

Automotive Industry & COVID19 Impact

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Goal



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- We are trying to evaluate the impact COVID 19 had on the automotive sales industry, and uncover sales trends that would lead to maximum profitability for current dealerships in the future.

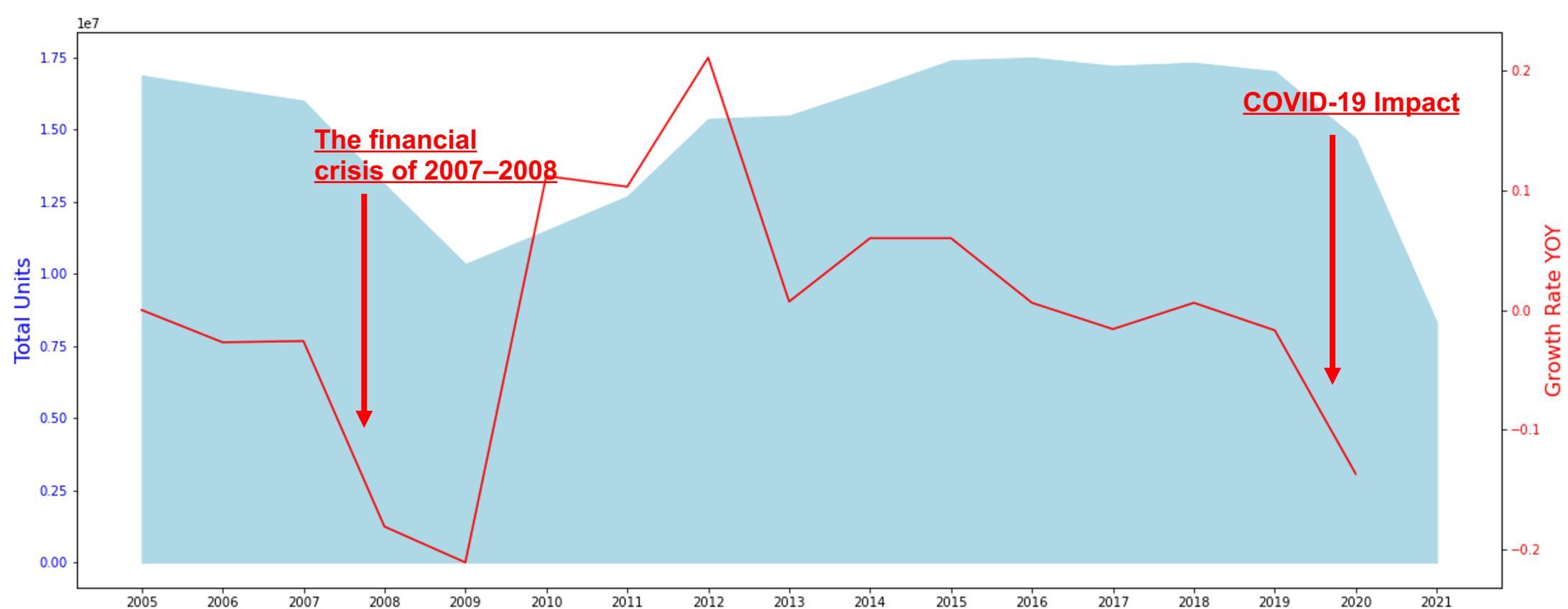


Questions for Analysis:



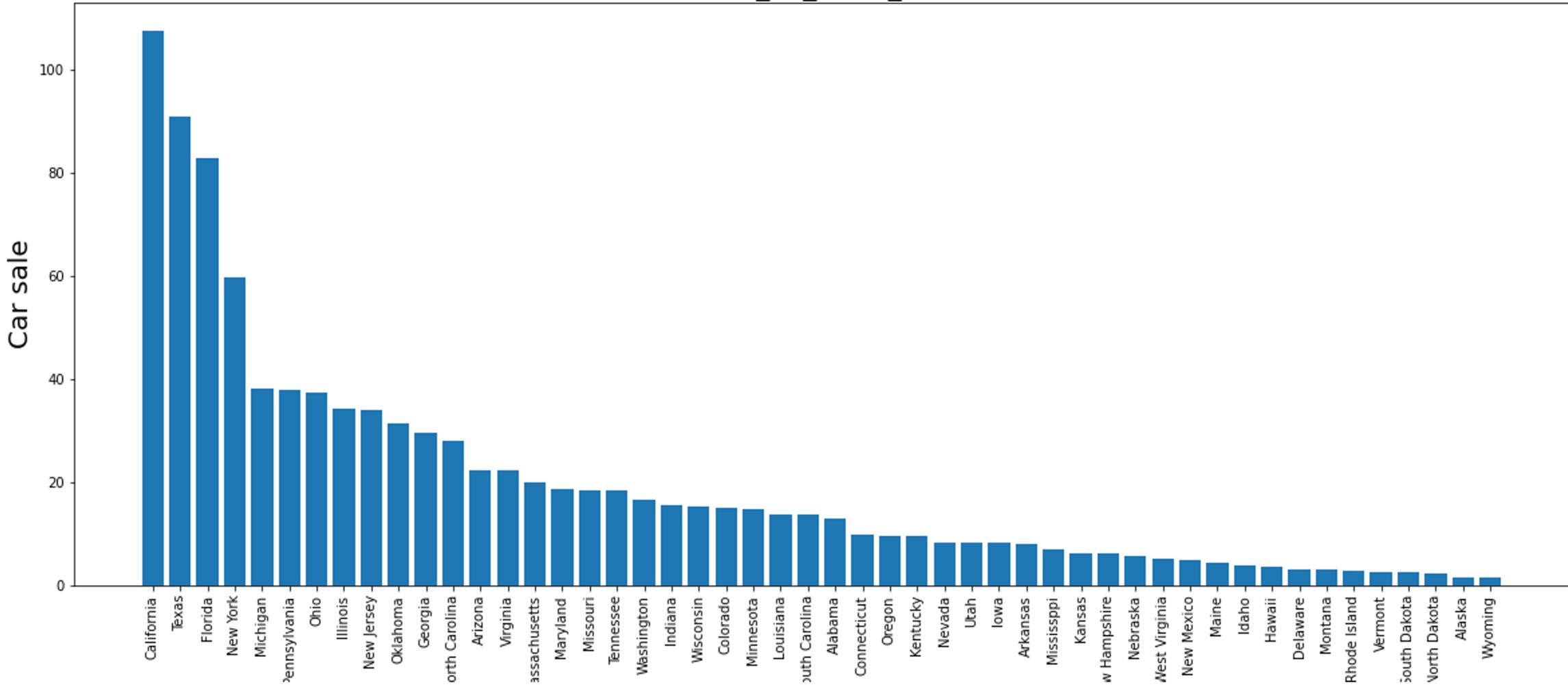
- What effect did COVID-19 have on consumer habits and behaviors in relation to car buying: brand of car, preferred mode of transport, etc?
- What current car sales trends can point to the ideal inventory?
- Did COVID have an equal effect on car sales based on location at a state level?
- What are other potential factors affecting current car prices?

