

Insurance Report



Whole vehicle theft losses

2019–21 passenger cars, pickups, SUVs, and vans

WT-21 April 2022



Highlights

The 2019–21 model year passenger vehicles combined had a whole vehicle theft claim frequency of 0.34 claims per 1,000 insured vehicle years and an average loss payment per whole vehicle theft (claim severity) of \$36,879, resulting in an average loss payment per insured vehicle year (overall losses) of \$13.

The Dodge Charger SRT Hellcat, a large four-door car, had the highest relative whole vehicle theft claim frequency at more than 50 times the all-passenger-vehicle average. The Tesla Model 3 electric four-door 4WD, a midsize luxury car, had the lowest relative whole vehicle theft claim frequency at just 4 percent of the all-passenger-vehicle average.

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► Introduction

Theft claims under comprehensive coverage in the Highway Loss Data Institute (HLDI) database can result from three different types of thefts: theft of contents from a vehicle, theft of vehicle parts, and theft of the entire vehicle. Most companies do not supply data to HLDI about the type of theft. Using the methodology defined in the Appendix, vehicle age and price were used to classify total theft losses.

The purpose of the current analysis is to quantify the extent to which whole vehicle theft varies by vehicle size/class and make/series. This report is an update of previous HLDI reports and presents whole vehicle theft losses under comprehensive coverage for passenger vehicles produced during model years 2019–21. Vehicles in this report were up to 4 years old during the period studied.

Results for all 2019–21 vehicles are included in the overall totals and in the separate totals for class and size subgroups in the principal table (**Table 4**). A detailed description of these class and size subgroups appears in the HLDI *Technical Appendix* (2010). Only vehicles with 20,000 insured vehicle years of exposure or 100 claims are included. A total of 303 passenger car, pickup, SUV, and van series met one or both of these reporting criteria.

Results in this report were standardized to control for the effect of demographic and geographic variables to accurately assess the contribution of the vehicle to insurance losses. Losses were standardized by calendar year; model year; garaging state; number of registered vehicles per square mile (vehicle density); deductible; risk; and driver age, gender, and marital status. Standardization was accomplished using a two-step process. First, regression models were constructed to produce estimates for each variable for claim frequency, claim severity, and overall losses. Then, the estimates were reweighted so that every vehicle has the same exposure distribution across all of the variables in the model.

This standardization procedure was first described in HLDI special report A-77, *Make and Series Results and Modeling* (2008). Further modifications were described in special report A-82, *Collision Losses After All-Variable Standardization* (2009). For details about this procedure, see *HLDI Loss Data Computation Methods* (2018).

► Whole vehicle theft losses by vehicle type

Table 1 lists whole vehicle theft losses for 2019–21 passenger vehicles by vehicle type after all-variable standardization. The 2019–21 model year passenger vehicles combined had a whole vehicle theft claim frequency of 0.34 claims per 1,000 insured vehicle years and an average loss payment per whole vehicle theft (claim severity) of \$36,879, resulting in an average loss payment per insured vehicle year (overall losses) of \$13. Passenger cars had the highest whole vehicle theft claim frequency (0.46) while pickups had the highest claim severity (\$49,992), and overall losses (\$17).

Table 1: Whole vehicle theft losses for 2019–21 model years by vehicle type after all-variable standardization

Vehicle type	Claim frequency	Claim severity	Overall loss
Passenger cars	0.46	\$30,369	\$14
Pickups	0.34	\$49,992	\$17
SUVs	0.28	\$38,215	\$11
All passenger vehicles*	0.34	\$36,879	\$13

*All-passenger-vehicle total includes 101,592 years of exposure and 24 claims from vans.

► Whole vehicle theft losses by class and size

Figures 1–3 show relative whole vehicle theft claim frequencies, claim severities, and overall losses by vehicle class and size for 2019–21 models. In each figure, the value 100 represents the average result for all passenger vehicles.

Relative claim frequencies ranged from 26 for two-door minicars to 614 for large two-door cars, a category consisting of variants of the Dodge Challenger. Large four-door cars had the second-highest relative whole vehicle theft claim frequency (462) (Figure 1). Relative claim severities ranged from 39 for four-door microcars, a category that only includes the Mitsubishi Mirage, to 302 for very large luxury cars (Figure 2). Relative overall losses ranged from 20 for two-door minicars to 814 for large two-door cars (Figure 3). Two-door microcars, midsize two-door cars, large station wagons, small sports cars, small luxury cars, and large vans did not have enough exposure to produce credible results.

Figure 1: Relative whole vehicle theft claim frequencies by class and size, 2019–21 model years

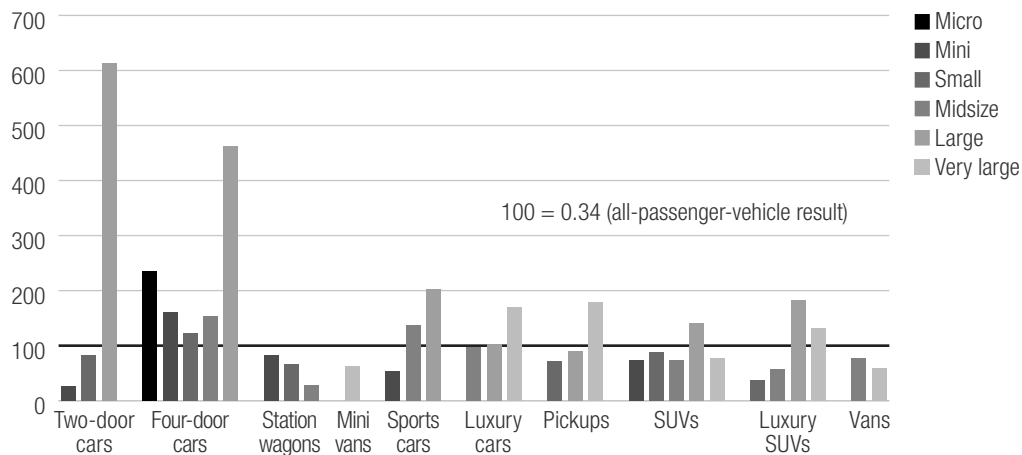


Figure 2: Relative whole vehicle theft claim severities by class and size, 2019–21 model years

