

CCC  
TRENDS

IMPACT OF  
THE SHIFT  
**IN TRAFFIC  
AND ACCIDENT  
PATTERNS**



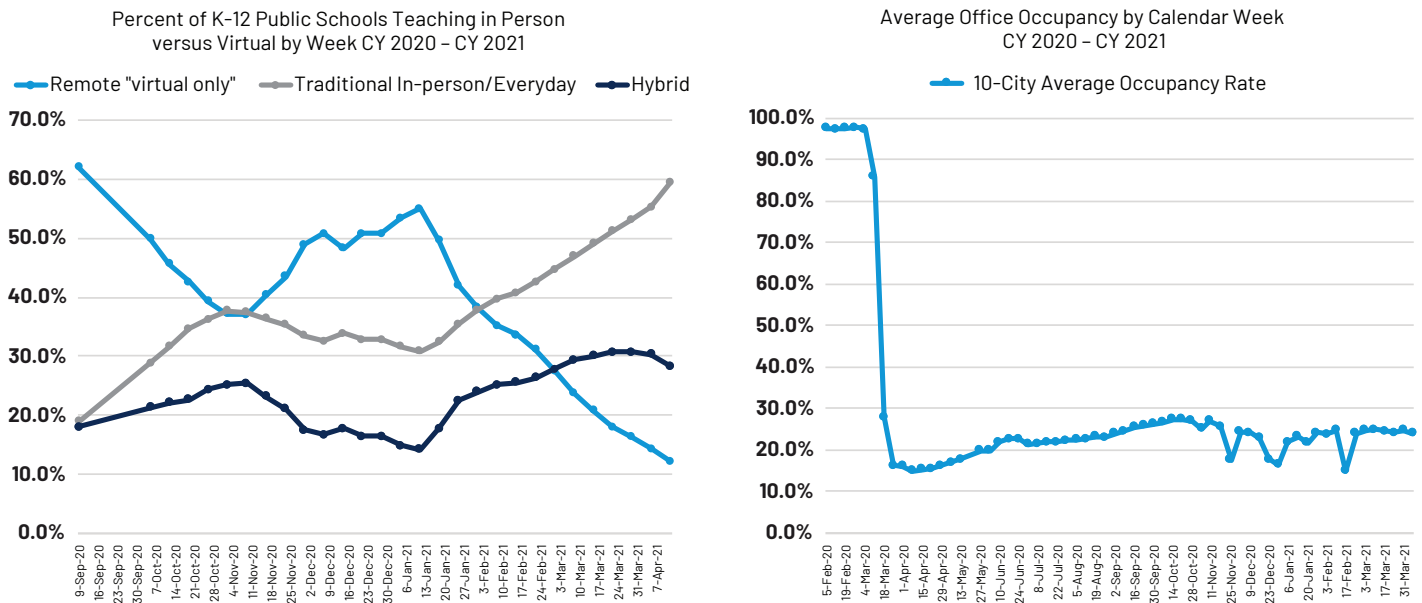
# SIGNS OF RECOVERY?

Recent data from Burbio and Kastle Systems show that in-person schooling has largely returned, but many businesses continue to keep their employees working remotely (Figure 1).<sup>1</sup>

With fewer people commuting to work each day but driving kids to school and taking more trips during the middle of the day, daily trips began to increase slowly in Q1 2021, with trips in March 2021 now exceeding daily trips in March 2019 (Figure 2).<sup>2</sup>

