

# **Story - 1 : Infrastructure Investment & Jobs Act Funding Allocation**

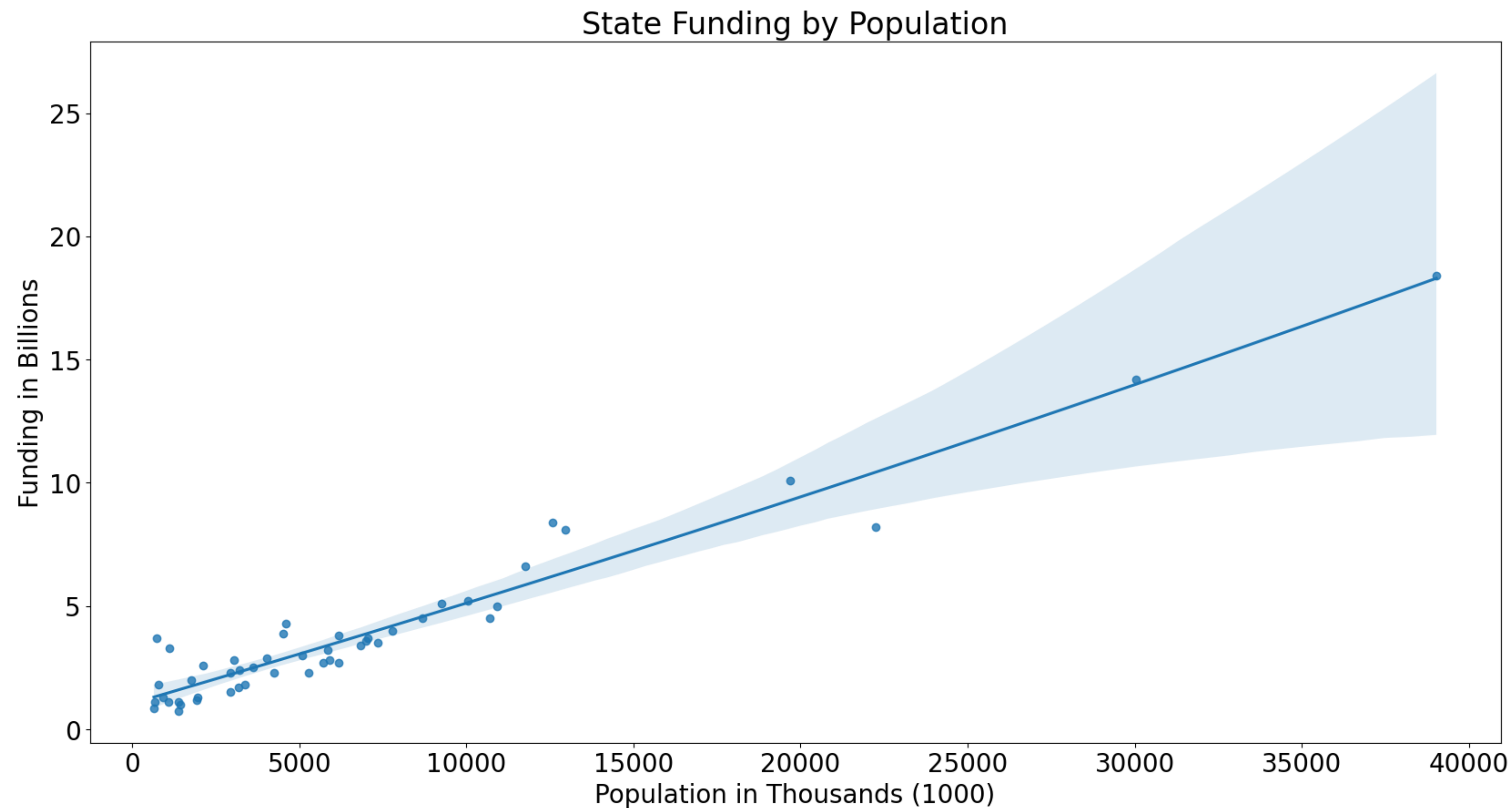
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# Key Questions

1. Is the funding allocation equitable based on the population of each of the States and Territories, or is bias apparent?
2. Does the allocation favor the political interests of the Biden administration?

