

# 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.



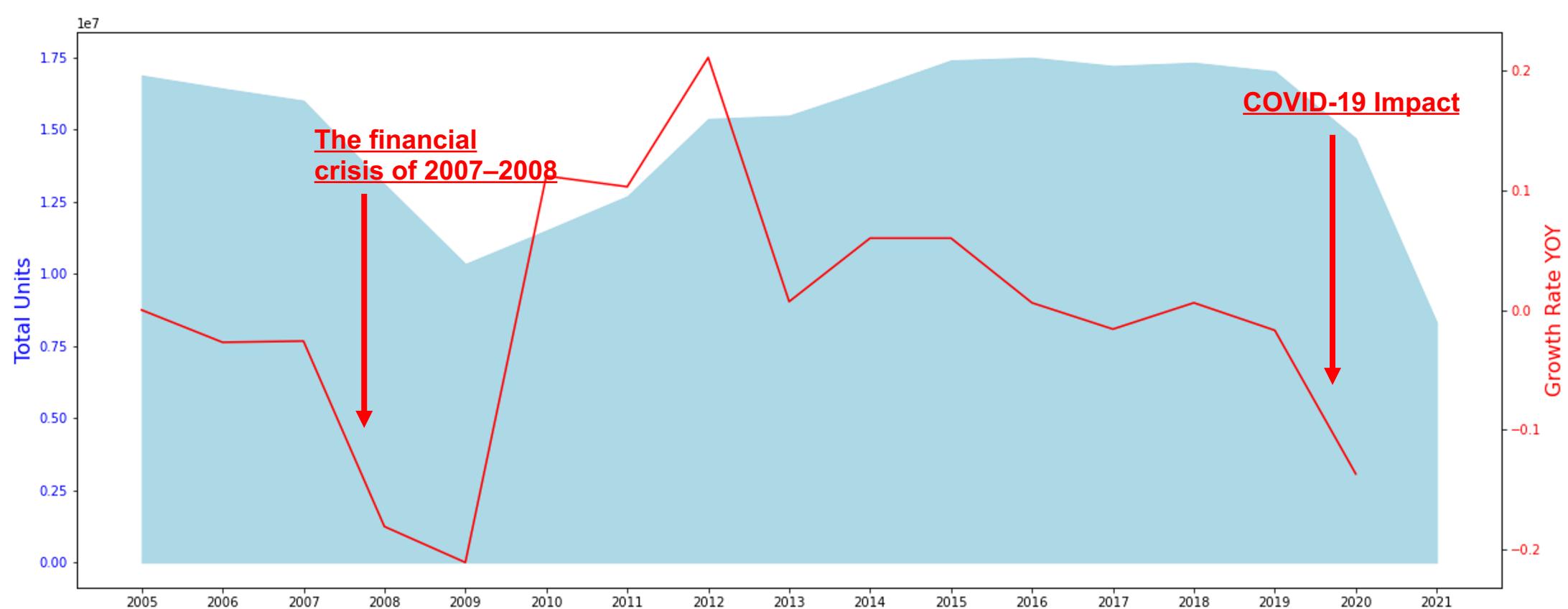
# Questions for Analysis:

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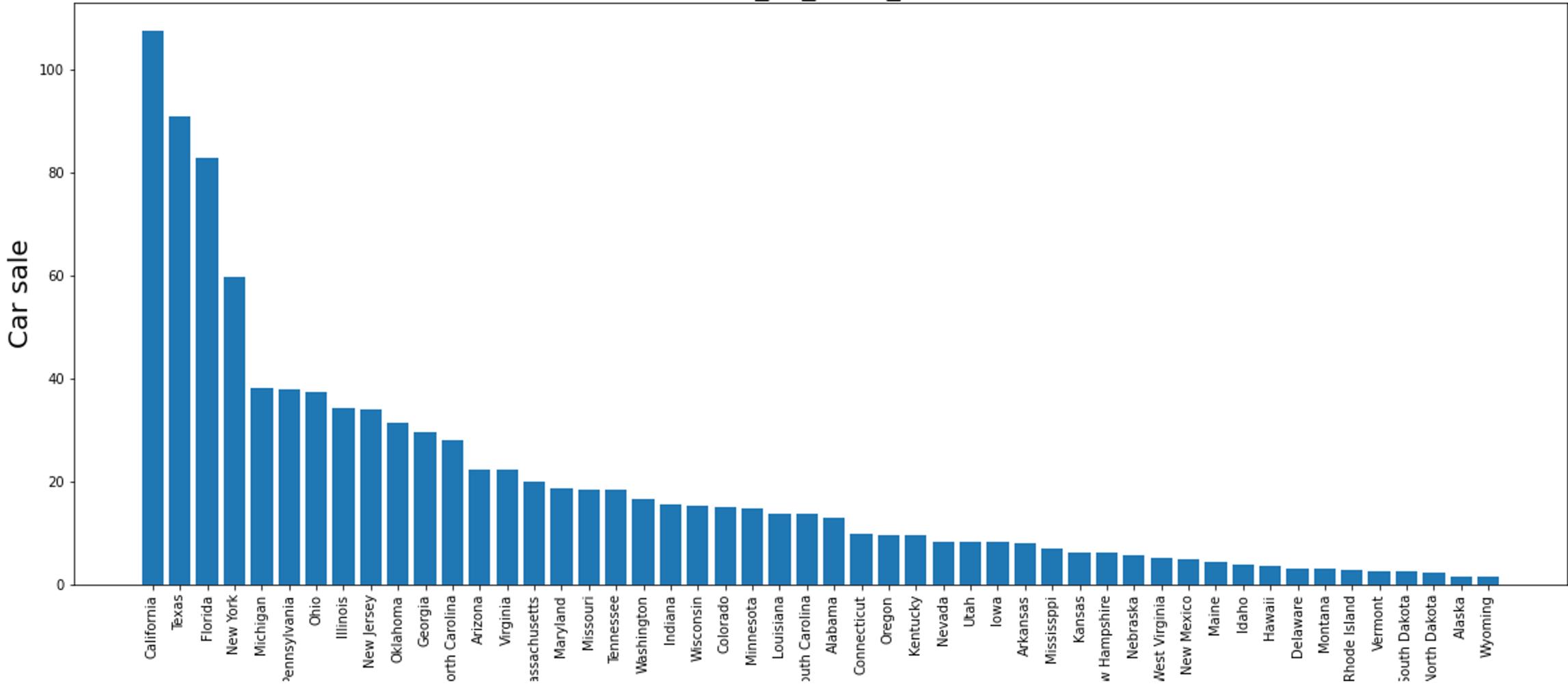
- What effect did COVID-19 have on consumer habits and behaviors in relation to car buying: brand of car, preferred mode of transport, etc?
- What current car sales trends can point to the ideal inventory?
- Did COVID have an equal effect on car sales based on location at a state level?
- What are other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

