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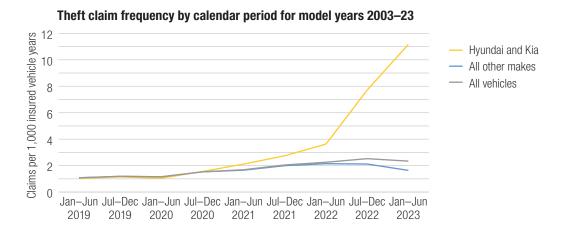


Hyundai and Kia theft and vandalism losses

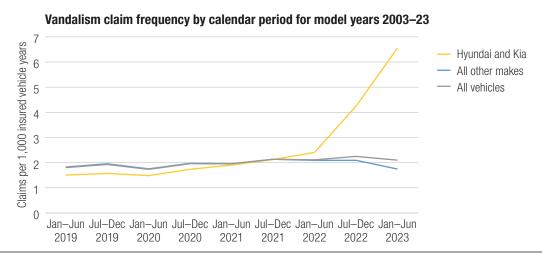
Summary

Since 2021, theft claim frequency for Hyundai and Kia vehicles has increased at a rate significantly higher than that for vehicles from other manufacturers. The rise in theft frequency for Hyundai and Kia vehicles is atypical in that many of the affected series are older. A lack of standard passive immobilizers in many Hyundai and Kia vehicles and the dissemination of instructional vehicle theft videos on social media have helped fuel this explosion of vehicle thefts. Over time, the problem has spread to include additional model years and states. Results now show that vandalism claim frequency is also increasing for Hyundai and Kia vehicles.

The Highway Loss Data Institute initially reported an increase in theft claim frequency for these models in December 2021 and has continued to monitor the situation. The current study updates previous reports by adding three months of data, from April to June 2023. Theft claim frequency for 2003–23 Hyundai and Kia models in the first half of 2023 was more than 10 times higher than in the first half of 2020. Theft claim frequency for Hyundai and Kia vehicles during January—June 2023 was nearly 7 times higher than that for other makes; during that same time period, the theft claim frequency for all vehicles, including Hyundai—Kia, rose 43 percent.



Gaining access to locked vehicles often results in damage. A rise in unsuccessful theft attempts could be expected to result in an increase in vandalism claims. Vandalism claim frequency for 2003–23 Hyundai and Kia vehicles was over 4 times higher in the first half of 2023 than in the first half of 2020. Vandalism claim frequency was also over 3 times higher for Hyundai and Kia vehicles than for other makes during January–June 2023. Additionally, the all-vehicle vandalism claim frequency rose by 20 percent with the inclusion of Hyundai and Kia vehicles. There were spikes in vandalism claims in the same states that had spikes in theft claims.



Introduction

Hyundai and Kia have lagged behind other manufacturers in installing passive immobilizer antitheft devices as standard equipment on their vehicles. Passive immobilizers were standard equipment on only 26 percent of 2015 Hyundai and Kia vehicle series, compared with 96 percent of vehicle series for all other manufacturers combined (HLDI, 2021). The lack of immobilizers has made many Hyundai and Kia vehicles easier targets for thieves, leading to a rise in theft claim frequencies for these models.

The Highway Loss Data Institute (HLDI) first reported on the increase in Hyundai and Kia theft claim frequencies for models without standard passive immobilizers in December 2021 (HLDI, 2021). In December 2022, HLDI conducted an analysis of models with and without standard passive immobilizers (HLDI, 2022). The two bulletins also studied theft trends for Hyundai–Kia and other makes for model years 2015–19 by calendar period. In April 2023, HLDI expanded previous reports by adding a wider range of model years, extending the scope to all states, and examining vandalism claims (HLDI, 2023a). Most recently, HLDI updated the report by adding data from January to March 2023 (HLDI, 2023b).

This bulletin updates the prior analysis with an additional three months of data, from April to June 2023, and examines theft and vandalism trends among Hyundai–Kia and other makes by calendar period, model year, and state.

Methods

Automobile insurance covers damage to vehicles and property from crashes plus injuries to people involved in the crashes. Vehicle damage and injuries are paid for by different types of insurance coverage, and different coverages may apply depending on who is at fault. The current study is based on comprehensive coverage. Comprehensive coverage insures against theft and physical damage to the insured vehicle that occurs for reasons other than crashes. Vehicle theft and vandalism losses are paid under comprehensive coverage.

Of the 38 companies that currently report comprehensive coverage to HLDI, 35 provide information on theft, representing nearly 100 percent of vehicle exposure in the HLDI database. Thirty-two companies provide information on vandalism, representing 93 percent of vehicle exposure in the HLDI database.

Insurance measures

Claim frequency is defined as the number of claims for a group of vehicles divided by the exposure for that group, expressed as claims per 1,000 insured vehicle years. Exposure is the length of time a vehicle is insured under a given coverage type and is measured in insured vehicle years. One insured vehicle year is one vehicle insured for 1 year, two vehicles insured for 6 months, and so forth. Claim severity is the total of all loss payments made for the claims divided by the number of claims paid. Claim severity is measured in dollars paid to settle a claim; it is not a measure of vehicle speed in a crash or injury severity. Overall losses are the product of claim frequency and claim severity, expressed as dollars per insured vehicle year. This is an insurance measure and represents the average annual dollars spent to settle claims.

