



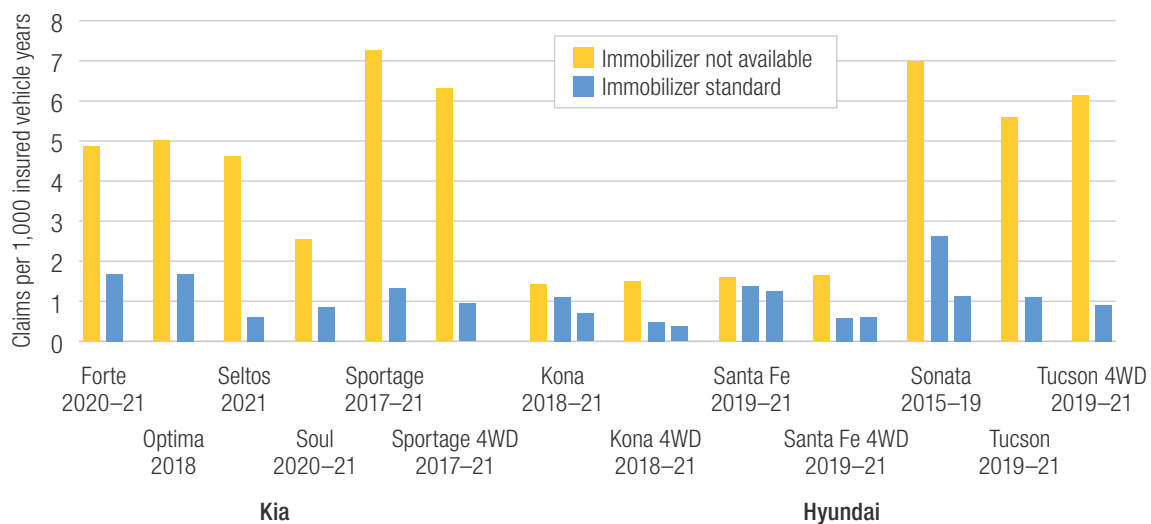
## Hyundai and Kia theft losses by passive immobilizer availability

### ► Summary

A 2021 Highway Loss Data Institute (HLDI) study found that 2015–19 Hyundai and Kia vehicle series without standard passive immobilizers experienced a large increase in theft losses beginning in the second half of 2020. Their theft losses have continued to increase in part due to social media posts on how to steal the vehicles. Wisconsin and Colorado were the initial hot spots for the Hyundai and Kia theft increases, but the high-theft areas have expanded to include most states. Hyundai and Kia theft claim frequencies for the first half of 2022 were over 3 times higher than those in the first half of 2019, based on 2015–19 model year vehicles.

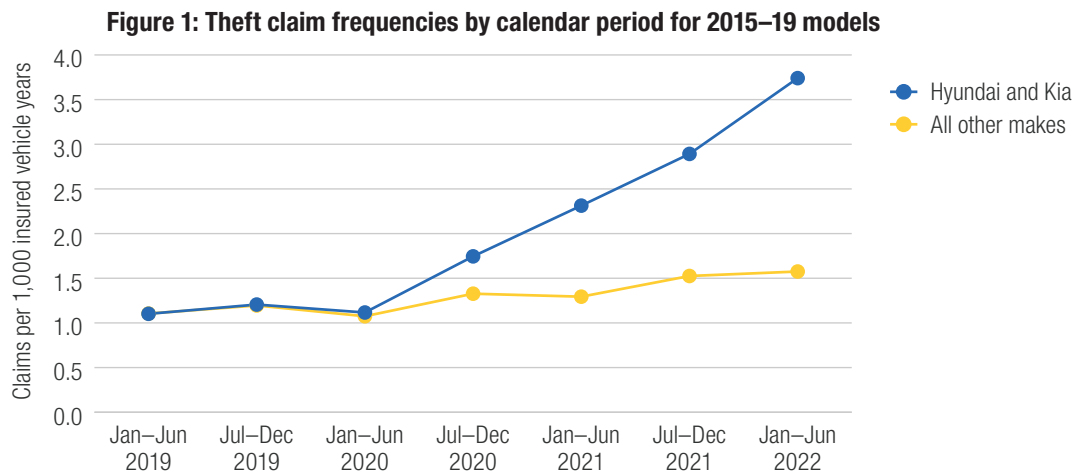
The figure below shows the estimated theft claim frequencies of selected Kia and Hyundai vehicle series where passive immobilizer availability could be determined at the HLDI model level (trim level outside of HLDI). Most of the vehicle series had significantly higher claim frequencies for the models without immobilizers than those with standard immobilizers. The exceptions were the two-wheel drive versions of the Hyundai Kona and Hyundai Santa Fe. For other vehicle series, claim frequencies for models without immobilizers were more than twice those of their corresponding models with standard immobilizers. Results for the Kia Seltos, Kia Sportage 4WD, and Hyundai Tucson 4WD models without immobilizers were over 6 times higher than their corresponding models with standard immobilizers.