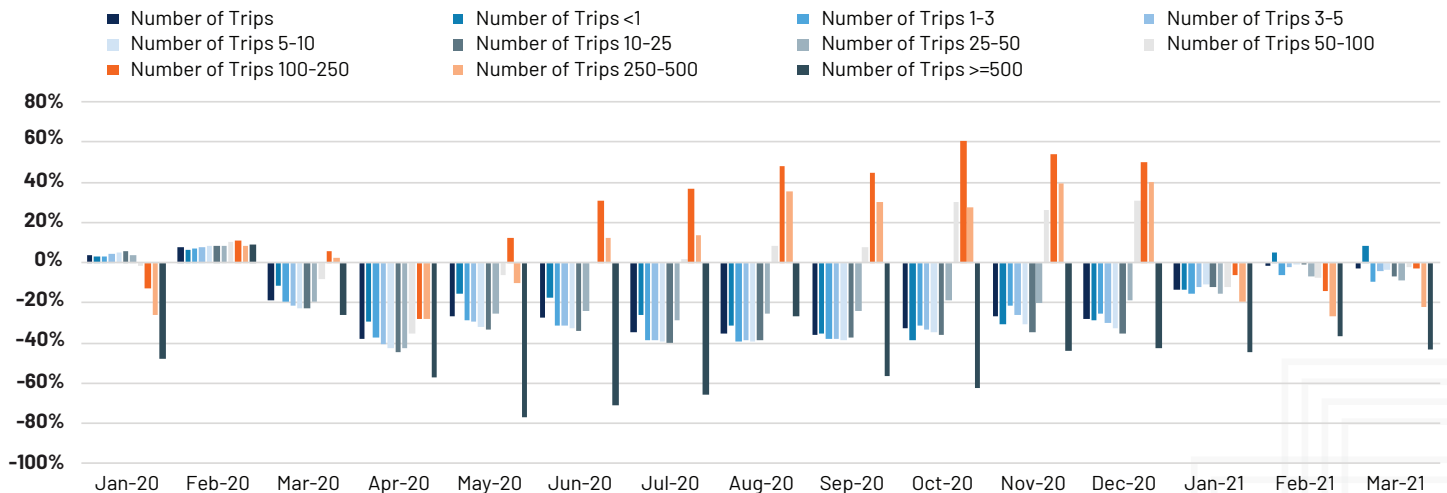
## Figure 1: In Person School Attendance Levels Increasing While Office Occupancy Levels Remain Low in Early CY2021

SOURCE: BURBIO, KASTLE SYSTEMS



## Figure 2: Percent Change versus Same Month in 2019 Total Number of Trips Taken by Month by Trip Distance Ranges

SOURCE: [HTTPS://DATA.BTS.GOV/RESEARCH-AND-STATISTICS/TRIPS-BY-DISTANCE/W96P-F2QV/DATA](https://data.bts.gov/research-and-statistics/trips-by-distance/w96p-f2qv/data)



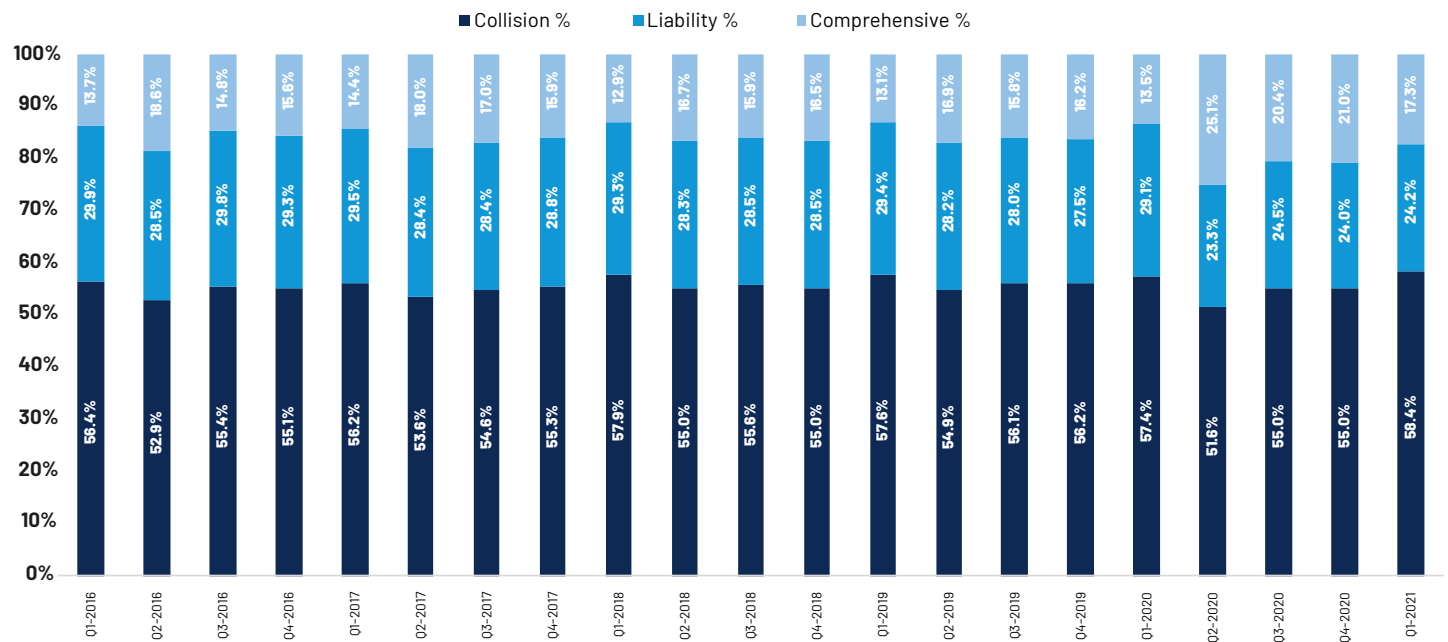
Uber and Lyft also reported their ridership levels have rebounded to pre-pandemic levels as of March 2021 but are challenged with finding enough drivers to meet surging demand.<sup>3</sup> So, with more people on the road, but fewer during historic peak rush-hour times, does automotive claims data suggest different driving patterns are still in place?