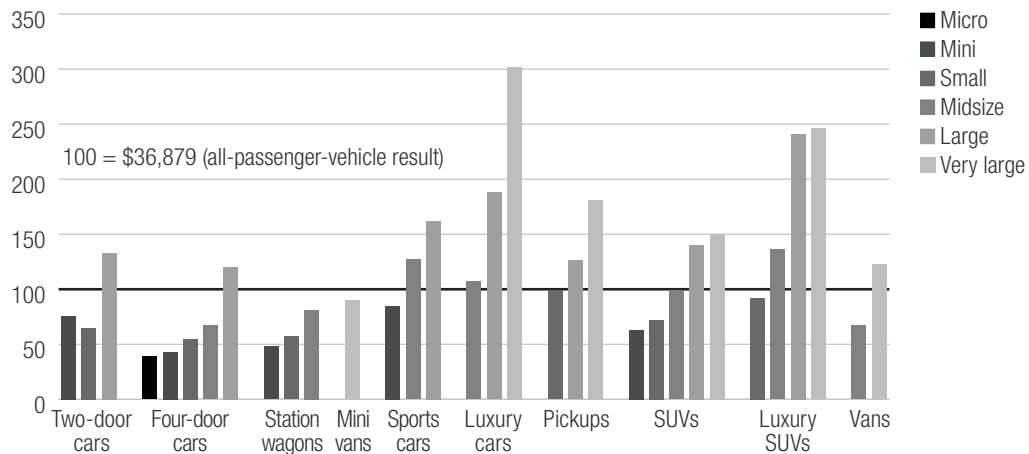
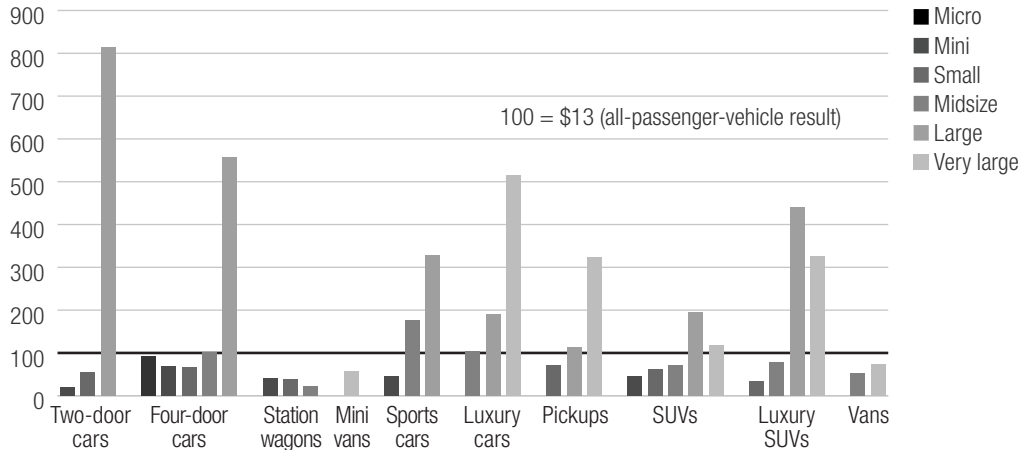


Figure 3: Relative whole vehicle theft overall losses by class and size, 2019–21 model years



► **Lowest and highest whole vehicle theft losses**

Table 2 lists the 20 vehicle series with the highest relative claim frequencies for whole vehicle theft. The Dodge Charger SRT Hellcat, a large four-door car, had the worst result (5,179). Three quarters of the vehicle series with the worst theft claim frequencies had overall losses that were more than twice the all-passenger-vehicle average.

Table 2: Highest whole vehicle theft claim frequencies, 2019–21 model years

Make	Series	Model years	Exposure (insured vehicle years)	Claims	Relative claim frequency	Relative claim severity	Relative overall losses
Dodge	Charger SRT Hellcat	19–21	7,068	126	5,179	204	10,562
Dodge	Charger HEMI	19–21	89,738	448	1,448	119	1,728
Infiniti	Q50 4dr	19–21	40,970	123	870	96	835
Dodge	Challenger	19–21	147,831	263	517	106	550
Land Rover	Range Rover 4dr 4WD	19–21	48,229	82	493	289	1,425
Land Rover	Range Rover Sport 4dr 4WD	19–21	83,777	112	389	234	910
Nissan	Maxima	19–21	64,770	77	346	83	286
Kia	Rio	19–21	67,332	72	311	43	134
Dodge	Charger	19–21	86,456	90	303	77	234
Honda	Accord	19–21	703,089	691	285	72	207
BMW	X7 4dr 4WD	19–21	61,360	60	284	231	655
Chrysler	300	19–21	48,859	47	280	72	201
Kia	Sportage 4dr	19–21	175,721	163	269	63	169
Ram	3500 crew cab LWB 4WD	19–21	54,785	49	260	172	448
Ford	F-350 SuperCrew 4WD	19–21	145,116	130	260	192	501
Kia	Sportage 4dr 4WD	19–21	193,809	159	239	67	159
Ford	F-250 SuperCrew 4WD	19–21	311,274	254	237	185	437
Honda	CR-V 4dr	19–21	408,463	332	236	76	178
Dodge	Durango 4dr 4WD	19–21	118,117	93	229	115	264
Hyundai	Accent	19–21	63,802	50	228	44	100

Table 3 lists the 20 vehicle series with the lowest relative claim frequencies for whole vehicle theft. The Tesla Model 3 electric four-door 4WD, a midsize luxury car, headed the list with a relative claim frequency of 4. All of the vehicles with the best results had whole vehicle theft claim frequencies that were less than one quarter of the all-passenger-vehicle average. Almost all of the best vehicles had whole vehicle theft overall losses that were also less than one quarter of the all-passenger-vehicle average.

Table 3: Lowest whole vehicle theft claim frequencies, 2019–21 model years

Make	Series	Model years	Exposure (insured vehicle years)	Claims	Relative claim frequency	Relative severity	Relative overall losses
Tesla	Model 3 electric 4dr	19–21	191,518	2	4	120	4
Tesla	Model Y electric 4dr 4WD	20–21	127,488	2	4	169	7
Volvo	XC60 4dr 4WD	19–21	91,779	2	6	95	6
Cadillac	XT5 4dr 4WD	19–21	75,538	2	8	103	8
Volvo	XC40 4dr 4WD	19–21	93,063	3	9	107	9
Buick	Enclave 4dr	19–21	77,557	3	10	162	16
Subaru	Ascent 4dr 4WD with EyeSight	19–21	357,825	16	13	99	12
Nissan	Leaf electric	19–21	41,012	2	13	77	10
Lexus	UX 250 hybrid 4dr 4WD	19–21	34,935	2	15	112	17
Ford	Expedition 4dr 4WD	19–21	64,829	3	15	178	27
Tesla	Model X 4dr electric 4WD	19–21	46,760	3	16	279	45
Cadillac	XT4 4dr	19–21	60,241	3	16	99	16
Buick	Envision 4dr	19–21	70,969	4	17	80	14
Mini	Cooper	19–21	40,613	2	18	82	15
Hyundai	Palisade 4dr	20–21	78,333	5	20	115	23
Subaru	Legacy 4WD with EyeSight	20–21	49,050	3	21	71	15
Buick	Envision 4dr 4WD	19–21	61,652	4	21	94	20
Chevrolet	Traverse 4dr 4WD	19–21	239,176	18	21	113	24
Buick	Encore 4dr 4WD	19–21	82,713	6	22	64	14
Subaru	Outback 4WD with EyeSight	20–21	286,677	21	22	90	19

► Vehicle series whole vehicle theft losses

Detailed whole vehicle theft results for all 2019–21 passenger vehicles with at least 20,000 insured vehicle years of exposure or 100 paid whole vehicle theft claims are listed in **Table 4**. The values reported are total exposure (insured vehicle years), number of claims, and relative results for three loss categories: claim frequency, claim severity, and overall losses. The value 100 corresponds to the average result for all passenger vehicles in each loss category. Individual series are listed in ascending order of relative overall losses within each size and class group.