U.S. Automotive Sales

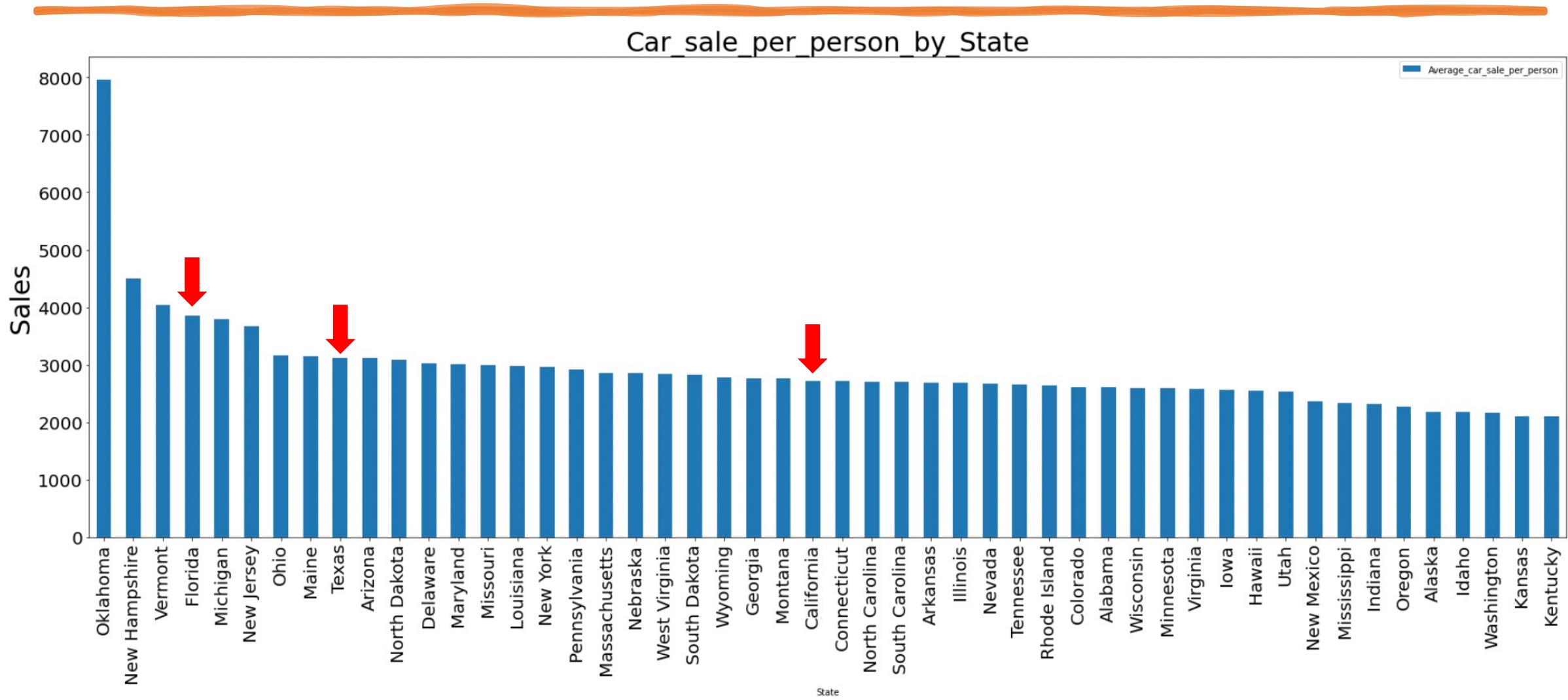


U.S. Automotive Sales by State

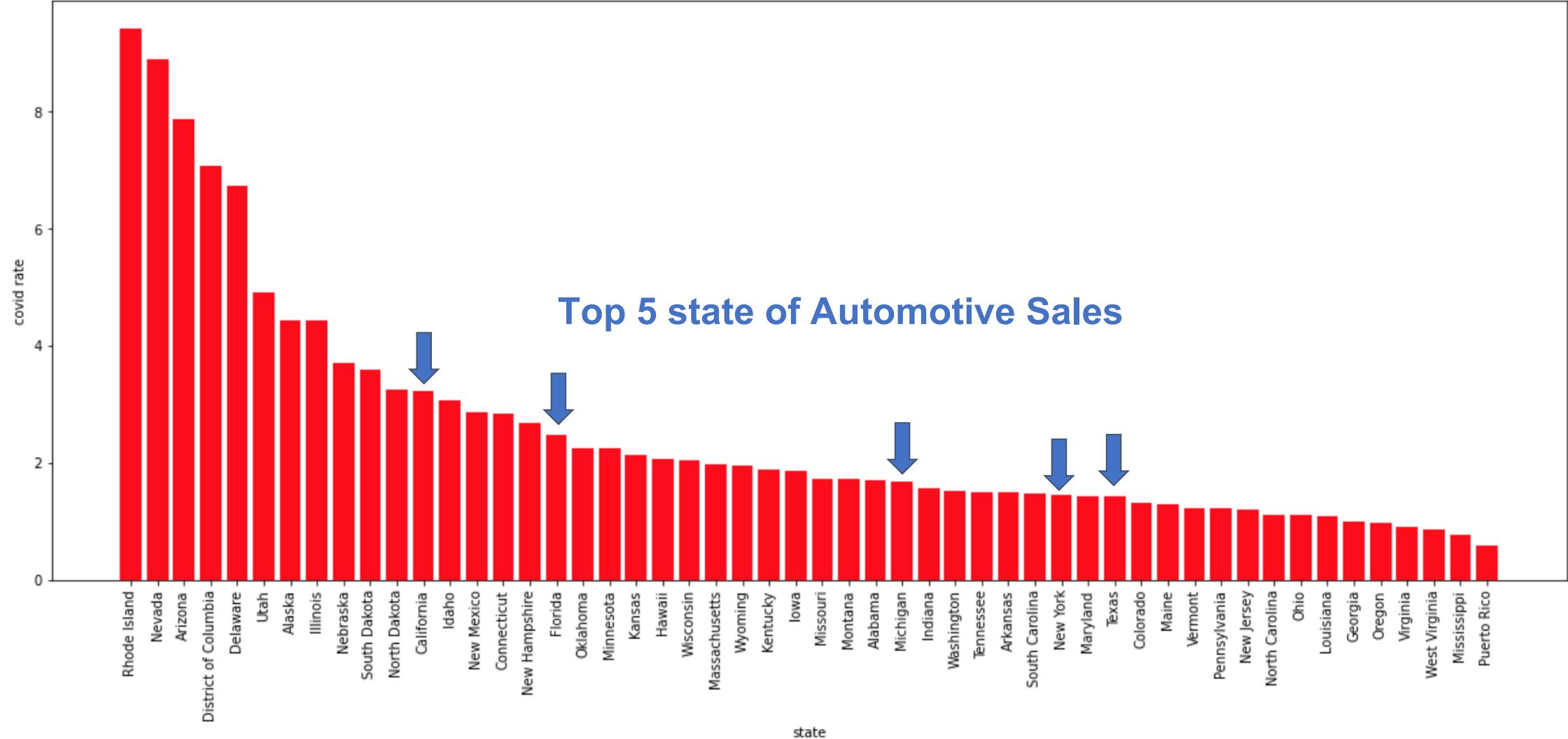
SALES_BY_State_2020



U.S. Automotive Sales per Person



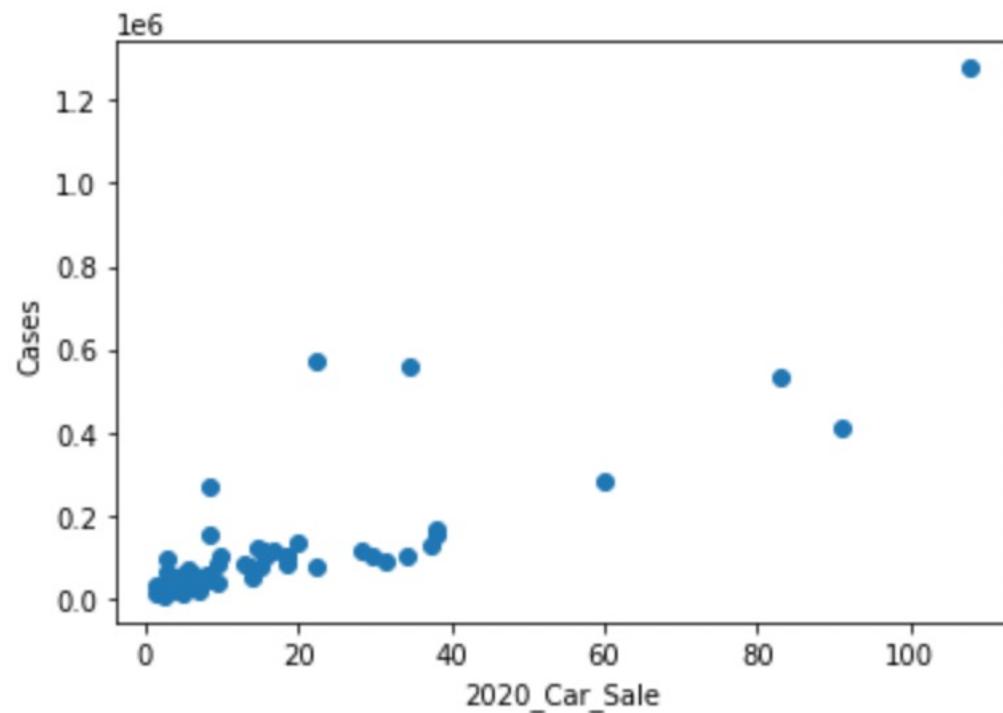
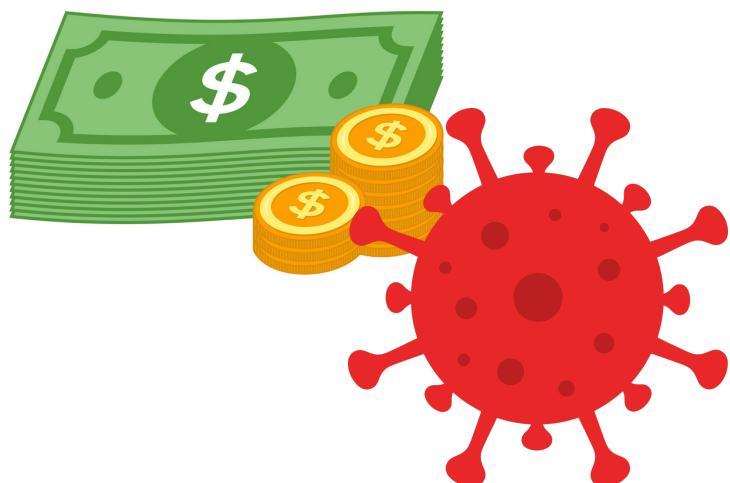
States Rank by Higher Infection Rate in 2020



Correlation between Sale and Case is 0.8



The correlation between both factors is 0.8



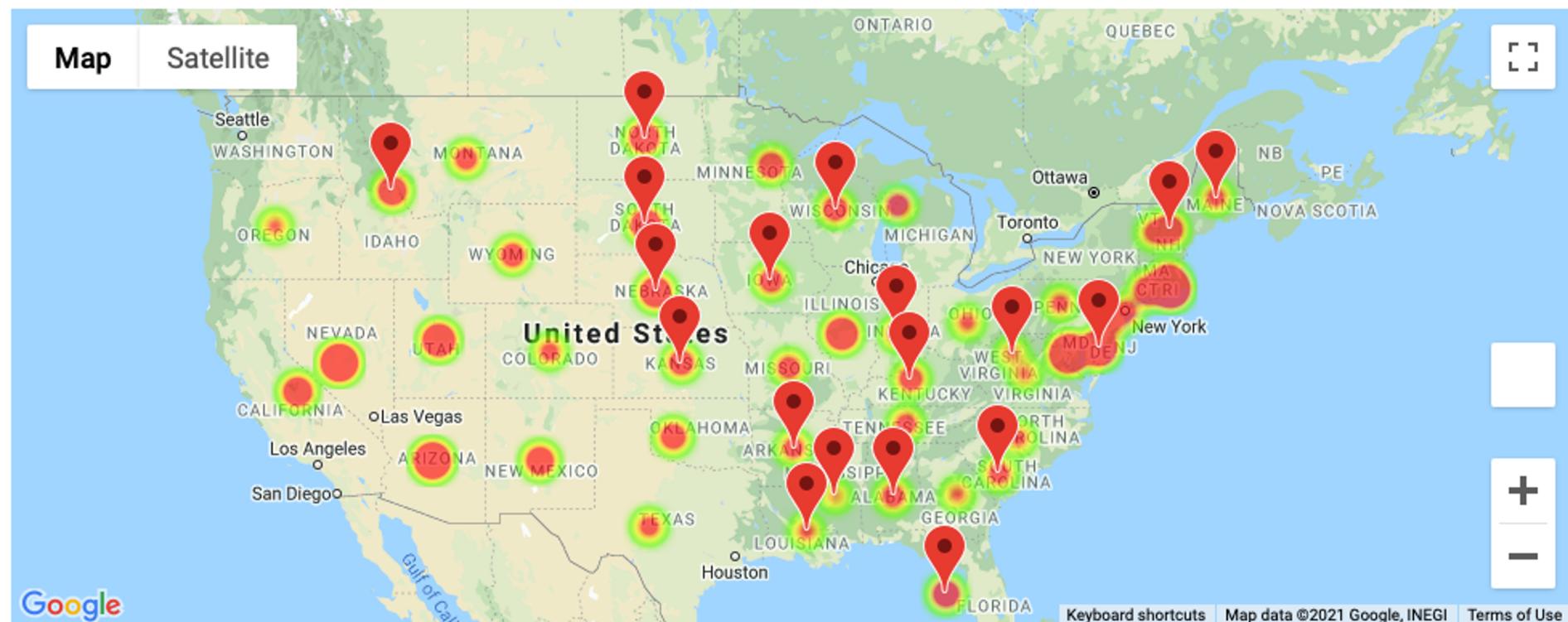
2018 2019 2020

| State | 2018 | 2019 | 2020 |
|----------------|-------|------|------|
| Florida | 80.40 | 80.5 | 83.0 |
| Indiana | 15.00 | 15.4 | 15.7 |
| Wisconsin | 15.00 | 15.1 | 15.3 |
| Louisiana | 13.88 | 13.5 | 13.9 |
| South Carolina | 10.96 | 13.5 | 13.8 |
| Alabama | 12.16 | 12.7 | 13.1 |
| Kentucky | 9.69 | 9.0 | 9.5 |
| Iowa | 9.44 | 7.8 | 8.2 |
| Arkansas | 7.97 | 7.9 | 8.1 |
| Mississippi | 6.11 | 6.6 | 6.9 |
| Kansas | 7.88 | 5.9 | 6.2 |
| New Hampshire | 5.41 | 6.0 | 6.2 |
| Nebraska | 6.55 | 5.3 | 5.6 |
| West Virginia | 4.97 | 5.0 | 5.1 |
| Maine | 3.66 | 4.1 | 4.3 |
| Idaho | 3.90 | 3.8 | 4.0 |
| Delaware | 3.00 | 2.9 | 3.0 |
| South Dakota | 2.30 | 2.3 | 2.5 |
| North Dakota | 2.40 | 2.3 | 2.4 |