## CLAIMS DATA REFLECTS DRIVING PATTERNS

Historically collision and liability losses have accounted for the majority of auto claim counts (Figure 3). When broken out by primary point of impact, the majority of collision losses are front primary impacts while the majority of liability losses identified as rear primary impacts (Figure 4). Analysis of the quarterly claims data for CY 2016 through CY 2019 reveals front impacts' share of volume is 2-3 percentage points higher for collision losses during quarters one and four, while liability losses see very little seasonal variability in volume share by impact.

**Figure 3: Share of Vehicle Claim Count by Loss Category and Calendar Quarter Q1 2016 to Q1 2021**

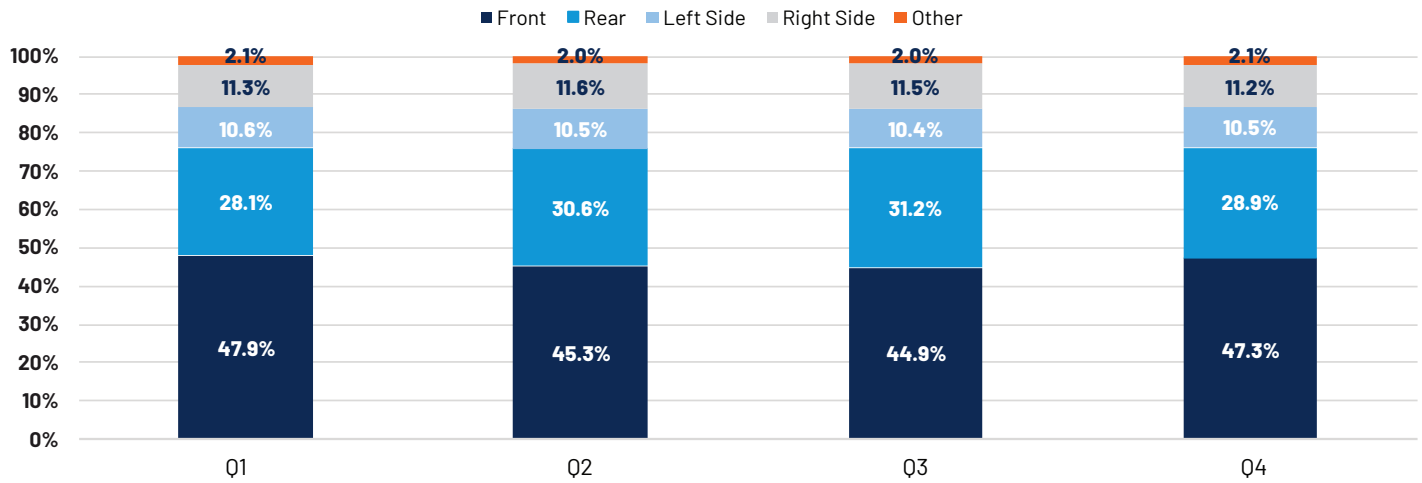
SOURCE: CCC INFORMATION SERVICES INC.