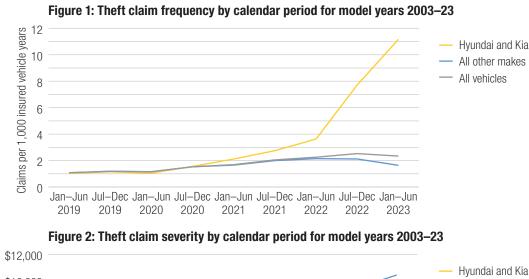
Subject vehicles

This study covers model years 2003–23 and analyzes data from January 2019 to June 2023. The model year range was selected because a minimum of 20,000 insured vehicle years was available for each model year in each of the studied calendar years. This was done to ensure the credibility of the results.

Results

Theft losses

Figures 1–3 and Table 1 show theft claim frequency, claim severity, and overall losses by calendar period for Hyundai–Kia vehicles and other makes for model years 2003–23. The claim frequencies of the two groups were nearly identical through mid-2020. The trends begin to diverge in the second half of 2020, when Hyundai–Kia claim frequency was slightly higher than that of all other makes. The difference continued to grow from 2021 to 2023. In January–June 2022, the average theft claim frequency of Hyundai–Kia vehicles was 69 percent higher than that of all other makes. In July–December 2022, it was nearly 4 times higher. The average theft claim frequency for Hyundai–Kia vehicles increased to 11.2 claims per 1,000 insured years during January–June 2023, which was nearly 7 times higher than for other makes. Since 2022 thefts of Hyundai–Kia vehicles have contributed to an increase in the all-vehicle theft claim frequency. Theft claim frequency rose to 2.3 claims per 1,000 insured vehicle years during the first six months of 2023. When Hyundai and Kia are excluded, theft claim frequency drops to 1.6. Until the most recent update, there was little variation in claim severity between Hyundai–Kia vehicles and all other makes during the study period (Figure 2). Overall losses followed a pattern similar to that for claim frequency (Figure 3). Table 1 includes the theft claim frequency, severity, and overall loss ratios for Hyundai–Kia vehicles relative to all other makes by calendar period.