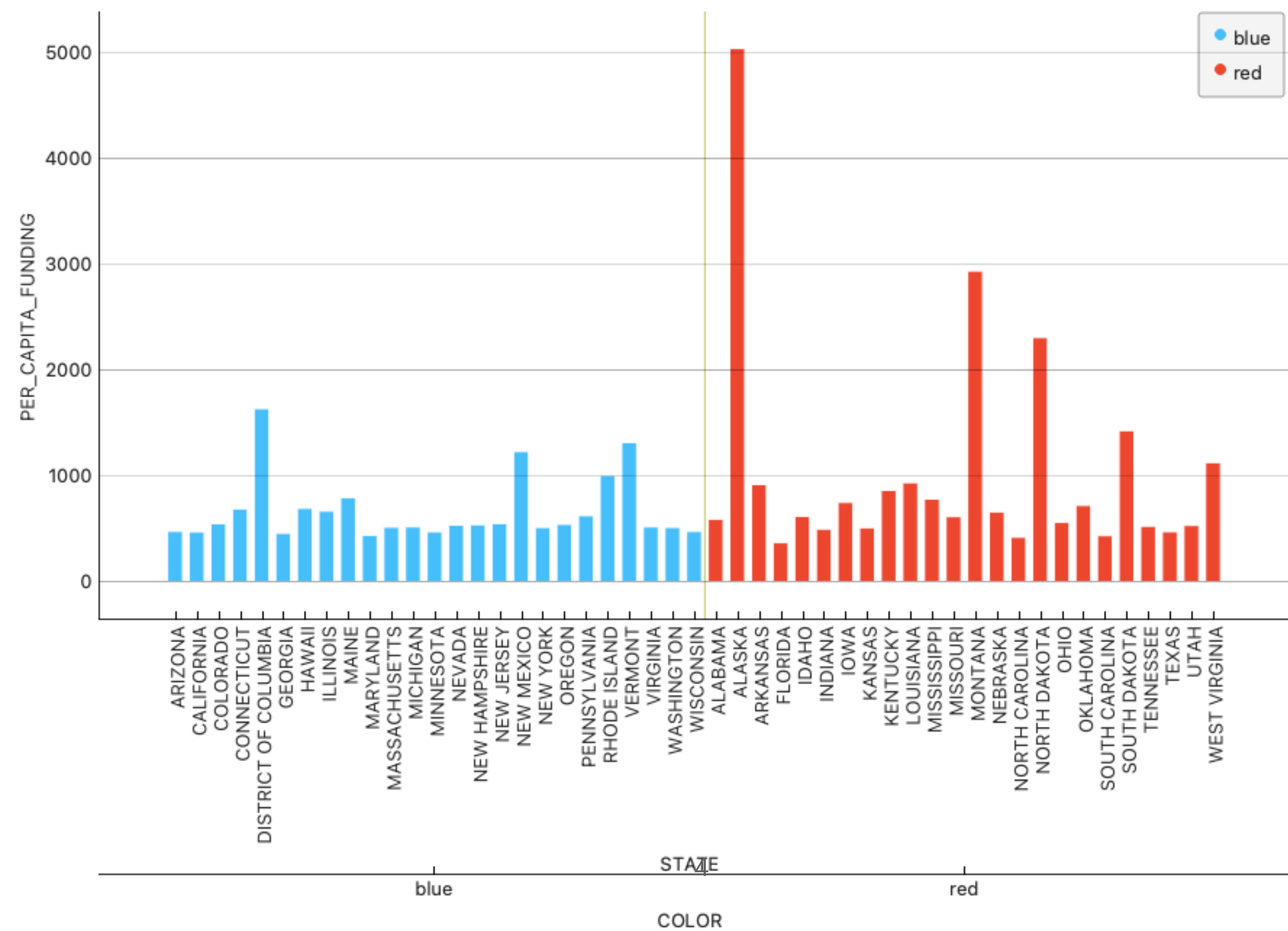
# Is the funding allocation equitable based on the population of each of the States and Territories, or is bias apparent?

Scatterplot, using a higher order regression line, shows that funding allocation (see Appendix for details) is highly correlated with population. Therefore, we conclude that allocation is equitable based on the population of each of the States, no bias is apparent. This conclusion is further supported by analysis of Question 2 (next slide).