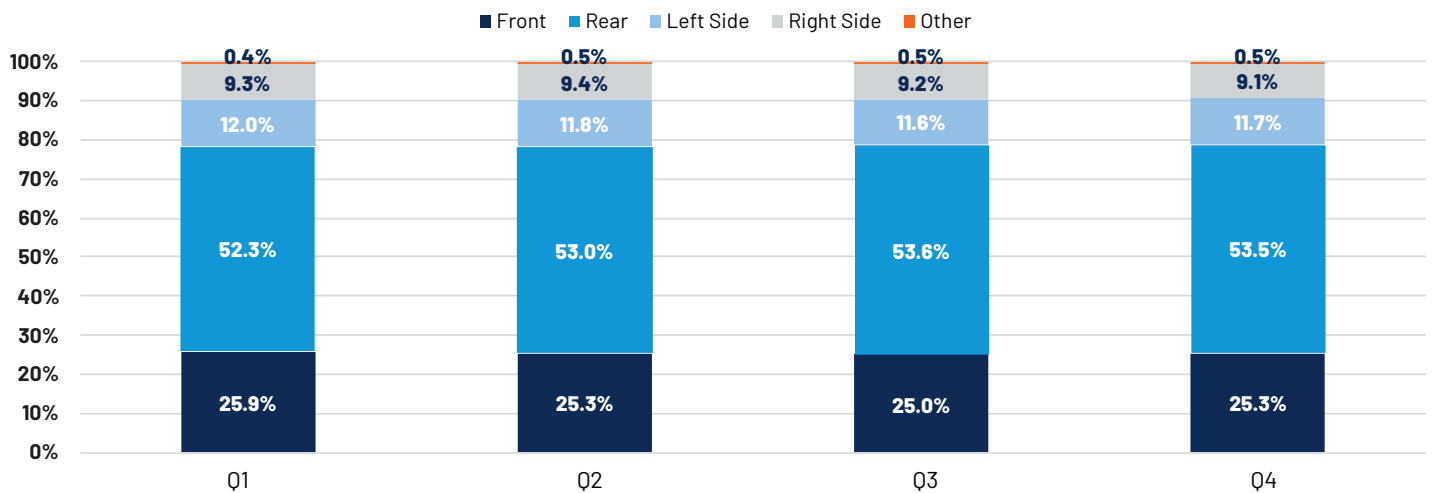
## Figure 4: Claim Volume by Primary Impact Historically Shows Majority of Collision Losses are Front Impacts while Majority of Liability Losses are Rear Impacts

SOURCE: CCC INFORMATION SERVICES INC.