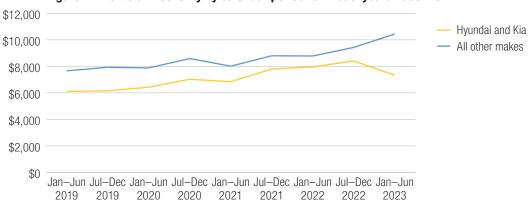


Figure 3: Theft overall losses by calendar period for model years 2003-23

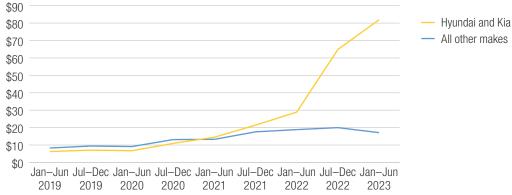


Table 1: Theft losses by calendar period for 2003–23 Hyundai–Kia vehicles and other makes										
	CI	aim frequenc	у	C	Claim severity			Overall losses		
Period	All other makes	Hyundai– Kia	Ratio	All other makes	Hyundai– Kia	Ratio	All other makes	Hyundai– Kia	Ratio	
Jan-Jun	1.1	1.0	95%	\$7,660	\$6,112	80%	\$8	\$6	76%	
Jul-Dec	1.2	1.1	96%	\$7,929	\$6,156	78%	\$9	\$7	75%	
Jan-Jun	1.2	1.0	91%	\$7,881	\$6,427	82%	\$9	\$7	74%	
Jul-Dec	1.5	1.6	102%	\$8,588	\$7,024	82%	\$13	\$11	83%	
Jan-Jun	1.7	2.1	128%	\$8,013	\$6,839	85%	\$13	\$14	109%	
Jul-Dec	2.0	2.7	138%	\$8,796	\$7,798	89%	\$18	\$21	122%	
Jan-Jun	2.1	3.6	169%	\$8,781	\$7,957	91%	\$19	\$29	153%	
Jul-Dec	2.1	7.7	364%	\$9,428	\$8,406	89%	\$20	\$65	324%	
Jan-Jun	1.6	11.2	681%	\$10,440	\$7,334	70%	\$17	\$82	478%	
	Period Jan-Jun Jul-Dec Jan-Jun Jul-Dec Jan-Jun Jul-Dec Jan-Jun Jul-Dec	Period All other makes Jan-Jun 1.1 Jul-Dec 1.2 Jan-Jun 1.2 Jul-Dec 1.5 Jan-Jun 1.7 Jul-Dec 2.0 Jan-Jun 2.1 Jul-Dec 2.1	Period All other makes Hyundai-Kia Jan-Jun 1.1 1.0 Jul-Dec 1.2 1.1 Jan-Jun 1.2 1.0 Jul-Dec 1.5 1.6 Jan-Jun 1.7 2.1 Jul-Dec 2.0 2.7 Jan-Jun 2.1 3.6 Jul-Dec 2.1 7.7	Period All other makes Hyundai- Kia Ratio Jan-Jun 1.1 1.0 95% Jul-Dec 1.2 1.1 96% Jan-Jun 1.2 1.0 91% Jul-Dec 1.5 1.6 102% Jan-Jun 1.7 2.1 128% Jul-Dec 2.0 2.7 138% Jan-Jun 2.1 3.6 169% Jul-Dec 2.1 7.7 364%	Claim frequency C Period All other makes Hyundai- Kia Ratio All other makes Jan-Jun 1.1 1.0 95% \$7,660 Jul-Dec 1.2 1.1 96% \$7,929 Jan-Jun 1.2 1.0 91% \$7,881 Jul-Dec 1.5 1.6 102% \$8,588 Jan-Jun 1.7 2.1 128% \$8,013 Jul-Dec 2.0 2.7 138% \$8,796 Jan-Jun 2.1 3.6 169% \$8,781 Jul-Dec 2.1 7.7 364% \$9,428	Claim frequency Claim severity Period All other makes Hyundai- Kia Ratio All other makes Hyundai- Kia Jan-Jun 1.1 1.0 95% \$7,660 \$6,112 Jul-Dec 1.2 1.1 96% \$7,929 \$6,156 Jan-Jun 1.2 1.0 91% \$7,881 \$6,427 Jul-Dec 1.5 1.6 102% \$8,588 \$7,024 Jan-Jun 1.7 2.1 128% \$8,013 \$6,839 Jul-Dec 2.0 2.7 138% \$8,796 \$7,798 Jan-Jun 2.1 3.6 169% \$8,781 \$7,957 Jul-Dec 2.1 7.7 364% \$9,428 \$8,406	Period Claim frequency Claim severity Jan-Jun 1.1 1.0 95% \$7,660 \$6,112 80% Jul-Dec 1.2 1.1 96% \$7,929 \$6,156 78% Jan-Jun 1.2 1.0 91% \$7,881 \$6,427 82% Jul-Dec 1.5 1.6 102% \$8,588 \$7,024 82% Jan-Jun 1.7 2.1 128% \$8,013 \$6,839 85% Jul-Dec 2.0 2.7 138% \$8,796 \$7,798 89% Jan-Jun 2.1 3.6 169% \$8,781 \$7,957 91% Jul-Dec 2.1 7.7 364% \$9,428 \$8,406 89%	Period Claim frequency Claim severity All other makes Myundai- Michael	Period Claim frequency Claim severity Overall losses Jan−Jun 1.1 1.0 95% \$7,660 \$6,112 80% \$8 \$6 Jul−Dec 1.2 1.1 96% \$7,929 \$6,156 78% \$9 \$7 Jan−Jun 1.2 1.0 91% \$7,881 \$6,427 82% \$9 \$7 Jul−Dec 1.5 1.6 102% \$8,588 \$7,024 82% \$13 \$11 Jan−Jun 1.7 2.1 128% \$8,013 \$6,839 85% \$13 \$14 Jul−Dec 2.0 2.7 138% \$8,796 \$7,798 89% \$18 \$21 Jan−Jun 2.1 3.6 169% \$8,781 \$7,957 91% \$19 \$29 Jul−Dec 2.1 7.7 364% \$9,428 \$8,406 89% \$20 \$65	

Table 2 summarizes claim frequency, claim severity, and overall losses by model year for Hyundai–Kia vehicles and all other makes from January 2019 to June 2023. Hyundai–Kia vehicles have higher theft claim frequencies than all other makes for all model years after 2008. The theft claim frequency for Hyundai–Kia vehicles was over twice that of all other makes for 2011–21 models. However, the theft claim frequency for 2022–23 Hyundai–Kia models was lower than for earlier models, and the gap between Hyundai–Kia and other makes decreased (25 percent higher for 2022; 19 percent higher for 2023). Claim severity for Hyundai–Kia models was lower than those of all other vehicles. Overall losses followed a pattern similar to that for claim frequency.

	Claim frequency				Claim severity		Overall losses		
Model year	All other makes	Hyundai– Kia	Ratio	All other makes	Hyundai– Kia	Ratio	All other makes	Hyundai– Kia	Ratio
2003	2.6	2.0	79%	\$4,167	\$1,867	45%	\$11	\$4	35%
2004	2.7	2.3	85%	\$4,310	\$2,047	47%	\$11	\$5	40%
2005	2.7	3.3	122%	\$4,472	\$1,897	42%	\$12	\$6	52%
2006	2.6	2.8	110%	\$4,666	\$1,994	43%	\$12	\$6	47%
2007	2.7	2.6	99%	\$4,342	\$2,213	51%	\$12	\$6	51%
2008	2.4	2.4	101%	\$4,218	\$2,255	53%	\$10	\$5	54%
2009	1.9	2.2	114%	\$4,412	\$2,575	58%	\$8	\$6	67%
2010	1.4	1.8	130%	\$5,419	\$3,185	59%	\$8	\$6	75%
2011	1.3	3.1	230%	\$6,283	\$4,704	75%	\$8	\$14	171%
2012	1.3	3.0	238%	\$6,738	\$5,118	76%	\$9	\$16	179%
2013	1.3	3.7	285%	\$7,337	\$5,862	80%	\$10	\$21	225%
2014	1.3	3.4	270%	\$8,632	\$6,606	77%	\$11	\$23	205%
2015	1.3	4.4	332%	\$9,465	\$7,744	82%	\$13	\$34	269%
2016	1.3	4.1	309%	\$11,160	\$7,944	71%	\$15	\$32	220%
2017	1.4	4.4	322%	\$12,443	\$8,633	69%	\$17	\$38	224%
2018	1.4	4.7	325%	\$13,742	\$9,080	66%	\$20	\$43	214%
2019	1.4	4.8	343%	\$13,164	\$9,771	74%	\$19	\$47	251%
2020	1.6	4.3	277%	\$15,023	\$9,928	66%	\$24	\$43	179%
2021	1.7	3.9	230%	\$17,421	\$10,128	58%	\$30	\$40	132%
2022	1.6	2.0	125%	\$18,841	\$9,287	49%	\$31	\$19	62%
2023	1.1	1.3	119%	\$21,681	\$7,017	32%	\$24	\$9	38%

