



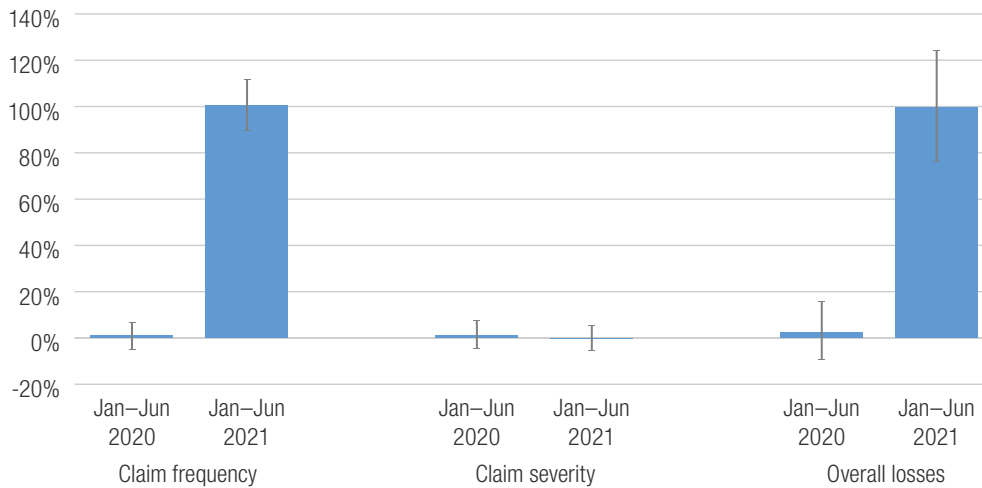
Hyundai and Kia theft losses

► Summary

Previous studies by the Highway Loss Data Institute (HLDI) found that vehicle theft losses decreased significantly after factory-installed passive immobilizing antitheft devices were introduced (HLDI, 1996, 1998, 2000, 2012, 2013). Hyundai and Kia have lagged behind other manufacturers in equipping their vehicles with standard passive immobilizers; for example, only 26 percent of their 2015 vehicle series were equipped with standard immobilizers compared with 96 percent of all other makes combined. This lack of an immobilizer has made many Hyundai and Kia vehicles vulnerable to theft. The current study examines the recent changes in Hyundai and Kia theft losses for 2015–19 model years during calendar years 2019–21 for vehicle series with optional or no immobilizers.

The figure below shows the estimated change in theft losses compared with the 2019 calendar period (January to June) for 2015–19 Hyundai and Kia vehicle series without standard immobilizers. Only the first 6 months of losses for each year were used due to 2021 data availability. The analyses controlled for vehicle series-model year; rated driver age, gender, and marital status; risk; vehicle density (registered vehicles per square mile); state; and comprehensive deductible.

Estimated change in Hyundai and Kia theft losses compared with 2019 calendar period (January to June) based on all states



During the 2020 calendar period, there were no statistically significant changes from 2019 in any of the loss measures. The results for the 2021 calendar period were much different, with claim frequencies and overall losses about twice as high as those in 2019. Claim severity had almost no change. The increases in claim frequencies and overall losses were not consistent across states, with Wisconsin and Colorado having appreciably higher increases. Additional analyses found that Hyundai and Kia theft claim frequencies and overall losses were estimated to be over 30 times higher in 2021 compared with 2019 in Wisconsin and over 10 times higher in Colorado.

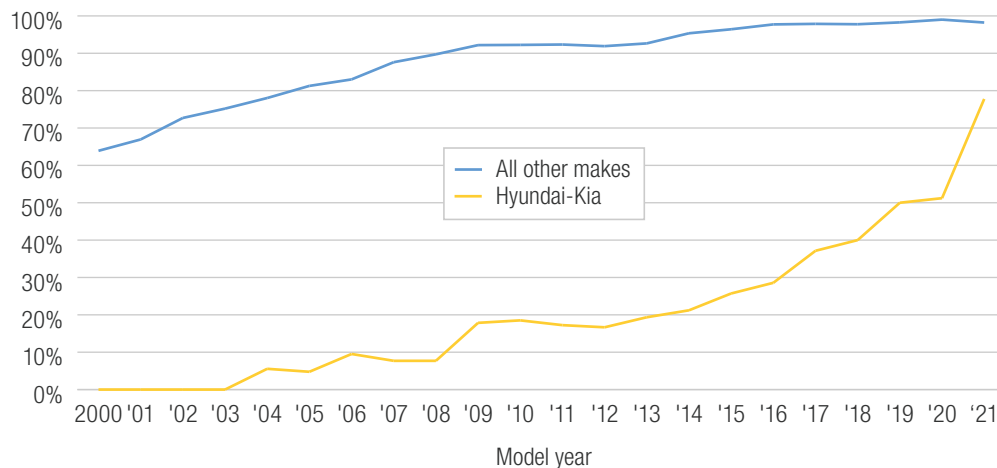
In recent model years, Hyundai and Kia have improved their immobilizer installation rates; 78 percent of 2021 Hyundai and Kia vehicle series now have standard passive immobilizers. HLDI will continue to monitor the increases in Hyundai and Kia thefts.