**Estimated theft claim frequency for Hyundai and Kia vehicle series with immobilizer availability identifiable at the model level for January 2021–June 2022**



## ► Introduction

Hyundai and Kia have lagged other manufactures in offering passive-immobilizer antitheft devices as standard equipment on their vehicles. For 2015 models, passive immobilizers were standard equipment 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 contributed to an increase in thefts of some Hyundai and Kia vehicle series. A 2021 Highway Loss Data Institute (HLDI) study found that 2015–19 Hyundai and Kia theft claim frequencies for the first 6 months of 2021 were twice as high as those in 2019. An update of the trend analysis found that claim frequencies continued to increase, with the January–June 2022 results now over 3 times higher than those from January–June 2019 (Figure 1).



HLDI initially reported on the rise in Hyundai and Kia theft claim frequencies for models without standard passive immobilizers in December 2021. The study compared the theft losses in January–June 2021 with losses in January–June 2019 for 2015–19 Hyundai and Kia vehicle series without standard passive immobilizers. In the current study, theft losses are compared within a vehicle series for models without passive immobilizers to those with standard passive immobilizers.

## ► Methods

Vehicle theft losses are paid under comprehensive coverage. The results in this study are based on theft losses and comprehensive coverage for selected 2015–21 Hyundai and Kia vehicle series with optional passive immobilizer antitheft devices at the series level that could be split into not available and standard at the HLDI model level (known as trim level outside of HLDI; referred to as “model” or “model level” in this report). For example, on the 2018 Kia Optima, passive immobilizers were not available on the S or LX models but were standard equipment on the EX and SX models. Only vehicle series with sufficient exposure at the model level were used.

Some models with the same immobilizer availability were combined to achieve the necessary exposure levels. **Table 1** lists the vehicle series along with their immobilizer availability. Some models within a vehicle series where the immobilizer availability could not be determined were excluded. Because 2022 coverage and losses were only available through June, data for other calendar years were also restricted to January–June to avoid seasonal bias in the state analysis.

