

What Makes a Safe District?

Elections for the U.S. House of Representatives for the
Democratic National Committee

Goals?

Democratic National Committee

Oversees ~ 400 House elections every two years

Win Seats in Congress

- Obtain a Majority

Resources are Limited

- Where to spend on ads
- Boots on the Ground
- Endorsements

Sources

- 01 **Cook Political**
PVI and Margins
- 02 **Mode Blog (Benn Stancil)**
-Gerrymander Index
- 03 **ProximityOne**
-Demographics
- 04 **Daily Kos Elections**
-Candidate information
- 05 **Governing.com**
-State Gerrymander scores

Selected Features

.92	Partisan Voting Index (PVI)	Ridge Mean Validated $r^2 = .857$
.59	% Population in Urban areas	Ridge Test $R^2 = .874$
.39	% Population Minority	MAE = 7.99
.29	Bachelors Degree or higher	
.29	GINI index	
.24	Time in Office	

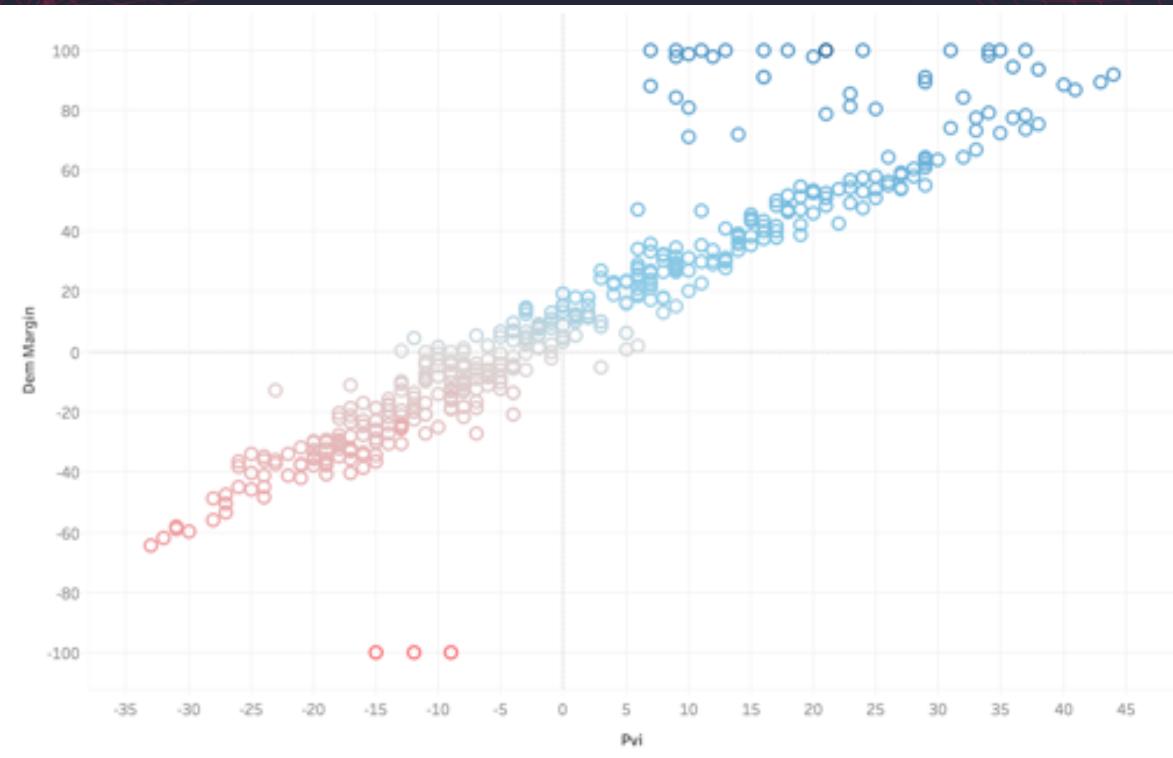
Partisan Voting Index

- Party lean of a district vs the national average. Updated every election cycle

National Average: D + 4

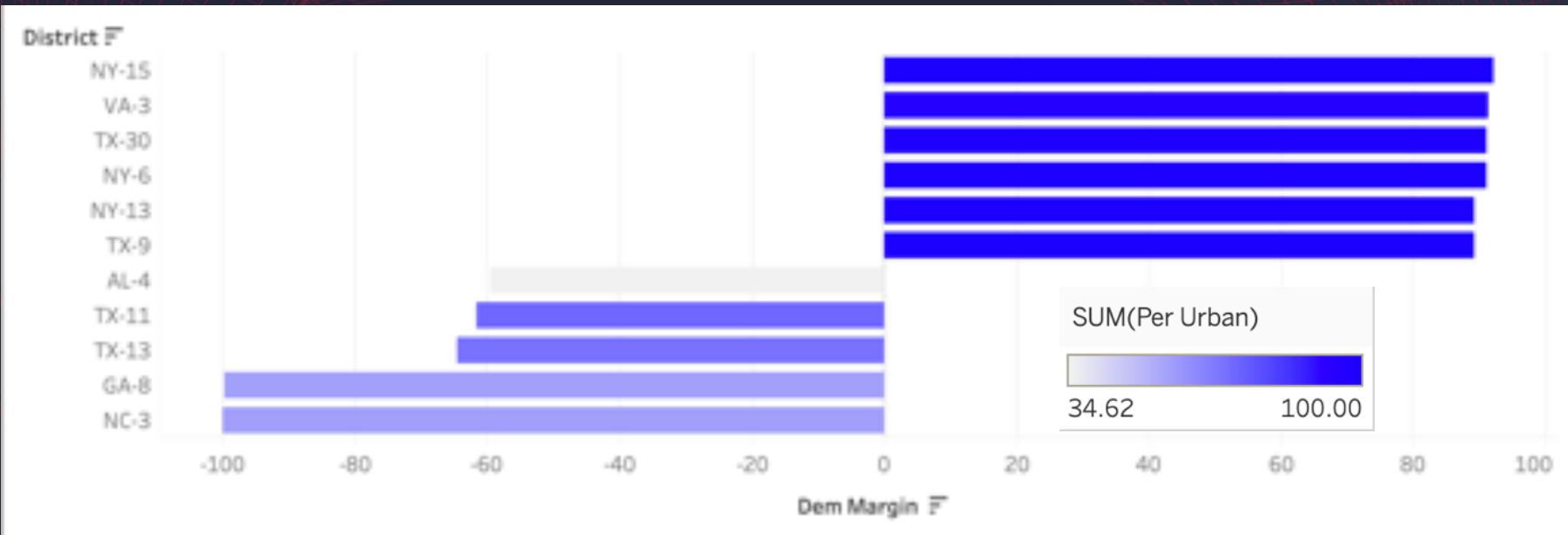
District: R + 10

PVI = R + 14



Urban vs. Rural

More urbanized districts favor Democrats



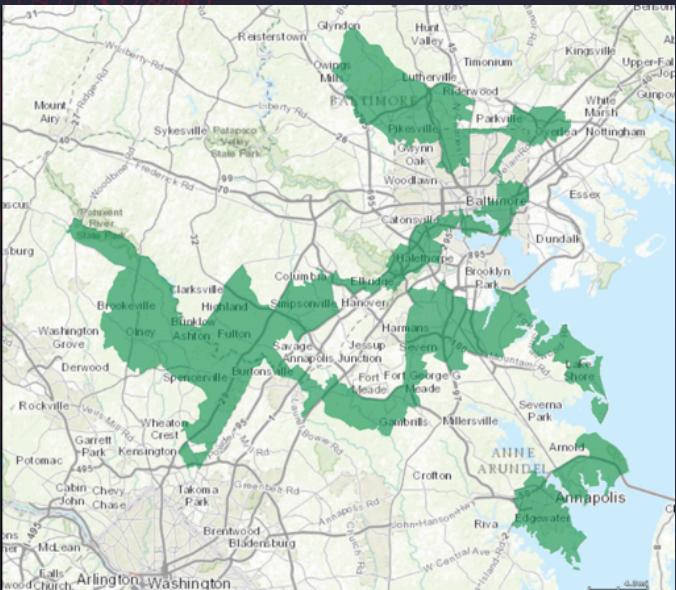
Gerrymandering Index

-Ratio of the perimeter of a district compared to the perimeter of a circle of equal area

