\$41.13	\$2,035.99	1.7878
19	-3	1.9316	1.9504	\$1,541.19	\$453.02	\$67.52	\$41.13	\$2,102.86	1.8465
20	-4	1.9908	2.0452	\$1,588.46	\$475.04	\$67.52	\$41.13	\$2,172.16	1.9074
21	-5	2.0519	2.1446	\$1,637.19	\$498.13	\$67.52	\$41.13	\$2,243.97	1.9704
22	-6	2.1148	2.2489	\$1,687.41	\$522.35	\$67.52	\$41.13	\$2,318.41	2.0358
23	-7	2.1797	2.3582	\$1,739.16	\$547.75	\$67.52	\$41.13	\$2,395.56	2.1036
24	-8	2.2465	2.4729	\$1,792.51	\$574.37	\$67.52	\$41.13	\$2,475.53	2.1738
25	-9	2.3155	2.5931	\$1,847.49	\$602.30	\$67.52	\$41.13	\$2,558.44	2.2466
26	-10	2.3865	2.7191	\$1,904.16	\$631.58	\$67.52	\$41.13	\$2,644.39	2.3220
27	-11	2.4597	2.8513	\$1,962.56	\$662.28	\$67.52	\$41.13	\$2,733.50	2.4003
28	-12	2.5351	2.9899	\$2,022.76	\$694.48	\$67.52	\$41.13	\$2,825.89	2.4814
29	-13	2.6129	3.1353	\$2,084.81	\$728.24	\$67.52	\$41.13	\$2,921.70	2.5656
30	-14	2.6930	3.2877	\$2,148.75	\$763.64	\$67.52	\$41.13	\$3,021.05	2.6528
31	-15	2.7756	3.4475	\$2,214.66	\$800.77	\$67.52	\$41.13	\$3,124.08	2.7433
32	-16	2.8608	3.6151	\$2,282.59	\$839.70	\$67.52	\$41.13	\$3,230.94	2.8371
33	-17	2.9485	3.7909	\$2,352.61	\$880.52	\$67.52	\$41.13	\$3,341.78	2.9344
34	-18	3.0390	3.9752	\$2,424.77	\$923.32	\$67.52	\$41.13	\$3,456.74	3.0354
35	-19	3.1322	4.1684	\$2,499.14	\$968.21	\$67.52	\$41.13	\$3,576.01	3.1401
36	-20	3.2282	4.3711	\$2,575.80	\$1,015.28	\$67.52	\$41.13	\$3,699.73	3.2488
37	<b>All DSR Levels*</b>			<b>\$797.89</b>	<b>\$232.27</b>	<b>\$67.52</b>	<b>\$41.13</b>	<b>\$1,138.82</b>	

38 *\*2021 GRA, Compliance Filing Jan 12, 2021, Figure 7:*

39 Amounts for Private Passenger

40 Amounts for 'Colli, Comp, PD and BI' and 'PIPP' include claims costs and expenses

41 Amount for 'Other Loss Cost and Exp' includes the following:

42 Fixed expenses - operating expenses, regulatory/appeal, road safety, commission flat fees, fleet rebates, anti-theft discount, reinsurance,  
43 and premium taxes and commissions on driver premiums

44 Fixed other income sources - driver premiums and service fees

#### 4. Results and Implications

- 1 *Figure DSR App 3-4* below shows the DSR discount percentages (for DSR levels 1 to  
2 15) and DSR surcharge dollars (for DSR levels -1 to -20) based on the overall DSR  
3 level relativities presented in *Figure DSR App 3-3*. MPI calculated the discounts and  
4 surcharges by comparing the relativity at each DSR level to the relativity at DSR level  
5 0 (i.e., the base DSR level).

