

Insurance Report



Whole vehicle theft losses

2022–24 passenger cars, pickups, SUVs, and vans

WT-24 May 2025



Highlights

Passenger vehicles from model years 2022–24 had a combined whole vehicle theft claim frequency of 0.45 claims per 1,000 insured vehicle years, or 1 claim for every 2,222 insured vehicle years. The average loss payment per whole vehicle theft (claim severity) was \$53,217. That translates to an average loss payment per insured vehicle year (overall losses) of \$24.

The Chevrolet Camaro ZL1 two-door, a large sports car, had the highest whole vehicle theft claim frequency at nearly 40 times the all-passenger-vehicle average. The Tesla Model 3 electric four-door 4WD, a midsize luxury car, had the lowest whole vehicle theft claim frequency at just 1% 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 originate from three different types of theft: theft of vehicle contents, theft of vehicle parts, and theft of the entire vehicle. The purpose of the current analysis is to quantify the extent to which whole vehicle theft varies by vehicle size/class and make/series. Most companies do not supply data to HLDI about the type of theft. Following the methodology described in the **Appendix**, vehicle age and price were used to classify theft losses.

This report is an update of previous HLDI reports. It presents whole vehicle theft losses under comprehensive coverage for passenger vehicles produced during model years 2022–24. Vehicles in this report were up to 4 years old during the period studied.

Results for all 2022–24 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 paid whole vehicle theft claims are included. A total of 282 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 had 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 2022–24 passenger vehicles by vehicle type after all-variable standardization. All 2022–24 model year passenger vehicles combined had a whole vehicle theft claim frequency of 0.45 claims per 1,000 insured vehicle years. The average loss payment per whole vehicle theft (claim severity) was \$53,217. As a result, the average loss payment per insured vehicle year (overall losses) was \$24. Pickups had the highest whole vehicle theft claim frequency (0.91), the highest claim severity (\$66,984), and therefore the highest overall losses (\$61).

Table 1: Whole vehicle theft losses for 2022–24 model years by vehicle type after all-variable standardization

Vehicle type	Claim frequency	Claim severity	Overall losses
Passenger cars	0.47	\$43,934	\$20
Pickups	0.91	\$66,984	\$61
SUVs	0.31	\$48,750	\$15
All passenger vehicles*	0.45	\$53,217	\$24

*All-passenger-vehicle total includes 49,039 years of exposure and 17 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, respectively, by vehicle class and size for 2022–24 models. In each figure, the value 100 represents the average result for all passenger vehicles.

Relative claim frequencies ranged from 12 for two-door minicars to 1,280 for large sports cars. Large four-door cars had the second-highest relative whole vehicle theft claim frequency (491), followed by large two-door cars (488) (**Figure 1**). Relative claim severities ranged from 36 for four-door minicars to 301 for very large luxury SUVs, followed by very large luxury cars (275) (**Figure 2**). Relative overall losses ranged from 7 for two-door minicars to 1,422 for large sports cars (**Figure 3**). Four-door microcars, small sports cars, mini station wagons, midsize vans, and large vans did not have enough exposure to produce credible results.

Figure 1: Relative whole vehicle theft claim frequencies by class and size, 2022–24 model years

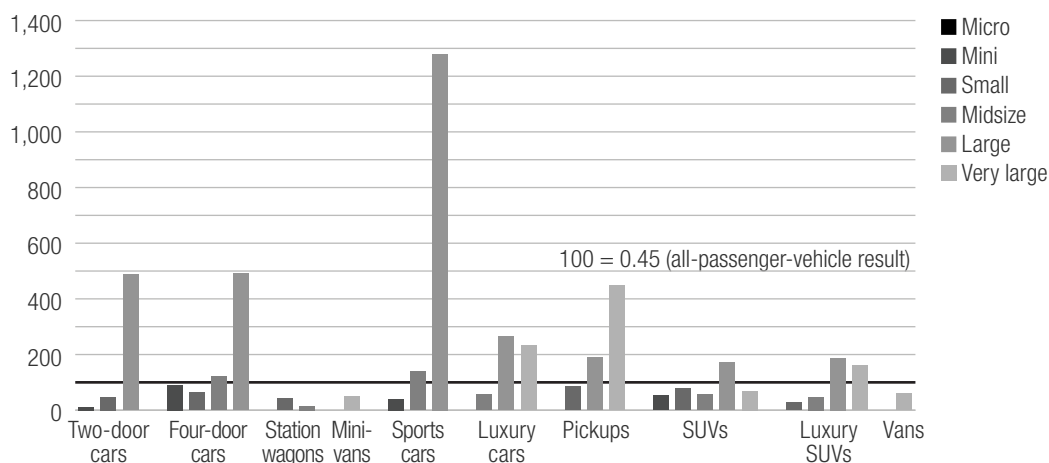
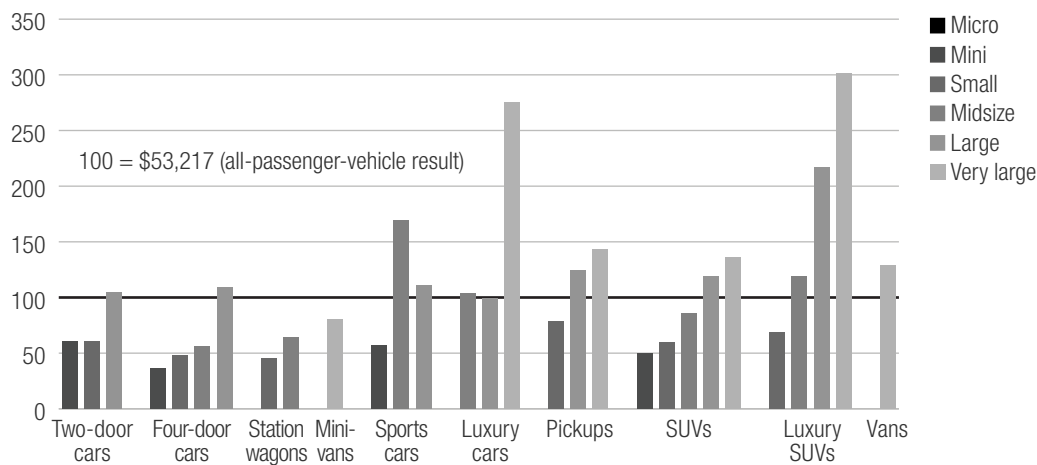
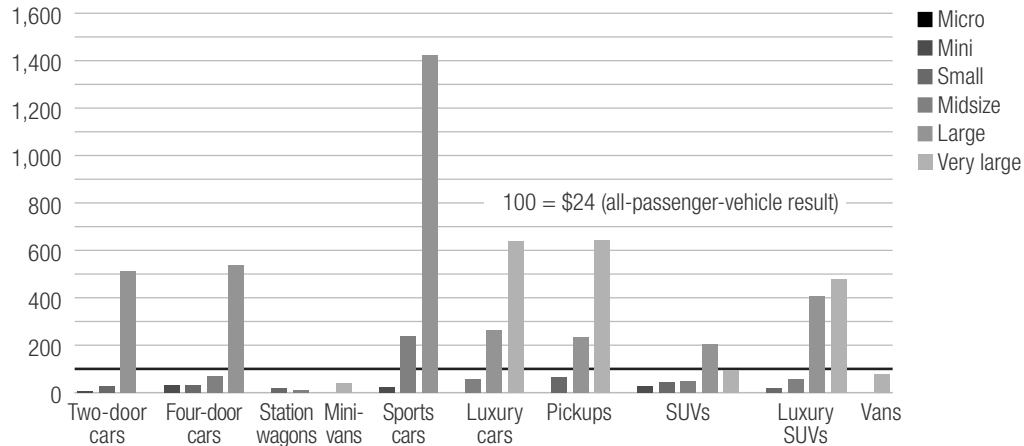