Maryland 3rd

2481 square miles

7.796 GI



Indiana 7th

2502 square miles

2.047 GI

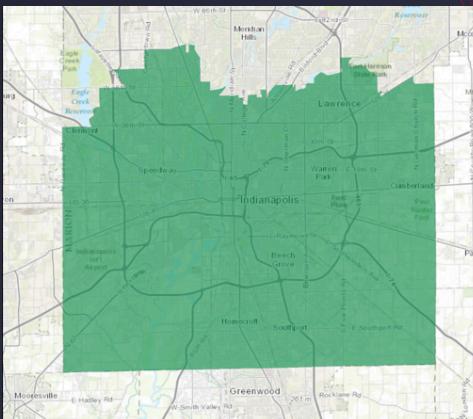
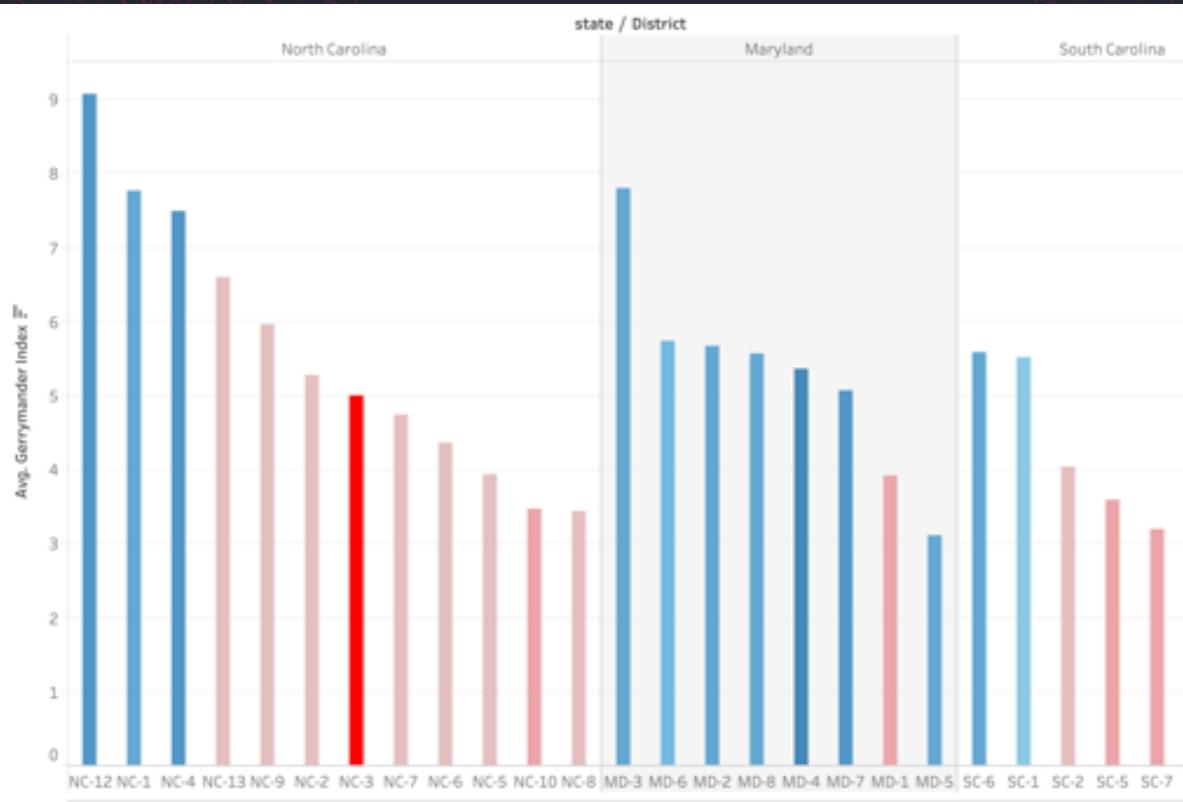
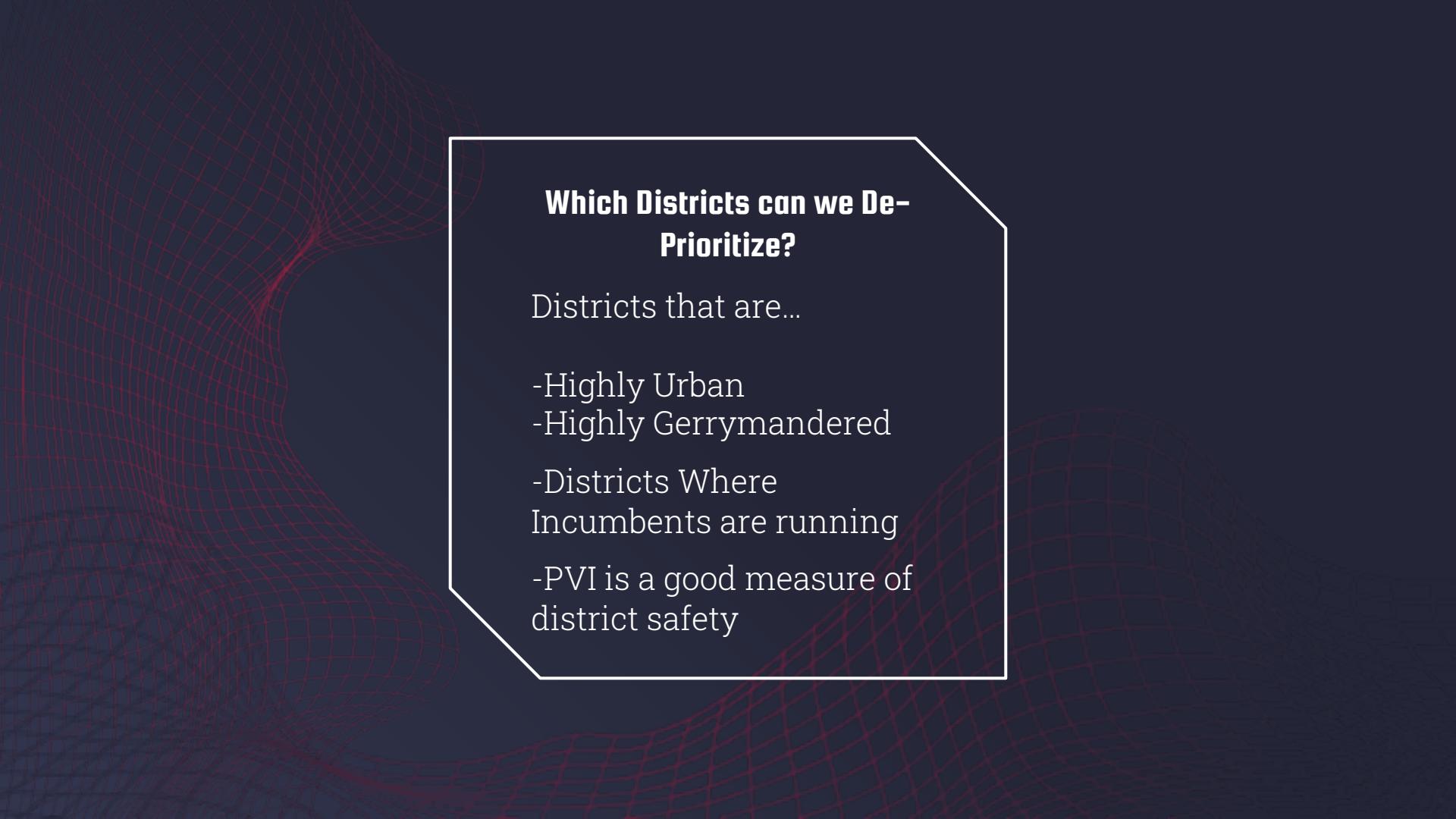