# Does the allocation favor the political interests of the Biden administration?

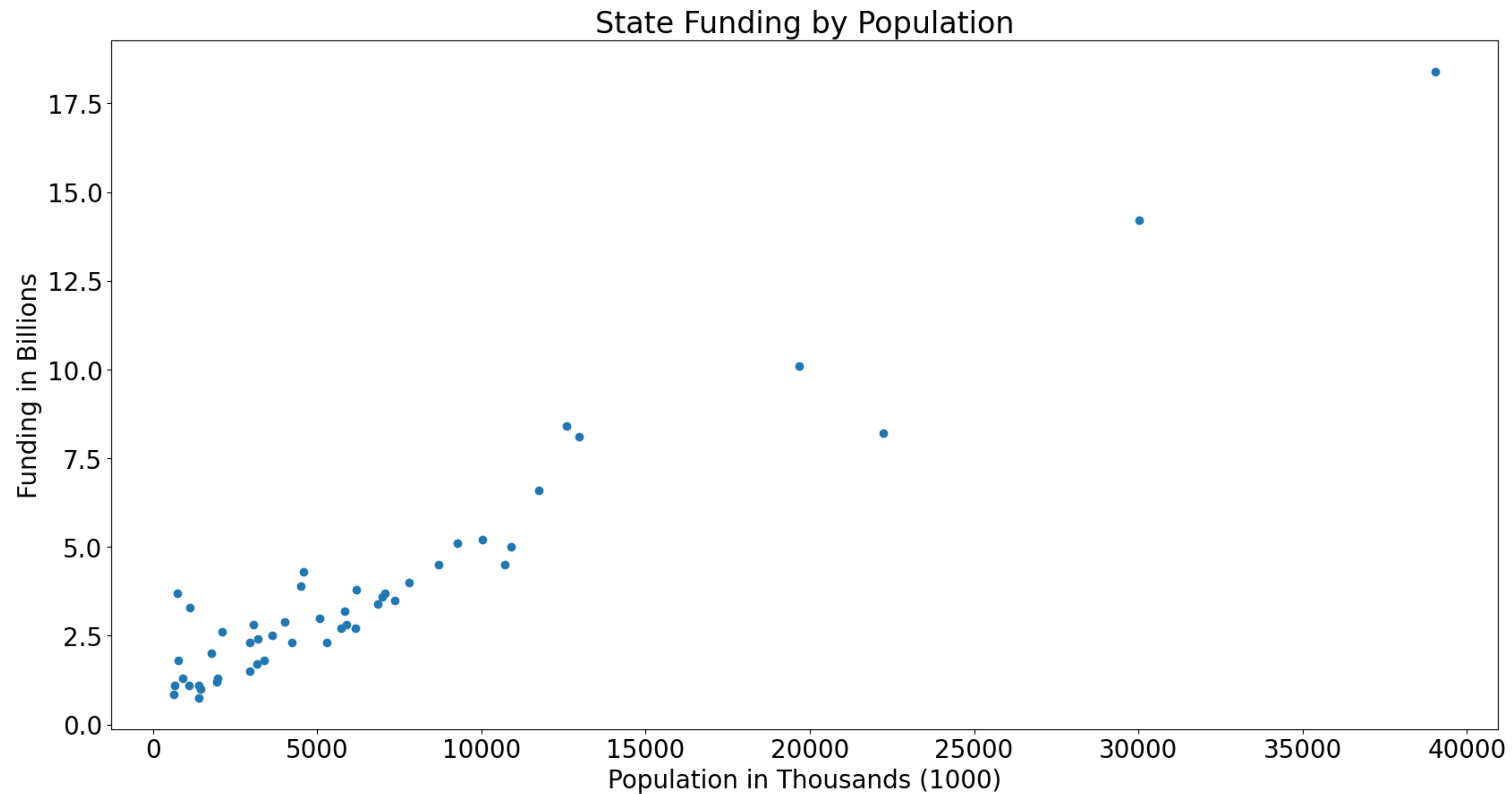
If funding was biased towards the political interests of the Biden administration, one would expect, in general, **Blue** (Democratic) states to get a greater share of the per-capita funding compared to **Red** (Republican) states. On the contrary, as below bar chart illustrates, the per-capita funding allocated to **Red** states is on par with or greater than the allocation to **Blue** states. Therefore, we conclude that the allocation, in fact, does not favor the political interests of the Biden administration.