Figure 2: Relative whole vehicle theft claim severities by class and size, 2022–24 model years



**Figure 3: Relative whole vehicle theft overall losses
by class and size, 2022–24 model years**



► Lowest and highest whole vehicle theft losses

Table 2 lists the 20 vehicle series with the highest claim frequencies for whole vehicle theft. A total of eight pickup trucks are included on this list, and many of the vehicles are expensive or boast high horsepower. The Chevrolet Camaro ZL1 two-door, a large sports car, had the worst result with a relative claim frequency of 3,949. All of the 20 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, 2022–24 model years

Make	Series	Model years	Exposure (insured vehicle years)	Claims	Relative claim frequency	Relative claim severity	Relative overall losses
Chevrolet	Camaro ZL1 2dr	22–24	7,189	127	3,949	146	5,763
Acura	TLX 4dr 4WD	22–24	25,100	240	2,138	92	1,973
Chevrolet	Camaro 2dr	22–24	57,533	331	1,287	87	1,117
GMC	Sierra 2500 crew cab 4WD	22–24	167,970	768	1,023	144	1,472
Acura	TLX 4dr	22–24	20,785	75	805	75	601
GMC	Sierra 3500 crew cab 4WD	22–24	63,375	210	742	153	1,138
Chevrolet	Silverado 3500 crew cab 4WD	22–24	67,814	201	662	143	949
Dodge	Durango 4dr 4WD	22–24	72,188	191	592	90	535
Land Rover	Range Rover 4dr 4WD (NEW)	22–24	26,033	63	540	287	1,549
Ram	1500 crew cab SWB 4WD	22–24	459,140	1,074	524	159	831
Chevrolet	Silverado 2500 crew cab 4WD	22–24	229,556	413	402	132	532
Ram	3500 crew cab LWB 4WD	22–24	60,900	105	387	128	496
Honda	CR-V hybrid 4dr 4WD	23–24	214,666	325	340	74	252
GMC	Sierra 1500 crew cab	22–24	42,624	62	324	96	310
Dodge	Durango 4dr	22–24	25,131	34	300	78	234
GMC	Sierra 1500 crew cab 4WD	22–24	418,610	546	292	110	322
BMW	X7 4dr 4WD	22–24	106,034	131	277	159	441
Mercedes-Benz	S class 4dr LWB 4WD	22–24	43,356	52	267	213	569
Jeep	Gladiator crew cab pickup convertible 4WD	22–24	200,081	236	264	89	234
Cadillac	Escalade ESV 4dr 4WD	22–24	34,868	40	260	220	573

Table 3 lists the 20 vehicle series with the lowest relative claim frequencies for whole vehicle theft. Eight of the 20 vehicles are electric — of those, four are manufactured by Tesla — and an additional four are hybrids or plug-in hybrids. The Tesla Model 3 electric four-door 4WD, a midsize luxury car, headed the list with a relative claim frequency of 1. All the vehicles with the best results had whole vehicle theft claim frequencies that were less than 15% of the all-passenger-vehicle average. Relative overall losses were also less than a quarter of the all-passenger-vehicle average for all the vehicles on this list.

Table 3: Lowest whole vehicle theft claim frequencies, 2022–24 model years

Make	Series	Model years	Exposure (insured vehicle years)	Claims	Relative claim frequency	Relative claim severity	Relative overall losses
Tesla	Model 3 electric 4dr 4WD	22–24	290,388	2	1	109	1
Tesla	Model Y electric 4dr 4WD	22–24	903,411	6	2	105	2
Tesla	Model 3 electric 4dr	22–24	262,214	3	2	87	2
Toyota	RAV4 Prime plug-in hybrid 4dr 4WD	22–24	76,305	2	5	88	5
Tesla	Model S 4dr electric 4WD	22–24	65,813	2	5	202	11
Volvo	XC90 4dr 4WD	22–24	93,178	3	6	103	7
Volvo	XC40 4dr 4WD	22–24	59,193	2	7	74	5
Ford	Mustang Mach-E electric 4dr	22–24	39,219	1	8	78	6
Volkswagen	ID.4 electric 4dr	22–24	37,718	1	9	71	6
Subaru	Crosstrek station wagon 4WD with EyeSight	24	182,098	7	9	59	5
Lexus	NX 350 4dr 4WD	22–24	95,874	4	9	90	8
Ford	Explorer 4dr	22–24	119,425	5	10	70	7
Infiniti	QX60 4dr 4WD	22–24	53,042	3	11	105	12
Kia	EV6 electric 4dr 4WD	22–24	43,123	2	11	102	11
BMW	iX electric 4dr 4WD	22–24	30,251	2	11	161	18
Mini	Cooper	22–24	30,273	2	12	61	7
Toyota	Venza hybrid 4dr 4WD	22–24	101,764	5	12	76	9
Mercedes-Benz	GLC class 4dr 4WD	23–24	31,406	2	12	91	11
Volvo	XC90 plug-in hybrid 4dr 4WD	22–24	44,735	3	13	170	21
Hyundai	Elantra hybrid	22–24	65,861	4	13	49	6

► Vehicle series whole vehicle theft losses

Detailed whole vehicle theft results for all 2022–24 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 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 over 43 million insured vehicle years and whole vehicle theft claims numbered more than 19,000.