The total exposure accumulated for the three model years was nearly 15 million insured vehicle years for passenger cars and nearly 34 million insured vehicle years for pickups, SUVs, and vans. Whole vehicle theft claims numbered nearly 7,000 for passenger cars and nearly 10,000 for pickups, SUVs, and vans.

Table 4: Whole vehicle theft losses by series, 2019–21 model years

Make	Series	Model years	Exposure (insured vehicle years)	Claims	Relative claim frequency	Relative claim severity	Relative overall losses
All passenger vehicles		19–21	48,903,590	16,853	100=0.34	100=\$36,879	100=\$13
All passenger cars		19–21	14,948,773	6,909	134	82	110
MICROCARS							
4-door		19–21	29,757	24	235	39	92
MINICARS							
2-door		19–21	61,071	5	26	76	20
Mini	Cooper	19–21	40,613	2	18	82	15
Mini	Cooper convertible	19–21	20,458	3	41	72	29
4-door		19–21	393,360	219	161	43	69
Mini	Cooper	19–21	28,275	3	26	75	20
Chevrolet	Spark	19–21	97,796	27	80	41	32
Hyundai	Accent	19–21	63,802	50	228	44	100
Kia	Rio	19–21	67,332	72	311	43	134
Station wagons		19–21	179,154	52	83	48	40
Sports		19–21	39,541	7	53	85	45
Mazda	MX-5 Miata convertible	19–21	34,033	5	43	87	37
SMALL CARS							
2-door		19–21	150,941	43	82	65	54
Hyundai	Veloster	19–21	20,425	9	134	49	66
4-door		19–21	4,274,721	1,794	122	55	67
Nissan	Leaf electric	19–21	41,012	2	13	77	10
Volkswagen	GTI	19–21	38,769	3	24	77	18
Toyota	Prius hybrid 4WD	19–21	36,380	4	29	66	19
Mazda	3	20–21	22,271	3	38	57	22
Subaru	Impreza 4WD with EyeSight	19–21	45,535	8	50	58	29
Toyota	Corolla hatchback	19–21	93,786	19	58	59	34
Toyota	Prius Prime plug-in hybrid	19–21	58,644	10	49	73	36
Subaru	Impreza 4WD	19–21	31,634	7	66	56	37
Toyota	Corolla hybrid	20–21	55,258	12	66	59	39
Honda	Insight hybrid	19–21	104,474	22	61	65	39
Subaru	WRX 4WD	19–21	96,417	17	51	88	45
Toyota	Corolla	20–21	503,976	142	82	56	45
Hyundai	Ioniq hybrid	19–21	31,998	11	96	56	53

Table 4: Whole vehicle theft losses by series, 2019–21 model years

Make	Series	Model years	Exposure (insured vehicle years)	Claims	Relative claim frequency	Relative claim severity	Relative overall losses
Mazda	3 hatchback 4WD	19–21	20,638	5	68	79	54
Toyota	Prius hybrid	19–21	74,887	22	87	72	62
Nissan	Kicks	19–21	148,283	68	134	53	71
Hyundai	Elantra	21	37,327	15	116	64	74
Honda	Civic hatchback	19–21	208,632	82	114	65	74
Nissan	Sentra	20–21	115,248	51	127	59	75
Acura	ILX	19–21	53,974	23	121	69	83
Honda	Civic	19–21	724,600	360	144	59	85
Nissan	Versa	20–21	56,194	37	192	47	90
Kia	Forte	19–21	342,967	262	222	50	111
Station wagons		19–21	1,142,696	262	66	57	38
Subaru	Crosstrek 4WD with EyeSight	19–21	442,399	43	28	75	21
Subaru	Crosstrek 4WD	19–21	151,242	17	33	70	23
Subaru	Impreza 4WD	19–21	65,972	13	58	53	31
Subaru	Impreza 4WD with EyeSight	19–21	104,493	22	60	58	35
Kia	Soul	20–21	208,516	82	114	55	63
Sports		19–21	6,339	2	—	—	—
MIDSIZE CARS							
4-door		19–21	4,094,630	2,158	153	67	102
Subaru	Legacy 4WD with EyeSight	20–21	49,050	3	21	71	15
Hyundai	Sonata	20–21	106,790	16	45	80	36
Toyota	Camry 4WD	20–21	31,436	5	47	78	36
Honda	Accord hybrid	19–21	76,304	15	55	78	43
Volkswagen	Jetta	19–21	444,708	137	90	56	50
Mazda	6	19–21	39,823	12	87	67	58
Toyota	Camry hybrid	19–21	102,249	27	77	77	60
Toyota	Camry	19–21	924,102	343	108	70	75
Volkswagen	Passat	19–21	48,659	21	123	66	81
Chevrolet	Malibu	19–21	183,770	88	139	60	84
Nissan	Altima 4WD	19–21	89,636	38	122	71	87
Kia	K5	21	48,769	21	122	80	97
Nissan	Altima	19–21	373,652	267	207	62	129
Honda	Accord	19–21	703,089	691	285	72	207
Nissan	Maxima	19–21	64,770	77	346	83	286
Station wagons		19–21	678,449	66	28	81	23
Subaru	Outback 4WD with EyeSight	20–21	286,677	21	22	90	19
Sports		19–21	292,668	140	138	127	176
Ford	Mustang convertible	19–21	23,215	8	99	82	81
Ford	Mustang 2dr	19–21	68,780	37	156	77	121
Ford	Mustang GT 2dr	19–21	81,219	57	203	110	224
Luxury		19–21	1,277,992	430	98	107	104
Tesla	Model 3 electric 4dr	19–21	191,518	2	4	120	4
BMW	3 series 4dr	19–21	54,389	6	31	109	33
Lexus	IS 300 4dr	19–21	32,482	5	47	92	43