# U.S. Automotive Sales

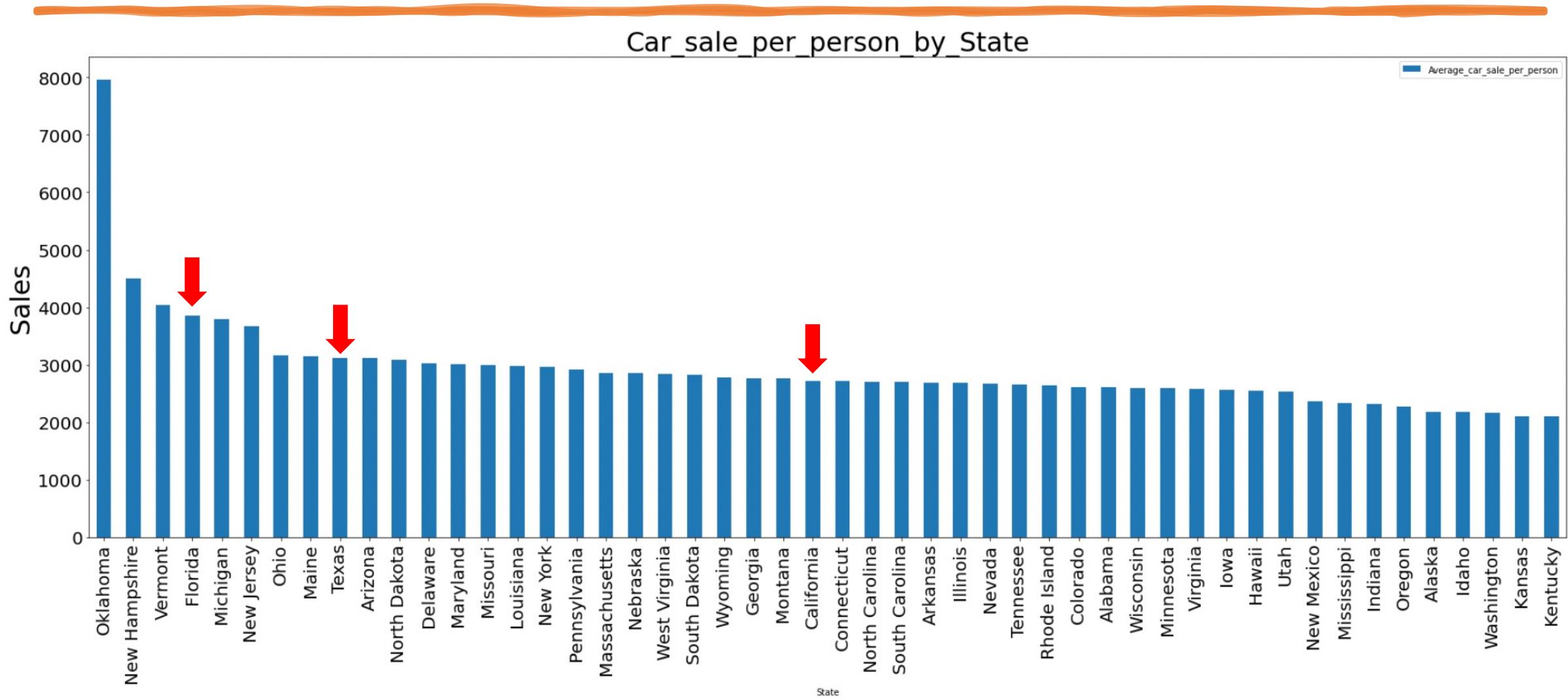


# U.S. Automotive Sales by State

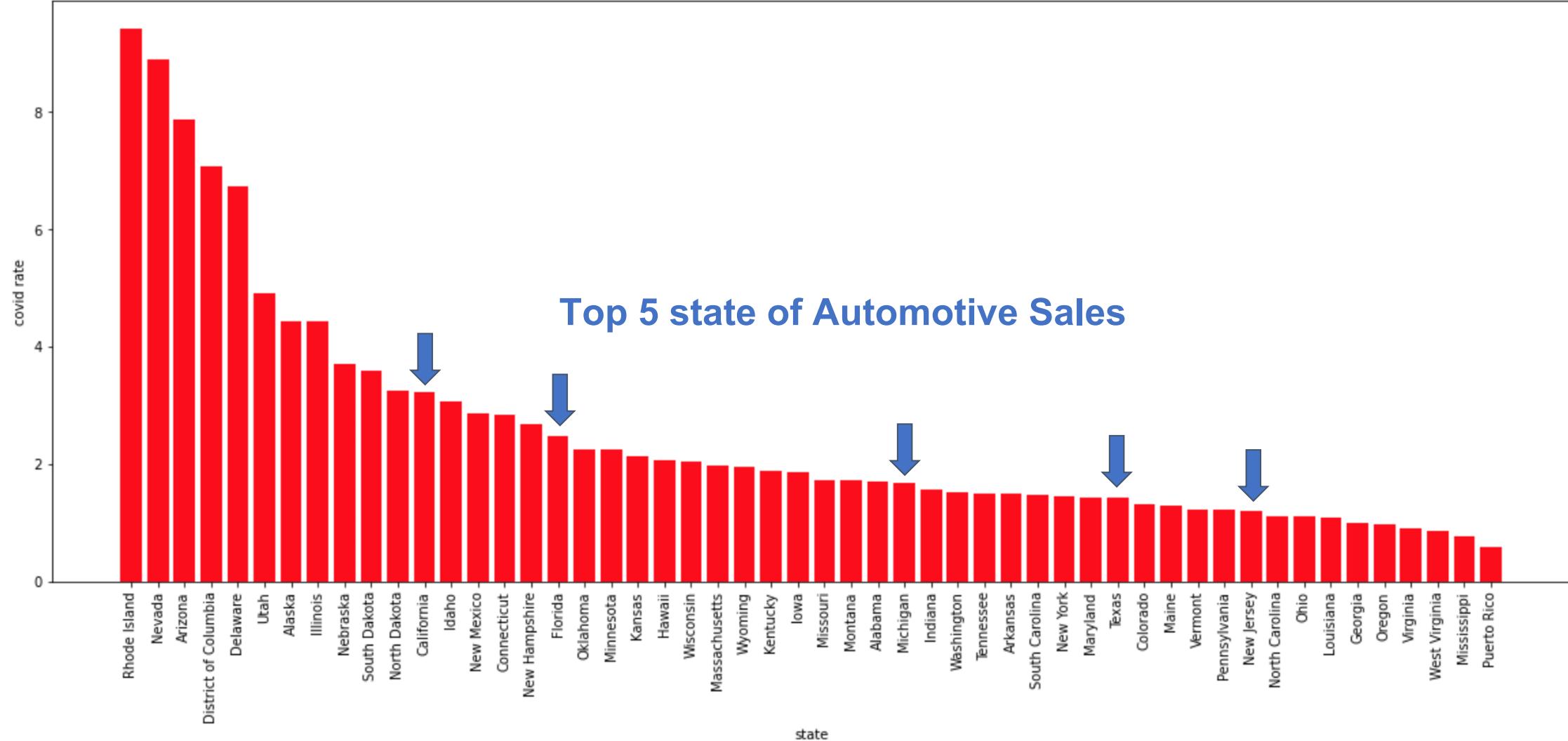
SALES\_BY\_State\_2020



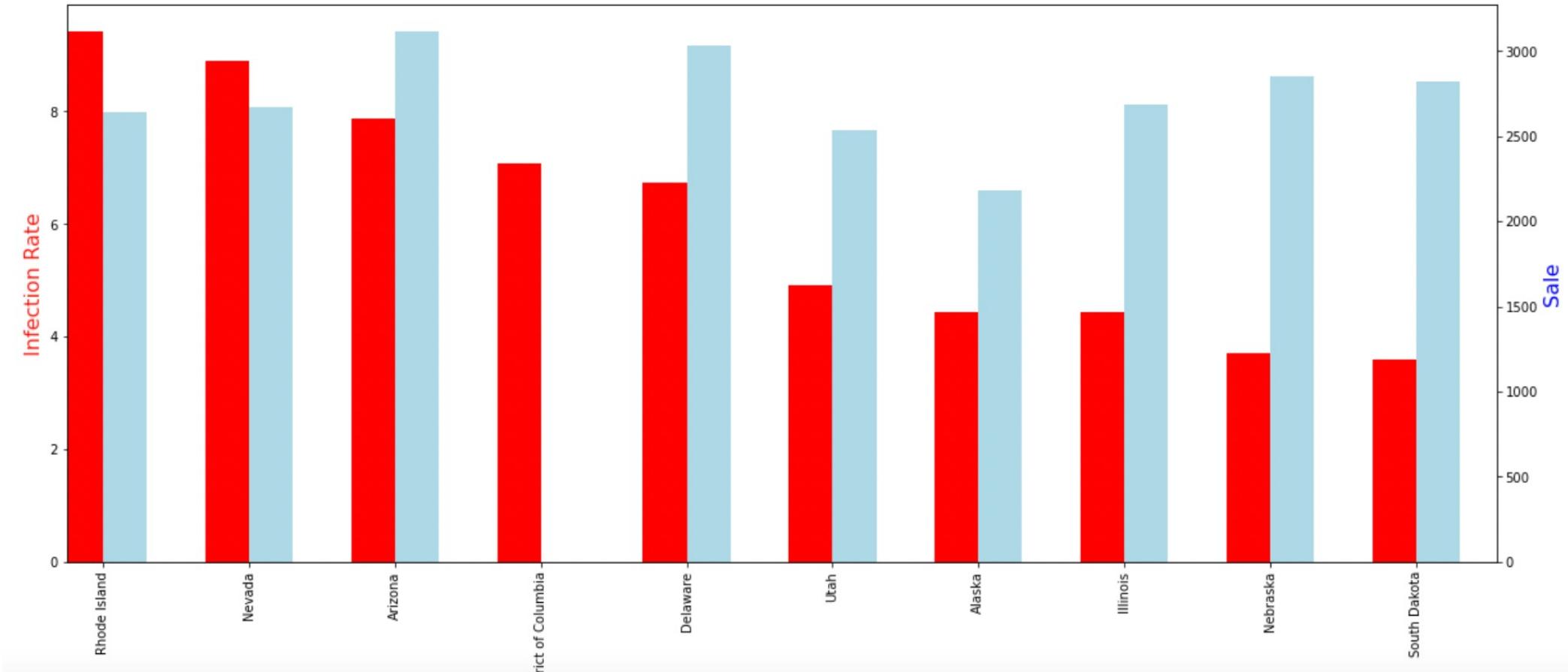
# U.S. Automotive Sales per Person



# States Rank by Higher Infection Rate