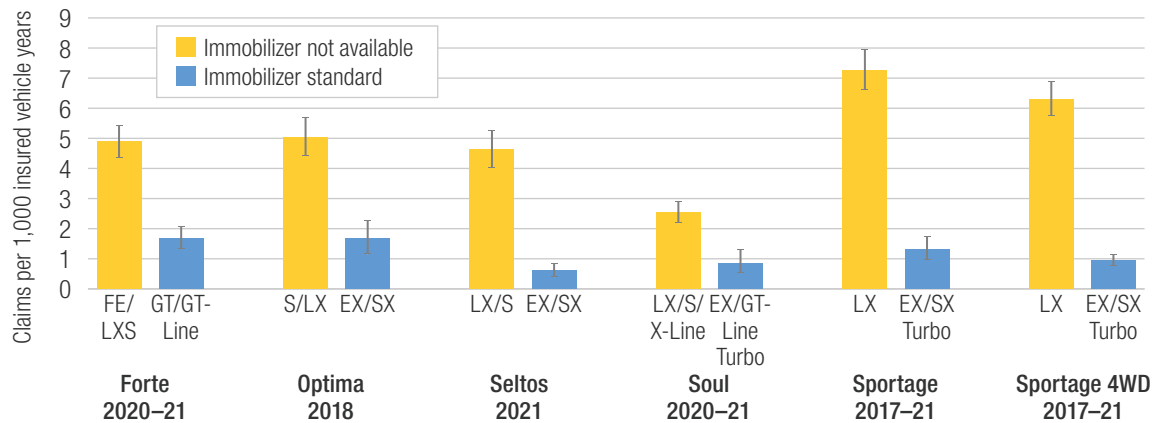
Table 1: Passive immobilizer availability in the study vehicles				
Make	Series	Model years	Model	Passive immobilizer availability
Kia	Forte 4dr	2020–21	FE/LXS	Not available
Kia	Forte 4dr	2020–21	GT/GT-Line	Standard
Kia	Optima 4dr	2018	S/LX	Not available
Kia	Optima 4dr	2018	EX/SX	Standard
Kia	Seltos 4dr 4WD	2021	LX/S	Not available
Kia	Seltos 4dr 4WD	2021	EX/SX	Standard
Kia	Soul station wagon	2020–21	LX/S/X-Line	Not available
Kia	Soul station wagon	2020–21	EX/GT-Line Turbo	Standard
Kia	Sportage 4dr	2017–21	LX	Not available
Kia	Sportage 4dr	2017–21	EX/SX Turbo	Standard
Kia	Sportage 4dr 4WD	2017–21	LX	Not available
Kia	Sportage 4dr 4WD	2017–21	EX/SX Turbo	Standard
Hyundai	Kona 4dr	2018–21	SE	not availableN
Hyundai	Kona 4dr	2018–21	SEL	Standard
Hyundai	Kona 4dr	2018–21	Limited/Ultimate	Standard
Hyundai	Kona 4dr 4WD	2018–21	SE	Not available
Hyundai	Kona 4dr 4WD	2018–21	SEL	Standard
Hyundai	Kona 4dr 4WD	2018–21	Limited/Ultimate	Standard
Hyundai	Santa Fe 4dr	2019–21	SE	Not available
Hyundai	Santa Fe 4dr	2019–21	Limited/Ultimate	Standard
Hyundai	Santa Fe 4dr	2019–21	SEL/SEL Plus	Standard
Hyundai	Santa Fe 4dr 4WD	2019–21	SE	Not available
Hyundai	Santa Fe 4dr 4WD	2019–21	Limited/Ultimate	Standard
Hyundai	Santa Fe 4dr 4WD	2019–21	SEL/SEL Plus	Standard
Hyundai	Sonata 4dr	2015–19	SE	Not available
Hyundai	Sonata 4dr	2015–19	Limited/Limited 2.0	Standard
Hyundai	Sonata 4dr	2015–19	Sport/SEL/LTD/Ultimate	Standard
Hyundai	Tucson 4dr	2019–21	SE STD	Not available
Hyundai	Tucson 4dr	2019–21	LTD/VAL/ULT/Sport/SEL	Standard
Hyundai	Tucson 4dr 4WD	2019–21	SE STD	Not available
Hyundai	Tucson 4dr 4WD	2019–21	LTD/VAL/ULT/Sport/SEL	Standard

Theft losses were computed for the Hyundai and Kia vehicle series where the model (trim) level could be determined from the first 10 positions of the Vehicle Identification Number (VIN) and passive immobilizer availability is tied to the model. 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; rated driver age, gender, and marital status; risk; vehicle density (registered vehicles per square mile); garaging state; and comprehensive deductible.