# Appendix - Question 1

## Analysis

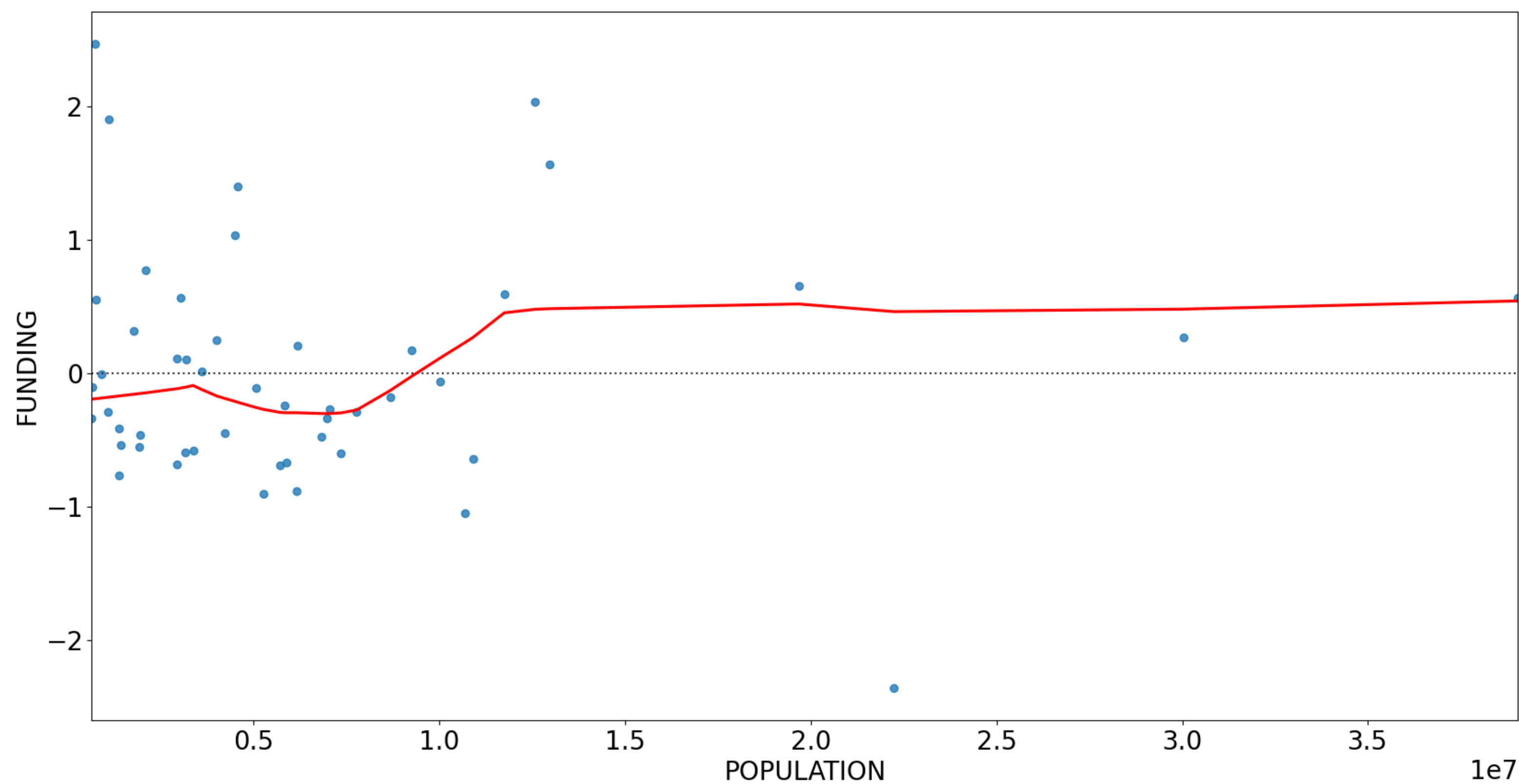
Scatterplot of population and funding shows that, in general, states received funding proportional to population. However, since IIJA funding contains both formula and discretionary allocations, the relationship between population and funding is (as expected) not perfectly linear.



