

CMMG (MPI) 2-3

Part and Chapter:	Part VI – DSR Appendix 3	Page No.:	3 of 13
PUB Approved Issue No:	11. Driver Safety Rating		
Topic:	DSR Actuarial Review		
Sub Topic:	CMMG (MPI) 1-14		

Preamble to IR:

CMMG (MPI) 1-14

Question:

- a) Please update Part VI – DSR Appendix 3 Figure DSR App 1- 3 using the average loss costs for Motorcycles.
- b) Please update Part VI – DSR Appendix 3 Figure DSR App 1- 4 using the overall relativities from the results in (a).

Rationale for Question:

To examine the impact of DSR levels on Motorcycles given their different risk potential.

RESPONSE:

a) and b)

Figure 1 below is an update to *Driver Safety Rating DSR Appendix 3 Figure DSR App 1-3* using the average loss costs for Motorcycles. *Figure 2* is an update to *Driver Safety Rating DSR Appendix 3 Figure DSR App 1-4* using the overall relativities from the results in *Figure 1*. ~~Due to the small number of Motorcycle~~

~~units, MPI believes that the results produced are may not be fully credible. Further, The use of average Motorcycle loss costs together with the fitted relativities of passenger vehicles/trucks in the figures below is not consistent and, therefore, the results are not theoretically appropriate to calculate overall relativities and indicated discounts is not consistent. The fitted relativities used in the original 2023 GRA were that of Passenger Vehicle and Light Truck and to use these relativities with the average Motorcycle loss costs is not theoretically appropriate.~~

Figure 1 Overall Relativities by DSR Level Using Average Motorcycle Loss Costs
~~Motorcycle Overall Relativities by DSR Level~~