Table 4: Whole vehicle theft losses by series, 2019–21 model years

Make	Series	Model years	Exposure (insured vehicle years)	Claims	Relative claim frequency	Relative claim severity	Relative overall losses
Lexus	ES 300h hybrid 4dr	19–21	34,240	5	45	109	49
Lexus	ES 350 4dr	19–21	158,757	26	48	109	52
Audi	A4 4dr 4WD	19–21	46,405	8	48	110	52
Mercedes-Benz	A class 4dr	19–21	29,138	6	64	94	61
Mercedes-Benz	C class 4dr	19–21	58,692	12	62	100	61
Mercedes-Benz	CLA class 4dr	19–21	31,438	8	70	91	63
BMW	3 series 4dr 4WD	19–21	54,733	12	63	118	75
Mercedes-Benz	CLA class 4dr 4WD	19–21	20,866	5	75	102	77
Mercedes-Benz	C class 4dr 4WD	19–21	50,010	13	76	108	82
Audi	A5 4dr 4WD hatchback	19–21	28,197	8	82	116	96
Infiniti	Q50 4dr 4WD	19–21	40,815	26	185	105	195
Infiniti	Q50 4dr	19–21	40,970	123	870	96	835
LARGE CARS							
2-door		19–21	176,828	374	614	133	814
Dodge	Challenger	19–21	147,831	263	517	106	550
4-door		19–21	519,868	828	462	120	556
Toyota	Avalon hybrid	19–21	33,725	4	38	98	37
Toyota	Avalon	19–21	85,097	20	69	88	61
Chrysler	300	19–21	48,859	47	280	72	201
Kia	Stinger 2WD/4WD	19–21	45,336	33	213	101	216
Dodge	Charger	19–21	86,456	90	303	77	234
Dodge	Charger HEMI	19–21	89,738	448	1,448	119	1,728
Dodge	Charger SRT Hellcat	19–21	7,068	126	5,179	204	10,562
Sports		19–21	143,469	101	203	162	329
Chevrolet	Camaro 2dr	19–21	92,110	59	186	93	173
Luxury		19–21	391,220	137	102	188	191
Mercedes-Benz	E class 4dr 4WD	19–21	44,348	4	28	162	45
BMW	5 series 4dr	19–21	39,108	6	45	144	65
Genesis	G70 4dr 2WD/4WD	19–21	35,832	8	62	106	66
Mercedes-Benz	E class 4dr	19–21	38,163	7	56	129	72
BMW	5 series 4dr 4WD	19–21	48,060	12	75	156	117
Audi	A6 4dr 4WD	19–21	41,395	15	105	142	149
VERY LARGE CARS							
Minivans		19–21	1,013,547	220	63	90	57
Chrysler	Pacifica	19–21	202,710	37	53	87	46
Honda	Odyssey	19–21	437,299	102	68	99	67
Kia	Sedona	19–21	40,409	18	132	78	104
Luxury		19–21	82,523	48	170	302	514
All pickups, SUVs, and vans		19–21	33,954,816	9,944	85	112	95
PICKUPS							
All pickups		19–21	7,974,329	2,701	98	136	133
All small pickups		19–21	2,053,061	509	72	99	71
2-door plus		19–21	185,989	52	82	80	65
Chevrolet	Colorado ext. cab	19–21	25,332	5	52	64	34
Ford	Ranger ext. cab	19–21	21,698	4	50	71	35

Table 4: Whole vehicle theft losses by series, 2019–21 model years

Make	Series	Model years	Exposure (insured vehicle years)	Claims	Relative claim frequency	Relative claim severity	Relative overall losses
Toyota	Tacoma xtra cab	19–21	33,810	11	92	73	68
Ford	Ranger ext. cab 4WD	19–21	27,321	7	77	92	71
Toyota	Tacoma xtra cab 4WD	19–21	59,855	18	89	94	84
4-door		19–21	1,867,072	457	71	102	72
Chevrolet	Colorado crew cab 4WD	19–21	192,261	15	22	99	22
GMC	Canyon crew cab 4WD	19–21	58,770	6	29	104	30
Ford	Ranger crew cab 4WD	19–21	155,785	16	29	108	32
Chevrolet	Colorado crew cab	19–21	95,317	21	62	79	49
Ford	Ranger crew cab	19–21	76,670	17	65	84	54
GMC	Canyon crew cab	19–21	27,970	7	72	82	60
Toyota	Tacoma double cab LWB 4WD	19–21	91,989	17	55	117	64
Toyota	Tacoma double cab 4WD	19–21	455,930	107	68	112	76
Honda	Ridgeline crew cab 4WD	19–21	147,523	40	78	102	80
Toyota	Tacoma double cab	19–21	204,456	75	106	93	98
Nissan	Frontier crew cab SWB	19–21	66,765	36	156	71	111
Nissan	Frontier crew cab SWB 4WD	19–21	75,517	37	141	79	111
Jeep	Gladiator crew cab pickup 4WD	20–21	182,556	55	88	139	122
All large pickups		19–21	4,752,979	1,473	90	126	113
2-door		19–21	39,969	21	151	81	123
2-door plus		19–21	243,541	89	106	93	99
Ram	1500 Classic ext. cab 4WD	19–21	91,245	18	58	99	58
Ram	1500 Classic ext. cab	19–21	54,206	40	213	82	175
4-door		19–21	4,469,469	1,363	88	129	114
GMC	Sierra 1500 ext. cab 4WD	19–21	28,932	2	24	87	21
Chevrolet	Silverado 1500 ext. cab 4WD	19–21	135,839	14	30	107	32
Ram	1500 Classic crew cab LWB 4WD	19–21	32,323	7	67	91	60
Toyota	Tundra double cab	19–21	24,980	6	68	101	69
Ford	F-150 SuperCrew 4WD	21	61,353	9	45	159	72
Chevrolet	Silverado 1500 crew cab 4WD	19–21	685,516	130	55	135	74
Ram	1500 crew cab LWB 4WD	19–21	72,750	15	59	131	77
Toyota	Tundra double cab 4WD	19–21	69,495	19	81	118	95
Toyota	Tundra CrewMax 4WD	19–21	247,384	60	70	138	97
Ram	1500 quad cab 4WD	19–21	108,279	34	91	107	98
Ram	1500 Classic crew cab SWB 4WD	19–21	71,840	27	109	99	108
Chevrolet	Silverado 1500 ext. cab	19–21	39,058	16	116	95	109
Chevrolet	Silverado 1500 crew cab	19–21	187,569	72	111	112	124
GMC	Sierra 1500 crew cab 4WD	19–21	383,389	108	81	158	129
Nissan	Titan crew cab short bed 4WD	19–21	46,442	17	106	123	131
Ram	1500 crew cab SWB 4WD	19–21	785,734	281	104	142	148
Toyota	Tundra CrewMax	19–21	50,306	23	133	120	160
Ram	1500 Classic crew cab SWB	19–21	37,817	24	186	88	164
Ram	1500 quad cab	19–21	30,233	19	183	95	173
GMC	Sierra 1500 crew cab	19–21	64,665	37	164	130	214
Ram	1500 crew cab SWB	19–21	155,455	114	213	115	245

