

# Economic Need in a Pandemic Predicting Presidential Elections

## Research Question

Did the economic recession due to COVID-19 cause a noticeable effect on the 2020 presidential election results? Many workers had to apply and most likely received a stimulus check from the government due to the CARES Act. Our alternative hypotheses here are:

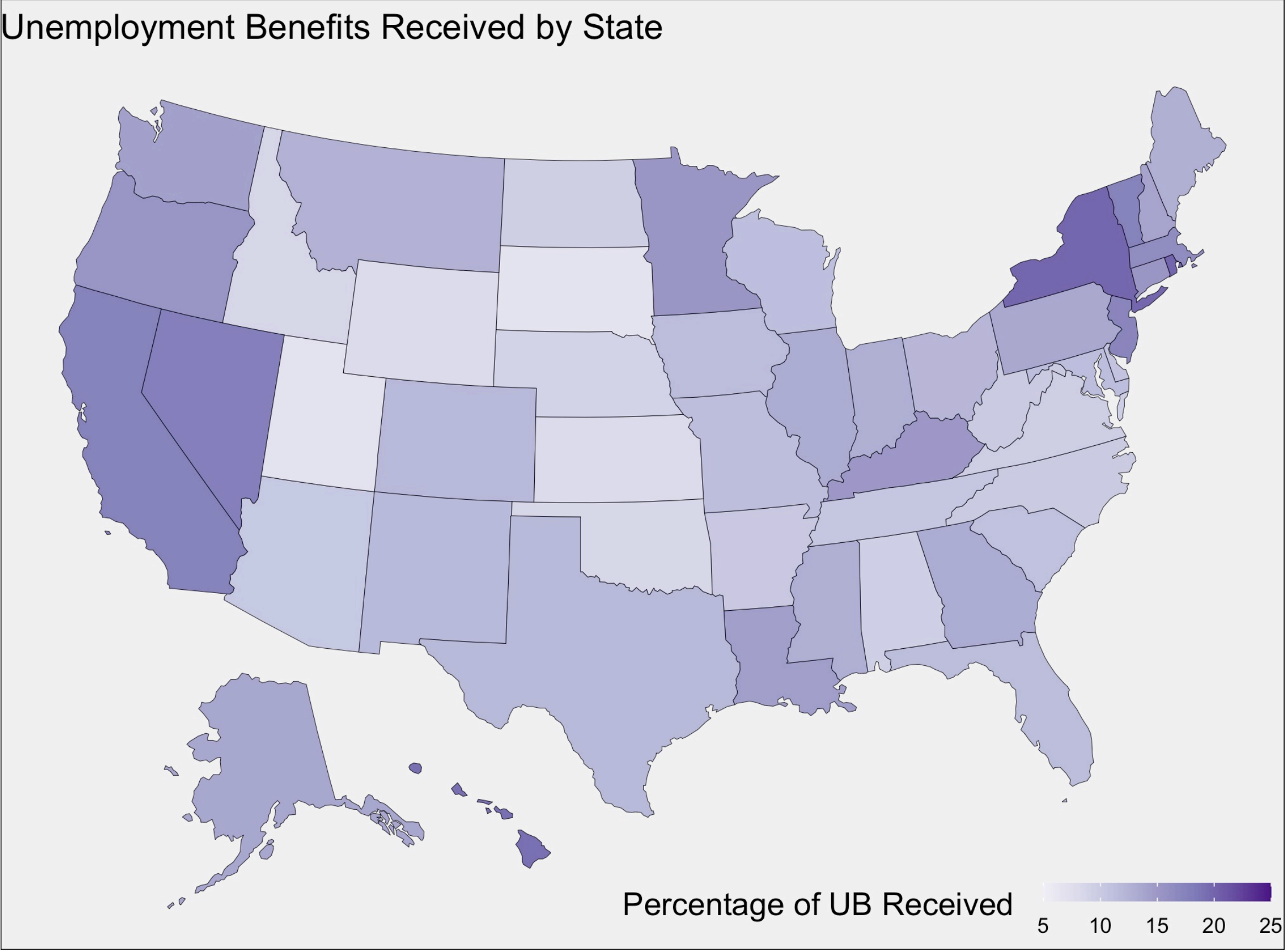
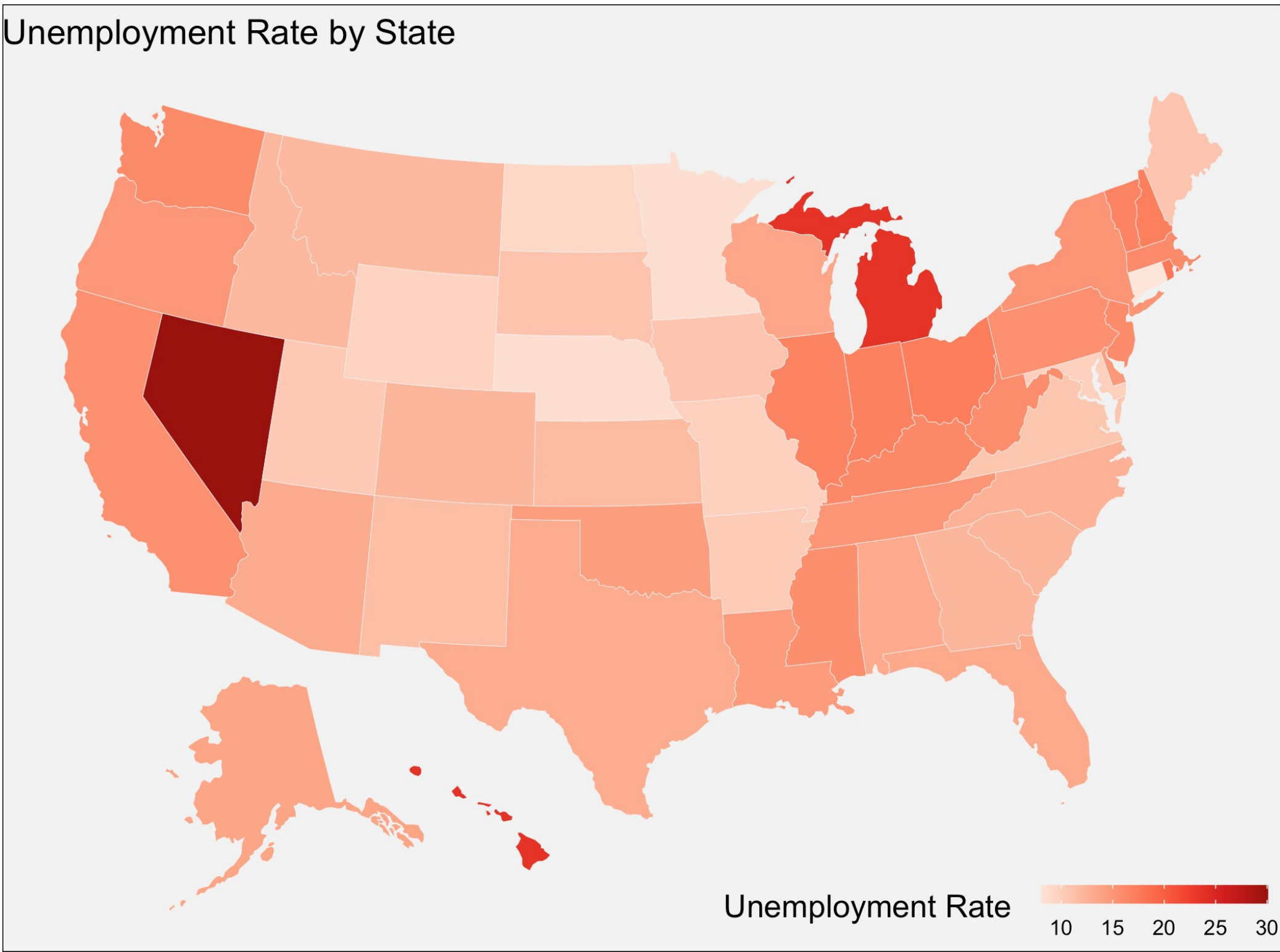
- whether people received a stimulus check from the government influenced their vote in the election and
- Whether states that had a higher unemployment rate ended up influencing the popular vote in the election.