Table 3 presents theft claim frequency ratios for Hyundai–Kia vehicles relative to all other makes by model year and calendar year. For example, in 2023, the theft claim frequency is 16.6 claims per 1,000 insured vehicle years for 2019 Hyundai–Kia vehicles and 1.4 for all other 2019 model year makes, so the theft claim frequency ratio is 1,197 percent (i.e., 16.6/1.4). This means that the theft claim frequency for Hyundai–Kia vehicles is nearly 12 times higher than that of all other 2019 model year vehicles. The color-coding scheme in the table represents different ratio ranges: Green represents ratios under 100 percent; yellow, 100 percent to 200 percent; orange, 200 percent to 300 percent; red, 300 percent to 450 percent; and dark red, over 450 percent. The theft claim frequency of Hyundai–Kia vehicles has increased over time compared with all other makes, and this problem has expanded to include more model years. The highest ratios are found in vehicles from model years 2011 to 2021 in calendar year 2023, when theft claim frequencies for those Hyundai–Kia vehicles were anywhere from 4.9 to 12.5 times higher than for all other makes.

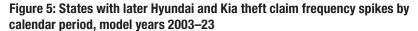
Table 3: Theft claim frequency ratio by model year and calendar year, Hyundai and Kia vs. other makes									
Model year	Calendar year 2019	Calendar year 2020	Calendar year 2021	Calendar year 2022	Calendar year 2023				
2003	51%	58%	87%	111%	103%				
2004	66%	50%	80%	126%	141%				
2005	74%	40%	133%	200%	190%				
2006	65%	64%	111%	162%	156%				
2007	70%	51%	100%	142%	146%				
2008	68%	49%	102%	140%	181%				
2009	87%	57%	98%	169%	202%				
2010	88%	79%	117%	155%	244%				
2011	107%	116%	162%	284%	708%				
2012	106%	113%	171%	302%	691%				
2013	108%	126%	177%	364%					
2014	116%	121%	168%	344%	901%				
2015	123%	139%	216%	437%	1,035%				
2016	103%	125%	182%	416%	1,198%				
2017	99%	114%	185%	432%	1,238%				
2018	91%	114%	170%	435%	1,249%				
2019	79%	106%	171%	411%	1,197%				
2020	79%	84%	123%	280%	781%				
2021		90%	106%	201%	493%				
2022			113%	107%	158%				
2023				115%	117%				

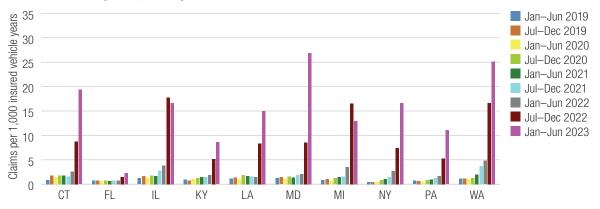
Figure 4 shows states with early Hyundai and Kia theft claim frequency spikes for model years 2003–23. These states saw an increase in theft claim frequency as early as 2020. The first large increases came in Colorado and Wisconsin. Theft claim frequency in Colorado increased from two claims per 1,000 insured vehicle years in the first half of 2020 to 30 claims per 1,000 insured vehicle years in the second half of 2022. Theft claim frequency in Colorado declined during January–June 2023 but remained relatively high at 23 claims per 1,000 insured vehicle years. Wisconsin theft claim frequency has been declining since a peak of 23 claims per 1,000 years during July–December 2021 and was down to nine claims per 1,000 insured vehicle years during January–June 2023. Other states also showed increases in Hyundai and Kia theft claim frequency from 2021 to 2023. Theft claim frequency in Missouri dropped in 2023 but remained high. Unlike other states, theft claim frequency in New Mexico remained high from 2019 to 2023.

The theft problem has spread to more states in recent years. **Figure 5** shows states with later Hyundai and Kia theft claim frequency spikes for model years 2003–23. The theft claim frequency in these states began to rise in the second half of 2022 and continued into 2023. By June of 2023, claims per 1,000 insured vehicle years rose to 19 in Connecticut, 9 in Kentucky, 15 in Louisiana, 27 in Maryland, 17 in New York, 11 in Pennsylvania, and 25 in Washington. Theft claim frequencies in Illinois and Michigan dropped in 2023 but remained high. Theft claim frequency remained almost unchanged from 2019 to the first half of 2022 in Florida, grew somewhat in the second half of 2022 and the first half of 2023 but remained low. Other states not included in **Figures 4 and 5** either had no increases over the study time period or had less pronounced increases than those depicted.