Table 4: Whole vehicle theft losses by series, 2019–21 model years

Make	Series	Model years	Exposure (insured vehicle years)	Claims	Relative claim frequency	Relative claim severity	Relative overall losses
All very large pickups		19–21	1,168,289	719	179	181	323
2-door		19–21	3,631	4	—	—	—
2-door plus		19–21	23,287	8	101	140	141
4-door		19–21	1,141,372	707	180	181	326
Chevrolet	Silverado 2500 crew cab 4WD	20–21	90,542	24	77	169	130
GMC	Sierra 3500 crew cab 4WD	20–21	23,094	5	64	220	142
GMC	Sierra 2500 crew cab 4WD	20–21	63,942	16	72	208	149
Chevrolet	Silverado 3500 crew cab 4WD	20–21	25,818	10	108	193	208
Ram	2500 crew cab SWB 4WD	19–21	158,517	78	142	159	226
Ram	2500 mega cab 4WD	19–21	22,314	10	132	197	258
Ford	F-250 SuperCrew 4WD	19–21	311,274	254	237	185	437
Ram	3500 crew cab LWB 4WD	19–21	54,785	49	260	172	448
Ford	F-350 SuperCrew 4WD	19–21	145,116	130	260	192	501
SUVs							
All SUVs		19–21	25,878,898	7,219	81	104	84
Mini SUVs		19–21	533,271	135	74	63	46
Mazda	CX-3 4dr	19–21	25,466	3	37	63	23
Kia	Niro hybrid 4dr	19–21	55,702	8	44	59	26
Mazda	CX-3 4dr 4WD	19–21	41,520	7	51	54	28
Honda	HR-V 4dr 4WD	19–21	241,715	65	78	66	51
Honda	HR-V 4dr	19–21	126,565	37	86	62	53
Hyundai	Venue 4dr	20–21	29,042	12	123	55	68
Small SUVs		19–21	10,109,308	3,054	88	72	63
Chevrolet	Trax 4dr 4WD	19–21	124,555	10	23	59	14
Subaru	Forester 4dr 4WD with EyeSight	19–21	750,476	56	22	76	16
Chevrolet	Trailblazer 4dr 4WD	21	25,599	2	23	76	17
Chevrolet	Equinox 4dr 4WD	19–21	436,875	40	27	73	19
GMC	Terrain 4dr 4WD	19–21	155,982	13	25	79	19
GMC	Terrain 4dr	19–21	176,599	23	38	68	26
Toyota	Venza hybrid 4dr 4WD	21	35,883	3	28	97	27
Chevrolet	Trax 4dr	19–21	235,674	43	53	52	28
Hyundai	Kona 4dr	19–21	126,471	22	51	56	28
Chevrolet	Trailblazer 4dr	21	37,881	6	46	62	29
Mazda	CX-30 4dr 4WD	20–21	42,310	6	41	76	31
Hyundai	Kona 4dr 4WD	19–21	131,795	22	47	65	31
Toyota	RAV4 hybrid 4dr 4WD	19–21	335,599	40	35	94	33
Ford	Escape 4dr 4WD	20–21	110,863	16	41	80	33
Ford	Escape 4dr	20–21	78,382	13	50	68	34
Chevrolet	Equinox 4dr	19–21	634,437	120	55	65	36
Toyota	RAV4 4dr	19–21	484,307	82	49	77	38
Nissan	Rogue 4dr 4WD	19–21	411,903	77	54	71	38
Jeep	Compass 4dr 4WD	19–21	267,946	54	58	69	40
Ford	EcoSport 4dr 4WD	19–21	73,295	18	70	58	40
Hyundai	Santa Fe 4dr	19–21	247,785	50	59	69	41

Table 4: Whole vehicle theft losses by series, 2019–21 model years

Make	Series	Model years	Exposure (insured vehicle years)	Claims	Relative claim frequency	Relative claim severity	Relative overall losses
Toyota	C-HR 4dr	19–21	195,963	46	68	61	42
Mazda	CX-5 4dr 4WD	19–21	343,127	63	53	81	43
Hyundai	Santa Fe 4dr 4WD	19–21	194,418	39	58	75	43
Nissan	Rogue Sport 4dr 4WD	19–21	118,231	29	71	62	44
Ford	Bronco Sport 4dr 4WD	21	41,634	6	41	107	44
Jeep	Renegade 4dr 4WD	19–21	102,480	26	73	67	49
Ford	EcoSport 4dr	19–21	65,695	20	89	55	49
Mazda	CX-30 4dr	20–21	24,143	6	75	67	50
Mazda	CX-5 4dr	19–21	182,835	46	73	70	51
Toyota	RAV4 4dr 4WD	19–21	616,588	144	68	85	57
Hyundai	Tucson 4dr	19–21	215,626	73	98	62	61
Nissan	Rogue Sport 4dr	19–21	102,041	37	104	59	61
Nissan	Rogue 4dr	19–21	311,848	118	110	64	70
Jeep	Compass 4dr	19–21	88,962	42	137	64	87
Hyundai	Tucson 4dr 4WD	19–21	240,383	119	144	66	95
Mitsubishi	Outlander Sport 4dr	19–21	47,563	29	174	55	95
Mitsubishi	Outlander Sport 4dr 4WD	19–21	31,801	17	156	62	96
Kia	Seltos 4dr 4WD	21	59,486	28	135	74	100
Jeep	Renegade 4dr	19–21	54,186	34	184	58	107
Kia	Sportage 4dr 4WD	19–21	193,809	159	239	67	159
Honda	CR-V hybrid 4dr 4WD	20–21	46,850	28	173	97	168
Kia	Sportage 4dr	19–21	175,721	163	269	63	169
Honda	CR-V 4dr 4WD	19–21	827,370	620	218	82	178
Honda	CR-V 4dr	19–21	408,463	332	236	76	178
Midsized SUVs		19–21	8,900,116	2,232	73	99	72
Subaru	Ascent 4dr 4WD with EyeSight	19–21	357,825	16	13	99	12
Buick	Enclave 4dr	19–21	77,557	3	10	162	16
Hyundai	Palisade 4dr	20–21	78,333	5	20	115	23
GMC	Acadia 4dr 4WD	19–21	157,552	12	23	103	23
Chevrolet	Traverse 4dr 4WD	19–21	239,176	18	21	113	24
Toyota	Highlander 4dr 4WD	20–21	135,272	12	25	122	31
GMC	Acadia 4dr	19–21	151,095	19	37	83	31
Toyota	Highlander hybrid 4dr 4WD	20–21	54,128	5	25	137	34
Ford	Edge 4dr	19–21	123,884	19	44	80	35
Chevrolet	Traverse 4dr	19–21	306,484	42	40	90	36
Toyota	Highlander 4dr	20–21	78,290	9	32	112	36
Chevrolet	Blazer 4dr 4WD	19–21	94,521	11	35	113	40
Kia	Telluride 4dr 4WD	20–21	139,887	16	34	123	42
Ford	Edge 4dr 4WD	19–21	219,437	35	46	98	45
Jeep	Cherokee 4dr 4WD	19–21	694,424	146	61	74	45
Volkswagen	Tiguan 4dr	19–21	146,991	33	65	70	45
Jeep	Wrangler 2dr 4WD	19–21	81,979	14	50	99	49
Honda	Passport 4dr 4WD	19–21	103,726	18	51	98	50
Hyundai	Palisade 4dr 4WD	20–21	102,603	15	42	124	52