**Figure DSR App 3- 4      Calculated Discounts and Surcharges**

Line No.	DSR	Overall Relativity	Calculated Discount (a)	Current Discount	Variance	Calculated Surcharge (b)	Current Surcharge	
1	15	0.7105	56.0%	37.0%	19.0%			
2	14	0.8879	45.0%	32.0%	13.0%			
3	13	0.9002	44.2%	31.0%	13.2%			
4	12	0.9185	43.1%	30.0%	13.1%			
5	11	0.9429	41.6%	29.0%	12.6%			
6	10	0.9732	39.7%	27.0%	12.7%			
7	9	1.0097	37.5%	25.0%	12.5%			
8	8	1.0522	34.8%	25.0%	9.8%			
9	7	1.1008	31.8%	25.0%	6.8%			
10	6	1.1556	28.4%	20.0%	8.4%			
11	5	1.2165	24.7%	15.0%	9.7%			
12	4	1.2837	20.5%	15.0%	5.5%			
13	3	1.3570	16.0%	10.0%	6.0%			
14	2	1.4366	11.0%	10.0%	1.0%			
15	1	1.5225	5.7%	5.0%	0.7%			
16	0	1.6147						
17	-1	1.7311				\$157.16	\$200.00	
18	-2	1.7878				\$211.73	\$200.00	
19	-3	1.8465				\$268.27	\$300.00	
20	-4	1.9074				\$326.86	\$400.00	
21	-5	1.9704				\$387.59	\$450.00	
22	-6	2.0358				\$450.53	\$500.00	
23	-7	2.1036				\$515.77	\$650.00	
24	-8	2.1738				\$583.39	\$800.00	
25	-9	2.2466				\$653.50	\$900.00	
26	-10	2.3220				\$726.17	\$1,000.00	
27	-11	2.4003				\$801.52	\$1,200.00	
28	-12	2.4814				\$879.65	\$1,400.00	
29	-13	2.5656				\$960.66	\$1,600.00	
30	-14	2.6528				\$1,044.67	\$1,800.00	
31	-15	2.7433				\$1,131.79	\$2,000.00	
32	-16	2.8371				\$1,222.15	\$2,200.00	
33	-17	2.9344				\$1,315.87	\$2,400.00	
34	-18	3.0354				\$1,413.08	\$2,600.00	
35	-19	3.1401				\$1,513.93	\$2,800.00	
36	-20	3.2488				\$1,618.55	\$3,000.00	
37	<b>Average Undiscounted Premium (c)</b>						<b>\$1,554.87</b>	

38 Notes:

39 (a) 1 - Overall Relativity for the respective DSR level / Overall Relativity for DSR level 0

40 (b) [Overall Relativity for the respective DSR level / Overall Relativity for DSR level 0 - 1]

41 \* Average Undiscounted Premium + \$45

42 (c) From the Rate Model; reflects the average for merit eligible passenger vehicles and light trucks  
43 based on 2022/23 approved rates

1 The discounts and surcharges calculated apply to vehicles insured by registered  
2 owners at the same DSR level. For example, a discount of 56.0% applies to vehicles  
3 insured by registered owners at DSR level 15. As stated in section 1, the discounts  
4 and surcharges reflect the collective loss experience of the drivers of vehicles  
5 registered to owners with the same DSR level. This implies the following:

- 6 • The discounts and surcharges do not reflect the relative risk of drivers at  
7 different DSR levels.
- 8 • The vehicle discount for a registered owner at DSR level 15 would be greater  
9 than 56.0% given that the discount was calculated including the loss  
10 experience of other drivers with a DSR level lower than 15 (i.e. drivers with  
11 worse driving behavior); conversely, DSR level 15 would be lower than 56.0%  
12 given that the discount was calculated including the loss experience of  
13 registered owners with a DSR level potentially higher than 15. Therefore, MPI  
14 did not adjust the vehicle discount for DSR 15 at this moment in time. Further,  
15 MPI currently does not have an indication for DSR 16 since their claims  
16 experience are not available until the end of the rating year 2022/23. As such,  
17 indications for the higher DSR levels will also have a one year lag.
- 18 • The surcharge for a registered owner with DSR level -20 would be greater than  
19 \$1,618.55 given that the discount was calculated including the loss experience  
20 of other drivers with a DSR level higher than -20.