in 2020



# States Rank by Higher Infection Rate



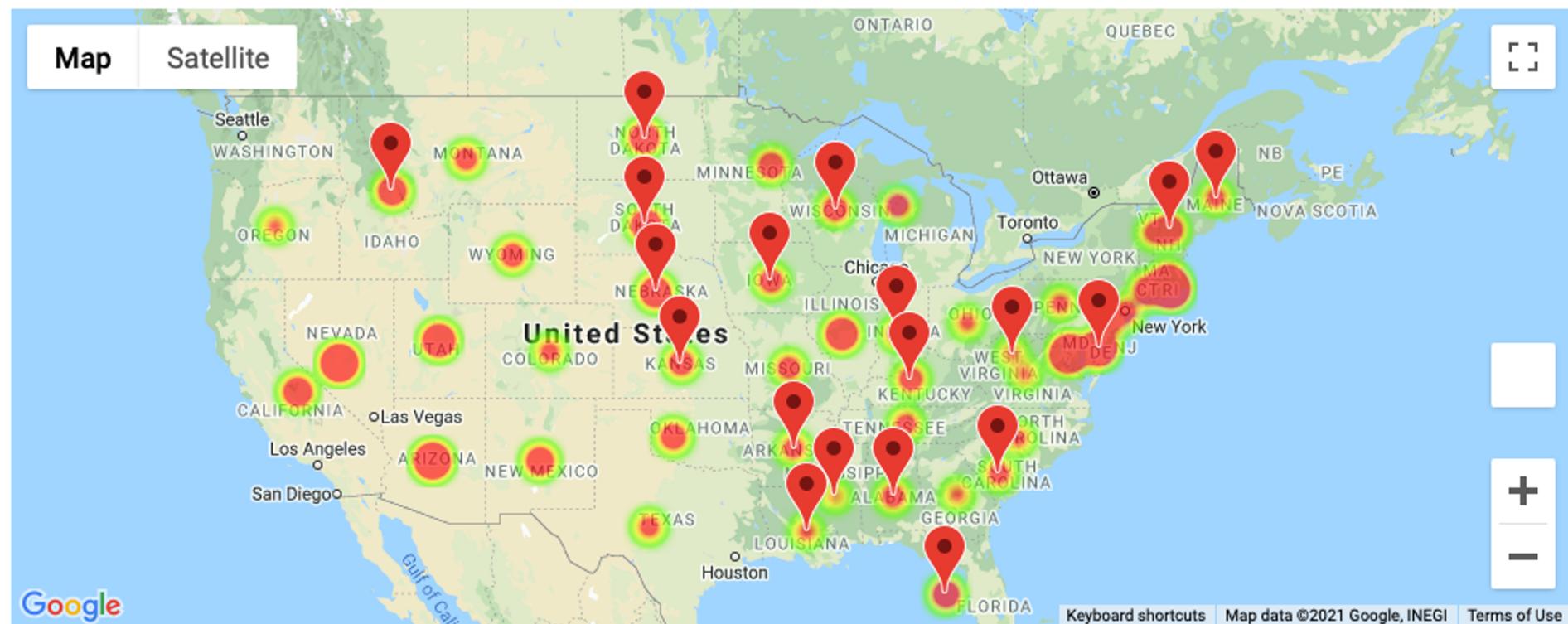
2018 2019 2020

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)



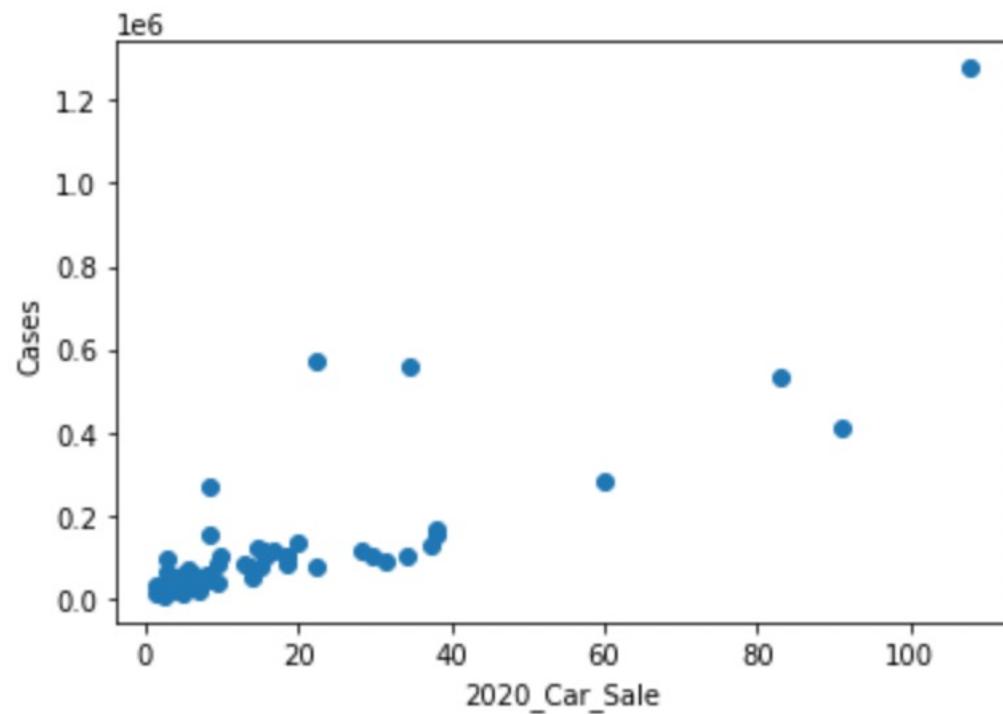
The State didn't impact by COVID that  
Car Sale in 2020 higher than 2019