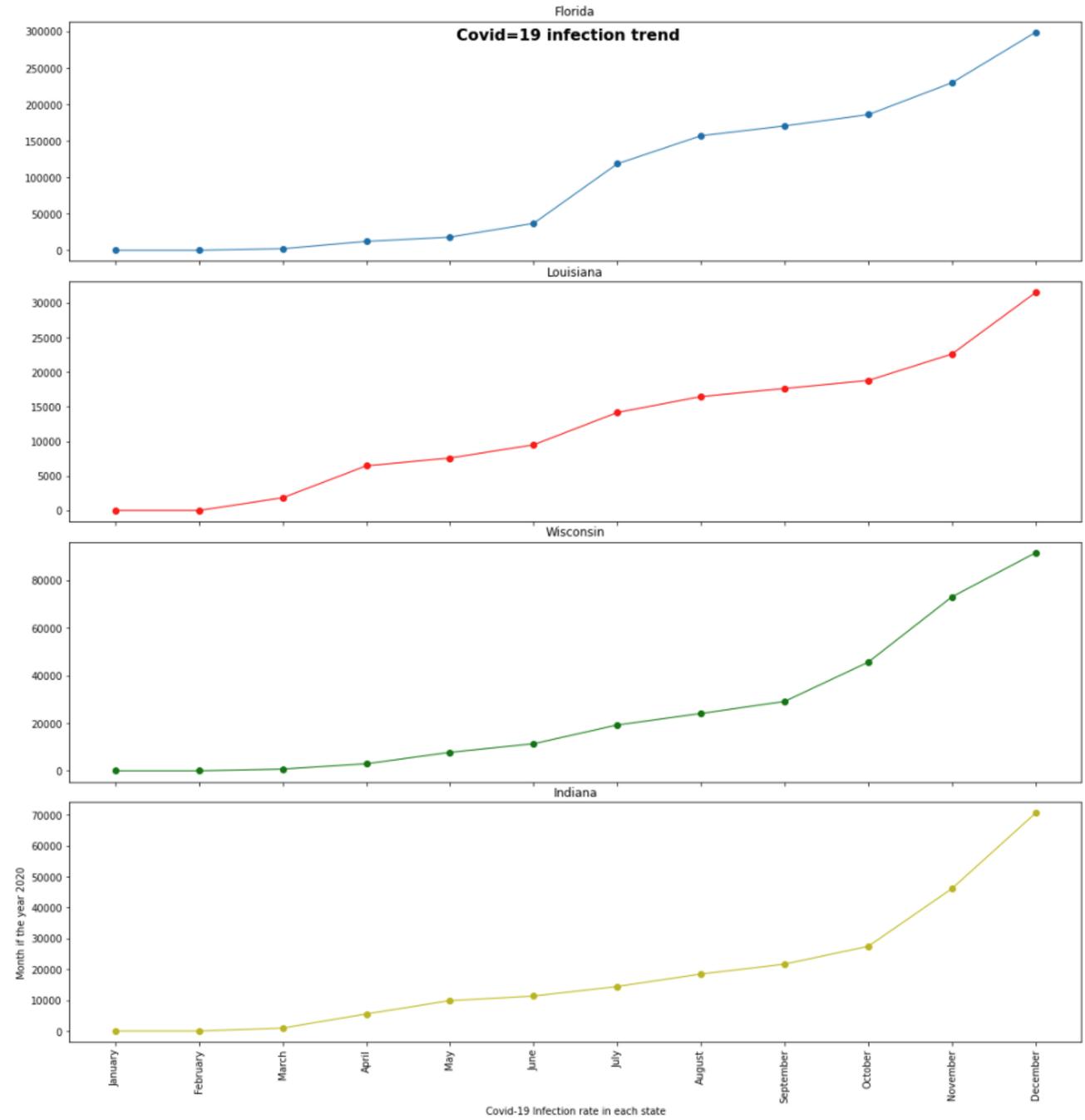
Sale (Unit:billion)



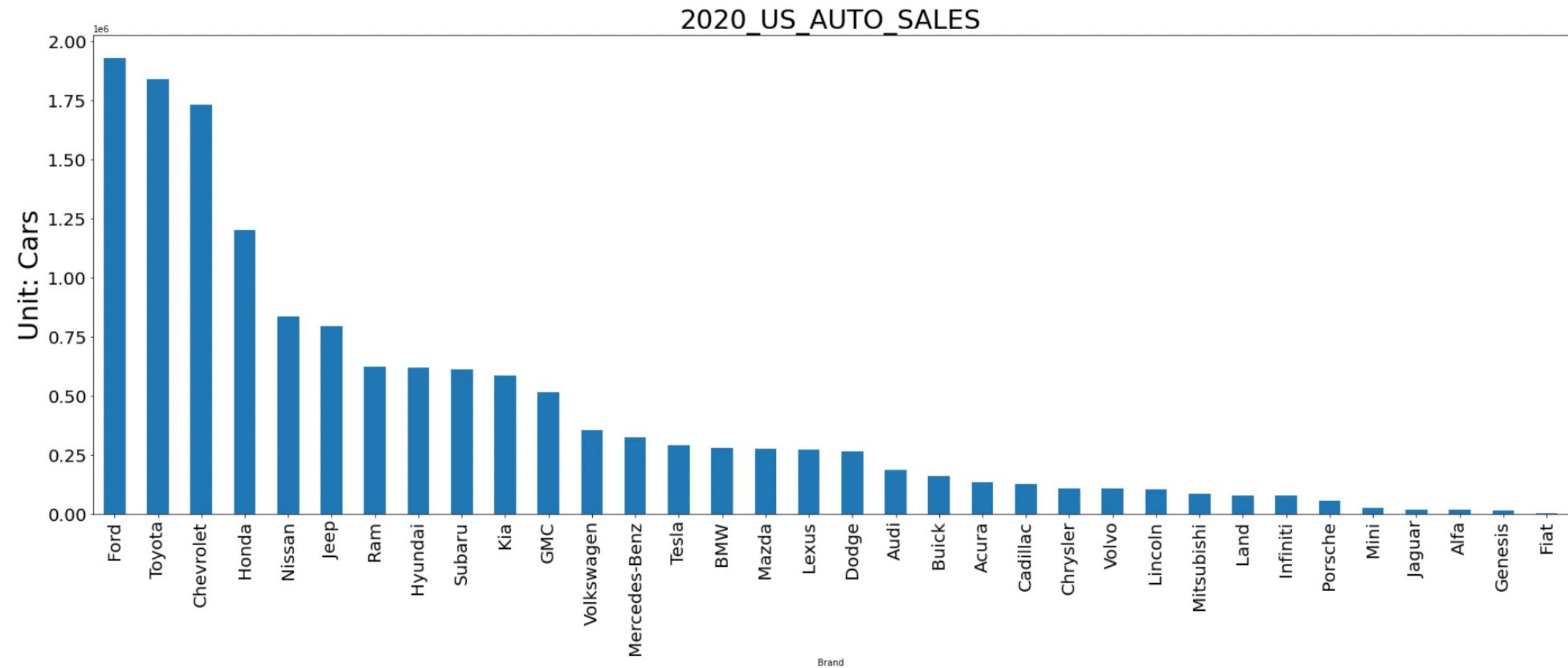
The State didn't impact by COVID that
Car Sale in 2020 higher than 2019