Table 4: Whole vehicle theft losses by series, 2022–24 model years

Make	Series	Model years	Exposure (insured vehicle years)	Claims	Relative claim frequency	Relative claim severity	Relative overall losses
All passenger vehicles		22–24	43,111,660	19,251	100 = 0.45	100 = \$53,217	100 = \$24
All passenger cars		22–24	11,305,255	5,275	104	83	86
MICROCARS							
4-door		22–24	18,385	3	—	—	—
MINICARS							
2-door		22–24	30,273	2	12	61	7
Mini	Cooper	22–24	30,273	2	12	61	7
4-door		22–24	166,348	68	91	36	33
Mini	Cooper	22–24	22,440	2	24	64	15
Mitsubishi	Mirage G4	22–24	20,895	11	116	34	39
Station wagons		22–24	12,766	2	—	—	—
Sports		22–24	26,441	5	40	57	23
Mazda	MX-5 Miata convertible	22–24	26,441	5	40	57	23
SMALL CARS							
2-door		22–24	41,515	9	47	61	29
Toyota	GR86 2dr w/Active Safety	22–24	25,836	5	47	63	30
4-door		22–24	3,377,216	962	64	48	31
Hyundai	Elantra hybrid	22–24	65,861	4	13	49	6
Volkswagen	GTI	22–24	27,940	2	14	56	8
Nissan	Leaf electric	22–24	43,730	4	19	56	11
Mazda	3 hatchback	22–24	31,811	3	22	51	11
Toyota	Corolla hatchback	22–24	72,026	10	32	49	15
Mazda	3	22–24	36,547	5	30	55	16
Toyota	Corolla	22–24	553,717	111	45	45	20
Toyota	Corolla hybrid	22–24	123,446	24	44	52	23
Hyundai	Elantra	22–24	399,099	103	58	43	25
Nissan	Versa	22–24	47,859	16	74	37	27
Nissan	Kicks	22–24	160,018	48	67	43	29
Kia	Forte	22–24	376,759	121	72	42	30
Acura	Integra 4dr	23–24	67,780	18	60	61	36
Honda	Civic Si	22–24	28,375	9	69	56	39
Honda	Civic hatchback	22–24	206,008	68	74	53	39
Nissan	Sentra	22–24	271,330	119	98	42	41
Honda	Civic	22–24	555,878	227	91	51	46

Table 4: Whole vehicle theft losses by series, 2022–24 model years

Make	Series	Model years	Exposure (insured vehicle years)	Claims	Relative claim frequency	Relative claim severity	Relative overall losses
Station wagons		22–24	856,632	162	42	45	19
Subaru	Crosstrek station wagon 4WD with EyeSight	24	182,098	7	9	59	5
Kia	Soul	22–24	230,249	111	108	40	44
MIDSIZE CARS							
4-door		22–24	2,696,255	1,447	120	56	68
Subaru	Legacy 4WD with EyeSight	22–24	97,402	12	27	52	14
Hyundai	Sonata hybrid	22–24	34,777	4	26	57	15
Volkswagen	Jetta	22–24	107,697	17	35	44	15
Toyota	Camry 4WD	22–24	114,629	20	40	57	23
Nissan	Altima 4WD	22–24	66,556	15	49	55	27
Hyundai	Sonata	22–24	171,256	50	65	50	33
Chevrolet	Malibu	22–24	125,071	44	79	46	36
Toyota	Camry hybrid	22–24	140,476	35	55	66	36
Toyota	Camry	22–24	678,222	193	64	57	36
Nissan	Altima	22–24	214,975	78	81	49	39
Honda	Accord	23–24	107,649	41	85	54	46
Kia	K5 2WD/4WD	22–24	296,756	129	97	54	53
Honda	Accord hybrid	23–24	130,827	73	125	63	79
Station wagons		22–24	683,713	46	15	64	10
Subaru	Outback 4WD with EyeSight	22–24	683,713	46	15	64	10
Sports		22–24	257,939	162	140	169	237
Porsche	911 Carrera 2dr	22–24	20,188	2	24	452	110
Chevrolet	Corvette 2dr	22–24	60,795	46	168	152	255
Chevrolet	Corvette convertible	22–24	53,017	36	154	185	284
Luxury		22–24	1,403,507	358	57	104	59
Tesla	Model 3 electric 4dr 4WD	22–24	290,388	2	1	109	1
Tesla	Model 3 electric 4dr	22–24	262,214	3	2	87	2
Audi	A4 4dr 4WD	22–24	30,966	2	17	73	12
BMW	i4 electric 4dr	22–24	35,396	2	13	100	13
BMW	3 series 4dr	22–24	34,724	4	25	78	20
Lexus	ES 350 4dr	22–24	100,810	13	29	83	24
Audi	A5 4dr 4WD hatchback	22–24	35,134	4	29	86	25
Mercedes-Benz	C class 4dr 4WD	22–24	36,521	6	37	93	34
Lexus	ES 300h hybrid 4dr	22–24	48,968	10	45	83	37
Mercedes-Benz	C class 4dr	22–24	37,438	11	66	84	55
BMW	3 series 4dr 4WD	22–24	33,725	12	80	85	68
Lexus	IS 350 4dr	22–24	36,063	17	109	88	95
LARGE CARS							
2-door		22–24	112,556	245	488	105	512
4-door		22–24	257,994	565	491	109	536
Toyota	Crown hybrid 4WD	23–24	27,240	5	38	81	31
Sports		22–24	101,757	582	1,280	111	1,422
Chevrolet	Camaro 2dr	22–24	57,533	331	1,287	87	1,117
Chevrolet	Camaro ZL1 2dr	22–24	7,189	127	3,949	146	5,763