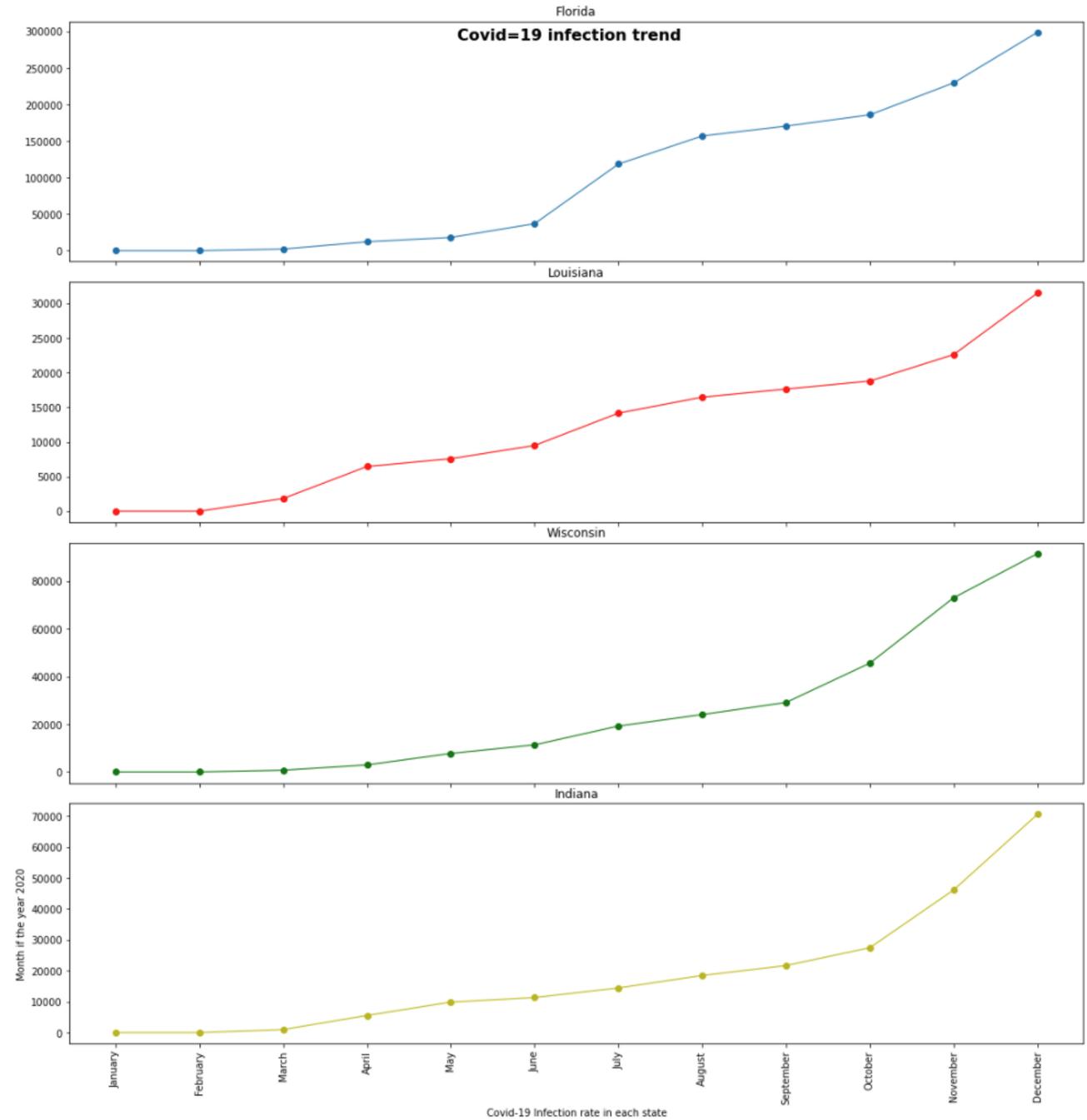
# Correlation between Sale and Case is 0.8



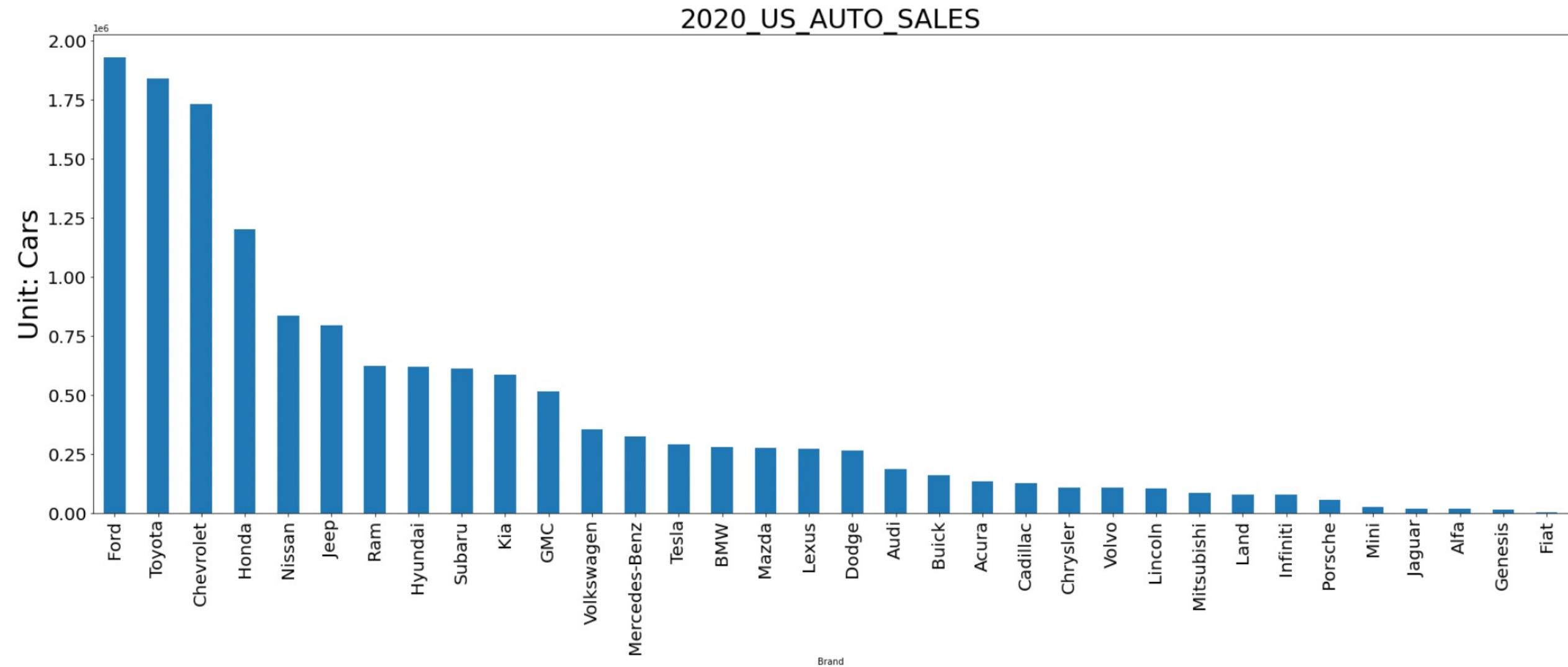
The correlation between both factors is 0.8