Covid-19 Infection Rate in Unimpacted states

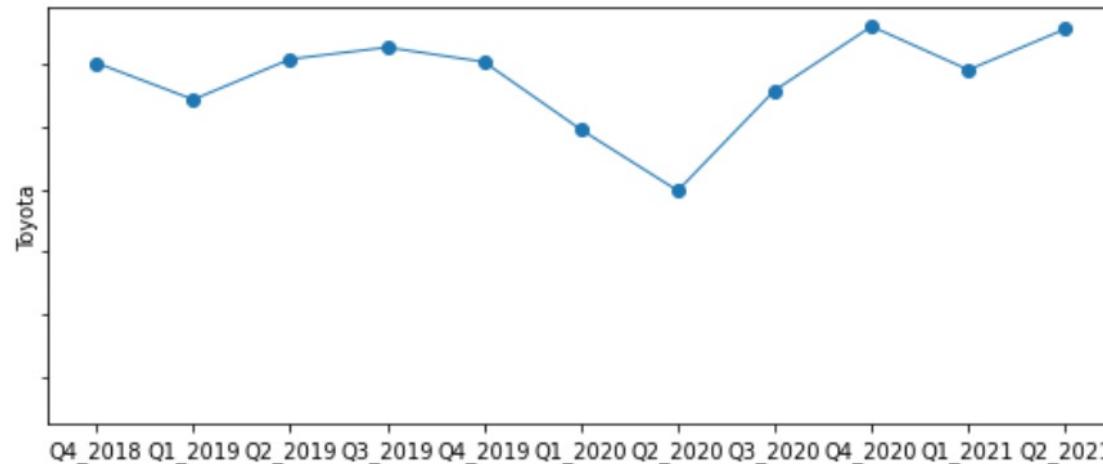
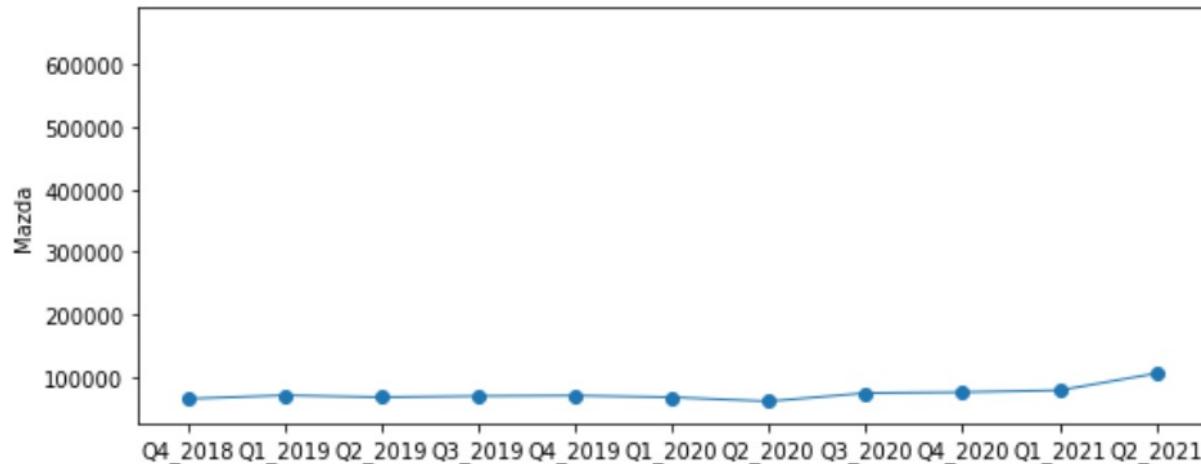
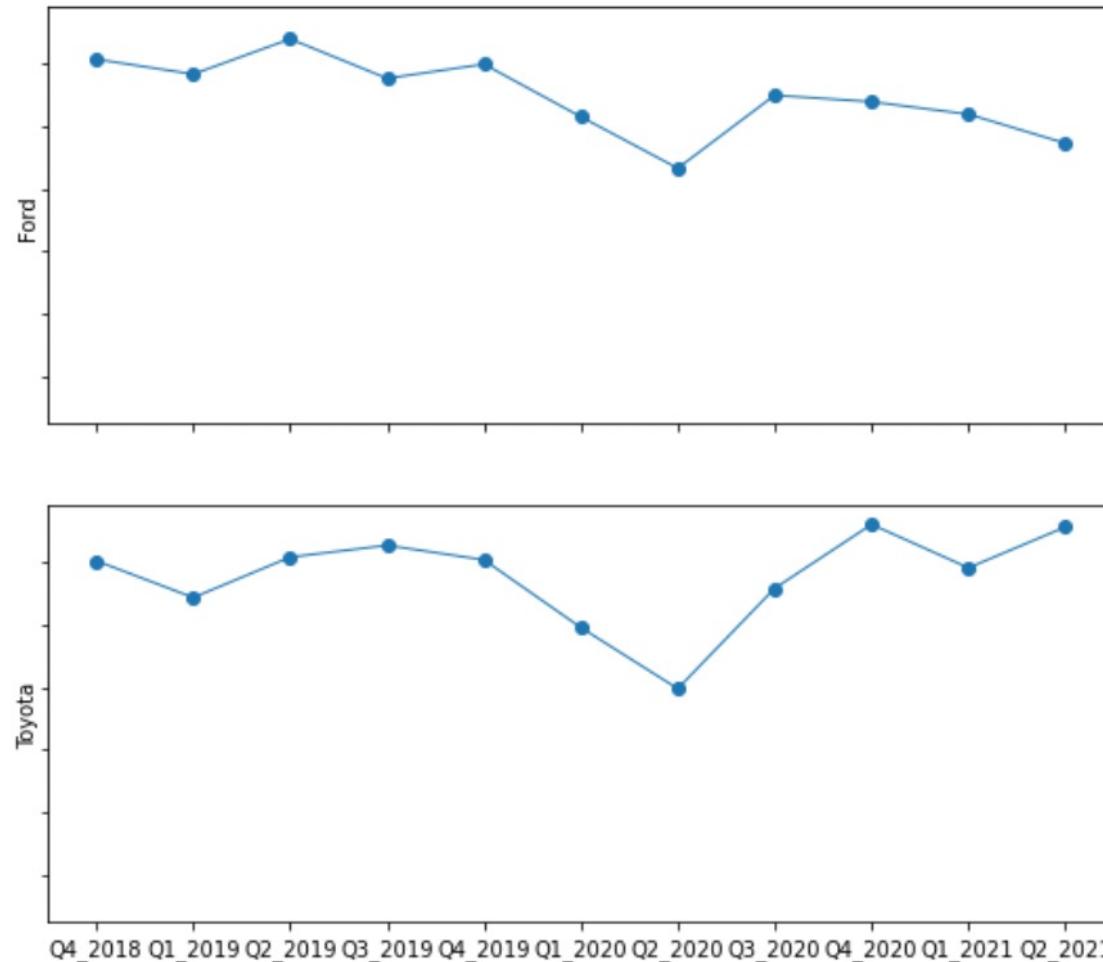
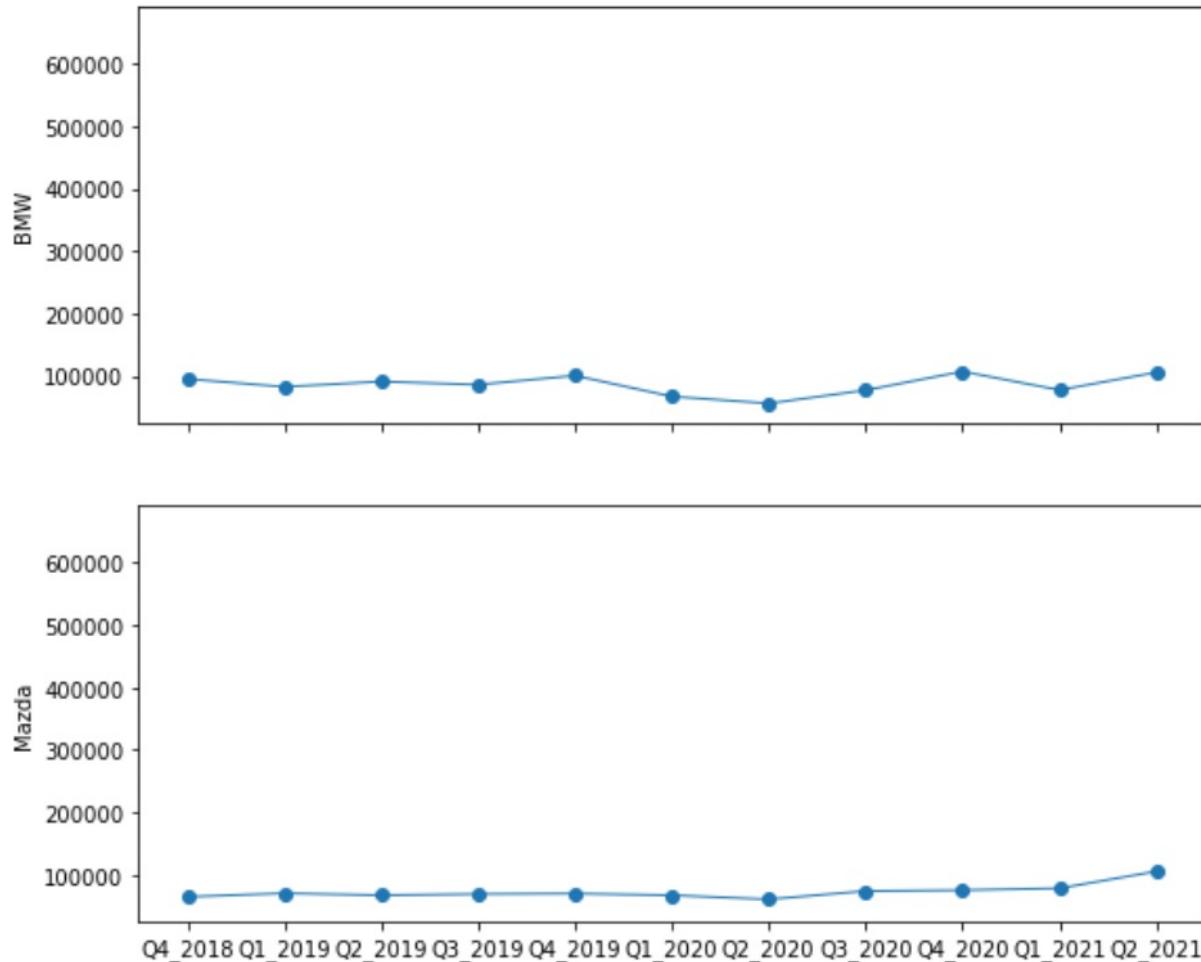


