The global Covid-19 pandemic had a substantial impact on the automotive sector. Governmental responses to the pandemic caused rolling changes in automotive production impacting vehicle supply, at the same time changes to consumer spending habits and travel impacted automotive supply chain demand. Vehicle travel declined by 41% (“Mobility Trends in the US” from March 2020 to April 2020 as more employees were working from home. At the same time the economic uncertainty caused by the pandemic coupled with the rise to 14% unemployment (“Civilian Unemployment Rate”) should have impacted consumer spending at the automotive and aftermarket retailers. Consumer spending dried up during the early days of the Covid-19 pandemic and US savings rates would grow to over double the average (“Personal Saving Rate”) as consumer travel and discretionary spending would grind to a halt. We wanted to see what level these impacts from the pandemic had on the three sectors of the automotive supply chain: (1) tier 1 automotive suppliers, (2) automotive retailers, and (3) automotive aftermarket retailers during the 2020 Covid-19 pandemic.

We divided the automotive industry into three groups: (1) Tier 1 automotive suppliers, (2) automotive retailers, and (3) automotive aftermarket retailers. We analyzed the quarterly financial statements. ranging Q1, 2018 to Q4, 2020, Bloomberg Terminal data and 10-Qs from all 15 companies. The only major finding doing a deep dive into each group was that the Aftermarket segment had better Gross Margins numbers than 2019.

When looking for the expected increase in cash conversions cycle, we did not see major upswings as expected in all 3 groups. Inventory levels and inventory turnover did not increase as we expected in our Hypothesis as well.

The only major finding doing a deep dive into efficiency ratios is that the Aftermarket segment trended down in late 2020 as their revenue would return to pre-pandemic levels after being elevated for most of 2020. The % revenue change from Q2 to Q3, 2020 was determined to be significant using an ANOVA. F=8.7631, Fcrit = 3.885, P<0.05.

H1 - Revenue Decrease
Quarterly revenues for tier 1 suppliers, automotive retailers, and automotive aftermarket retailers would be significantly less in 2020 compared to prior years.

H2 - Efficiency Decrease
The efficiency of each of the three segments would greatly decrease, shown with a decrease in inventory turnover and an increase in the cash conversion cycle.

H3 - Recovery
Starting in Q4 2020 each segment will show an increase in revenue and efficiency, almost to the level of pre-pandemic financial statements due to lessened governmental restrictions and consumer higher propensity to spend.

The data suggests that as consumers grew more economically uncertain and apt to save, tier 1 automotive suppliers and automotive retailers saw a sharp drop in revenue, while the automotive aftermarket industry showed a sharp upturn in revenue during the pandemic. This could be explained by consumers staying away from new car purchases and being more likely to purchase aftermarket parts to repair the vehicles they already own.

As governmental regulations slowed and consumers became more secure in their economic situation, tier 1 automotive suppliers and direct automotive retailers bounced back to pre-pandemic revenue numbers rapidly. Conversely, the automotive aftermarket industry settled to their pre-pandemic financial performance. While the automotive aftermarket showed a revenue uptick in Q2 2020 as well, the revenue upturn in Q2, 2020 was considered significant using an ANOVA analysis.

**REFERENCES**