# Covid-19 Infection Rate in Unimpacted states

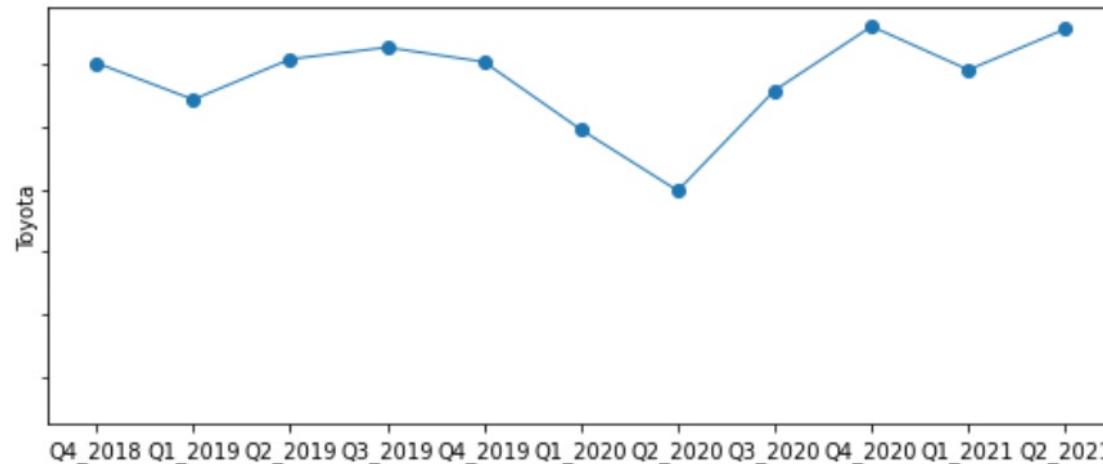
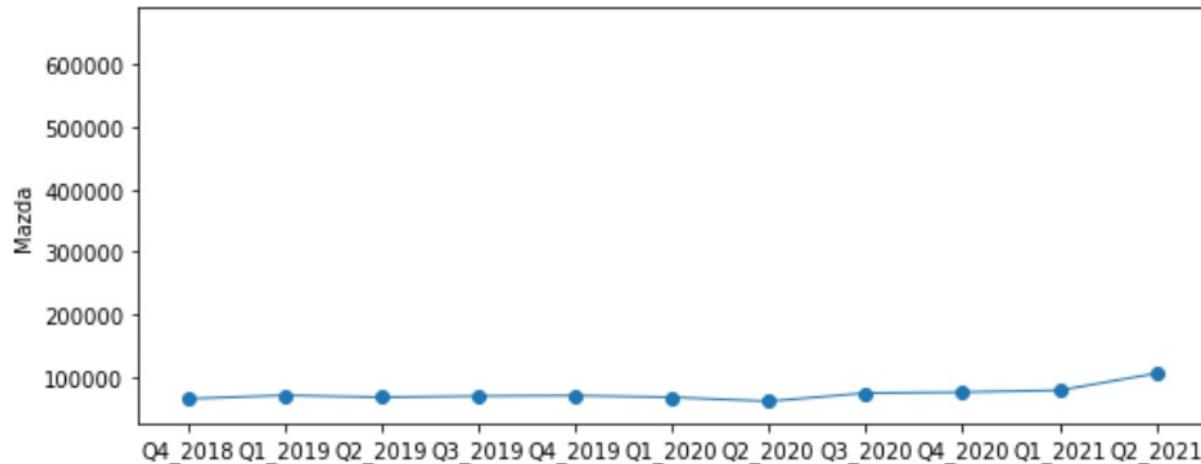
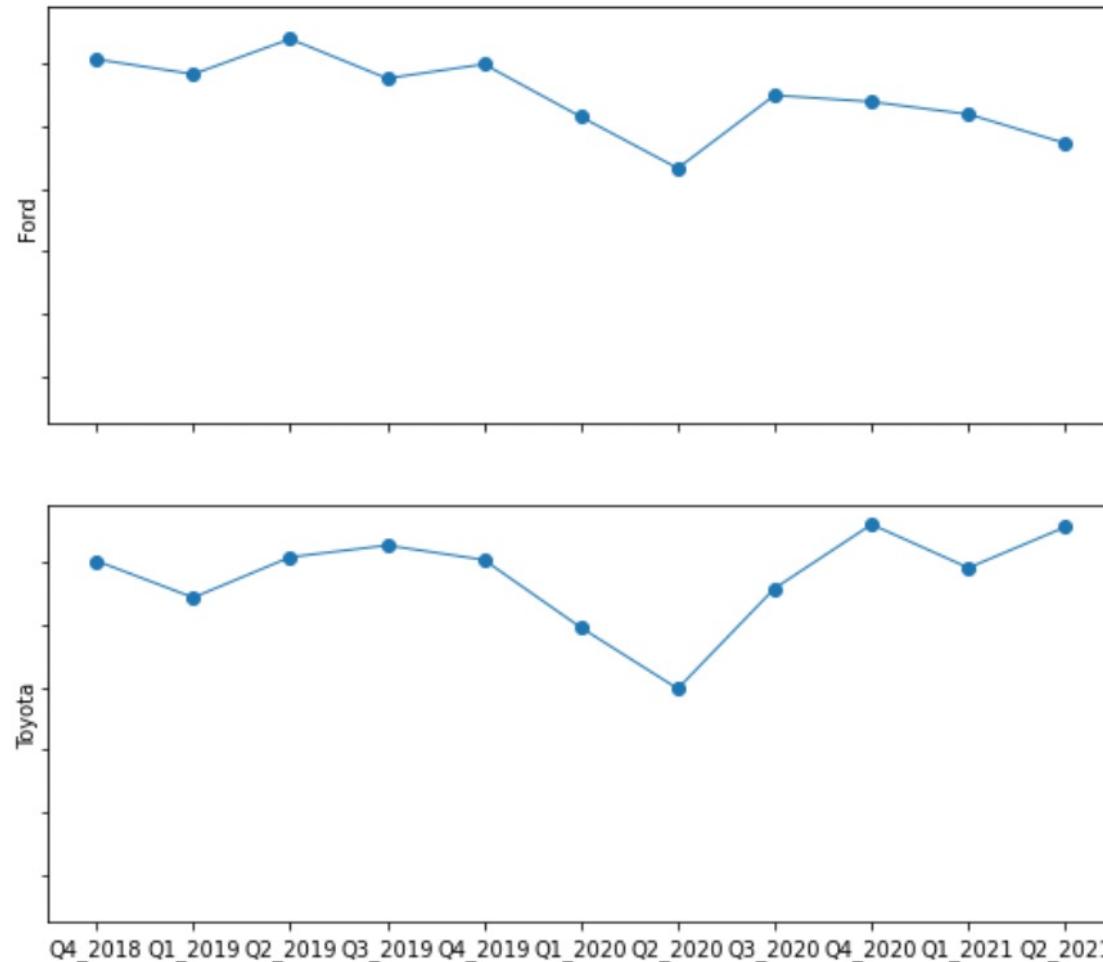
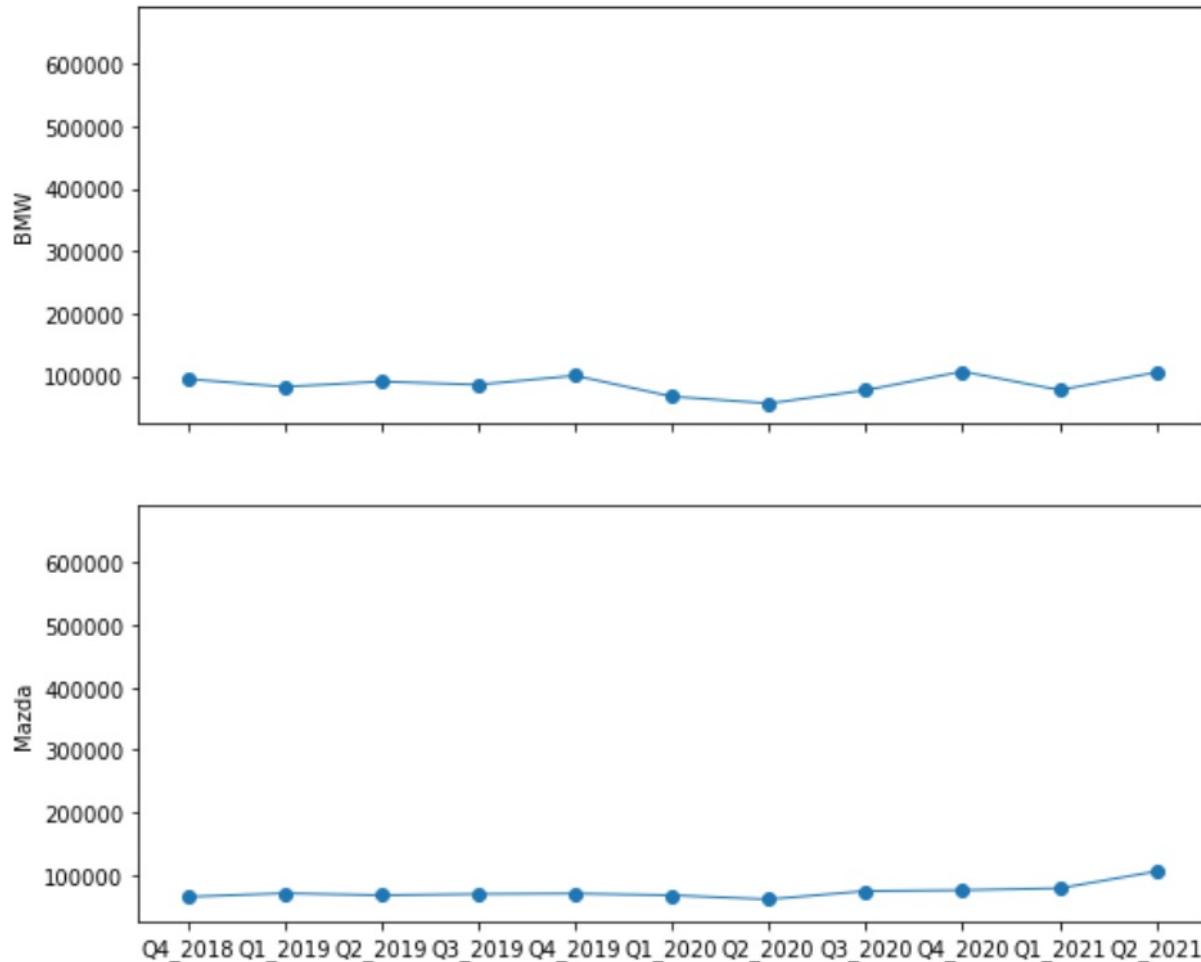