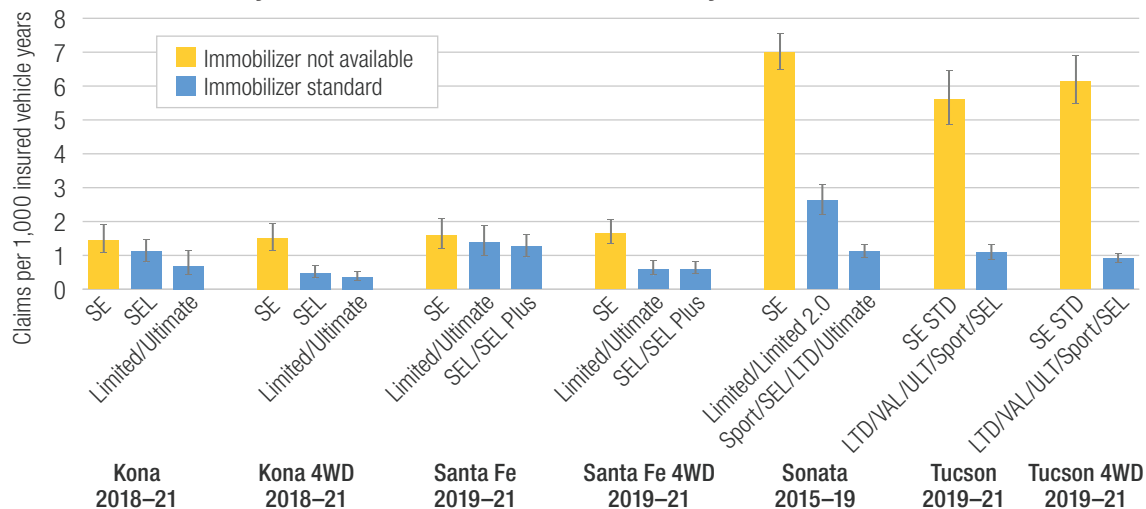
## ► Results

Figures 2–3 show the estimated theft claim frequencies, along with their Wald 95 percent limits, of selected Kia (Figure 2) and Hyundai (Figure 3) vehicle series. For the Kia vehicle series, the models without immobilizers had significantly higher claim frequencies than their corresponding models with standard immobilizers. The differences ranged from about 3 times higher for the Forte, Optima, and Soul to over 7 times higher for the Seltos 4WD. The Sportage LX had the highest estimated claim frequency of 7.3 claims per 1,000 insured vehicle years, compared with 1.3 for the combined EX and SX Turbo.

**Figure 2: Estimated theft claim frequency for Kia vehicle series with immobilizer availability identifiable at the model level for January 2021–June 2022**



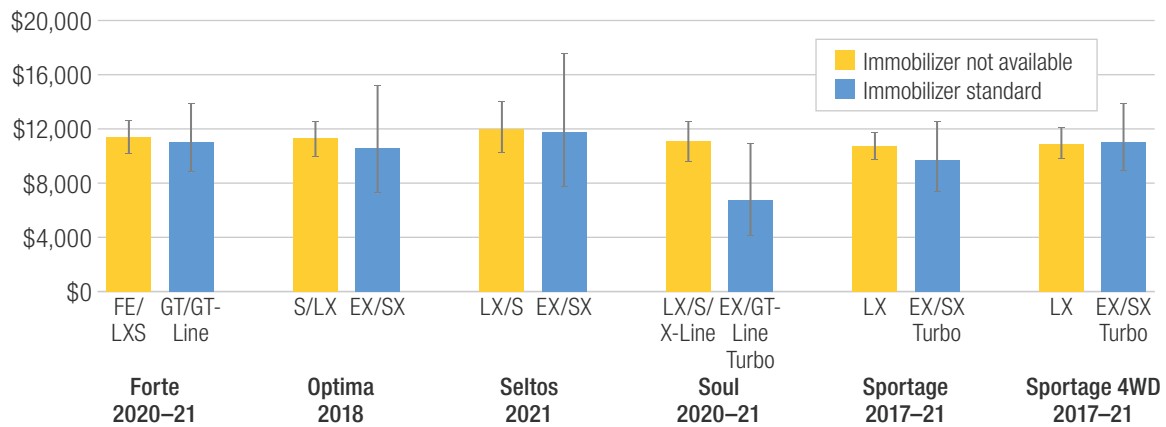
**Figure 3: Estimated theft claim frequency for Hyundai vehicle series with immobilizer availability identifiable at the model level for January 2021–June 2022**