Line No.	DSR	Fitted Relativity		Average Loss Cost							Overall Relativity			
		Colli, Comp, PD & BI	PIPP	Colli, Comp, PD & BI	PIPP		Other Costs		Total					
					Non-Pool	Pool	& Expenses							
1	15	0.7127	0.5674	\$62.47	\$57.87	\$673.72	\$418.62	\$67.52	\$67.52	\$7.96	\$701.68	\$551.97	0.7846	0.6171
2	14	0.8777	0.8703	\$55.24	\$71.27	\$608.37	\$642.02	\$67.52	\$67.52	\$7.96	\$739.05	\$788.77	0.8263	0.8819
3	13	0.8830	0.9126	\$62.03	\$71.70	\$643.04	\$673.23	\$67.52	\$67.52	\$7.96	\$780.52	\$820.41	0.8727	0.9173
4	12	0.8962	0.9569	\$68.86	\$72.77	\$677.66	\$705.96	\$67.52	\$67.52	\$7.96	\$821.99	\$854.22	0.9190	0.9551
5	11	0.9174	1.0034	\$75.68	\$74.50	\$712.29	\$740.28	\$67.52	\$67.52	\$7.96	\$863.45	\$890.26	0.9654	0.9953
6	10	0.9466	1.0522	\$82.54	\$76.86	\$746.93	\$776.27	\$67.52	\$67.52	\$7.96	\$904.92	\$928.61	1.0117	1.0382
7	9	0.9837	1.1034	\$89.33	\$79.88	\$781.57	\$814.01	\$67.52	\$67.52	\$7.96	\$946.38	\$969.37	1.0584	1.0838
8	8	1.0288	1.1570	\$96.16	\$83.54	\$816.24	\$853.58	\$67.52	\$67.52	\$7.96	\$987.85	\$1,012.60	1.1045	1.1321
9	7	1.0818	1.2133	\$102.99	\$87.85	\$850.86	\$895.07	\$67.52	\$67.52	\$7.96	\$1,029.32	\$1,058.40	1.1608	1.1833
10	6	1.1428	1.2723	\$109.84	\$92.80	\$885.49	\$938.59	\$67.52	\$67.52	\$7.96	\$1,070.78	\$1,106.87	1.1972	1.2375
11	5	1.2118	1.3341	\$116.64	\$98.40	\$920.13	\$984.22	\$67.52	\$67.52	\$7.96	\$1,112.25	\$1,158.10	1.2435	1.2948
12	4	1.2887	1.3990	\$123.46	\$104.65	\$954.77	\$1,032.06	\$67.52	\$67.52	\$7.96	\$1,153.72	\$1,212.19	1.2899	1.3553
13	3	1.3736	1.4670	\$130.29	\$111.54	\$989.44	\$1,082.24	\$67.52	\$67.52	\$7.96	\$1,195.18	\$1,269.26	1.3363	1.4191
14	2	1.4665	1.5383	\$137.14	\$119.08	\$1,024.05	\$1,134.85	\$67.52	\$67.52	\$7.96	\$1,236.65	\$1,329.41	1.3826	1.4863
15	1	1.5673	1.6131	\$143.94	\$127.26	\$1,058.69	\$1,190.02	\$67.52	\$67.52	\$7.96	\$1,278.14	\$1,392.76	1.4290	1.5572
16	0	1.6760	1.6915	\$144.13	\$136.09	\$1,093.34	\$1,247.87	\$67.52	\$67.52	\$7.96	\$1,312.96	\$1,459.45	1.4679	1.6317
17	-1	1.8183	1.7737	\$144.33	\$147.65	\$1,127.98	\$1,308.54	\$67.52	\$67.52	\$7.96	\$1,347.79	\$1,531.67	1.5069	1.7125
18	-2	1.8741	1.8600	\$144.52	\$152.18	\$1,162.62	\$1,372.15	\$67.52	\$67.52	\$7.96	\$1,382.62	\$1,599.81	1.5458	1.7887
19	-3	1.9316	1.9504	\$144.72	\$156.84	\$1,197.26	\$1,438.86	\$67.52	\$67.52	\$7.96	\$1,417.46	\$1,671.19	1.5848	1.8685
20	-4	1.9908	2.0452	\$144.94	\$161.65	\$1,231.90	\$1,508.81	\$67.52	\$67.52	\$7.96	\$1,452.29	\$1,745.95	1.6237	1.9520
21	-5	2.0519	2.1446	\$149.45	\$166.61	\$1,266.54	\$1,582.16	\$67.52	\$67.52	\$7.96	\$1,491.47	\$1,824.26	1.6675	2.0396
22	-6	2.1148	2.2489	\$153.99	\$171.72	\$1,301.18	\$1,659.08	\$67.52	\$67.52	\$7.96	\$1,530.65	\$1,906.28	1.7113	2.1313
23	-7	2.1797	2.3582	\$158.52	\$176.99	\$1,335.82	\$1,739.73	\$67.52	\$67.52	\$7.96	\$1,569.83	\$1,992.21	1.7564	2.2274
24	-8	2.2465	2.4729	\$163.06	\$182.42	\$1,370.46	\$1,824.31	\$67.52	\$67.52	\$7.96	\$1,609.00	\$2,082.21	1.7989	2.3280
25	-9	2.3155	2.5931	\$167.60	\$188.02	\$1,405.10	\$1,913.00	\$67.52	\$67.52	\$7.96	\$1,648.18	\$2,176.50	1.8427	2.4334
26	-10	2.3865	2.7191	\$172.14	\$193.78	\$1,439.74	\$2,006.00	\$67.52	\$67.52	\$7.96	\$1,687.36	\$2,275.26	1.8865	2.5438
27	-11	2.4597	2.8513	\$176.67	\$199.73	\$1,474.38	\$2,103.52	\$67.52	\$67.52	\$7.96	\$1,726.54	\$2,378.73	1.9303	2.6595
28	-12	2.5351	2.9899	\$181.24	\$205.85	\$1,509.02	\$2,205.78	\$67.52	\$67.52	\$7.96	\$1,765.72	\$2,487.12	1.9742	2.7807
29	-13	2.6129	3.1353	\$185.75	\$212.17	\$1,543.66	\$2,313.01	\$67.52	\$67.52	\$7.96	\$1,804.89	\$2,600.66	2.0180	2.9077
30	-14	2.6930	3.2877	\$190.29	\$218.67	\$1,578.30	\$2,425.46	\$67.52	\$67.52	\$7.96	\$1,844.07	\$2,719.62	2.0618	3.0407
31	-15	2.7756	3.4475	\$194.82	\$225.38	\$1,612.95	\$2,543.37	\$67.52	\$67.52	\$7.96	\$1,883.25	\$2,844.24	2.1056	3.1800
32	-16	2.8608	3.6151	\$199.36	\$232.30	\$1,647.59	\$2,667.02	\$67.52	\$67.52	\$7.96	\$1,922.43	\$2,974.80	2.1494	3.3260
33	-17	2.9485	3.7909	\$203.90	\$239.42	\$1,682.23	\$2,796.68	\$67.52	\$67.52	\$7.96	\$1,961.64	\$3,111.58	2.1932	3.4789
34	-18	3.0390	3.9752	\$208.44	\$246.76	\$1,716.87	\$2,932.64	\$67.52	\$67.52	\$7.96	\$2,000.78	\$3,254.88	2.2370	3.6391
35	-19	3.1322	4.1684	\$212.97	\$254.33	\$1,751.54	\$3,075.21	\$67.52	\$67.52	\$7.96	\$2,039.96	\$3,405.02	2.2808	3.8070
36	-20	3.2282	4.3711	\$217.54	\$262.13	\$1,786.16	\$3,224.71	\$67.52	\$67.52	\$7.96	\$2,079.14	\$3,562.32	2.3246	3.9828
37	All DSR Levels*			\$81.20	\$81.20	\$737.74	\$737.74	\$67.52	\$67.52	\$7.96	\$894.42	\$894.42		