► Introduction

Earlier HLDI studies have found significant reductions in theft losses after passive immobilizing antitheft devices were added to vehicles. A 1996 HLDI study found significant decreases in overall theft losses between 1993 and 1994 models for several General Motors vehicles. Reductions in theft losses were also seen in BMW vehicles with improved immobilizers (HLDI, 1998). Later studies saw decreases in theft losses for Ford pickups and the Nissan Maxima (HLDI, 2000, 2012). A 2013 study found that thieves were sometimes targeting the older model years of a vehicle series without immobilizers, such as the Honda Civic and Honda Accord (HLDI, 2013).

Due in part to the early and proven success with immobilizers reducing thefts, immobilizers rapidly increased in popularity, rising from being standard on just 9 percent of 1990 vehicle series, to 62 percent of 2000 vehicle series, to 97 percent of today's 2021 vehicle series. Hyundai and Kia have trailed other manufacturers in adding immobilizers as standard equipment (**Figure 1**). For 2015 models, passive immobilizers were standard on only 26 percent of Hyundai and Kia vehicle series, compared with 96 percent of vehicle series for all other manufacturers combined. This lack of an immobilizer has made many Hyundai and Kia vehicles easier targets for thieves. The current study examines recent theft trends among Hyundai and Kia vehicles.

Figure 1: Percentage of vehicle series with passive immobilizer as standard equipment by model year



► Method

Vehicle theft losses are paid under comprehensive coverage. The results in this study are based on theft losses and comprehensive coverage for 2015–19 Hyundai and Kia vehicle series with optional or not available passive immobilizer antitheft devices. **Table 1** lists the vehicle series along with their immobilizer availability. Model years where the immobilizer was offered as standard equipment were excluded from the analyses.

Only January to June theft coverage and losses were used in the analyses. This is because the 2021 calendar year data were only available through June, and using only January to June data made the 2019 and 2020 calendar periods comparable. This control was needed since seasonal patterns have been observed in theft losses, with claim frequencies highest in July and August and lowest in February (HLDI, 2011).

Table 1: Study vehicles and their passive immobilizer availability

Make	Series	Size class and body type	Model year				
			2015	2016	2017	2018	2019
Hyundai	Accent 4dr	Minicar	na	na	na	Opt	Opt
Hyundai	Accent station wagon	Minicar	na	na	na	–	–
Hyundai	Elantra 2dr	Small car	Opt	–	–	–	–
Hyundai	Elantra 4dr	Small car	Opt	Opt	Opt	Opt	Opt
Hyundai	Elantra GT 4dr	Small car	Opt	Opt	Opt	Opt	Opt
Hyundai	Kona 4dr	Small SUV	–	–	–	Opt	Opt
Hyundai	Kona 4dr 4WD	Small SUV	–	–	–	Opt	Opt
Hyundai	Santa Fe 4dr	Small SUV	Opt	Opt	Opt	Opt	Opt
Hyundai	Santa Fe 4dr 4WD	Small SUV	Opt	Opt	Opt	Opt	Opt
Hyundai	Santa Fe Sport 4dr	Midsize SUV	na	na	na	na	–
Hyundai	Santa Fe Sport 4dr 4WD	Midsize SUV	na	na	na	na	–
Hyundai	Santa Fe XL 4dr	Midsize SUV	–	–	–	–	Opt
Hyundai	Santa Fe XL 4dr 4WD	Midsize SUV	–	–	–	–	Opt
Hyundai	Sonata 4dr	Midsize car	Opt	Opt	Opt	Opt	Opt
Hyundai	Tucson 4dr	Small SUV	Opt	Opt	Opt	Opt	Opt
Hyundai	Tucson 4dr 4WD	Small SUV	Opt	Opt	Opt	Opt	Opt
Hyundai	Veloster 3dr	Small car	Opt	Opt	Opt	–	Std*
Kia	Forte 2dr	Small car	Opt	Opt	–	–	–
Kia	Forte 4dr	Small car	Opt	Opt	Opt	Opt	Opt
Kia	Forte station wagon	Small car	Opt	Opt	Opt	Opt	–
Kia	Optima 4dr	Midsize car	Opt	Opt	Opt	Opt	Opt
Kia	Optima hybrid 4dr	Midsize car	na	na	Std*	Std*	Std*
Kia	Rio 4dr	Minicar	na	na	na	na	na
Kia	Rio station wagon	Minicar	na	na	na	na	na
Kia	Sedona	Very large minivan	Opt	Opt	Opt	Opt	Opt
Kia	Sorento 4dr	Midsize SUV	Opt	Opt	Std*	Std*	Std*
Kia	Sorento 4dr 4WD	Midsize SUV	Opt	Opt	Std*	Std*	Std*
Kia	Soul station wagon	Small car	Opt	Opt	Opt	Opt	Opt
Kia	Sportage 4dr	Small SUV	Opt	Opt	Opt	Opt	Opt
Kia	Sportage 4dr 4WD	Small SUV	Opt	Opt	Opt	Opt	Opt