35 Jan-Jun 2019 Claims per 1,000 insured vehicle years Jul-Dec 2019 30 Jan-Jun 2020 Jul-Dec 2020 25 Jan-Jun 2021 20 Jul-Dec 2021 ■ Jan-Jun 2022 15 Jul-Dec 2022 Jan-Jun 2023 10 5 0 CA CO MN MO NE NV NM OH 0R \//I

Figure 4: States with early Hyundai and Kia theft claim frequency spikes by calendar period, model years 2003–23

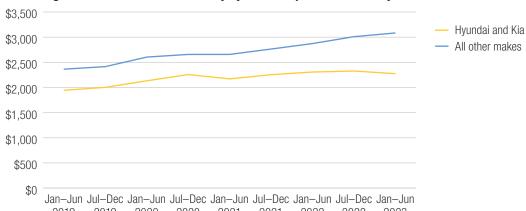




Vandalism losses

Figures 6-8 and Table 4 show vandalism claim frequency, claim severity, and overall losses by calendar period for Hyundai-Kia vehicles and all other makes from model years 2003-23. Vandalism claim frequency for Hyundai-Kia vehicles was lower than that of all other makes combined in 2019 and 2020 and was similar in 2021. Starting in 2022, vandalism claim frequency for Hyundai-Kia vehicles exceeded that of all other makes. Vandalism claim frequencies for Hyundai-Kia vehicles continued to grow in 2023. By June 2023, Hyundai-Kia vandalism claim frequency was nearly 4 times higher than other makes. Vandalism of Hyundai-Kia vehicles hs negatively impacted the all-vehicle vandalism claim frequency since 2022. Vandalism claim frequency rose to 2.1 claims per 1,000 insured vehicle years during the first six months of 2023. When Hyundai and Kia are excluded, vandalism claim frequency drops to 1.7. The differences in claim severity between Hyundai-Kia vehicles and all other vehicles were not as large as the differences in claim frequency (Figure 7). The pattern for overall losses was similar to that for claim frequency (Figure 8).

Figure 6: Vandalism claim frequency by calendar period for model years 2003–23 Claims per 1,000 insured vehicle years Hyundai and Kia 6 All other makes All vehicles 5 3 0 Jan-Jun Jul-Dec Jan-Jun Jul-Dec Jan-Jun Jul-Dec Jan-Jun Jul-Dec Jan-Jun 2019 2020 2020 2021 2021 2022