Table 4: Whole vehicle theft losses by series, 2019–21 model years

Make	Series	Model years	Exposure (insured vehicle years)	Claims	Relative claim frequency	Relative claim severity	Relative overall losses
Ford	Explorer 4dr	20–21	92,638	15	47	112	52
Volkswagen	Tiguan 4dr 4WD	19–21	238,035	56	68	78	53
Ford	Explorer 4dr 4WD	20–21	237,881	37	45	119	53
Mazda	CX-9 4dr	19–21	35,072	7	59	90	54
Kia	Telluride 4dr	20–21	90,164	17	54	111	60
Volkswagen	Atlas 4dr 4WD	19–21	170,753	34	57	110	63
Volkswagen	Atlas 4dr	19–21	83,582	20	68	94	64
Honda	Passport 4dr	19–21	35,119	9	72	90	65
Chevrolet	Blazer 4dr	19–21	127,297	33	75	95	71
Toyota	4Runner 4dr	19–21	70,240	17	68	106	72
Toyota	4Runner 4dr 4WD	19–21	417,599	90	63	125	78
Nissan	Murano 4dr 4WD	19–21	104,828	33	90	87	79
Jeep	Cherokee 4dr	19–21	280,385	129	134	62	83
Mazda	CX-9 4dr 4WD	19–21	67,955	21	89	99	87
Nissan	Murano 4dr	19–21	89,253	37	119	82	98
Volkswagen	Atlas Cross Sport 4dr 4WD	20–21	32,999	10	92	111	102
Honda	Pilot 4dr 4WD	19–21	391,904	135	100	104	104
Jeep	Wrangler 4dr 4WD	19–21	524,708	153	85	129	109
Honda	Pilot 4dr	19–21	165,825	71	125	94	118
Jeep	Grand Cherokee 4dr 4WD	21	79,227	32	116	122	141
Large SUVs		19–21	741,821	358	140	140	196
Ford	Expedition 4dr 4WD	19–21	64,829	3	15	178	27
Nissan	Armada 4dr	19–21	37,617	5	36	106	38
GMC	Yukon 4dr 4WD	21	23,135	2	27	225	60
Ford	Expedition 4dr	19–21	54,080	14	75	147	111
Chevrolet	Tahoe 4dr 4WD	21	43,165	9	59	213	127
Nissan	Armada 4dr 4WD	19–21	35,256	12	98	141	139
Dodge	Durango 4dr	19–21	53,830	35	191	96	184
Dodge	Durango 4dr 4WD	19–21	118,117	93	229	115	264
Very large SUVs		19–21	255,076	68	78	150	117
Ford	Expedition Max 4dr 4WD	19–21	54,288	14	74	174	128
Ford	Expedition Max 4dr	19–21	26,055	8	93	148	137
LUXURY SUVs							
Small luxury SUVs		19–21	801,722	102	37	92	34
Volvo	XC40 4dr 4WD	19–21	93,063	3	9	107	9
Buick	Encore 4dr 4WD	19–21	82,713	6	22	64	14
Cadillac	XT4 4dr	19–21	60,241	3	16	99	16
Lexus	UX 250 hybrid 4dr 4WD	19–21	34,935	2	15	112	17
Buick	Encore 4dr	19–21	184,079	21	33	56	18
BMW	X1 4dr 4WD	19–21	33,660	4	31	106	33
Lincoln	Corsair 4dr 4WD	20–21	21,780	2	27	126	34
Mercedes-Benz	GLB class 4dr 4WD	20–21	21,262	3	36	127	45
Lexus	UX 200 4dr	19–21	23,501	5	60	87	52
BMW	X1 4dr	19–21	20,078	5	68	97	66

Table 4: Whole vehicle theft losses by series, 2019–21 model years

Make	Series	Model years	Exposure (insured vehicle years)	Claims	Relative claim frequency	Relative claim severity	Relative overall losses
Land Rover	Range Rover Evoque 4dr 4WD	19–21	35,350	8	65	126	82
Audi	Q3 4dr 4WD	20–21	51,739	15	83	112	93
Midsize luxury SUVs		19–21	3,649,723	725	58	136	78
Volvo	XC60 4dr 4WD	19–21	91,779	2	6	95	6
Tesla	Model Y electric 4dr 4WD	20–21	127,488	2	4	169	7
Cadillac	XT5 4dr 4WD	19–21	75,538	2	8	103	8
Buick	Envision 4dr	19–21	70,969	4	17	80	14
Buick	Envision 4dr 4WD	19–21	61,652	4	21	94	20
Lexus	NX 300 4dr 4WD	19–21	108,622	8	23	99	22
Cadillac	XT5 4dr	19–21	88,627	7	22	104	23
Volvo	XC90 4dr 4WD	19–21	120,063	10	23	141	33
Lexus	RX 450h hybrid 4dr 4WD	19–21	50,388	4	25	137	34
Lexus	NX 300h hybrid 4dr 4WD	19–21	43,842	5	32	109	35
BMW	X3 4dr	19–21	95,927	11	34	105	36
Lincoln	Nautilus 4dr 4WD	19–21	55,307	6	29	125	36
Mercedes-Benz	GLC class 4dr	20–21	32,027	4	32	120	38
Acura	RDX 4dr 4WD	19–21	204,741	25	36	107	38
Volvo	XC60 4dr	19–21	28,182	3	36	116	41
Cadillac	XT6 4dr 4WD	20–21	28,054	3	28	155	43
Lexus	NX 300 4dr	19–21	124,115	19	43	99	43
Lexus	RX 350 4dr 4WD	19–21	167,570	20	34	136	46
Mercedes-Benz	GLC class 4dr 4WD	20–21	52,592	7	37	130	47
Mercedes-Benz	GLE class 4dr	20–21	28,696	3	28	174	49
Lexus	RX 350 4dr	19–21	127,749	18	40	127	51
BMW	X3 4dr 4WD	19–21	183,516	26	41	126	52
Lincoln	Nautilus 4dr	19–21	39,295	7	49	117	57
Acura	RDX 4dr	19–21	107,068	21	57	104	60
Infiniti	QX50 4dr 4WD	19–21	68,917	14	59	104	61
Land Rover	Discovery Sport 4dr 4WD	19–21	31,973	6	56	112	62
Mercedes-Benz	GLE class 4dr 4WD	20–21	104,187	14	38	173	67
Audi	Q5 4dr 4WD	19–21	154,263	32	60	112	68
Lincoln	Aviator 4dr 4WD	20–21	31,019	5	51	188	95
Infiniti	QX50 4dr	19–21	54,851	19	101	97	98
BMW	X5 4dr	20–21	27,192	5	57	172	99
Mercedes-Benz	GLC class coupe 4dr 4WD	19–21	22,849	6	81	140	113
Jaguar	F-Pace 4dr 4WD	19–21	45,593	15	97	129	125
Audi	SQ5 4dr 4WD	19–21	26,673	8	83	166	138
BMW	X4 4dr 4WD	19–21	31,612	10	95	149	141
Alfa Romeo	Stelvio 4dr 4WD	19–21	23,903	11	133	112	149
Porsche	Macan 4dr 4WD	19–21	54,592	19	102	164	168
BMW	X5 4dr 4WD	19–21	158,148	70	129	180	232
Land Rover	Range Rover Velar 4dr 4WD	19–21	56,279	32	166	160	266
Large luxury SUVs		19–21	805,246	506	182	241	440
Tesla	Model X 4dr electric 4WD	19–21	46,760	3	16	279	45
Lexus	GX 460 4dr 4WD	19–21	106,928	17	47	152	71