Table 4: Whole vehicle theft losses by series, 2022–24 model years

Make	Series	Model years	Exposure (insured vehicle years)	Claims	Relative claim frequency	Relative claim severity	Relative overall losses
Luxury		22–24	320,274	378	264	99	262
Tesla	Model S 4dr electric 4WD	22–24	65,813	2	5	202	11
Polestar	2 electric 4dr 4WD	22–24	21,546	1	14	80	11
Genesis	G70 4dr 2WD/4WD	22–24	51,841	4	18	78	14
Acura	TLX 4dr	22–24	20,785	75	805	75	601
Acura	TLX 4dr 4WD	22–24	25,100	240	2,138	92	1,973
VERY LARGE CARS							
Minivans		22–24	856,480	193	50	80	40
Chrysler	Pacifica plug-in hybrid	22–24	31,803	2	14	83	12
Toyota	Sienna hybrid van 4WD	22–24	112,586	7	14	91	13
Toyota	Sienna hybrid van	22–24	129,878	14	24	91	22
Chrysler	Pacifica 4WD	22–24	31,577	4	31	80	25
Chrysler	Pacifica	22–24	58,493	12	46	72	33
Kia	Carnival	22–24	157,192	33	47	74	35
Honda	Odyssey	22–24	334,952	120	80	81	65
Luxury		22–24	85,204	88	232	275	638
Mercedes-Benz	S class 4dr LWB 4WD	22–24	43,356	52	267	213	569
All pickups, SUVs, and vans		22–24	31,806,406	13,976	98	107	105
PICKUPS							
All pickups		22–24	6,689,340	6,105	204	126	257
All small pickups		22–24	2,106,258	801	85	79	67
2-door plus		22–24	97,034	18	41	63	26
4-door		22–24	2,009,224	783	87	79	69
Ford	Maverick hybrid crew cab pickup	22–24	134,450	10	16	58	10
Ford	Maverick crew cab pickup 4WD	22–24	108,033	14	29	63	18
GMC	Canyon crew cab 4WD	23–24	23,598	3	24	79	19
Hyundai	Santa Cruz crew cab pickup	22–24	26,072	5	39	53	21
Hyundai	Santa Cruz crew cab pickup 4WD	22–24	126,257	21	38	59	22
Nissan	Frontier crew cab SWB 4WD	22–24	145,097	25	39	67	26
Nissan	Frontier crew cab SWB	22–24	77,963	15	44	60	26
Ford	Maverick crew cab pickup	22–24	39,218	9	52	55	29
Toyota	Tacoma double cab pickup 4WD	24	30,509	9	66	91	60
Honda	Ridgeline crew cab 4WD	22–24	175,020	61	78	80	62
Jeep	Gladiator crew cab pickup convertible 4WD	22–24	200,081	236	264	89	234
All large pickups		22–24	3,350,732	2,833	189	124	235
2-door		22–24	22,909	11	110	79	87
2-door plus		22–24	225,959	73	73	80	58
Chevrolet	Silverado 1500 ext. cab 4WD	22–24	25,285	3	25	82	21
Ford	F-150 SuperCab 4WD	22–24	33,534	5	32	88	28
GMC	Sierra 1500 ext. cab 4WD	22–24	21,672	7	68	86	58
Ram	1500 quad cab 4WD	22–24	58,692	23	87	79	69
Toyota	Tundra double cab 4WD	22–24	22,487	9	90	92	83
Ram	1500 quad cab	22–24	32,235	18	125	70	88

Table 4: Whole vehicle theft losses by series, 2022–24 model years

Make	Series	Model years	Exposure (insured vehicle years)	Claims	Relative claim frequency	Relative claim severity	Relative overall losses
4-door		22–24	3,101,865	2,749	198	125	249
Toyota	Tundra CrewMax	22–24	45,737	9	45	100	46
Ford	F-150 Lightning electric crew cab pickup 4WD	22–24	44,493	8	41	132	54
Nissan	Titan crew cab short bed 4WD	22–24	23,487	7	64	88	57
Toyota	Tundra CrewMax pickup LWB 4WD	22–24	29,568	9	65	103	67
Ford	F-150 SuperCrew	22–24	74,691	29	87	84	74
Ford	F-150 SuperCrew 4WD	22–24	564,959	171	68	118	80
Toyota	Tundra CrewMax 4WD	22–24	186,047	62	74	110	81
Ford	F-150 hybrid crew 4WD	22–24	110,738	33	67	123	82
Ram	1500 crew cab LWB 4WD	22–24	41,176	21	115	105	121
Ram	1500 crew cab SWB	22–24	78,017	49	141	86	122
Chevrolet	Silverado 1500 crew cab	22–24	155,260	115	165	83	137
Chevrolet	Silverado 1500 crew cab 4WD	22–24	730,785	505	155	99	152
Toyota	Tundra CrewMax hybrid pickup 4WD	22–24	61,799	33	120	129	154
GMC	Sierra 1500 crew cab	22–24	42,624	62	324	96	310
GMC	Sierra 1500 crew cab 4WD	22–24	418,610	546	292	110	322
Ram	1500 crew cab SWB 4WD	22–24	459,140	1,074	524	159	831
All very large pickups		22–24	1,232,349	2,470	449	143	642
2-door plus		22–24	22,038	14	141	101	142
4-door		22–24	1,210,311	2,456	455	143	652
Ford	F-250 SuperCrew 4WD	23–24	56,675	20	81	146	118
Ford	F-350 SuperCrew 4WD	23–24	38,188	13	74	177	132
Ram	2500 crew cab SWB 4WD	22–24	193,590	170	197	118	233
Ram	2500 mega cab 4WD	22–24	23,296	25	238	144	342
Ram	3500 crew cab LWB 4WD	22–24	60,900	105	387	128	496
Chevrolet	Silverado 2500 crew cab 4WD	22–24	229,556	413	402	132	532
Chevrolet	Silverado 3500 crew cab 4WD	22–24	67,814	201	662	143	949
GMC	Sierra 3500 crew cab 4WD	22–24	63,375	210	742	153	1,138
GMC	Sierra 2500 crew cab 4WD	22–24	167,970	768	1,023	144	1,472
SUVs							
All SUVs		22–24	25,068,028	7,854	70	92	64
Mini SUVs		22–24	732,288	173	53	50	26
Hyundai	Venue 4dr	22–24	115,482	16	31	41	13
Honda	HR-V 4dr	23–24	114,509	22	43	49	21
Kia	Niro hybrid 4dr	23–24	41,434	8	41	57	23
Honda	HR-V 4dr 4WD	23–24	151,860	46	68	55	37
Small SUVs		22–24	10,100,787	3,490	77	60	46
Toyota	RAV4 Prime plug-in hybrid 4dr 4WD	22–24	76,305	2	5	88	5
Mazda	CX-5 4dr 4WD	22–24	523,817	35	15	58	9
Toyota	Venza hybrid 4dr 4WD	22–24	101,764	5	12	76	9
Kia	Seltos 4dr	22–24	55,700	5	21	47	10
Mazda	CX-30 4dr 4WD	22–24	218,735	18	19	52	10
Nissan	Rogue 4dr 4WD	22–24	295,081	24	18	57	10