21 Figure DSR App 3-4 also compares the actuarially indicated discounts to the current  
22 discounts. For all DSR levels where discounts are applicable (DSR levels 1 to 15), the  
23 actuarially indicated discounts are higher than the current discounts. If MPI increased  
24 the current discounts to the actuarially indicated discounts for the population of  
25 vehicles (for merit eligible passenger vehicles and light trucks) as at November 1,  
26 2021, the estimated increase in the base rate would be 18.3%<sup>2</sup>. This offsets the  
27 revenue loss from providing higher discounts (i.e., to achieve revenue neutrality). The

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<sup>2</sup> The projected estimated increase in base rate for 2023/24 is 15.6%. This is based on the DSR simulation model discussed in Revenues REV.2. Refer to DSR Driver Safety Rating Chapter for additional scenarios.



1 new overall discounted average vehicle rate would remain the same in the indicated  
2 structure. However, average vehicle rates by DSR levels will change per *Figure DSR*  
3 *App 3-5* below.

4 *Figure DSR App 3-4* also shows the current surcharges for DSR levels -1 to -20.  
5 However, these surcharges are not directly comparable to the calculated surcharges.  
6 As stated earlier, the calculated surcharges apply to vehicles insured by registered  
7 owners at the same DSR level. However, the current surcharges are applicable at the  
8 driver level (i.e., based on the DSR level of the driver). The calculated surcharges  
9 represent the minimum surcharges for drivers at the same DSR levels.

10 *Figure DSR App 3-5* shows the changes in average rate by DSR level based on  
11 applying the higher calculated discounts offset by the 18.3% increase in the base rate  
12 required to achieve revenue neutrality. Registered owners at DSR levels 10 to 15  
13 would see lower average rates. All other registered owners would see higher average  
14 rates up to 18.3% for DSR levels 0 to -20.

**Figure DSR App 3- 5 Changes in Average Rate**

Line No.	DSR	Average Rate			
		Current	Indicated	Ind vs. Curr, \$	Ind vs. Curr, %
1	15	\$931	\$770	-\$162	-17.4%
2	14	\$1,050	\$1,004	-\$46	-4.3%
3	13	\$1,077	\$1,030	-\$48	-4.4%
4	12	\$1,095	\$1,053	-\$42	-3.9%
5	11	\$1,123	\$1,093	-\$30	-2.7%
6	10	\$1,160	\$1,133	-\$27	-2.3%
7	9	\$1,205	\$1,188	-\$17	-1.4%
8	8	\$1,213	\$1,247	\$34	2.8%
9	7	\$1,224	\$1,316	\$92	7.5%
10	6	\$1,310	\$1,387	\$76	5.8%
11	5	\$1,386	\$1,454	\$67	4.9%
12	4	\$1,398	\$1,547	\$149	10.6%
13	3	\$1,473	\$1,628	\$154	10.5%
14	2	\$1,492	\$1,745	\$253	16.9%
15	1	\$1,572	\$1,846	\$274	17.4%
16	0	\$1,616	\$1,911	\$296	18.3%
17	-1 to -20	\$1,621	\$1,918	\$297	18.3%
18	<b>Total</b>	\$1,174	\$1,174	\$0	0.0%

- 1 *Figure DSR App 3-6* shows the indicated surcharges (based on the overall DSR level
- 2 relativities) after adjusting for revenue neutrality.

**Figure DSR App 3- 6 Actuarially Indicated Surcharges**

Line No.	Surcharge		
	DSR	Indicated	Current
1	-1	\$178	\$200
2	-2	\$242	\$200
3	-3	\$309	\$300
4	-4	\$378	\$400
5	-5	\$450	\$450
6	-6	\$525	\$500
7	-7	\$602	\$650
8	-8	\$682	\$800
9	-9	\$765	\$900
10	-10	\$851	\$1,000
11	-11	\$940	\$1,200
12	-12	\$1,032	\$1,400
13	-13	\$1,128	\$1,600
14	-14	\$1,228	\$1,800
15	-15	\$1,331	\$2,000
16	-16	\$1,438	\$2,200
17	-17	\$1,548	\$2,400
18	-18	\$1,663	\$2,600
19	-19	\$1,783	\$2,800
20	-20	\$1,906	\$3,000