Table 4: Whole vehicle theft losses by series, 2019–21 model years

Make	Series	Model years	Exposure (insured vehicle years)	Claims	Relative claim frequency	Relative claim severity	Relative overall losses
Land Rover	Discovery 4dr 4WD	19–21	20,087	4	52	144	75
Mercedes-Benz	GLS class 4dr 4WD	20–21	34,012	7	57	241	137
Porsche	Cayenne 4dr 4WD	19–21	57,352	14	73	220	161
Audi	Q7 4dr 4WD	19–21	110,986	43	112	148	165
Infiniti	QX80 4dr 4WD	19–21	28,725	13	130	178	232
Infiniti	QX80 4dr	19–21	24,887	13	148	158	233
Audi	Q8 4dr 4WD	19–21	44,354	23	150	194	291
BMW	X7 4dr 4WD	19–21	61,360	60	284	231	655
Land Rover	Range Rover Sport 4dr 4WD	19–21	83,777	112	389	234	910
Land Rover	Range Rover 4dr 4WD	19–21	48,229	82	493	289	1,425
Very large luxury SUVs		19–21	82,615	38	132	246	325
Lincoln	Navigator 4dr 4WD	19–21	26,522	5	56	210	118
All vans		19–21	101,592	24	70	90	62
VANS							
Midsized vans		19–21	46,717	12	77	67	52
Large vans		19–21	9,426	3	—	—	—
Very large vans		19–21	45,449	9	59	123	73
Ford	T-250 Transit cargo	19–21	23,410	3	43	100	43

► Appendix — methodology

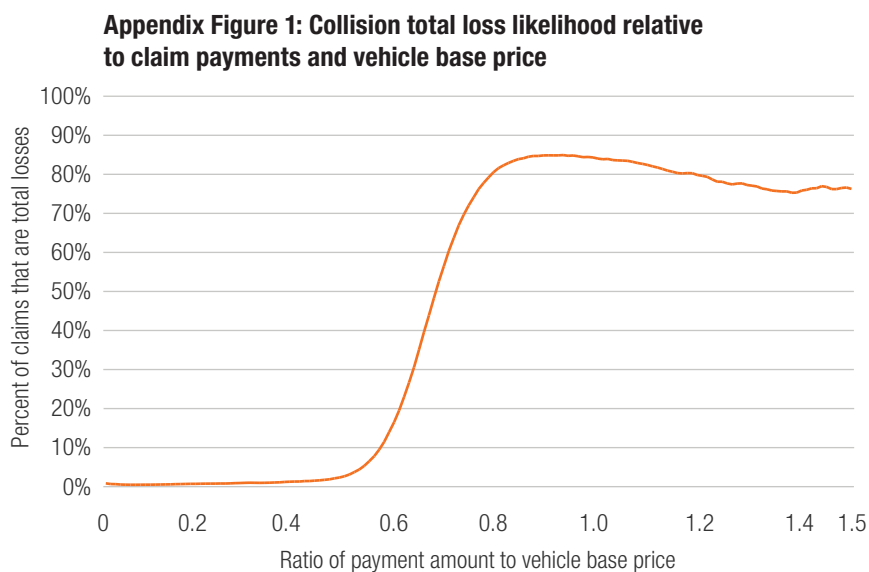
Theft claims under comprehensive coverage pay for financial losses associated with any of the three types of theft claims: theft of contents from a vehicle, theft of vehicle parts, and theft of the entire vehicle. Presumably, the cost of a claim for theft of vehicle contents and/or personal valuables in a vehicle should be less than the value of the vehicle, while the theft of an entire vehicle should result in a claim that is near the residual value of the vehicle. Therefore, any theft claim that is near the residual value of the vehicle is likely to be a whole vehicle theft.

Under collision coverage, a vehicle is declared a total loss when crash damage is so severe that the cost to repair the vehicle is higher than the vehicle's residual value. Insurers then take possession of the damaged vehicle and pay the insured the residual value of the vehicle. Data on collision total loss claims are provided to HLDI. Under comprehensive coverage, when an insured vehicle is stolen, insurers pay the insured the residual value of the vehicle.

Therefore, it can be assumed that total loss payments under collision coverage are approximately equal to payments for whole vehicle theft under comprehensive coverage.

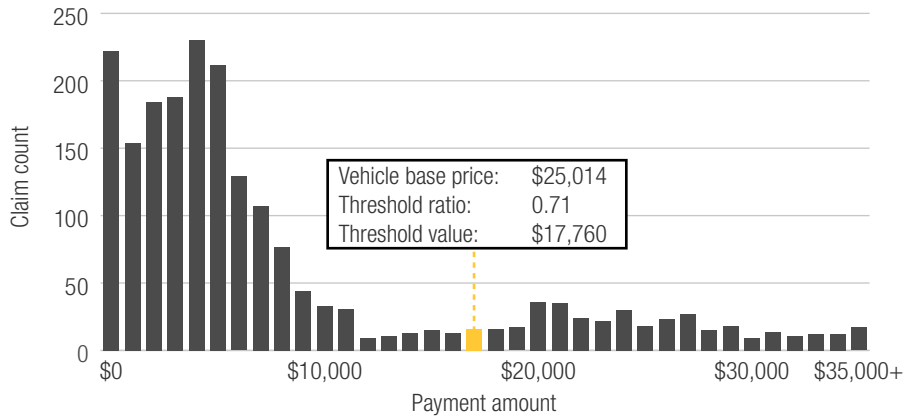
Collision claims data and information on vehicle base price were used to calculate thresholds that approximate vehicle residual values at the calendar year, model year, and make and series level. These thresholds were then used as a whole vehicle theft threshold. If the payment associated with a theft claim was greater than the threshold value, then it was designated a whole vehicle theft.

Information on all collision claims for 2019–21 model year vehicles during calendar years 2018–21 was obtained, and each claim was categorized as a total loss or not a total loss. Information on vehicle base price for each vehicle was obtained, and a ratio of collision payment to vehicle base price was calculated. The relationship between the payment ratio and the likelihood that a claim resulted in a total loss was studied by comparing the percentage of total losses across different values of the payment ratio. For example, among claims with a payment ratio ranging from 0.28 to 0.33, only about 1 percent resulted in a total loss; whereas, among claims with a payment ratio ranging from 0.66 to 0.67, as much as 50 percent resulted in a total loss. A payment ratio of 0.71 was selected as a preliminary threshold amount. At this ratio, two thirds of collision claims resulted in a total loss. This ratio was selected based on the shape of the distribution curve to balance the proportions of false negatives and false positives. This curve is illustrated in **Appendix Figure 1**.