# U.S. Automotive Sales by Manufacturer



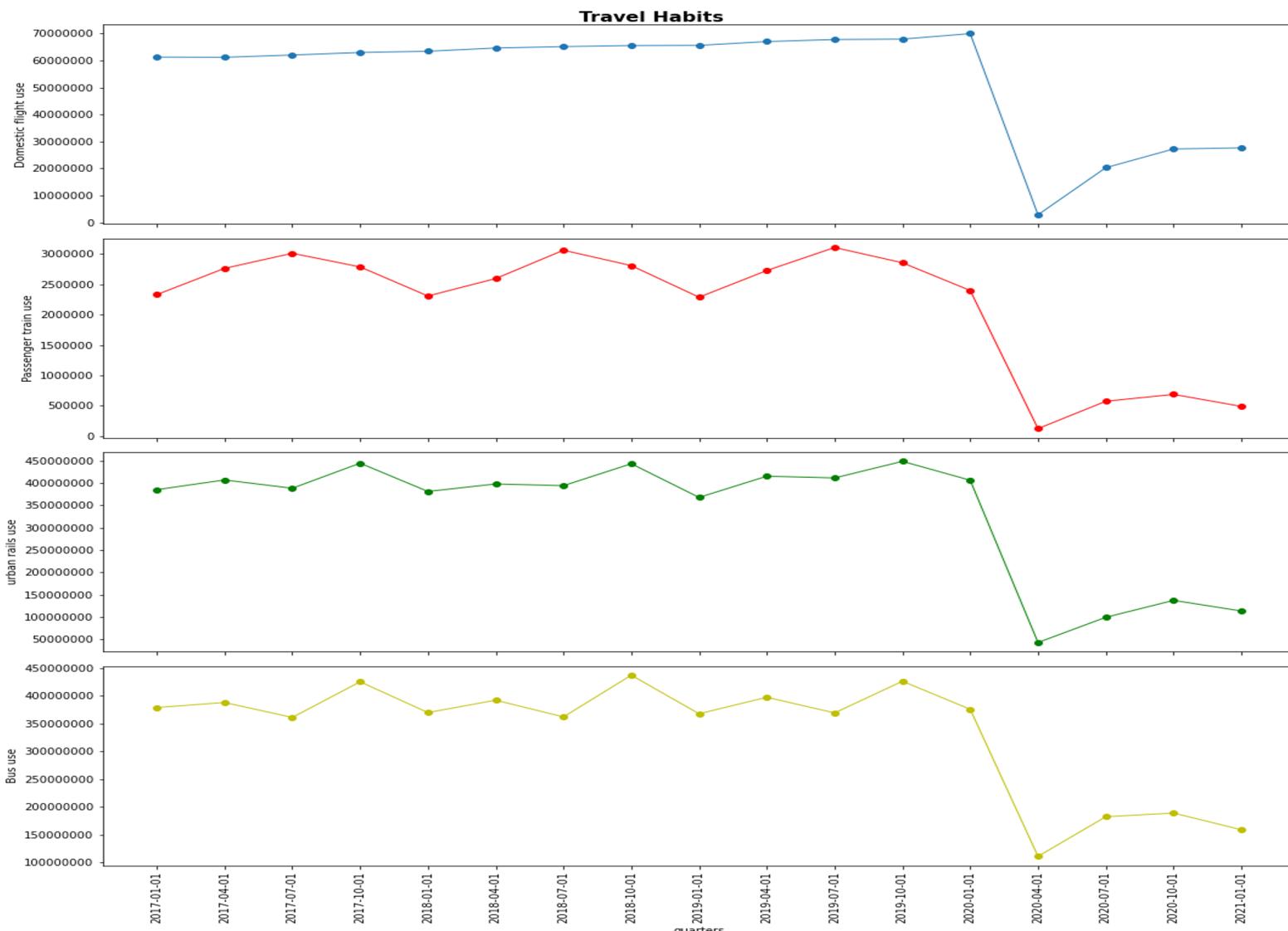
# U.S. Automotive Industry

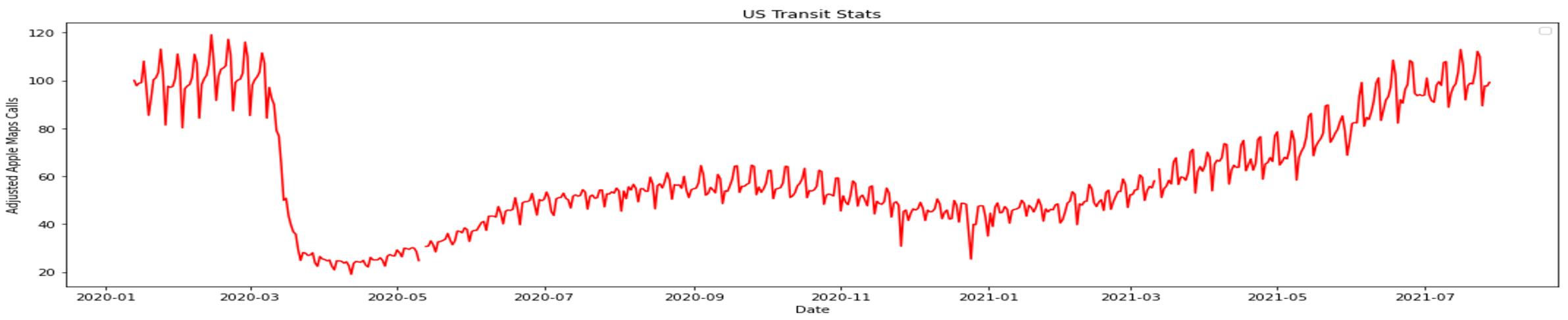
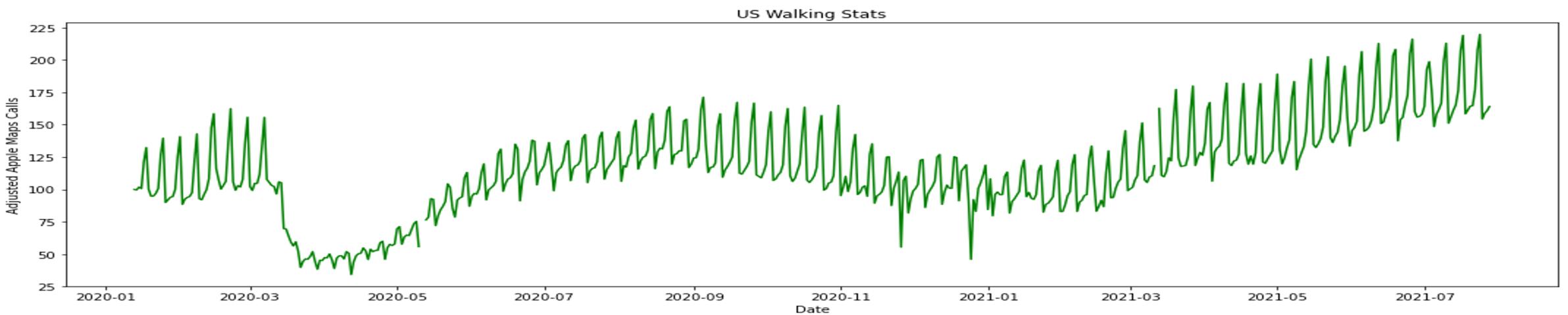
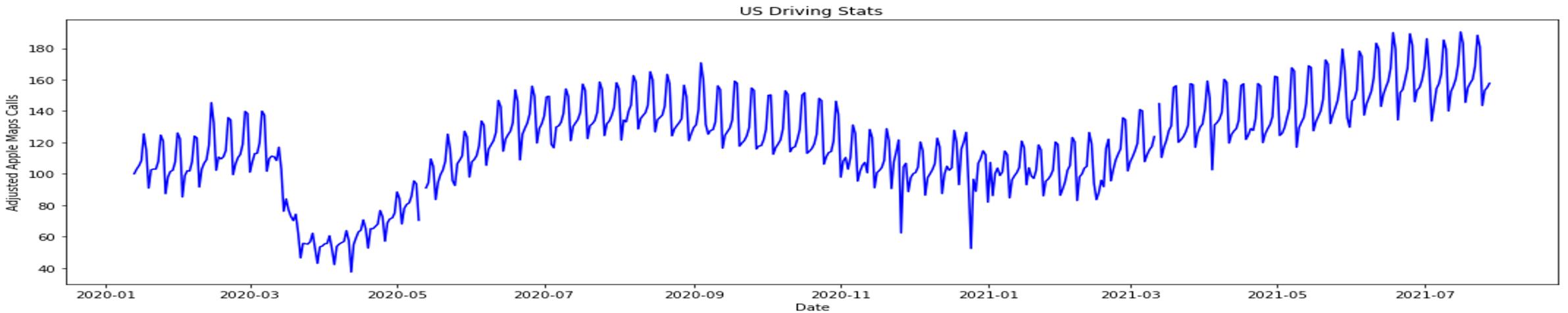
Car\_Sale\_By\_Manufacturer