### Collision Losses CY2016-CY2019 Combined Share of Volume per Primary Impact



### Liability Losses CY2016-CY2019 Combined Share of Volume per Primary Impact



### Primary Impact Point

**Front:** 11, 12, 1

**Rear:** 7, 6, 5

**Left side:** 8, 9, 10

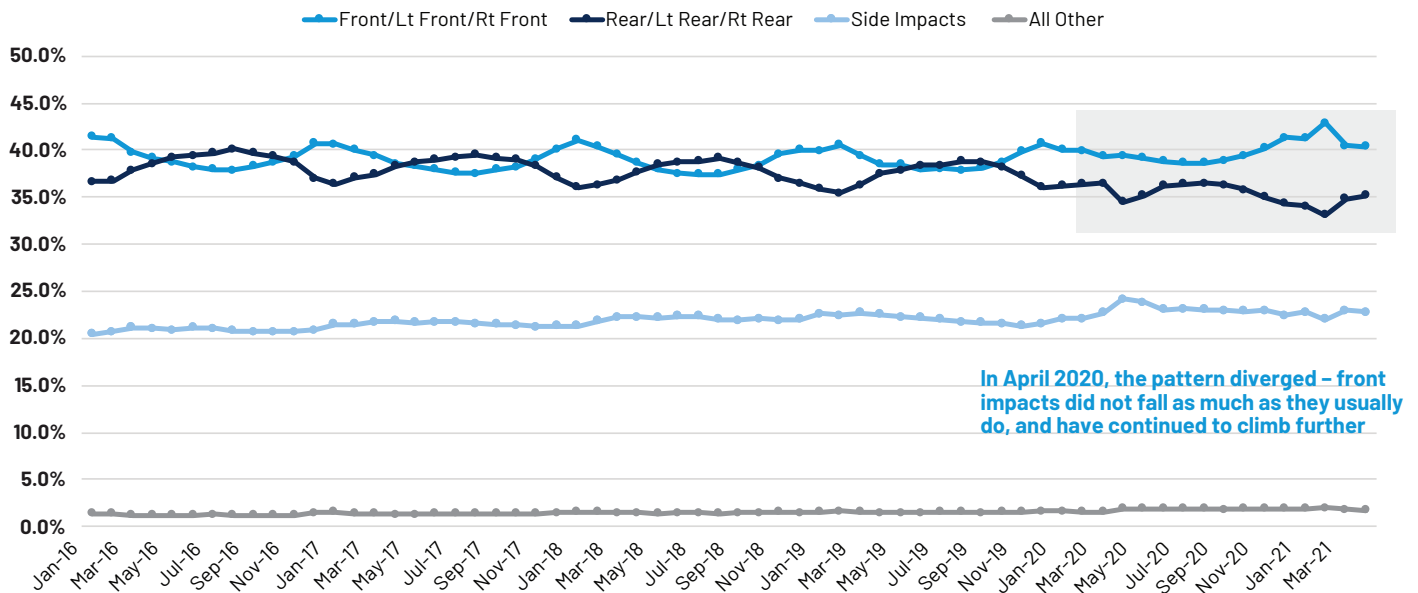
**Right side:** 2, 3, 4

All Other: All Over, Front & Rear, Hail, Hood, Deck Lid, Left & Right Side, Rollover, Roof, Undercarriage

When collision and liability losses are combined, and primary impact volume share is broken out by month, a seasonal pattern becomes even more apparent (Figure 5). While volume share for side impacts and other impacts sees little seasonal change historically, front impacts increase in volume share during the winter months, and then fall in the summer months.

## Figure 5: Primary Impact Share of Overall Appraisal Volume for Collision and Liability Losses by Year & Quarter

SOURCE: CCC INFORMATION SERVICES INC.



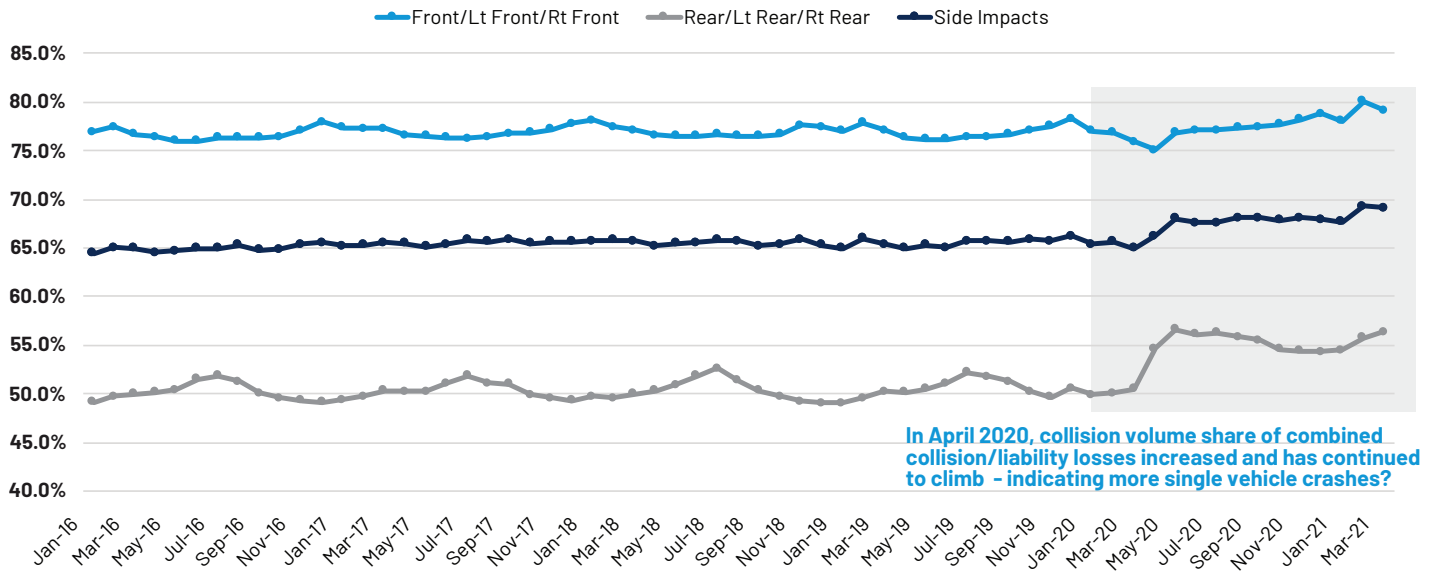
What this implies is when there are winter driving conditions like ice and snow, the vehicle may be unable to stop before crashing into another vehicle or other object. Then during the milder months, when fewer of these types of crashes occur, rear impact losses account for a larger share of the overall volume. This is a pattern clearly evident in the four years prior to CY 2020 – and then the pandemic.