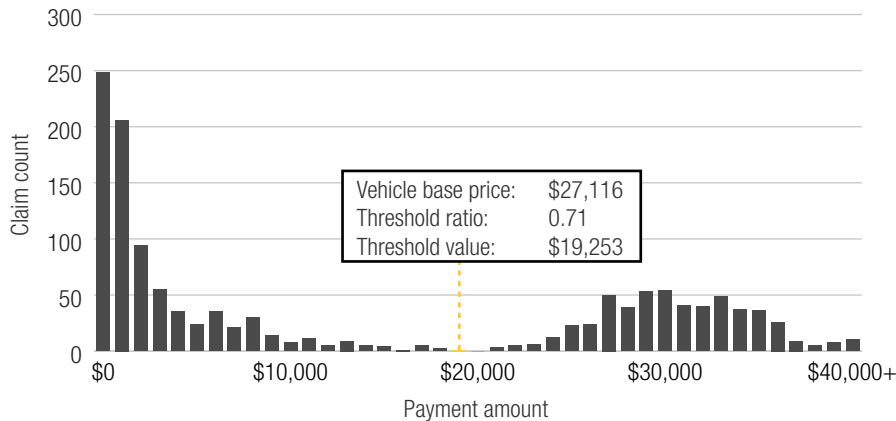


To further verify the validity of this threshold for theft claims, individual claim sizes for three popular vehicles were examined: the Toyota Camry, Honda CR-V 4WD and Ram 1500 crew cab SWB 4WD. In general, claim size distributions are different for collision and theft claims. A crash can result in damage for any dollar value between a few hundred dollars and the full price of the vehicle. For theft, a loss is likely to be minor (when some parts are stolen) or major (when the whole vehicle is stolen) and less likely to be in between. When the theft claim size distributions for those three vehicles were examined and base prices were taken into account, the threshold value of 0.71 fit into that “in-between” range. The theft claim size distributions for these three vehicles are illustrated in **Appendix Figures 2–4**.

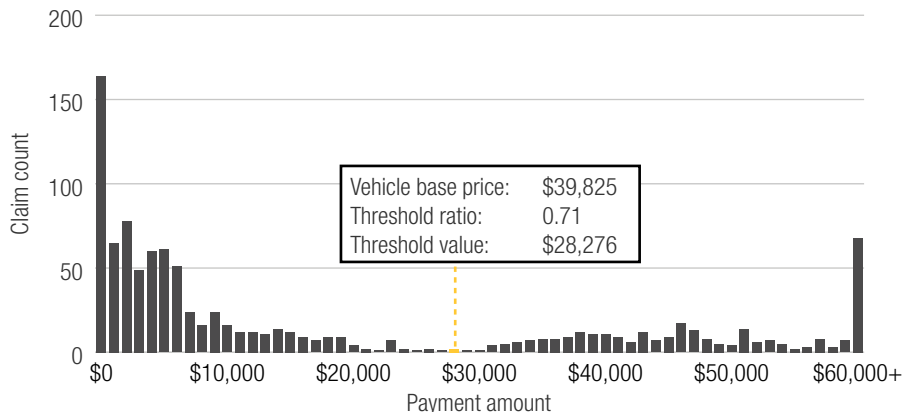
Appendix Figure 2: Toyota Camry theft claim size distribution



Appendix Figure 3: Honda CR-V 4WD theft claim size distribution



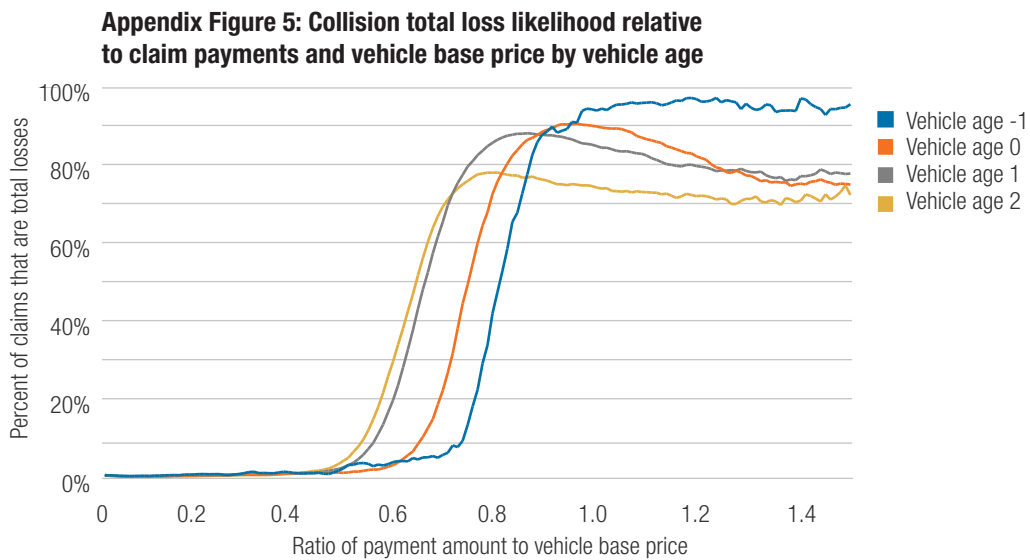
Appendix Figure 4: Ram 1500 crew cab SWB 4WD theft claim size distribution



Vehicles depreciate significantly as they age. Consequently, individual thresholds were calculated for each of the possible vehicle ages in the analysis. The ages ranged from -1 to 2. A negative vehicle age occurs when the model year is greater than the calendar year. Vehicles from a model year can be and often are sold in the calendar year preceding the model year. These thresholds were selected because two thirds of collision claims associated with the thresholds resulted in a total loss.

Vehicle age	Threshold
-1	0.83
0	0.77
1	0.69
2	0.67

Appendix Figure 5 illustrates the collision total loss likelihood relative to claim payment amounts and vehicle base price by vehicle age. As the vehicle age increases, the total loss threshold decreases.



After these age-level values were selected, theft claims were evaluated to determine if they were likely to be whole vehicle theft claims. For each claim, the payment amount was divided by the vehicle base price. If the resulting ratio was greater than the threshold value appropriate for the age of the vehicle, then the claim was considered a whole vehicle theft. All claims considered to be whole vehicle theft were combined with exposure data and run through HLDI’s all-variable-standardization procedure. The end result was that claim frequencies decreased and claim severities increased for the vehicles with the highest theft losses. For example, the 2021 Hyundai Elantra has an overall theft claim frequency of 1.3, compared with a whole vehicle theft claim frequency of 0.4. Claim severity for this vehicle increased from \$10,774 for any type of theft to \$23,622 for whole vehicle theft.

References

- Highway Loss Data Institute. (2008). *Make and series results and modeling* (Insurance Special Report A-77).
- Highway Loss Data Institute. (2009). *Collision losses after all-variable standardization, 2007–09 models* (Insurance Special Report A-82).
- Highway Loss Data Institute. (2010). *Technical appendix*.
- Highway Loss Data Institute. (2018). *HLDI loss data computation methods*.



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