Table 4: Whole vehicle theft losses by series, 2022–24 model years

Make	Series	Model years	Exposure (insured vehicle years)	Claims	Relative claim frequency	Relative claim severity	Relative overall losses
Hyundai	Tucson hybrid 4dr 4WD	22–24	167,072	13	17	61	11
Mazda	CX-50 4dr 4WD	23–24	115,078	9	17	63	11
Subaru	Forester 4dr 4WD with EyeSight	22–24	476,070	39	18	61	11
Kia	EV6 electric 4dr 4WD	22–24	43,123	2	11	102	11
Ford	Escape 4dr	22–24	89,735	9	23	49	12
Toyota	Corolla Cross 4dr	22–24	88,812	8	20	58	12
Chevrolet	Equinox 4dr 4WD	22–24	267,073	26	22	55	12
Ford	Escape 4dr 4WD	22–24	166,528	16	21	61	13
GMC	Terrain 4dr 4WD	22–24	150,067	14	21	63	13
Toyota	RAV4 4dr	22–24	312,951	31	22	61	14
Chevrolet	Trailblazer 4dr	22–24	206,950	26	28	50	14
Hyundai	Tucson 4dr	22–24	296,360	34	26	54	14
Chevrolet	Trailblazer 4dr 4WD	22–24	143,444	18	28	51	14
Volkswagen	Taos 4dr	22–24	135,148	18	30	48	14
Volkswagen	Taos 4dr 4WD	22–24	114,646	15	29	55	16
Chevrolet	Equinox 4dr	22–24	317,516	41	29	54	16
Chevrolet	Trax 4dr	24	147,461	21	33	52	17
Hyundai	Tucson 4dr 4WD	22–24	415,696	59	32	55	18
Toyota	Corolla Cross 4dr 4WD	22–24	108,304	15	32	56	18
GMC	Terrain 4dr	22–24	87,164	11	28	66	18
Ford	Bronco Sport 4dr 4WD	22–24	368,915	51	31	60	18
Nissan	Rogue 4dr	22–24	206,800	34	37	54	20
Kia	Sportage hybrid 4dr 4WD	23–24	80,192	11	31	64	20
Mitsubishi	Outlander 4dr	22–24	81,948	14	39	53	20
Kia	Sportage 4dr	23–24	140,180	25	40	56	23
Kia	Sportage 4dr 4WD	23–24	195,371	34	39	63	25
Toyota	RAV4 hybrid 4dr 4WD	22–24	512,087	85	37	75	28
Kia	Seltos 4dr 4WD	22–24	185,766	48	58	50	29
Mitsubishi	Eclipse Cross 4dr 4WD	22–24	45,112	13	63	48	30
Buick	Envista 4dr	24	29,112	7	56	54	31
Jeep	Compass 4dr 4WD	22–24	273,645	68	55	57	31
Toyota	RAV4 4dr 4WD	22–24	397,534	94	53	65	35
Mitsubishi	Outlander 4dr 4WD	22–24	128,509	33	57	61	35
Mitsubishi	Outlander Sport 4dr 4WD	22–24	28,045	11	85	50	42
Honda	CR-V 4dr	23–24	76,755	27	77	61	47
Honda	CR-V hybrid 4dr	23–24	74,695	27	81	68	55
Honda	CR-V 4dr 4WD	23–24	205,063	172	188	67	126
Honda	CR-V hybrid 4dr 4WD	23–24	214,666	325	340	74	252
Midsize SUVs		22–24	7,551,744	1,932	57	86	50
Volkswagen	ID.4 electric 4dr	22–24	37,718	1	9	71	6
Ford	Mustang Mach-E electric 4dr	22–24	39,219	1	8	78	6
Ford	Explorer 4dr	22–24	119,425	5	10	70	7
Volkswagen	Tiguan 4dr 4WD	22–24	188,543	17	20	59	12
Subaru	Ascent 4dr 4WD with EyeSight	22–24	233,452	17	17	72	12