## Data and Maps

To calculate the effects, I used a few different data sets:

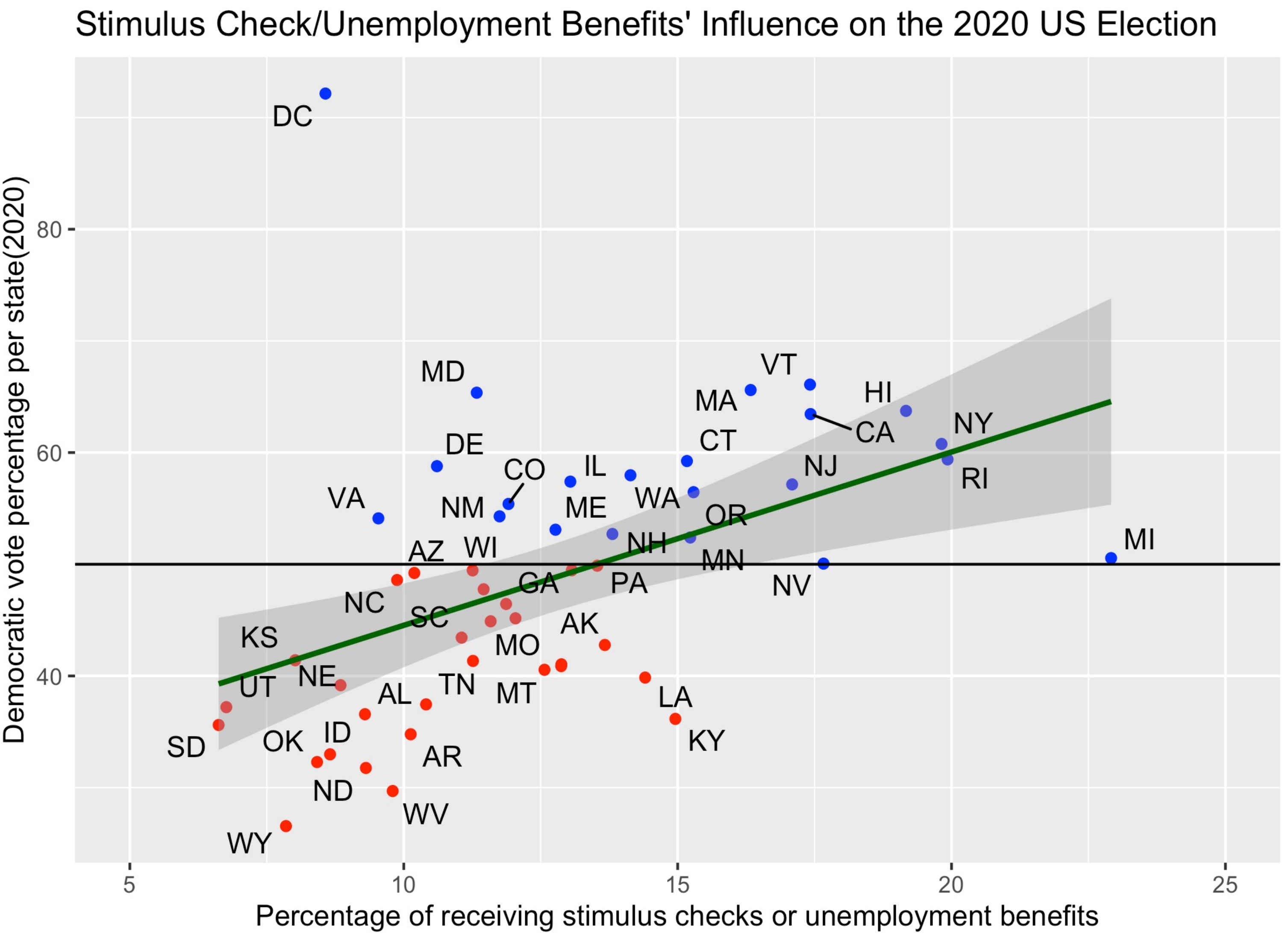
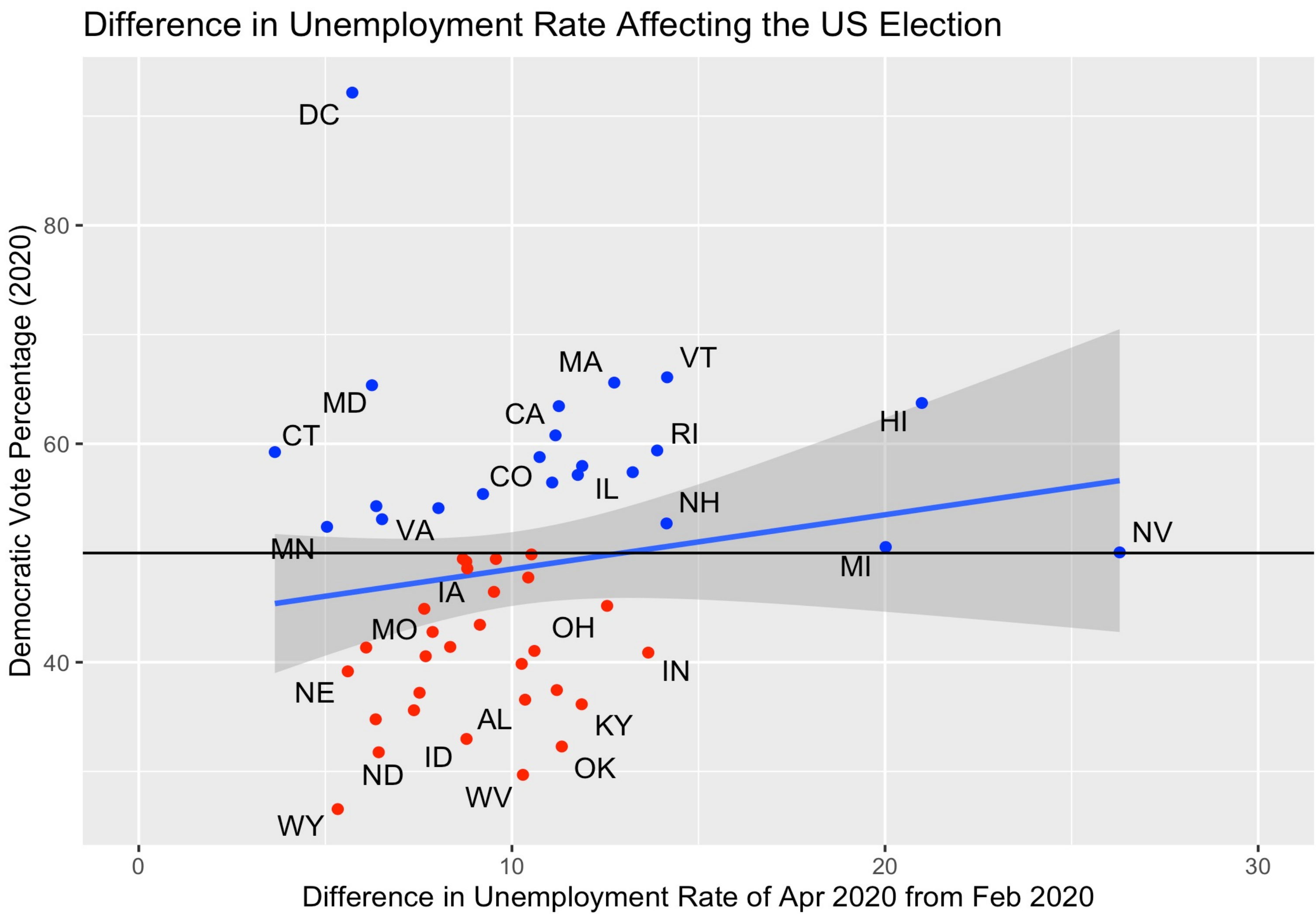
- State-level 2020 presidential election data by popular vote,
- State-level, unemployment data from the Bureau of Labor Statistics, and
- Data from the Household Pulse Survey, a special survey conducted by the Census Bureau in 2020 to measure the effects on the coronavirus pandemic, collected during the month prior to the presidential election. (Sept. 30 – Oct. 26).