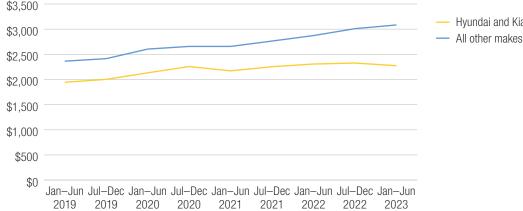


Figure 7: Vandalism claim severity by calendar period for model years 2003–23

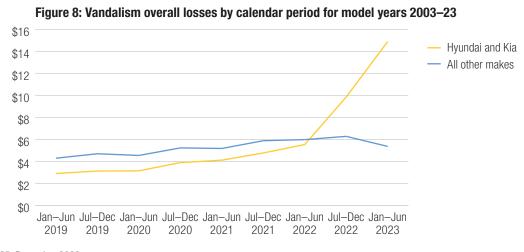


Table 4: Vandalism losses by calendar period for 2003–23 Hyundai–Kia vehicles and other makes										
	CI	aim frequenc	y		Claim severity			Overall losses		
Period	All other makes	Hyundai– Kia	Ratio	All other makes	Hyundai– Kia	Ratio	All other makes	Hyundai– Kia	Ratio	
Jan-Jun	1.8	1.5	82%	\$2,364	\$1,944	82%	\$4	\$3	68%	
Jul-Dec	2.0	1.6	80%	\$2,414	\$2,002	83%	\$5	\$3	67%	
Jan-Jun	1.8	1.5	85%	\$2,604	\$2,132	82%	\$5	\$3	69%	
Jul-Dec	2.0	1.7	88%	\$2,657	\$2,257	85%	\$5	\$4	75%	
Jan-Jun	2.0	1.9	97%	\$2,657	\$2,171	82%	\$5	\$4	80%	
Jul-Dec	2.1	2.1	100%	\$2,764	\$2,254	82%	\$6	\$5	81%	
Jan-Jun	2.1	2.4	115%	\$2,873	\$2,307	80%	\$6	\$6	93%	
Jul-Dec	2.1	4.2	203%	\$3,010	\$2,327	77%	\$6	\$10	157%	
Jan-Jun	1.7	6.6	376%	\$3,084	\$2,274	74%	\$5	\$15	277%	
	Period Jan-Jun Jul-Dec Jan-Jun Jul-Dec Jan-Jun Jul-Dec Jan-Jun Jul-Dec	Period All other makes Jan-Jun 1.8 Jul-Dec 2.0 Jan-Jun 1.8 Jul-Dec 2.0 Jan-Jun 2.0 Jul-Dec 2.1 Jan-Jun 2.1 Jul-Dec 2.1 Jul-Dec 2.1	Period All other makes Hyundai-Kia Jan-Jun 1.8 1.5 Jul-Dec 2.0 1.6 Jan-Jun 1.8 1.5 Jul-Dec 2.0 1.7 Jan-Jun 2.0 1.9 Jul-Dec 2.1 2.1 Jan-Jun 2.1 2.4 Jul-Dec 2.1 4.2	Claim frequency Period All other makes Hyundai- Kia Ratio Jan-Jun 1.8 1.5 82% Jul-Dec 2.0 1.6 80% Jan-Jun 1.8 1.5 85% Jul-Dec 2.0 1.7 88% Jan-Jun 2.0 1.9 97% Jul-Dec 2.1 2.1 100% Jan-Jun 2.1 2.4 115% Jul-Dec 2.1 4.2 203%	Claim frequency Color frequency <t< td=""><td>Claim frequency Claim severity Period All other makes Hyundai- Kia Ratio All other makes Hyundai- Kia Jan-Jun 1.8 1.5 82% \$2,364 \$1,944 Jul-Dec 2.0 1.6 80% \$2,414 \$2,002 Jan-Jun 1.8 1.5 85% \$2,604 \$2,132 Jul-Dec 2.0 1.7 88% \$2,657 \$2,257 Jan-Jun 2.0 1.9 97% \$2,657 \$2,171 Jul-Dec 2.1 2.1 100% \$2,764 \$2,254 Jan-Jun 2.1 2.4 115% \$2,873 \$2,307 Jul-Dec 2.1 4.2 203% \$3,010 \$2,327</td><td>Period Claim frequency Claim severity Jan-Jun 1.8 1.5 82% \$2,364 \$1,944 82% Jul-Dec 2.0 1.6 80% \$2,414 \$2,002 83% Jan-Jun 1.8 1.5 85% \$2,604 \$2,132 82% Jul-Dec 2.0 1.7 88% \$2,657 \$2,257 85% Jan-Jun 2.0 1.9 97% \$2,657 \$2,171 82% Jul-Dec 2.1 2.1 100% \$2,764 \$2,254 82% Jan-Jun 2.1 2.4 115% \$2,873 \$2,307 80% Jul-Dec 2.1 4.2 203% \$3,010 \$2,327 77%</td><td>Period Claim frequency Claim severity All other makes Jan-Jun 1.8 1.5 82% \$2,364 \$1,944 82% \$4 Jul-Dec 2.0 1.6 80% \$2,414 \$2,002 83% \$5 Jul-Dec 2.0 1.7 88% \$2,604 \$2,132 82% \$5 Jul-Dec 2.0 1.7 88% \$2,657 \$2,257 85% \$5 Jul-Dec 2.1 2.1 100% \$2,764 \$2,254 82% \$6 Jul-Dec 2.1 2.4 115% \$2,873 \$2,307 80% \$6 Jul-Dec 2.1 4.2 203% \$3,010 \$2,327 77% \$6</td><td>Period Claim frequency Claim severity Overall losses Jan-Jun 1.8 1.5 82% \$2,364 \$1,944 82% \$4 \$3 Jul-Dec 2.0 1.6 80% \$2,414 \$2,002 83% \$5 \$3 Jan-Jun 1.8 1.5 85% \$2,604 \$2,132 82% \$5 \$3 Jul-Dec 2.0 1.7 88% \$2,657 \$2,257 85% \$5 \$4 Jan-Jun 2.0 1.9 97% \$2,657 \$2,171 82% \$5 \$4 Jul-Dec 2.1 2.1 100% \$2,764 \$2,254 82% \$6 \$5 Jan-Jun 2.1 2.4 115% \$2,873 \$2,307 80% \$6 \$6 Jul-Dec 2.1 4.2 203% \$3,010 \$2,327 77% \$6 \$10</td></t<>	Claim frequency Claim severity Period All other makes Hyundai- Kia Ratio All other makes Hyundai- Kia Jan-Jun 1.8 1.5 82% \$2,364 \$1,944 Jul-Dec 2.0 1.6 80% \$2,414 \$2,002 Jan-Jun 1.8 1.5 85% \$2,604 \$2,132 Jul-Dec 2.0 1.7 88% \$2,657 \$2,257 Jan-Jun 2.0 1.9 97% \$2,657 \$2,171 Jul-Dec 2.1 2.1 100% \$2,764 \$2,254 Jan-Jun 2.1 2.4 115% \$2,873 \$2,307 Jul-Dec 2.1 4.2 203% \$3,010 \$2,327	Period Claim frequency Claim severity Jan-Jun 1.8 1.5 82% \$2,364 \$1,944 82% Jul-Dec 2.0 1.6 80% \$2,414 \$2,002 83% Jan-Jun 1.8 1.5 85% \$2,604 \$2,132 82% Jul-Dec 2.0 1.7 88% \$2,657 \$2,257 85% Jan-Jun 2.0 1.9 97% \$2,657 \$2,171 82% Jul-Dec 2.1 2.1 100% \$2,764 \$2,254 82% Jan-Jun 2.1 2.4 115% \$2,873 \$2,307 80% Jul-Dec 2.1 4.2 203% \$3,010 \$2,327 77%	Period Claim frequency Claim severity All other makes Jan-Jun 1.8 1.5 82% \$2,364 \$1,944 82% \$4 Jul-Dec 2.0 1.6 80% \$2,414 \$2,002 83% \$5 Jul-Dec 2.0 1.7 88% \$2,604 \$2,132 82% \$5 Jul-Dec 2.0 1.7 88% \$2,657 \$2,257 85% \$5 Jul-Dec 2.1 2.1 100% \$2,764 \$2,254 82% \$6 Jul-Dec 2.1 2.4 115% \$2,873 \$2,307 80% \$6 Jul-Dec 2.1 4.2 203% \$3,010 \$2,327 77% \$6	Period Claim frequency Claim severity Overall losses Jan-Jun 1.8 1.5 82% \$2,364 \$1,944 82% \$4 \$3 Jul-Dec 2.0 1.6 80% \$2,414 \$2,002 83% \$5 \$3 Jan-Jun 1.8 1.5 85% \$2,604 \$2,132 82% \$5 \$3 Jul-Dec 2.0 1.7 88% \$2,657 \$2,257 85% \$5 \$4 Jan-Jun 2.0 1.9 97% \$2,657 \$2,171 82% \$5 \$4 Jul-Dec 2.1 2.1 100% \$2,764 \$2,254 82% \$6 \$5 Jan-Jun 2.1 2.4 115% \$2,873 \$2,307 80% \$6 \$6 Jul-Dec 2.1 4.2 203% \$3,010 \$2,327 77% \$6 \$10	