Table 4: Whole vehicle theft losses by series, 2022–24 model years

Make	Series	Model years	Exposure (insured vehicle years)	Claims	Relative claim frequency	Relative claim severity	Relative overall losses
Buick	Enclave 4dr	22–24	44,035	3	15	84	13
Ford	Bronco 2dr convertible 4WD	22–24	68,466	4	14	103	14
Volkswagen	Tiguan 4dr	22–24	149,093	19	28	55	15
Ford	Edge 4dr 4WD	22–24	198,084	21	24	72	17
Hyundai	Palisade 4dr	22–24	155,507	15	21	83	18
Toyota	Highlander hybrid 4dr	22–24	38,178	4	24	77	18
Kia	Telluride 4dr	22–24	132,749	14	24	78	18
Hyundai	Palisade 4dr 4WD	22–24	243,515	25	23	81	18
Volkswagen	Atlas 4dr	22–24	61,517	8	29	66	19
Kia	Sorento hybrid 4dr 4WD	22–24	36,413	4	28	69	19
Nissan	Pathfinder 4dr 4WD	22–24	184,889	22	26	73	19
Toyota	4Runner 4dr	22–24	80,894	10	26	75	20
Ford	Mustang Mach-E electric 4dr 4WD	22–24	74,076	7	22	90	20
Nissan	Pathfinder 4dr	22–24	95,845	12	29	70	20
Volkswagen	Atlas Cross Sport 4dr	22–24	32,361	5	34	67	23
Toyota	Grand Highlander hybrid 4dr 4WD	24	22,059	2	22	107	24
Chevrolet	Blazer 4dr 4WD	22–24	101,855	16	34	73	25
Kia	Telluride 4dr 4WD	22–24	373,059	48	29	88	25
Volkswagen	Atlas Cross Sport 4dr 4WD	22–24	88,117	13	33	78	26
Ford	Bronco 4dr convertible 4WD	22–24	295,353	36	27	104	28
Jeep	Grand Cherokee plug-in hybrid 4dr 4WD	22–24	53,699	6	27	109	29
Toyota	Highlander 4dr	22–24	212,358	39	41	74	30
Honda	Pilot 4dr	23–24	31,835	6	41	76	31
Jeep	Grand Cherokee 4dr (NEW)	22–24	31,474	5	38	82	31
Kia	Sorento 4dr 4WD	22–24	141,982	29	46	69	31
Volkswagen	Atlas 4dr 4WD	22–24	155,712	29	42	77	33
Kia	Sorento 4dr	22–24	120,268	27	50	66	33
Toyota	4Runner 4dr 4WD	22–24	392,761	73	42	89	37
Jeep	Wrangler 2dr convertible 4WD	22–24	68,905	17	54	74	40
Nissan	Murano 4dr 4WD	22–24	49,912	14	61	69	42
Honda	Passport 4dr 4WD	22–24	126,670	32	56	77	43
Chevrolet	Blazer 4dr	22–24	116,562	34	65	70	46
Ford	Explorer 4dr 4WD	22–24	338,954	89	59	89	52
Jeep	Wrangler plug-in hybrid 4dr convertible 4WD	22–24	156,892	37	53	102	54
Toyota	Grand Highlander 4dr 4WD	24	42,949	11	58	103	60
Honda	Pilot 4dr 4WD	23–24	109,593	39	80	91	73
Jeep	Grand Cherokee L 4dr	22–24	38,163	18	104	81	84
Nissan	Murano 4dr	22–24	37,185	24	147	64	95
Jeep	Grand Cherokee 4dr 4WD (NEW)	22–24	211,497	119	126	90	114
Jeep	Grand Cherokee L 4dr 4WD	22–24	241,546	144	134	93	125
Toyota	Highlander hybrid 4dr 4WD	22–24	134,665	86	143	88	126
Toyota	Highlander 4dr 4WD	22–24	333,429	291	195	81	159
Jeep	Wrangler 4dr convertible 4WD	22–24	300,087	200	149	125	187

Table 4: Whole vehicle theft losses by series, 2022–24 model years

Make	Series	Model years	Exposure (insured vehicle years)	Claims	Relative claim frequency	Relative claim severity	Relative overall losses
Large SUVs		22–24	700,994	537	171	119	204
Nissan	Armada 4dr 4WD	22–24	22,130	4	42	111	47
Ford	Expedition 4dr 4WD	22–24	45,081	7	36	129	47
Nissan	Armada 4dr	22–24	23,266	6	53	95	50
GMC	Yukon 4dr	22–24	30,144	6	44	136	60
Ford	Expedition 4dr	22–24	27,334	7	60	115	69
Chevrolet	Tahoe 4dr	22–24	68,101	24	79	120	94
Chevrolet	Tahoe 4dr 4WD	22–24	222,867	83	83	131	109
GMC	Yukon 4dr 4WD	22–24	122,120	46	84	147	124
Dodge	Durango 4dr	22–24	25,131	34	300	78	234
Toyota	Sequoia hybrid 4dr 4WD	23–24	30,676	22	158	158	250
Dodge	Durango 4dr 4WD	22–24	72,188	191	592	90	535
Very large SUVs		22–24	410,550	127	69	136	94
GMC	Yukon XL 1500 4dr 4WD	22–24	89,410	16	39	152	60
Ford	Expedition Max 4dr 4WD	22–24	41,509	11	57	134	76
Chevrolet	Suburban 1500 4dr 4WD	22–24	99,594	31	71	130	92
Jeep	Wagoneer 4dr 4WD	22–24	73,862	28	85	128	109
Jeep	Grand Wagoneer 4dr 4WD	22–24	31,730	12	82	166	136
Chevrolet	Suburban 1500 4dr	22–24	22,919	11	112	122	137
LUXURY SUVs							
Small luxury SUVs		22–24	622,141	79	28	69	20
Volvo	XC40 4dr 4WD	22–24	59,193	2	7	74	5
Buick	Encore GX 4dr	22–24	111,756	8	17	50	8
Buick	Encore GX 4dr 4WD	22–24	71,586	7	23	52	12
Mercedes-Benz	GLB class 4dr 4WD	22–24	31,962	2	17	76	13
Mercedes-Benz	GLA class 4dr 4WD	22–24	23,521	2	23	80	18
Audi	Q3 4dr 4WD	22–24	104,416	15	32	72	23
BMW	X1 4dr 4WD	23–24	29,394	4	31	77	24
Mercedes-Benz	GLB class 4dr	22–24	23,729	4	36	70	25
Lincoln	Corsair 4dr 4WD	22–24	43,562	7	35	79	28
Lincoln	Corsair 4dr	22–24	33,905	7	46	65	30
Cadillac	XT4 4dr	22–24	40,644	13	70	72	51
Midsize luxury SUVs		22–24	4,174,402	881	47	119	56
Tesla	Model Y electric 4dr 4WD	22–24	903,411	6	2	105	2
Volvo	XC90 4dr 4WD	22–24	93,178	3	6	103	7
Lexus	NX 350 4dr 4WD	22–24	95,874	4	9	90	8
Mercedes-Benz	GLC class 4dr 4WD	23–24	31,406	2	12	91	11
Infiniti	QX60 4dr 4WD	22–24	53,042	3	11	105	12
Cadillac	XT5 4dr 4WD	22–24	51,273	3	14	83	12
Lexus	RX 350 4dr	23–24	53,905	4	15	104	15
BMW	iX electric 4dr 4WD	22–24	30,251	2	11	161	18
Alfa Romeo	Stelvio 4dr 4WD	22–24	22,136	2	20	95	19
Genesis	GV70 4dr 4WD	22–24	100,036	10	21	95	20
Volvo	XC90 plug-in hybrid 4dr 4WD	22–24	44,735	3	13	170	21