U.S. Automotive Sales by Manufacturer



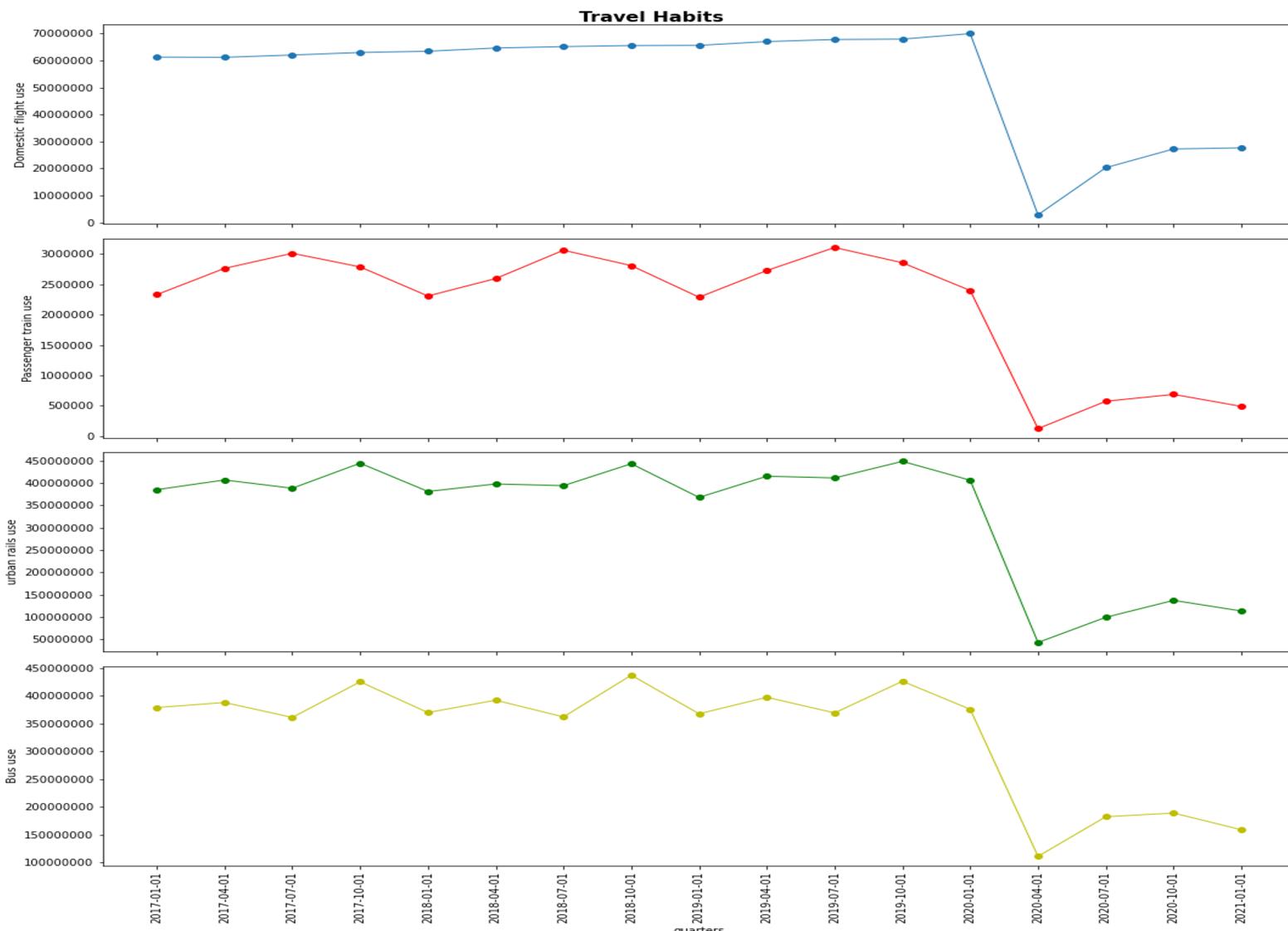
U.S. Automotive Industry

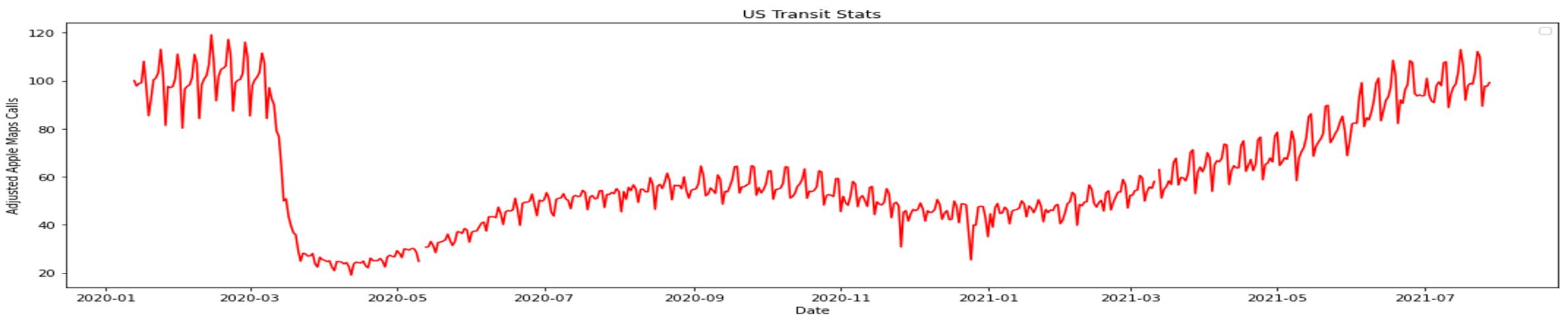
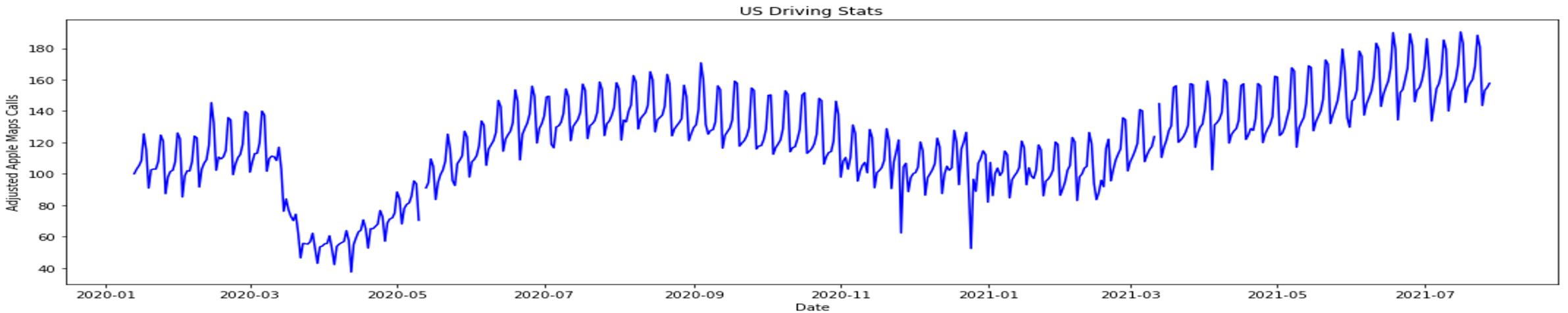
Car_Sale_By_Manufacturer



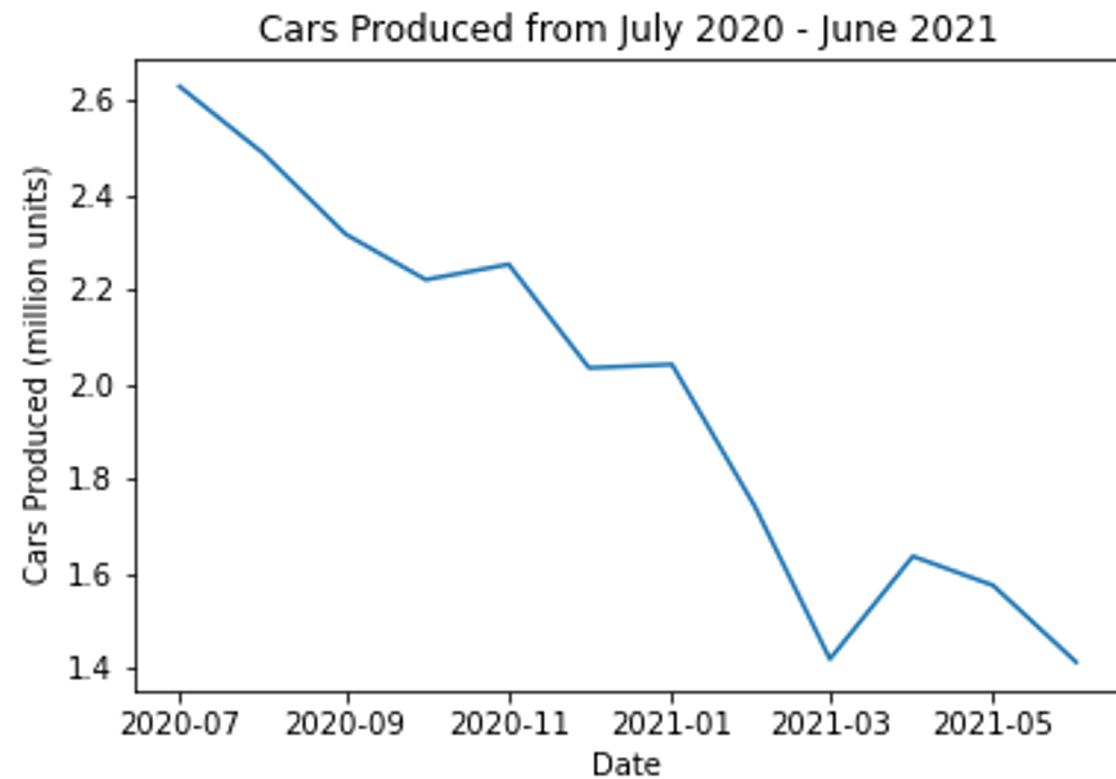
COVID Impact Travel Behaviors

| | State/territory | State of emergency declared | Stay at home ordered | Face coverings required in public | Gatherings banned |
|----|---------------------------------|-----------------------------|----------------------|-----------------------------------|---|
| 0 | Alabama | 13-Mar | 4-Apr | Yes | 10 or more |
| 1 | Alaska | 11-Mar | 28-Mar | No | 10 or more |
| 2 | American Samoa | 29-Jan | No | No | 10 or more |
| 3 | Arizona | 11-Mar | 31-Mar | No | 50 or more |
| 4 | Arkansas | 11-Mar | No | Yes | 10 or more |
| 5 | California(government response) | 4-Mar | 19-Mar | Yes | All |
| 6 | Colorado | 10-Mar | 26-Mar | Yes | 10 or more |
| 7 | Connecticut | 10-Mar | 23-Mar | Yes | All |
| 8 | Delaware | 12-Mar | 24-Mar | Yes | All |
| 9 | District of Columbia | 11-Mar | 30-Mar | Yes | 10 or more |
| 10 | Florida | 1-Mar | 3-Apr | No | 10 or more |
| 11 | Georgia | 14-Mar | 3-Apr | No | 10 or more |
| 12 | Guam | 14-Mar | No | No | All |
| 13 | Hawaii | 4-Mar | 25-Mar | Yes | 11 or more, and public gathering in public places |
| 14 | Idaho | 13-Mar | 25-Mar | No | All |
| 15 | Illinois | 9-Mar | 21-Mar | Yes | All |
| 16 | Indiana | 6-Mar | 25-Mar | Yes | All outside, and 11 or more inside a household |
| 17 | Iowa | 9-Mar | No | No | 10 or more |
| 18 | Kansas | 9-Mar | 30-Mar | Yes | 10 or more |
| 19 | Kentucky | 6-Mar | March 26(advisory) | Yes | 10 or more |
| 20 | Louisiana | 11-Mar | 23-Mar | Yes | 11 or more |