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

Amounts for Motorcycle

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

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

Fixed expenses - operating expenses, regulatory/appeal, road safety, commission flat fees, fleet rebates, anti-theft discount, reinsurance,

and premium taxes and commissions on driver premiums

Fixed other income sources - driver premiums and service fees

Figure 2 Calculated Surcharges and Discounts Using Average Motorcycle Loss
Costs~~Motorcycle~~Calculated Surcharges and Discounts

Line No.	DSR	Overall Relativity	Calculated Discount (a)	Current Discount	Variance	Calculated Surcharge (b)	Current Surcharge	
1	15	0.7845	46.6%	62.2%	37.0%	9.6%	25.2%	
2	14	0.8263	43.7%	46.0%	32.0%	11.7%	14.0%	
3	13	0.8727	40.6%	43.8%	31.0%	9.6%	12.8%	
4	12	0.9490	37.4%	41.5%	30.0%	7.4%	11.5%	
5	11	0.9654	34.2%	39.0%	29.0%	5.2%	10.0%	
6	10	1.0417	31.1%	36.4%	27.0%	4.1%	9.4%	
7	9	1.0581	27.9%	33.6%	25.0%	2.9%	8.6%	
8	8	1.1045	24.8%	30.6%	25.0%	-0.2%	5.6%	
9	7	1.1508	21.6%	27.5%	25.0%	-3.4%	2.5%	
10	6	1.1972	18.4%	24.2%	20.0%	-1.6%	4.2%	
11	5	1.2435	15.3%	20.6%	15.0%	0.3%	5.6%	
12	4	1.2899	12.1%	16.9%	15.0%	-2.9%	1.9%	
13	3	1.3363	9.0%	13.0%	10.0%	-1.0%	3.0%	
14	2	1.3826	5.8%	8.9%	10.0%	-4.2%	-1.1%	
15	1	1.4290	2.7%	4.6%	5.0%	-2.3%	-0.4%	
16	0	1.4679						
17	-1	1.5069				\$77.92	\$121.94	
18	-2	1.5458				\$110.84	\$194.54	
19	-3	1.5848				\$143.75	\$270.58	
20	-4	1.6237				\$176.67	\$350.23	
21	-5	1.6627				\$213.69	\$433.66	
22	-6	1.7113				\$250.71	\$521.05	
23	-7	1.7551				\$287.73	\$612.59	
24	-8	1.7989				\$324.75	\$708.48	
25	-9	1.8427				\$361.78	\$808.93	
26	-10	1.8865				\$398.80	\$914.15	
27	-11	1.9303				\$435.82	\$1,024.38	
28	-12	1.9742				\$472.84	\$1,139.86	
29	-13	2.0180				\$509.86	\$1,260.83	
30	-14	2.0618				\$546.88	\$1,387.56	
31	-15	2.1056				\$583.90	\$1,520.33	
32	-16	2.1494				\$620.92	\$1,659.42	
33	-17	2.1932				\$657.94	\$1,805.15	
34	-18	2.2370				\$694.96	\$1,957.82	
35	-19	2.2808				\$731.98	\$2,117.77	
36	-20	2.3246				\$769.01	\$2,285.36	
37	Average Undiscounted Premium (c)						\$1,240.66	\$1,554.87

Notes:
 (a) 1 - Overall Relativity for the respective DSR level / Overall Relativity for DSR level 0
 (b) [Overall Relativity for the respective DSR level / Overall Relativity for DSR level 0 - 1]
 * Average Undiscounted Premium + \$45
 (c) From the Rate Model; reflects the average for merit eligible Motorcycles.
 based on 2022/23 approved rates

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- b) Please update Part VI – DSR Appendix 3 Figure DSR App 1- 4 using the overall relativities from the results in (a).