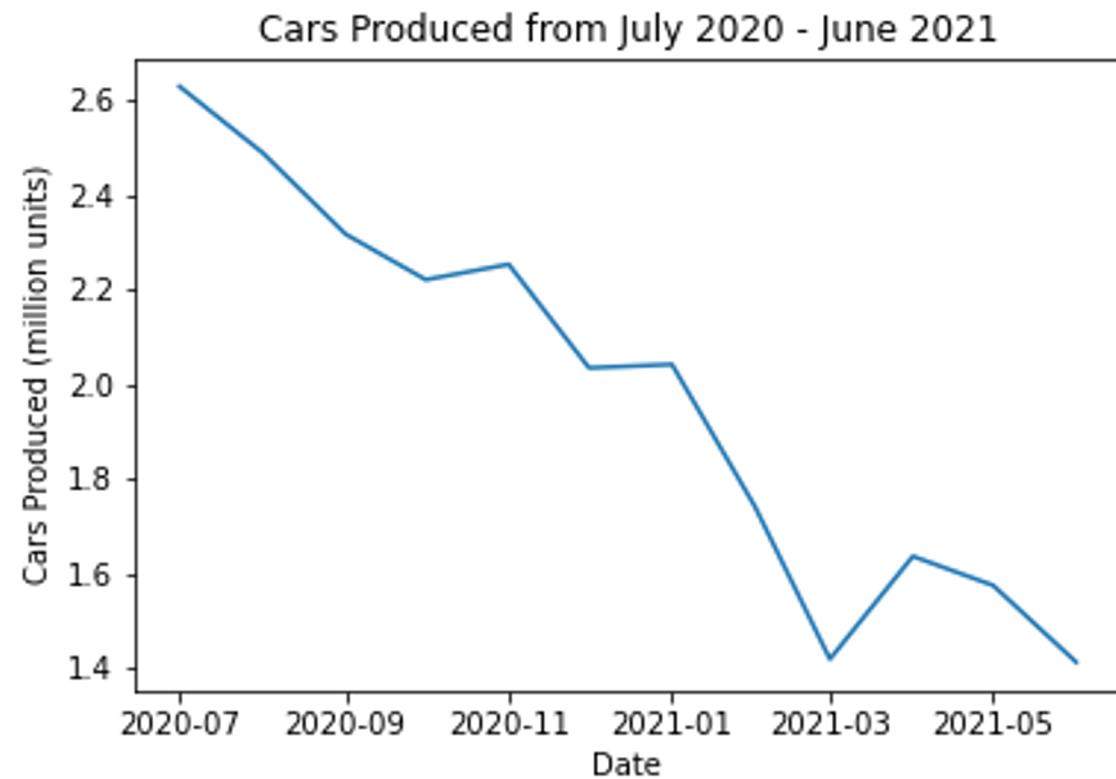
# COVID Impact Travel Behaviors

	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

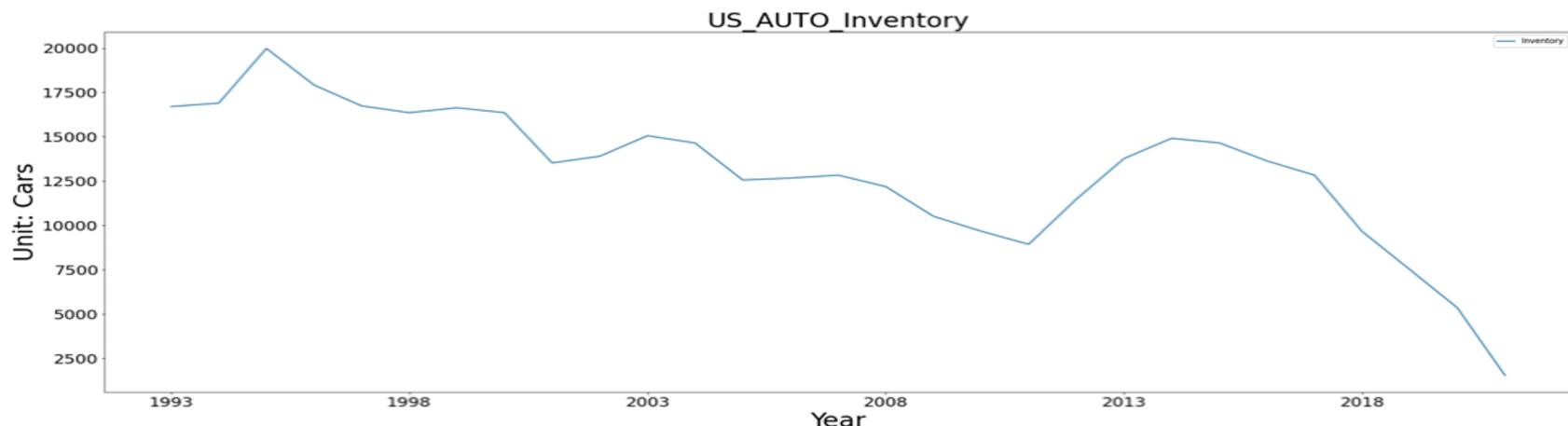
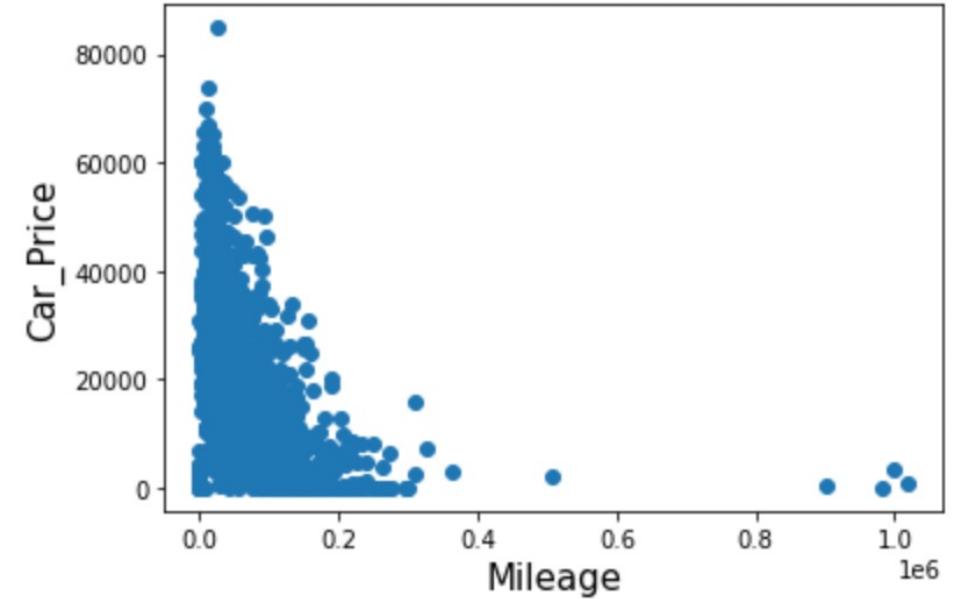
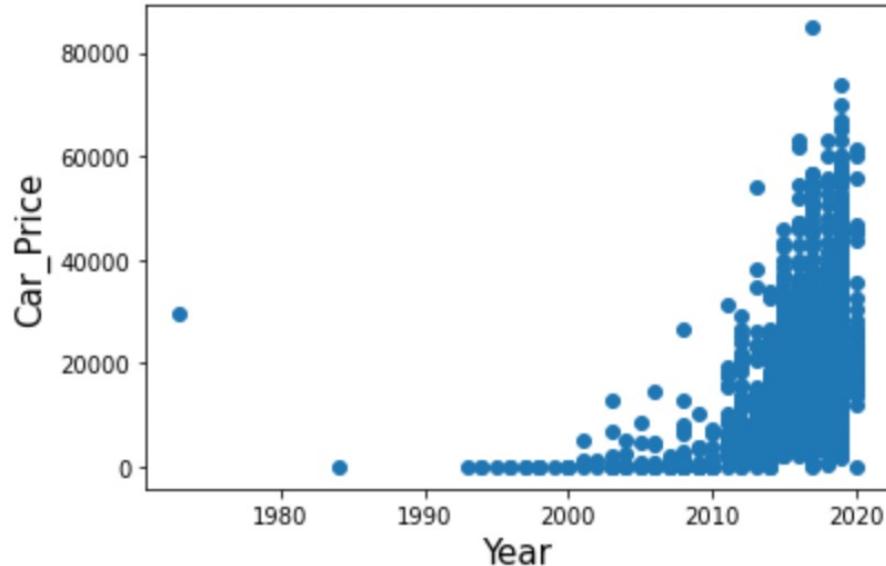