In April 2020, the pattern diverged. The improvement in seasonal driving conditions in February–March 2020 did not result in improvement in frontal collisions as seen in the past at the onset of spring. Instead, front impacts share of volume increased, and increased further than even during the winter months. At the same time rear impacts share of volume fell, and side impacts saw a sizable increase in April 2020 and have stayed elevated through March 2021.

Figure 6 shows how the collision loss share of the combined collision and liability claim count for all primary impacts also historically saw an increase in the winter months, implying more crashes were potentially single vehicle crashes also related to winter weather. But in April 2020, collision share of the combined collision/liability loss increased significantly.

### Figure 6: Collision Loss Category Share of Combined Collision and Liability Claim Count All Vehicle Conditions by Impact Point

SOURCE: CCC INFORMATION SERVICES INC.



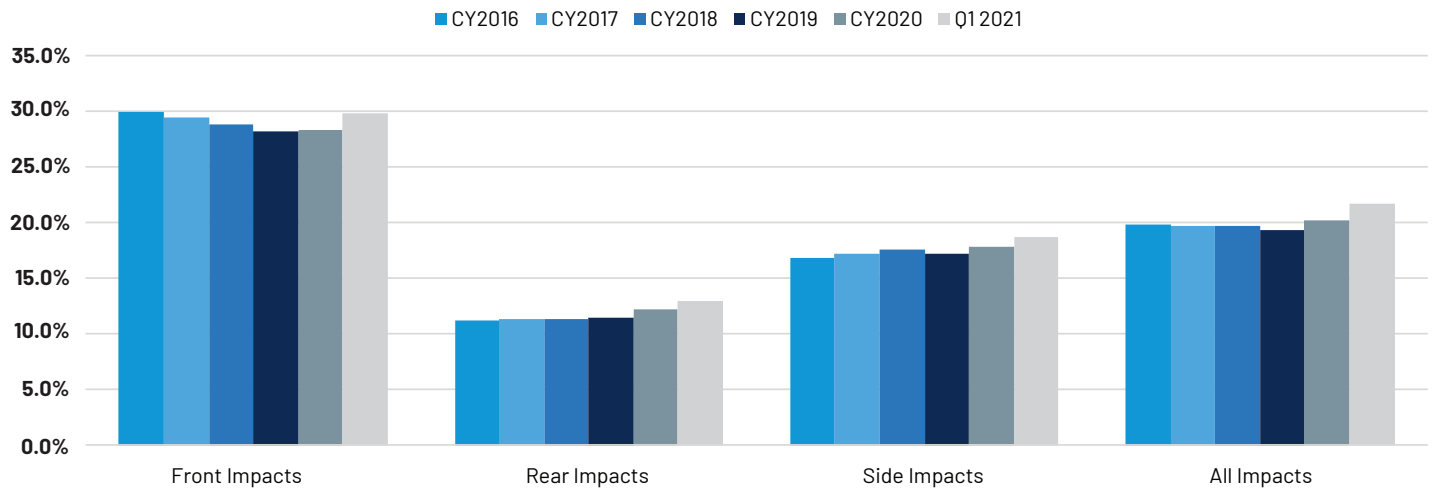
Reports of less congested roads, drivers traveling at higher speeds, suggest this increase may be the result of more single-vehicle crashes during the pandemic. It could also suggest customer behavior also shifted during the pandemic in terms of a consumer’s willingness to file a loss with their own carrier versus the at-fault driver’s carrier.

With more vehicles equipped with advanced driver assistance systems (ADAS) like front automatic emergency braking (AEB) we would expect front impacts as a share of overall crashes to decline. However, the data since the start of the pandemic has seen the opposite, and also potentially underscores the trend of traffic moving at higher speeds, where most ADAS is not able to avoid a crash altogether.