Note: na = not available, Opt = optional, and Std = standard.

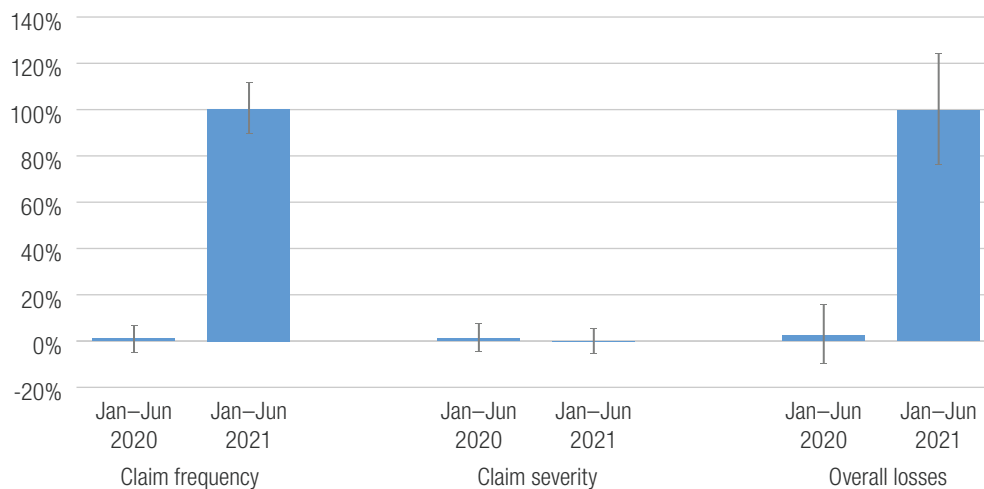
* Only model years where the passive immobilizer was not available or optional were used.

Theft losses were compared by calendar period for the Hyundai and Kia vehicle series with optional or not available immobilizers. The regression analyses were run using a Poisson distribution for claim frequency and a Gamma distribution for claim severity. A logarithmic link function was used in both models. Estimates for overall losses were derived from the claim frequency and claim severity models. The regressions controlled for vehicle series-model year; rated driver age, gender, and marital status; risk; vehicle density (registered vehicles per square mile), and comprehensive deductible. Separate analyses were run for Wisconsin, Colorado, and all other states using similar methods, but without controlling for vehicle series-model year and state. Eliminating the vehicle series-model year variable was needed to achieve convergence in the models due to the smaller amount of data in the state-specific analyses.

► Results

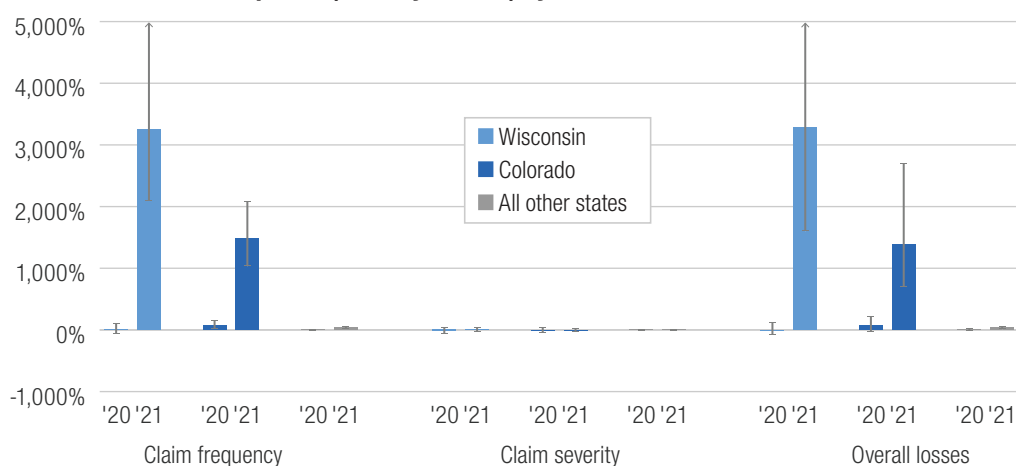
Figure 2 shows the estimated change in theft losses for the 2020 and 2021 calendar periods compared with the 2019 calendar period based on the Hyundai and Kia study vehicles. There was little change between the 2019 and 2020 calendar periods for any of the loss metrics. For the 2021 calendar period, large increases were seen in theft claim frequencies and overall losses, with results about twice as high as those in the 2019 calendar period. There was no significant change in claim severity for 2021.