Table 4: Whole vehicle theft losses by series, 2022–24 model years

Make	Series	Model years	Exposure (insured vehicle years)	Claims	Relative claim frequency	Relative claim severity	Relative overall losses
Audi	Q5 4dr 4WD	22–24	160,375	19	26	83	22
Lexus	NX 350 hybrid 4dr 4WD	22–24	54,798	6	25	90	22
Infiniti	QX60 4dr	22–24	23,543	3	24	100	24
Audi	Q5 sportback 4dr 4WD	22–24	20,362	2	26	94	25
BMW	X3 4dr	22–24	83,966	15	39	83	33
Acura	MDX 4dr	22–24	49,247	8	37	87	33
Land Rover	Defender 110 4dr 4WD	22–24	61,047	6	23	165	39
Mercedes-Benz	GLE class 4dr 4WD	22–24	134,817	20	34	124	42
Genesis	GV80 4dr 4WD	22–24	60,622	10	36	118	42
Cadillac	XT6 4dr 4WD	22–24	38,084	7	44	100	44
BMW	X3 4dr 4WD	22–24	199,078	49	56	100	55
BMW	X5 plug-in hybrid 4dr 4WD	22–24	58,792	11	43	130	56
Land Rover	Range Rover Velar 4dr 4WD	22–24	20,539	5	50	119	60
Lexus	RX 350h hybrid 4dr 4WD	23–24	38,597	9	52	115	60
Lexus	RX 350 4dr 4WD	23–24	61,890	15	55	111	61
Cadillac	XT6 4dr	22–24	24,689	7	62	99	62
Lincoln	Aviator 4dr 4WD	22–24	45,909	10	51	123	62
Acura	RDX 4dr 4WD	22–24	91,533	32	79	88	69
Porsche	Macan 4dr 4WD	22–24	75,133	19	55	130	72
Infiniti	QX55 4dr 4WD	22–24	28,062	11	87	83	72
BMW	X5 4dr	22–24	55,181	18	73	116	85
BMW	X4 4dr 4WD	22–24	40,199	15	84	111	93
Acura	MDX 4dr 4WD	22–24	249,274	108	97	110	106
Audi	SQ5 4dr 4WD	22–24	21,267	10	100	108	109
BMW	X5 4dr 4WD	22–24	171,839	106	138	133	183
Mercedes-Benz	AMG GLE class coupe 4dr 4WD	22–24	34,021	28	181	185	336
BMW	X6 4dr 4WD	22–24	41,404	44	239	147	351
Large luxury SUVs		22–24	692,378	577	187	217	406
Audi	Q7 4dr 4WD	22–24	67,890	18	61	111	67
Mercedes-Benz	GLS class 4dr 4WD	22–24	59,378	12	44	166	73
Porsche	Cayenne 4dr 4WD	22–24	39,067	10	58	181	105
Audi	Q8 4dr 4WD	22–24	25,847	9	78	140	109
BMW	X7 4dr 4WD	22–24	106,034	131	277	159	441
Land Rover	Range Rover Sport 4dr 4WD	23–24	22,215	24	246	206	507
Cadillac	Escalade 4dr 4WD	22–24	64,841	72	249	204	508
Land Rover	Range Rover 4dr 4WD (NEW)	22–24	26,033	63	540	287	1,549
Very large luxury SUVs		22–24	82,744	59	160	301	480
Cadillac	Escalade ESV 4dr 4WD	22–24	34,868	40	260	220	573
All vans		22–24	49,039	17	78	101	79
VANS							
Midsize vans		22–24	11,638	7	—	—	—
Very large vans		22–24	37,401	10	60	129	77

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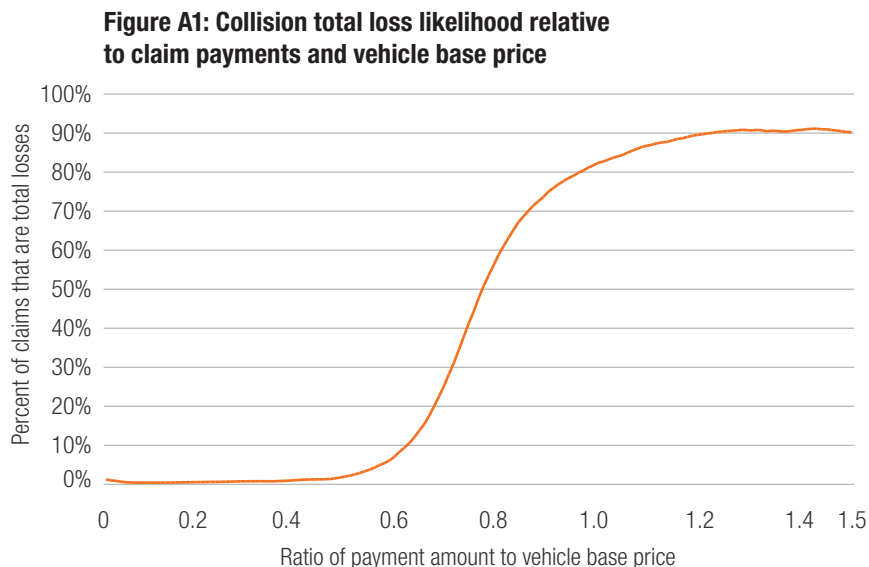
► Appendix: Methodology

Comprehensive coverage pays 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 theft of vehicle components 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 policyholder 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 estimate vehicle residual values at the calendar year, model year, and make and series level. These estimates 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 2022–24 model year vehicles during calendar years 2021–24 was obtained, and each claim was categorized as either 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 0.37 to 0.38, only about 1% resulted in a total loss. In contrast, among claims with a payment ratio ranging from 0.75 to 0.76, as many as 50% resulted in a total loss. Based on the shape of the distribution curve, illustrated in **Figure A1**, a payment ratio of 0.83 was selected as a preliminary threshold amount to balance the proportions of false negatives and false positives. At this ratio, two-thirds of collision claims resulted in a total loss.



To further verify the validity of this threshold for theft claims, individual claim sizes for three popular vehicles were examined: the Chevrolet Silverado 1500 crew cab 4WD, Subaru Outback 4WD with EyeSight, and the Toyota Corolla. In general, claim size distributions are different for collision and theft claims. The amounts for collision claims are distributed more or less equally between claims of less than \$1,000 and claims equaling the full price of the vehicle. For theft claims, losses tend to be either minor (when vehicle contents and/or components are stolen) or major (when the whole vehicle is stolen); claims for amounts in the middle are infrequent. When the theft claim size distributions for these three vehicles were examined and base prices were taken into account, the threshold value of 0.83 fit into that “in-between” range. The theft claim size distributions for these three vehicles are illustrated in **Figures A2–A4**.