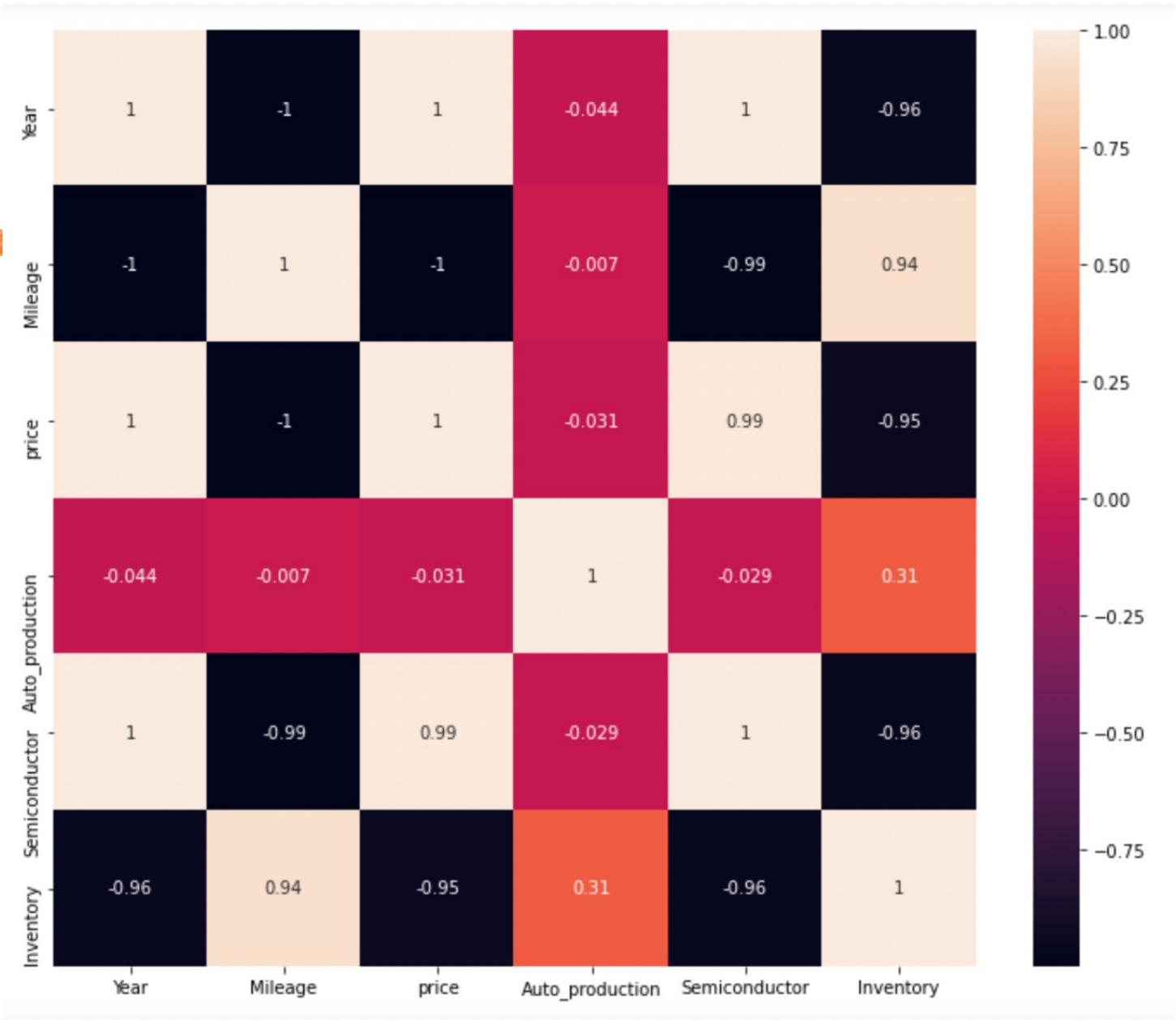
# COVID Impact on Supply Chain



# Factors Affecting Price



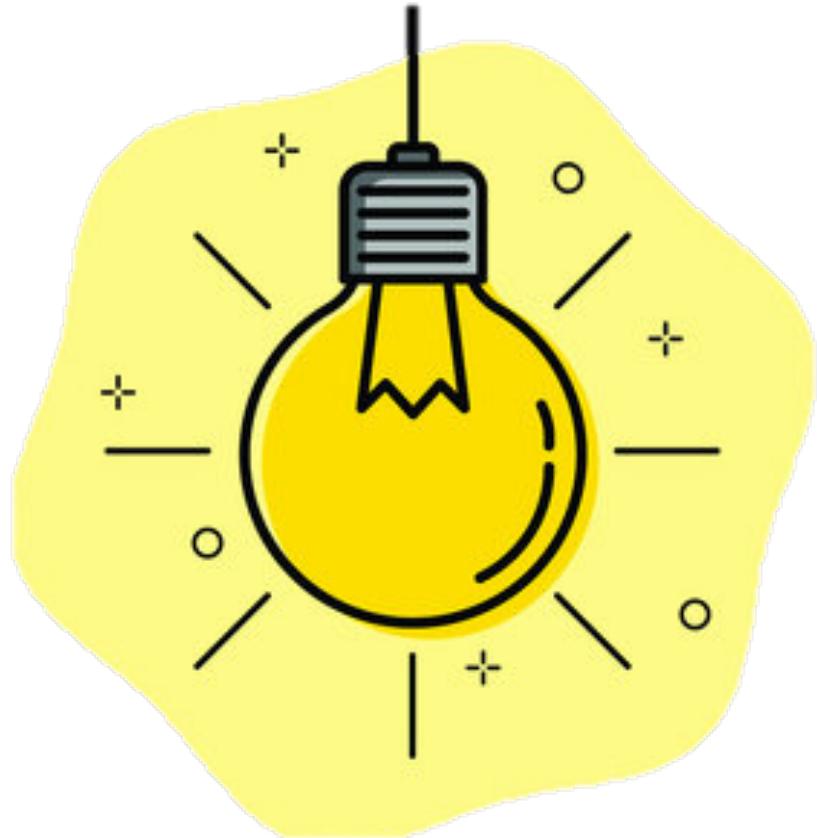
# Factors Affecting Price Correlation



# Summary

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- Based on our data we have concluded COVID 19 did have a direct negative impact on the auto sales industry, however we did not see enough evidence to support the idea that infection rate alone caused the decline in sales
- However, there were car manufacturers and locations that were resilient during the COVID pandemic with a positive sales trend moving into this current year.
- Increase in consumer demand in 2021 coupled with a car supply shortage has increased car prices
- As a result we expect to see dealerships with toyota inventories to dominate both market share and be the most profitable dealerships based on current market conditions



||| Thank you