Rationale for Question:

To examine the impact of DSR levels on Motorcycles given their different risk potential.

RESPONSE:

a) and b)

Figure 1 below is an update to *Driver Safety Rating DSR Appendix 3 Figure DSR App 1-3* using the average loss costs for Motorcycles. *Figure 2* is an update to *Driver Safety Rating DSR Appendix 3 Figure DSR App 1-4* using the overall relativities from the results in *Figure 1*. The use of average Motorcycle loss costs

together with the fitted relativities of passenger vehicles/trucks in the figures below is not consistent and, therefore, the results are not theoretically appropriate.

Figure 1 Overall Relativities by DSR Level Using Average Motorcycle Loss Costs

Line No.	DSR	Fitted Relativity		Average Loss Cost			Other Costs & Expenses	Total	Overall Relativity
		Colli, Comp, PD & BI	PIPP	Colli, Comp, PD & BI	Non-Pool	Pool			
1	15	0.6462	0.7777	\$57.87	\$418.62	\$67.52	\$7.96	\$551.97	0.6171
2	14	0.6799	0.8246	\$71.27	\$642.02	\$67.52	\$7.96	\$788.77	0.8819
3	13	0.7639	0.8716	\$71.70	\$673.23	\$67.52	\$7.96	\$820.41	0.9173
4	12	0.8480	0.9185	\$72.77	\$705.96	\$67.52	\$7.96	\$854.22	0.9551
5	11	0.9321	0.9655	\$74.50	\$740.28	\$67.52	\$7.96	\$890.26	0.9953
6	10	1.0161	1.0125	\$76.86	\$776.27	\$67.52	\$7.96	\$928.61	1.0382
7	9	1.1002	1.0594	\$79.88	\$814.01	\$67.52	\$7.96	\$969.37	1.0838
8	8	1.1842	1.1064	\$83.54	\$853.58	\$67.52	\$7.96	\$1,012.60	1.1321
9	7	1.2683	1.1533	\$87.85	\$895.07	\$67.52	\$7.96	\$1,058.40	1.1833
10	6	1.3523	1.2003	\$92.80	\$938.59	\$67.52	\$7.96	\$1,106.87	1.2375
11	5	1.4364	1.2472	\$98.40	\$984.22	\$67.52	\$7.96	\$1,158.10	1.2948
12	4	1.5205	1.2942	\$104.65	\$1,032.06	\$67.52	\$7.96	\$1,212.19	1.3553
13	3	1.6045	1.3411	\$111.54	\$1,082.24	\$67.52	\$7.96	\$1,269.26	1.4191
14	2	1.6886	1.3881	\$119.08	\$1,134.85	\$67.52	\$7.96	\$1,329.41	1.4863
15	1	1.7726	1.4351	\$127.26	\$1,190.02	\$67.52	\$7.96	\$1,392.76	1.5572
16	0	1.7750	1.4820	\$136.09	\$1,247.87	\$67.52	\$7.96	\$1,459.45	1.6317
17	-1	1.7774	1.5290	\$147.65	\$1,308.54	\$67.52	\$7.96	\$1,531.67	1.7125
18	-2	1.7798	1.5759	\$152.18	\$1,372.15	\$67.52	\$7.96	\$1,599.81	1.7887
19	-3	1.7822	1.6229	\$156.84	\$1,438.86	\$67.52	\$7.96	\$1,671.19	1.8685
20	-4	1.7846	1.6698	\$161.65	\$1,508.81	\$67.52	\$7.96	\$1,745.95	1.9520
21	-5	1.8405	1.7168	\$166.61	\$1,582.16	\$67.52	\$7.96	\$1,824.26	2.0396
22	-6	1.8964	1.7637	\$171.72	\$1,659.08	\$67.52	\$7.96	\$1,906.28	2.1313
23	-7	1.9523	1.8107	\$176.99	\$1,739.73	\$67.52	\$7.96	\$1,992.21	2.2274
24	-8	2.0082	1.8577	\$182.42	\$1,824.31	\$67.52	\$7.96	\$2,082.21	2.3280
25	-9	2.0640	1.9046	\$188.02	\$1,913.00	\$67.52	\$7.96	\$2,176.50	2.4334
26	-10	2.1199	1.9516	\$193.78	\$2,006.00	\$67.52	\$7.96	\$2,275.26	2.5438
27	-11	2.1758	1.9985	\$199.73	\$2,103.52	\$67.52	\$7.96	\$2,378.73	2.6595
28	-12	2.2317	2.0455	\$205.85	\$2,205.78	\$67.52	\$7.96	\$2,487.12	2.7807
29	-13	2.2875	2.0924	\$212.17	\$2,313.01	\$67.52	\$7.96	\$2,600.66	2.9077
30	-14	2.3434	2.1394	\$218.67	\$2,425.46	\$67.52	\$7.96	\$2,719.62	3.0407
31	-15	2.3993	2.1863	\$225.38	\$2,543.37	\$67.52	\$7.96	\$2,844.24	3.1800
32	-16	2.4552	2.2333	\$232.30	\$2,667.02	\$67.52	\$7.96	\$2,974.80	3.3260
33	-17	2.5111	2.2803	\$239.42	\$2,796.68	\$67.52	\$7.96	\$3,111.58	3.4789
34	-18	2.5669	2.3272	\$246.76	\$2,932.64	\$67.52	\$7.96	\$3,254.88	3.6391
35	-19	2.6228	2.3742	\$254.33	\$3,075.21	\$67.52	\$7.96	\$3,405.02	3.8070
36	-20	2.6787	2.4211	\$262.13	\$3,224.71	\$67.52	\$7.96	\$3,562.32	3.9828
37	All DSR Levels*			\$81.20	\$737.74	\$67.52	\$7.96	\$894.42	