Table 5 summarizes vandalism claim frequency, claim severity, and overall losses by model year for Hyundai–Kia vehicles and all other makes during January 2019 to June 2023. Hyundai–Kia vehicles have a higher vandalism claim frequency than all other makes starting with model year 2010, although the differences in vandalism claim frequency between Hyundai–Kia and all other makes were not as large as those observed for theft. The largest gap was in model year 2023, when vandalism claim frequency for Hyundai–Kia vehicles was nearly twice that for all other makes. Claim severity for Hyundai–Kia vehicles was lower than that of all other vehicles combined for all model years. Most Hyundai–Kia vehicles exhibit lower or comparable vandalism overall losses when compared with all other vehicles combined.

	Claim frequency			(Claim severity	1	Overall losses		
Model year	All other makes	Hyundai– Kia	Ratio	All other makes	Hyundai– Kia	Ratio	All other makes	Hyundai– Kia	Ratio
2003	1.9	1.3	71%	\$2,147	\$1,261	59%	\$4	\$2	42%
2004	1.9	1.4	76%	\$2,171	\$1,421	65%	\$4	\$2	50%
2005	1.9	1.6	88%	\$2,283	\$1,414	62%	\$4	\$2	54%
2006	2.0	1.8	92%	\$2,386	\$1,467	61%	\$5	\$3	57%
2007	2.1	1.7	82%	\$2,575	\$1,510	59%	\$5	\$3	48%
2008	1.9	1.7	85%	\$2,516	\$1,470	58%	\$5	\$2	50%
2009	1.7	1.6	94%	\$2,492	\$1,698	68%	\$4	\$3	64%
2010	1.6	1.9	123%	\$2,527	\$1,648	65%	\$4	\$3	80%
2011	1.6	2.2	142%	\$2,664	\$1,993	75%	\$4	\$4	106%
2012	1.5	2.3	147%	\$2,670	\$2,015	75%	\$4	\$5	111%
2013	1.7	2.5	150%	\$2,699	\$2,148	80%	\$4	\$5	120%
2014	1.7	2.5	145%	\$2,784	\$2,217	80%	\$5	\$6	115%
2015	1.9	2.8	150%	\$2,804	\$2,316	83%	\$5	\$6	124%
2016	2.0	2.8	144%	\$2,820	\$2,259	80%	\$6	\$6	115%
2017	2.1	2.8	136%	\$2,827	\$2,283	81%	\$6	\$6	109%
2018	2.2	3.0	133%	\$2,807	\$2,307	82%	\$6	\$7	109%
2019	2.3	3.1	135%	\$2,841	\$2,325	82%	\$6	\$7	111%
2020	2.4	3.2	132%	\$2,939	\$2,414	82%	\$7	\$8	108%
2021	2.6	3.5	138%	\$3,087	\$2,516	81%	\$8	\$9	112%
2022	2.6	3.8	145%	\$3,216	\$2,649	82%	\$8	\$10	119%
2023	2.2	4.4	198%	\$3,229	\$2,631	81%	\$7	\$12	161%

Table 6 presents vandalism claim frequency ratios for Hyundai–Kia vehicles relative to all other makes by model year and calendar year. These ratios are calculated in the same manner as the theft claim frequency ratios. Green represents ratios under 100 percent; yellow, 100 percent to 200 percent; orange, 200 percent to 300 percent; red, 300 percent to 450 percent; and dark red, over 450 percent. For calendar years 2019 and 2020, almost all Hyundai–Kia models have lower vandalism claim frequency than other makes. In 2021, one quarter of Hyundai–Kia models have higher vandalism claim frequency than other makes of the same model year. In 2022, Hyundai–Kia vandalism claim frequencies were higher than other makes for all model years except 2003. In 2023, the gaps between Hyundai–Kia vandalism claim frequency and that of other makes continued to grow. The ratios were highest for model years 2010–20 in calendar year 2023, when vandalism claim frequencies for Hyundai–Kia vehicles were more than 3 times higher than those of other makes.