Figure 2: Estimated change in Hyundai and Kia theft losses compared with 2019 calendar period (January to June) based on all states



The increase in Hyundai and Kia theft was not uniform across states. **Figure 3** shows the estimated change in theft losses for Wisconsin, Colorado, and all other states. Claim frequencies for 2021 calendar period compared with the 2019 calendar period were 3,246 percent higher in Wisconsin, 1,477 percent higher in Colorado, and 35 percent higher in all other states combined. Each of these differences was statistically significant at the 0.05 level. No difference was found in the claim severities. Changes in overall losses followed a similar pattern as claim frequencies, with results 3,288 percent higher in Wisconsin, 1,380 percent higher in Colorado, and 37 percent higher in all other states combined.

Figure 3: Estimated change in Hyundai and Kia theft losses compared with 2019 calendar period (January to June) by state

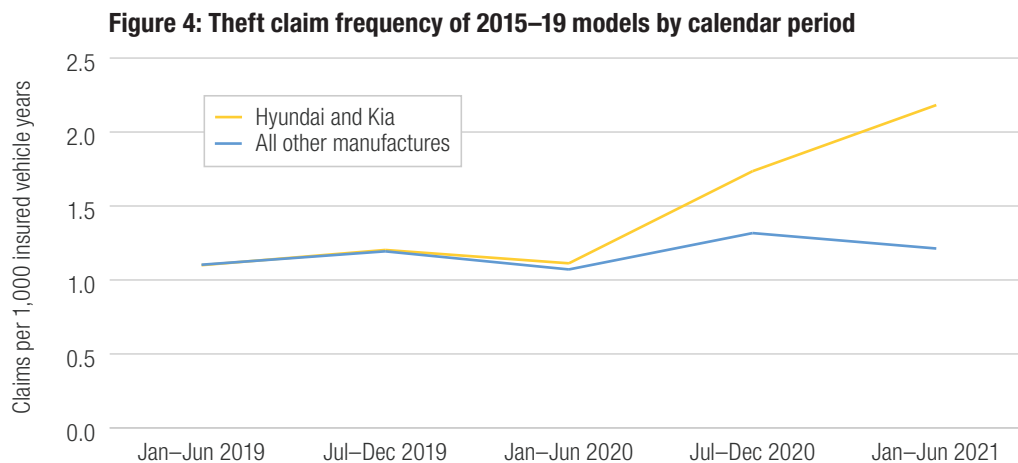


► Discussion

Theft claim frequencies and overall losses for Hyundai and Kia vehicles without standard passive immobilizers increased dramatically in 2021. Hyundai and Kia have lagged other manufacturers in installing standard immobilizers. For 2015 models, only 26 percent of Hyundai and Kia vehicle series had passive immobilizers as standard equipment, compared with 96 percent of other manufacturers. The increases in Hyundai and Kia thefts were most pronounced in Wisconsin and Colorado, where claim frequencies for the 2021 calendar period compared with the 2019 calendar period were over 30 times higher in Wisconsin and over 10 times higher in Colorado.

During the 2019–21 calendar periods, other changes occurred that effected theft losses. The beginning of the COVID-19 pandemic in early 2020 and the later economic fallout likely contributed to the increase in Hyundai and Kia thefts. Another product of the pandemic was the increase in catalytic converter thefts (HLDI, 2021). Although the largest increases in theft losses due to catalytic converter thefts were mainly for older models, newer vehicles were also impacted.

To assess the effects that the economic decline and catalytic converter thefts might have had on the results of this study, theft claim frequency trends for Hyundai and Kia vehicles were compared with those of all other manufacturers combined for 2015–19 models (**Figure 4**). Claim frequencies for the two groups were nearly identical for the first two periods (January to June and July to December 2019). The trends begin to diverge in the first half of 2020, when Hyundai and Kia claim frequencies were slightly higher than that of all other manufacturers combined. The differences increased for the second half of 2020 and the first half of 2021. Hyundai and Kia claim frequencies were almost 80 percent higher than that of all other manufacturers combined for January–June 2021.



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The Highway Loss Data Institute is a nonprofit public service organization that gathers, processes, and publishes insurance data on the human and economic losses associated with owning and operating motor vehicles. DW202112 BT

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