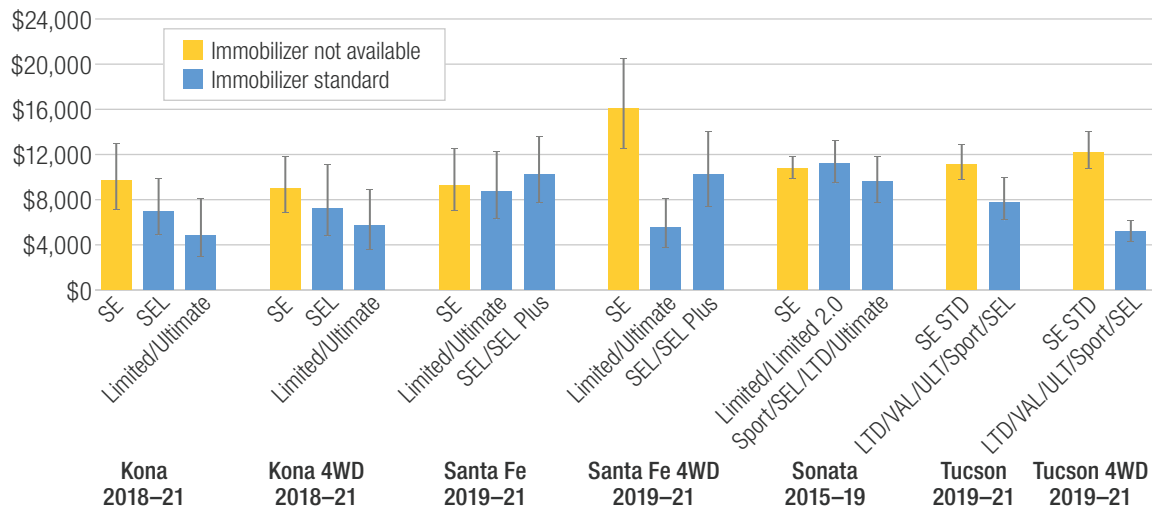
For Hyundai vehicle series (Figure 3), the Sonata, Tucson, and Tucson 4WD had the same large differences in theft claim frequencies between the models with no immobilizers and the models with standard immobilizers as seen in the Kia vehicle series. Smaller, but still statistically significant, differences were seen in the Kona 4WD and Santa Fe 4WD. The SE models without immobilizers for the two-wheel drive versions of the Kona and Santa Fe had claim frequencies only slightly higher than their models with standard immobilizers. Some of this lack of effect in the two-wheel drive vehicles may be due to their smaller exposure in some of the northern states, such as Wisconsin and Colorado, where Hyundai and Kia thefts have been highest (HLDI, 2021).

Figures 4–5 show the estimated theft claim severities of selected Kia (Figure 4) and Hyundai (Figure 5) vehicle series. There is little or no pattern among the claim severity results, with most differences not statistically significant. Some of the noise in these results can be attributed to the relatively low number of claims for some of the models with standard immobilizers.