# Appendix - Question 1

## Analysis

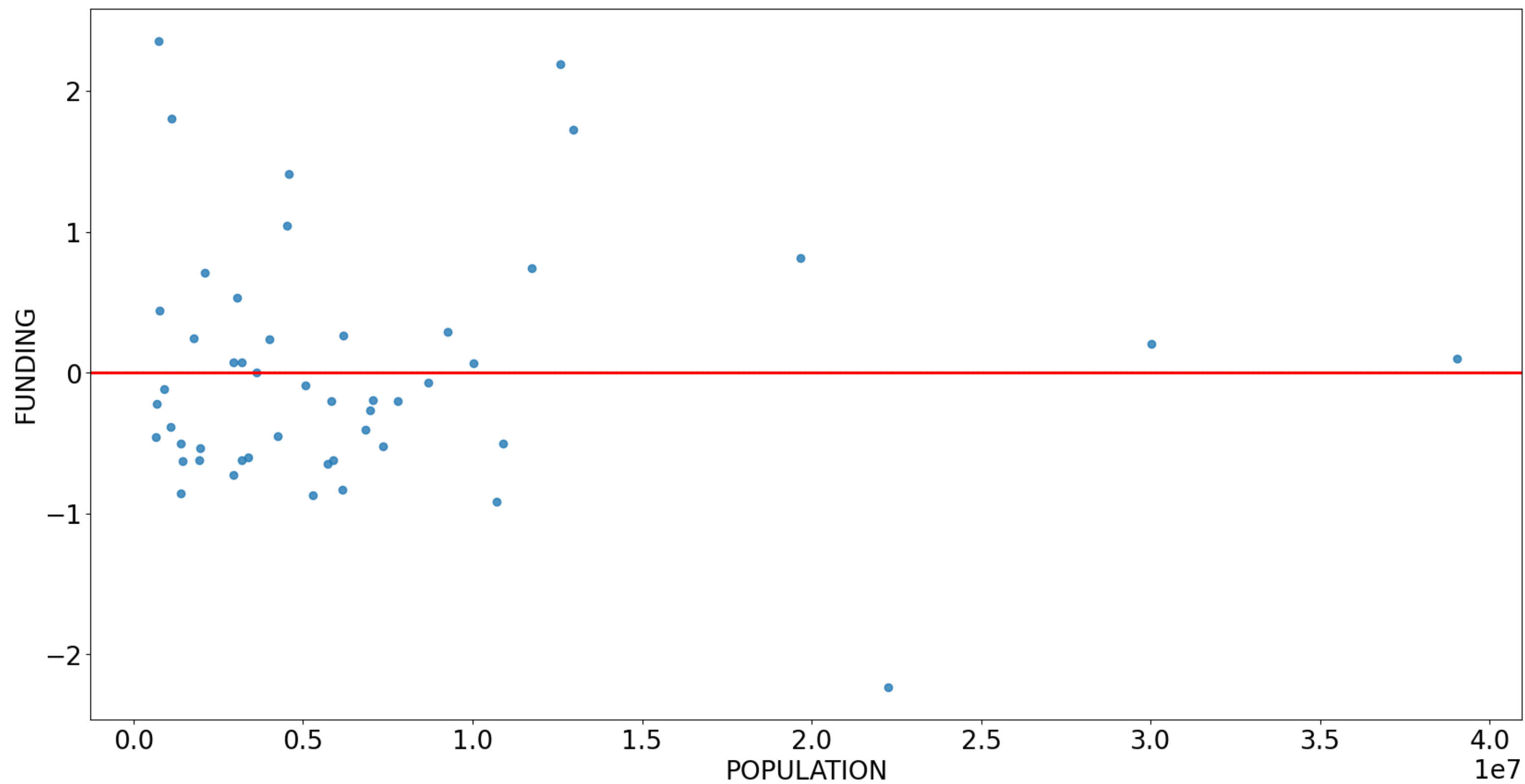
To better see the relationship between Population and Funding, we fit the data using linear regression and plot the residuals. Note: presence of *structure* in the residual plot reveals a violation of linear regression assumptions. The red *Loess* line shows the structure.



# Appendix - Question 1

## Analysis

To compensate for structure in the residuals, a higher order polynomial function is used to fit the data. Using a order=2 function gets rid of structure in the residuals.



# Appendix

## Data Sources

- **State Population Totals and Components of Change: 2020-2022:** <https://www.census.gov/data/tables/time-series/demo/popest/2020s-state-total.htm>
- **Presidential Election Results:** <https://www.presidency.ucsb.edu/statistics/elections/2020>