Previous research by CCC has shown how the average Delta-v of vehicle claims during the pandemic has risen, and the increase in the non-driveable percent that occurred between CY 2019 and CY 2020 – particularly for rear impacts. With the increase in front impacts, where the non-driveable percent is higher, the non-driveable percent overall has climbed (Figure 7). And finally, with the average repair cost of front impacts higher than rear and side impacts, an increase in front impacts means higher vehicle repair costs overall (Figure 8).

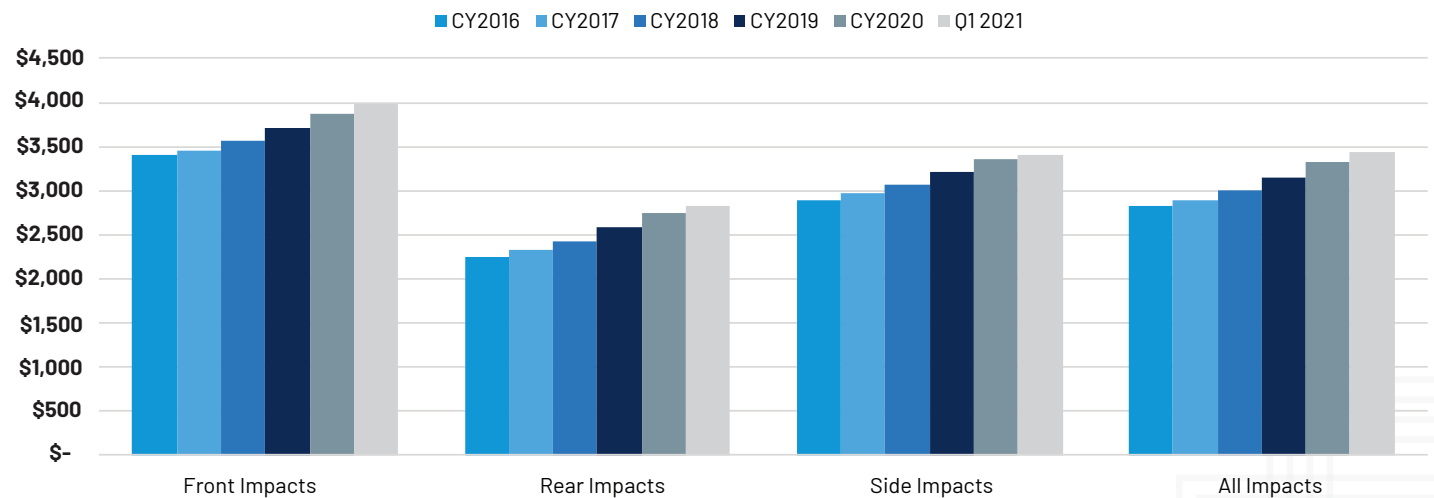
**Figure 7: Non-Driveable Percent of Collision/Liability Losses by Primary Impact**  
**Repairable Losses Only**

SOURCE: CCC INFORMATION SERVICES INC.



**Figure 8: Average TCOR of Collision/Liability Losses by Primary Impact**  
**Repairable Losses Only**

SOURCE: CCC INFORMATION SERVICES INC.



As the U.S. begins to slowly emerge from the COVID-19 pandemic, how permanent these shifts in accident patterns remain could have meaningful impact on technologies like ADAS to be able to reduce accident frequency. The ADAS system front AEB has been shown to help reduce accident frequency for direct front to rear impacts that per NHTSA have historically accounted for 33 percent of all accidents. Historically however, traffic has been more congested, and travel speeds significantly lower. It's difficult to predict just how much of what has changed due to the pandemic remains permanent. What we can say is that the changes in traffic flows during the pandemic have led to shifts within the auto claims mix that will either revert or remain based on the permanency of those changes.



# CCC TRENDS SOURCES

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1. <https://cai.burbio.com/school-opening-tracker/> and <https://www.kastle.com/safety-wellness/getting-america-back-to-work/>.
2. <https://data.bts.gov/Research-and-Statistics/Trips-by-Distance/w96p-f2qv/data>.
3. Dave Sebastian and Preetika Rana. "Uber Posts Record Demand for March." [www.wsj.com](http://www.wsj.com), April 12, 2021.



**SUSANNA GOTSCH**  
DIRECTOR, INDUSTRY ANALYST, CCC

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