38 **2021 GRA, Compliance Filing Jan 12, 2021, Figure Z:*

39 Amounts for Motorcycle

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,
and premium taxes and commissions on driver premiums

44 Fixed other income sources - driver premiums and service fees

Figure 2 Calculated Surcharges and Discounts Using Average Motorcycle Loss Costs

Line No.	DSR	Overall Relativity	Calculated Discount (a)	Current Discount	Variance	Calculated Surcharge (b)	Current Surcharge	
1	15	0.6171	62.2%	37.0%	25.2%			
2	14	0.8819	46.0%	32.0%	14.0%			
3	13	0.9173	43.8%	31.0%	12.8%			
4	12	0.9551	41.5%	30.0%	11.5%			
5	11	0.9953	39.0%	29.0%	10.0%			
6	10	1.0382	36.4%	27.0%	9.4%			
7	9	1.0838	33.6%	25.0%	8.6%			
8	8	1.1321	30.6%	25.0%	5.6%			
9	7	1.1833	27.5%	25.0%	2.5%			
10	6	1.2375	24.2%	20.0%	4.2%			
11	5	1.2948	20.6%	15.0%	5.6%			
12	4	1.3553	16.9%	15.0%	1.9%			
13	3	1.4191	13.0%	10.0%	3.0%			
14	2	1.4863	8.9%	10.0%	-1.1%			
15	1	1.5572	4.6%	5.0%	-0.4%			
16	0	1.6317						
17	-1	1.7125				\$121.94	\$200.00	
18	-2	1.7887				\$194.54	\$200.00	
19	-3	1.8685				\$270.58	\$300.00	
20	-4	1.9520				\$350.23	\$400.00	
21	-5	2.0396				\$433.66	\$450.00	
22	-6	2.1313				\$521.05	\$500.00	
23	-7	2.2274				\$612.59	\$650.00	
24	-8	2.3280				\$708.48	\$800.00	
25	-9	2.4334				\$808.93	\$900.00	
26	-10	2.5438				\$914.15	\$1,000.00	
27	-11	2.6595				\$1,024.38	\$1,200.00	
28	-12	2.7807				\$1,139.86	\$1,400.00	
29	-13	2.9077				\$1,260.83	\$1,600.00	
30	-14	3.0407				\$1,387.56	\$1,800.00	
31	-15	3.1800				\$1,520.33	\$2,000.00	
32	-16	3.3260				\$1,659.42	\$2,200.00	
33	-17	3.4789				\$1,805.15	\$2,400.00	
34	-18	3.6391				\$1,957.82	\$2,600.00	
35	-19	3.8070				\$2,117.77	\$2,800.00	
36	-20	3.9828				\$2,285.36	\$3,000.00	
37	Average Undiscounted Premium (c)						\$1,554.87	

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 Motorcycles.
43 based on 2022/23 approved rates

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