	Table 6: Vandalism claim frequency ratio by model year and calendar year, Hyundai and Kia vs. other makes									
Model year	Calendar year 2019	Calendar year 2020	Calendar year 2021	Calendar year 2022	Calendar year 2023					
2003	59%	58%	81%	83%	118%					
2004	56%	56%	80%	109%	126%					
2005	70%	48%	102%	129%	129%					
2006	70%	57%	95%	137%	154%					
2007	58%	53%	87%	117%	152%					
2008	60%	57%	86%	115%	183%					
2009	68%	62%	83%	135%	209%					
2010	72%	77%	93%	163%	402%					
2011	82%	93%	112%	189%	454%					
2012	87%	94%	117%	188%	476%					
2013	82%	92%	109%	198%						
2014	81%	91%	100%	187%	516%					
2015	84%	98%	111%	192%						
2016	84%	87%	97%	189%	510%					
2017	77%	86%	96%	173%	461%					
2018	76%	81%	97%	164%	457%					
2019	80%	86%	93%	156%	396%					
2020	73%	86%	89%	133%	314%					
2021		110%	99%	122%	255%					
2022			96%	121%	197%					
2023				199%	199%					

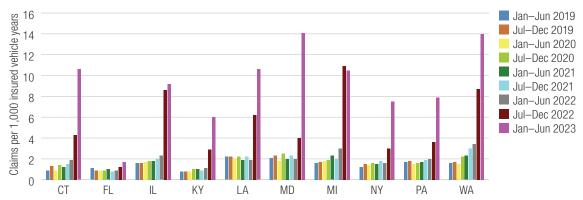
 Figure 9 shows states with early Hyundai and Kia vandalism claim frequency spikes by calendar period for model years 2003–23. The first large increase in vandalism claim frequency occurred in Colorado, where claim frequency rose from less than two claims per 1,000 insured vehicle years in the first half of 2020 to nine claims in 2023. In Wisconsin, Hyundai–Kia vandalism claim frequency spiked in the first half of 2021 but began to decline in 2022. Other states, including California, Minnesota, Missouri, Nebraska, Nevada, Ohio, and Oregon, also saw substantial increases in Hyundai and Kia vandalism claim frequency, particularly in the second half of 2022 to the first half of 2023. New Mexico had consistently high vandalism claim frequency throughout the analyzed period.

Figure 10 shows states with later Hyundai and Kia vandalism claim frequency spikes by calendar period for model years 2003–23. Vandalism claim frequency in many of these states was relatively low from 2019 to the first half of 2022 but began to rise substantially in the second half of 2022 and remained high thereafter. Florida did not show any noticeable increase in vandalism claim frequency. Other states not featured in **Figures 9 and 10** either had minimal increases over the study time period or the increases were not as noticeable as those illustrated.

16 Jan-Jun 2019 Claims per 1,000 insured vehicle years Jul-Dec 2019 14 Jan-Jun 2020 12 Jul-Dec 2020 ■ Jan-Jun 2021 10 Jul-Dec 2021 8 Jan-Jun 2022 Jul-Dec 2022 6 Jan-Jun 2023 4 2 CO MO NV ОН 0R MN NE NM

Figure 9: States with early Hyundai and Kia vandalism claim frequency spikes by calendar period, model years 2003–23





Discussion

Hyundai–Kia theft claim frequencies have continued to increase, and the problem has spread to more states. By June of 2023, the theft claim frequency for model year 2003–23 Hyundai and Kia vehicles was more than 10 times higher than in the first half of 2020. Colorado and Wisconsin were the first states to witness a substantial increase in theft claim frequency; as time progressed, this issue spread to other states.

Hyundai and Kia vehicles from model years 2011–21 are more likely to be stolen than vehicles from other manufacturers. This is especially pronounced for model year 2015–19 vehicles and less for newer ones. Among 2015–19 vehicles, the theft claim frequency for Hyundai–Kia vehicles is more than 3 times higher than for other makes. In contrast, for model year 2022 and 2023 vehicles, Hyundai–Kia theft claim frequencies are only 25 percent and 19 percent higher than those of other makes. This could be because more of the latest Hyundai–Kia models are equipped with immobilizers. Hyundai announced that all its vehicles produced since November 2021 have engine immobilizers as standard (Hyundai Motor America, 2023). Kia also said that all of its 2022 models and trims have immobilizers, applied either at the beginning of the year or as a running change (Lowery, 2022). Hyundai and Kia have begun updating vehicles that lack an immobilizer with theft deterrent software. Only vehicles equipped with an audible alarm are eligible for the update. According to Hyundai–Kia, after the update, vehicles will start only if a key is in the ignition. The vehicle must be locked with the key fob to activate the ignition "kill" feature. The software also extends the duration of the alarm from 30 seconds to 1 minute. Updated vehicles will receive a window sticker in an effort to deter potential thieves. The software update has only been available to vehicle owners since February 2023.

The rise in thefts also likely explains the increased frequency of vandalism claims. Presumably, would-be thieves are damaging Hyundai–Kia vehicles but failing to steal them because they mistakenly target a vehicle equipped with an immobilizer. The vehicle owner then files a vandalism claim for a broken window or other damage rather than a theft claim.

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