**Figure 4: Estimated theft claim severity for Kia vehicle series with immobilizer availability identifiable at the model level for January 2021–June 2022**

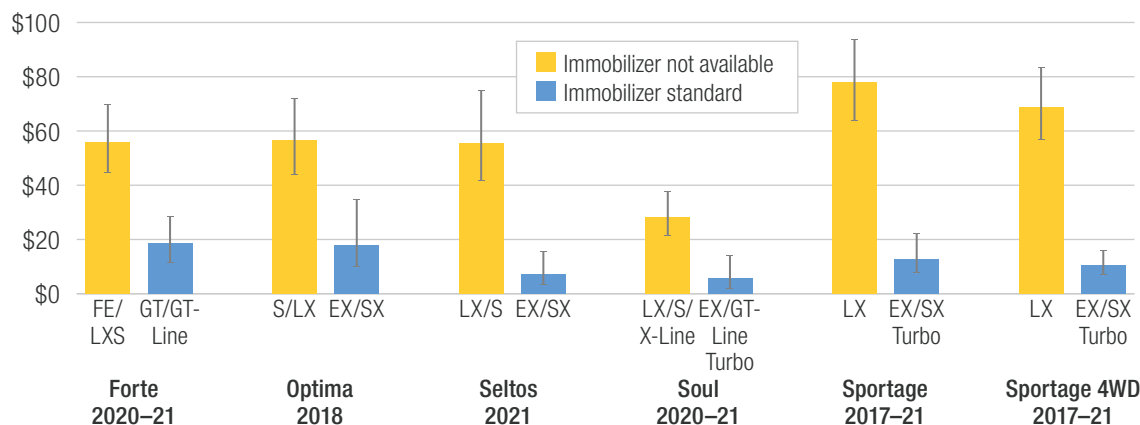


**Figure 5: Estimated theft claim severity for Hyundai vehicle series with immobilizer availability identifiable at the model level for January 2021–June 2022**

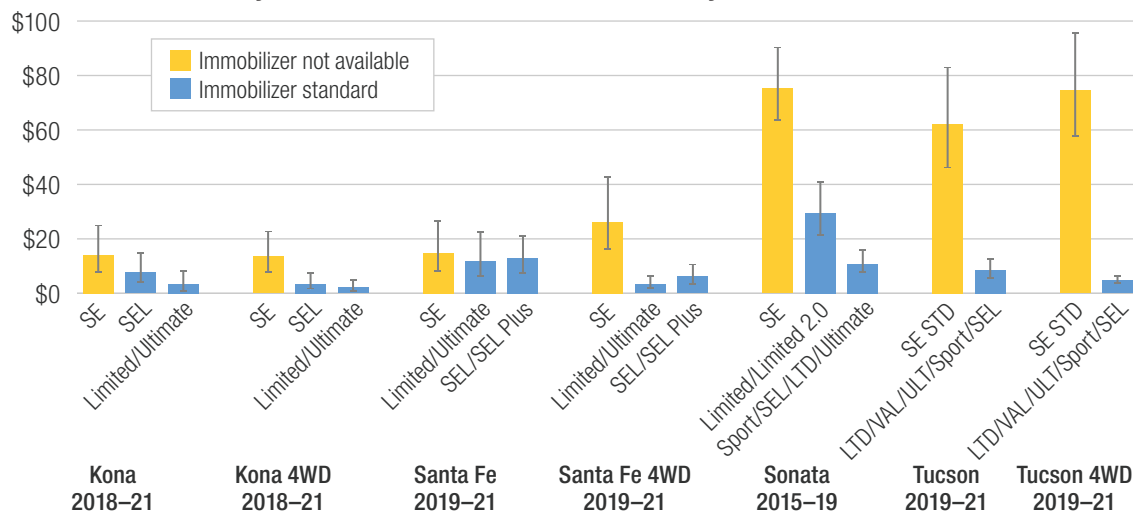


Figures 6–7 show the estimated theft overall losses of selected Kia (Figure 6) and Hyundai (Figure 7) vehicle series. The results for overall losses are similar to the claim frequency results. Models without immobilizers have higher overall losses than their corresponding models with standard immobilizers for most vehicle series. The two-wheel drive versions of the Hyundai Kona and Santa Fe were again the exception.