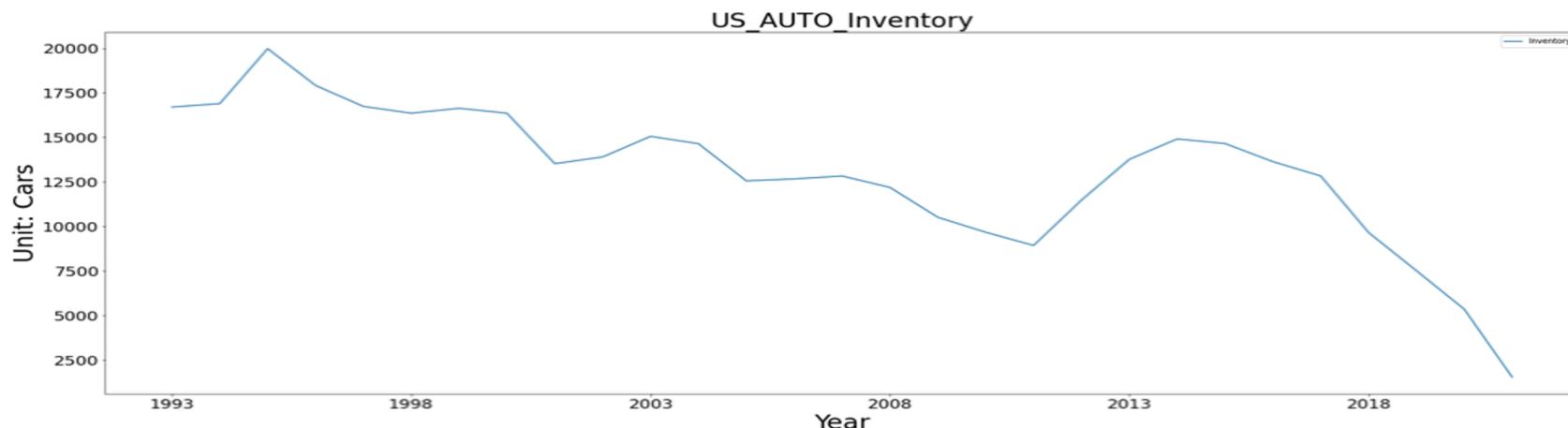
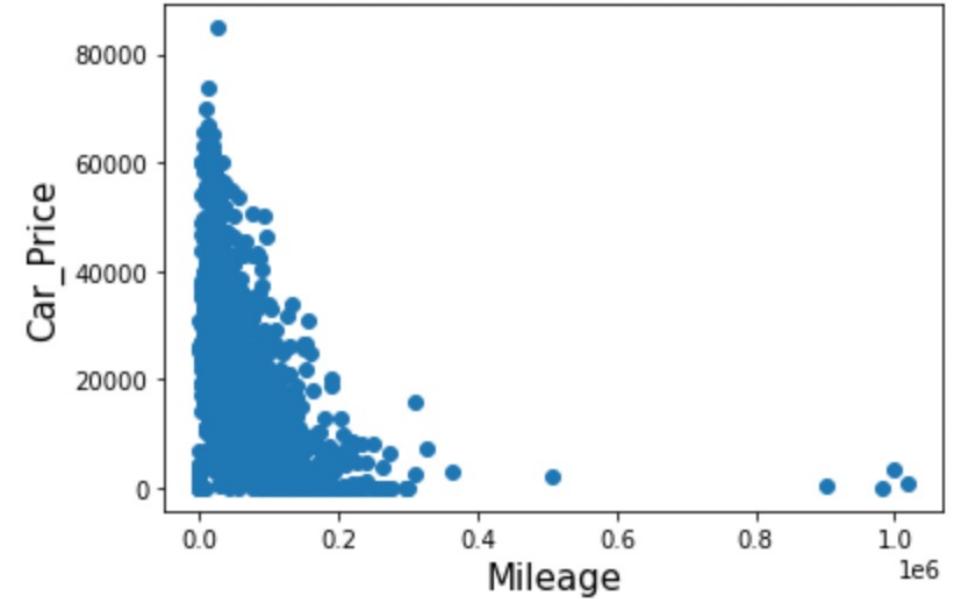
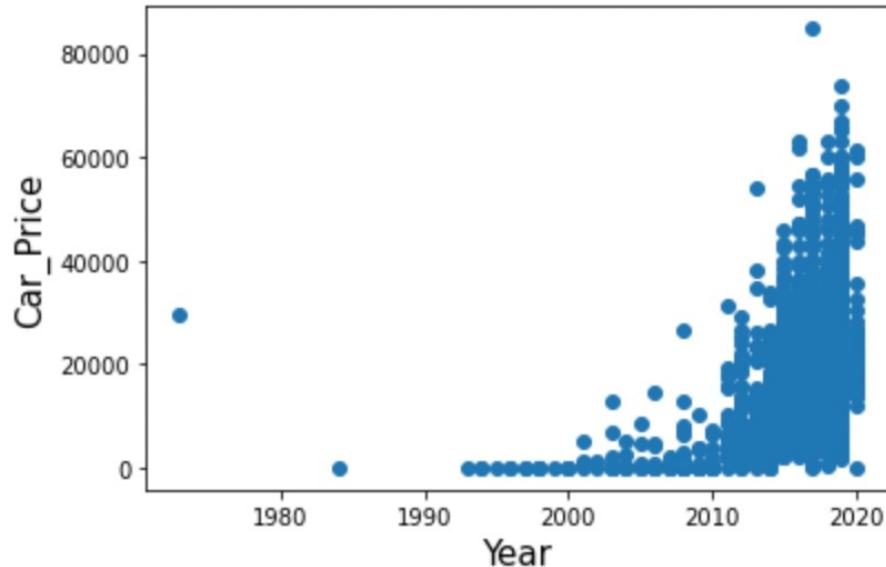




COVID Impact on Supply Chain



Factors Affecting Price

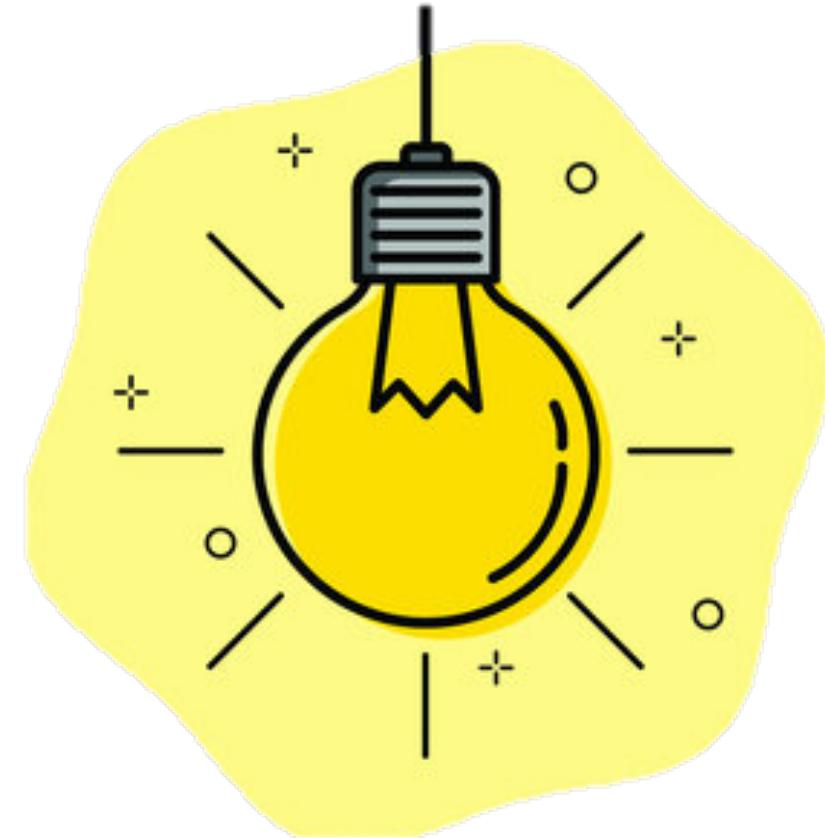


Factors Affecting Price Correlation



Summary

- COVID 19 did have a direct negative impact on the auto sales industry
- Certain car manufacturers and locations were resilient during the COVID pandemic with a positive sales trend moving into this current year
- Increased car prices due to increase in consumer demand in 2021 and car supply shortage
- Dealerships like Toyota still had inventories to dominate both market share and be profitable based on current market conditions



||| Thank you