Unemployment data was measured as the difference between the unemployment rate in February and April of 2020, measured by state (or in more detailed descriptions, by county).



## Michael Yue

### Graphs



Regression Statistics	Estimate	Std. Error	P value	T value	Confidence Intervals (95%)
Stimulus Checks	2.40	0.399	< 0.0001	6.017	1.60 – 3.21
Unemployment Rate Difference	-0.324	0.342	0.349	-0.947	-1.01 – 0.365

## Analysis

I estimated two linear regressions. Both graphs have some traits I added: if the popular vote went to Biden, then the state's plot point is colored Blue, for Trump, Red, and for readability, I added a line at 50% of the popular vote.

The first plot, shown left, is the difference of the unemployment rate from April from February as an independent variable, and the democratic vote percentage of the 2020 election as the dependent variable. There isn't a strong relationship between the unemployment rate and the democratic vote percentage, many different states have the same unemployment rate, yet decided to vote for different candidates. With a p value that high and a t value as close to zero as it is, I can accept a null hypothesis where the unemployment rate has no effect on the US election.

The second linear regression I estimated, also shown left, was measuring if states whose citizens received a higher percentage of stimulus checks affected the 2020 election. I used the percentage of stimulus checks received from the pandemic as an independent variable, and the popular democratic vote percentage as a dependent variable. Note that the percentage of stimulus checks received may be small, as I sampled from all survey results, many of whom did not apply for a stimulus check. Actual results may be inflated.

This regression proved to be a lot more promising as a trend, but not enough to prove that it truly correlates with the other. With a p value extremely close to zero and a t value higher than 1, it makes sense to reject our null hypothesis, and say that states that needed to have more stimulus checks had an influence on the election. We can see a weak trend in the data that states that had a higher percentage of people receiving a stimulus check tended to vote more for Biden in the 2020 presidential election.

## Conclusion

First, I found that there is no correlation whether the unemployment rate mattered for the election. It did not matter whether the unemployment data was filtered by county or by state, unemployment due to the coronavirus hit all states roughly the same way.

However, whether people received a stimulus check did have a somewhat stronger correlation on the 2020 election. This may not have been a clear causation, let alone a completely strong correlation, but there seems to be a clear trend that those states who received less stimulus checks tended to vote for Trump in the popular vote.