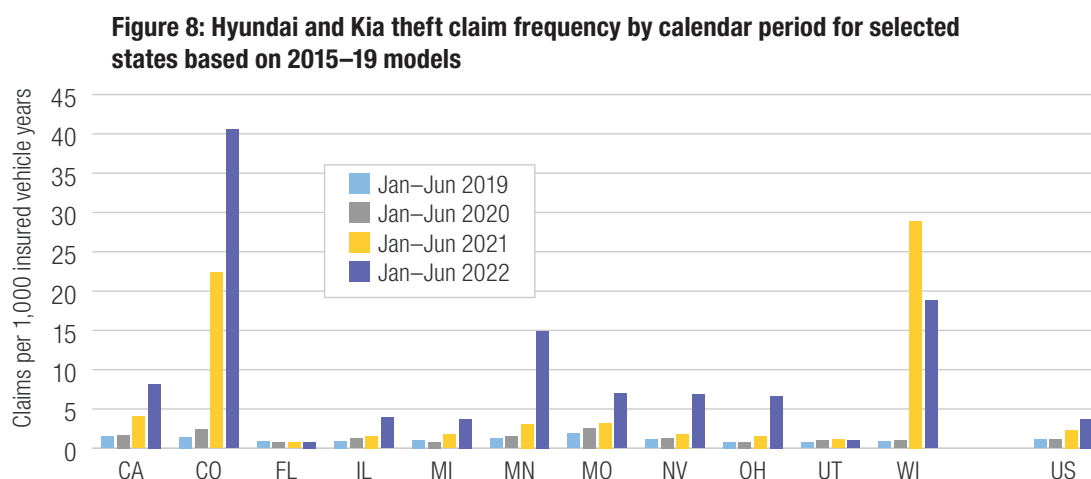
**Figure 6: Estimated theft overall losses for Kia vehicle series with immobilizer availability identifiable at the model level for January 2021–June 2022**



**Figure 7: Estimated theft overall losses for Hyundai vehicle series with immobilizer availability identifiable at the model level for January 2021–June 2022**



**Figure 8** shows the Hyundai and Kia theft claim frequency by calendar period for selected states based on 2015–19 models. Colorado and Wisconsin experienced the first large increases in claim frequencies with results rising from less than 3 claims per 1,000 insured vehicle years in the first half of 2020 to over 22 for the first half of 2021. Claim frequencies continued to grow in Colorado topping 40 claims per 1,000 insured vehicle years in the first half of 2022. Wisconsin claim frequencies remained high but dropped to 19 claims per 1,000 insured vehicle years. Other states also saw increases in Hyundai and Kia claim frequencies for 2022. Claims per 1,000 insured vehicle years rose to 8 for California; 15 for Minnesota; and 7 for Missouri, Nevada, and Ohio. Only a few states, such as Florida and Utah, have not seen increases in Hyundai and Kia thefts.



## ► Discussion

Hyundai and Kia theft claim frequencies continue to grow. What was initially a problem in just Colorado and Wisconsin has now expanded to most states. For the first half of 2022, the claim frequency of 2015–19 Hyundai and Kia vehicles was over 3 times higher than during the first half of 2020.

Thieves seem to know which models are easier to steal. Within a vehicle series, the models without a passive immobilizer generally had significantly higher claim frequencies than models with a standard immobilizer. Theft claim severities were not as clearly affected. One might have expected higher claim severities due to more whole vehicle thefts, but if a substantial proportion are recovered that might not be the case. HLDI will continue to monitor the Hyundai and Kia theft problem.

## References

Highway Loss Data Institute. (2021). Hyundai and Kia theft losses. *Loss Bulletin*, 38(28).



4121 Wilson Boulevard, 6th floor  
Arlington, VA 22203  
+1 703 247 1500  
[iihs-hldi.org](http://iihs-hldi.org)

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