Figure A2: Chevrolet Silverado 1500 crew cab 4WD theft claim size distribution

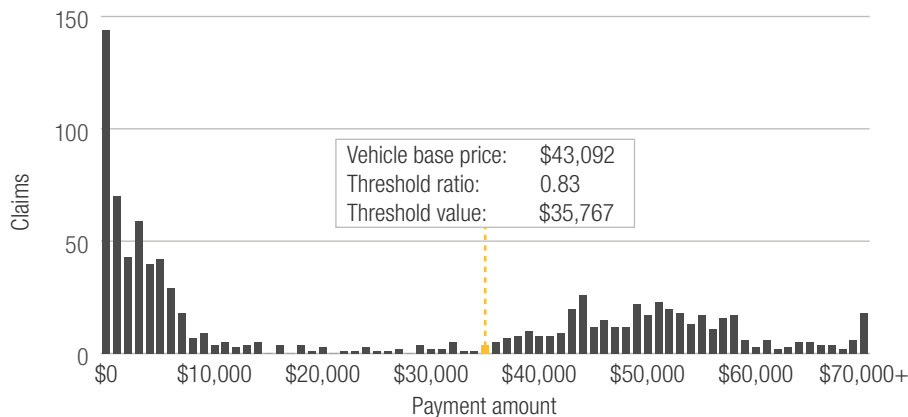


Figure A3: Subaru Outback four-door 4WD with EyeSight theft claim size distribution

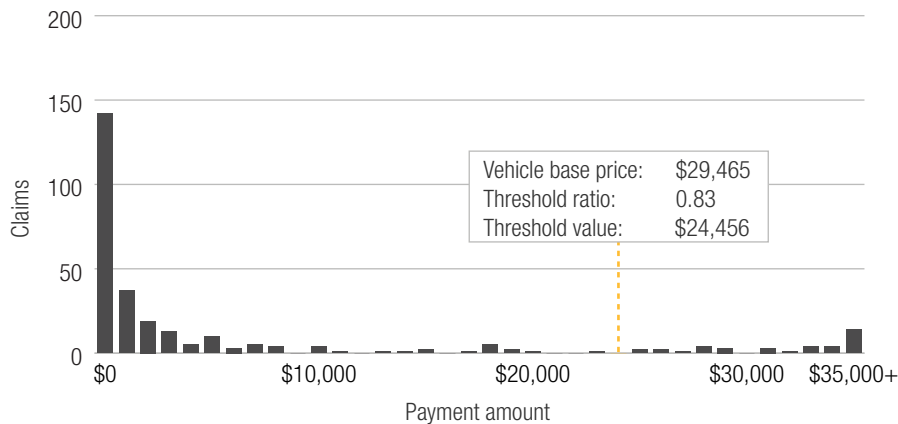
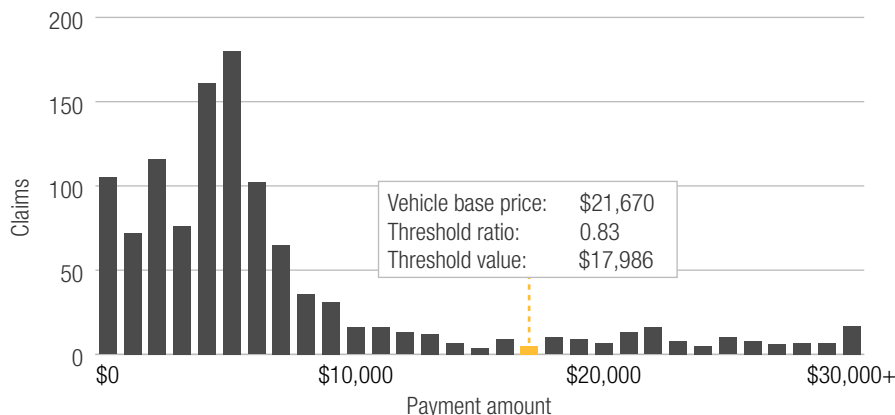


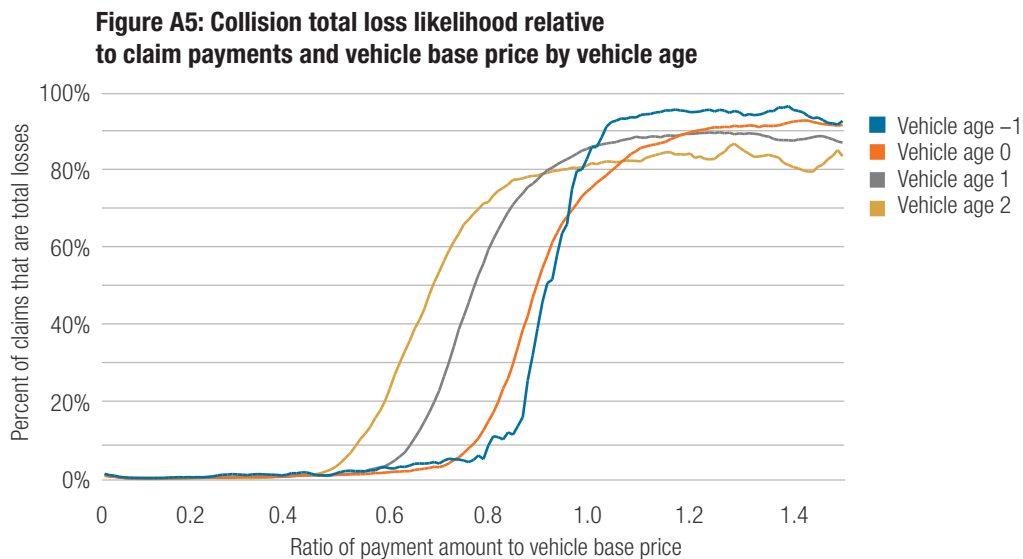
Figure A4: Toyota Corolla theft claim size distribution



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

Table A1: Whole vehicle theft thresholds by vehicle age	
Vehicle age	Threshold
-1	0.95
0	0.94
1	0.81
2	0.74

Figure A5 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 the vehicle age thresholds 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 2022-24 Hyundai Elantra has an overall theft claim frequency of 1.5, compared with a whole vehicle theft claim frequency of 0.26. Claim severity for this vehicle was \$7,579 for any type of theft and \$22,883 for whole vehicle theft.



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