image: wikipedia

Gerrymandering Index

- Gerrymandered Districts tend to be safer
- Opens other districts up to be competitive





Which Districts can we De-Prioritize?

Districts that are...

- Highly Urban
- Highly Gerrymandered
- Districts Where Incumbents are running
- PVI is a good measure of district safety

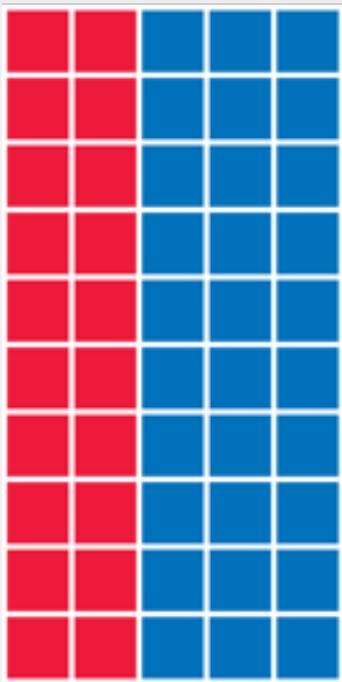
Next Steps

- Include more Historical Years:
 - Data is spread out across sources
 - Districts are added, removed, and redrawn
 - Populations are always changing
- What Makes a good candidate for competitive races?
 - Candidate variables were largely insignificant in this model
- Adjusting the Target Variable (Democratic Win Margins).

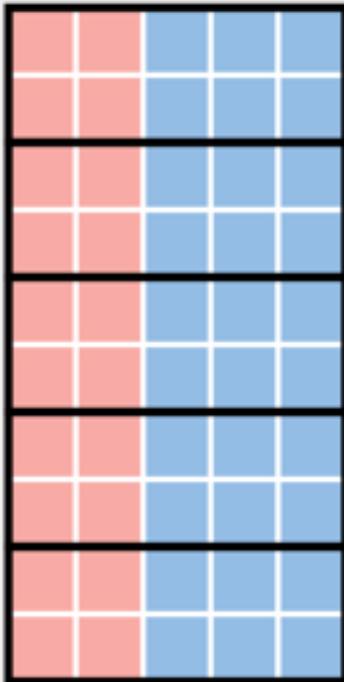
Questions?

Appendix

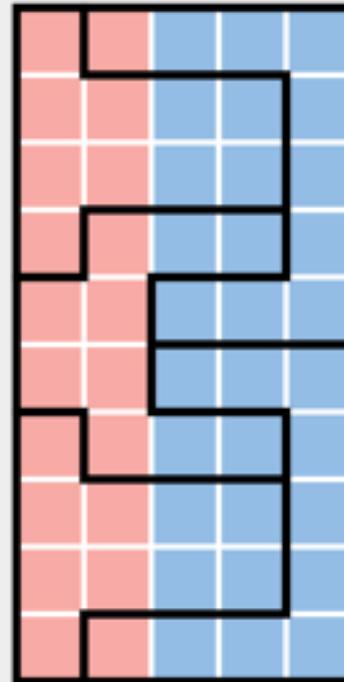
HOW TO STEAL AN ELECTION



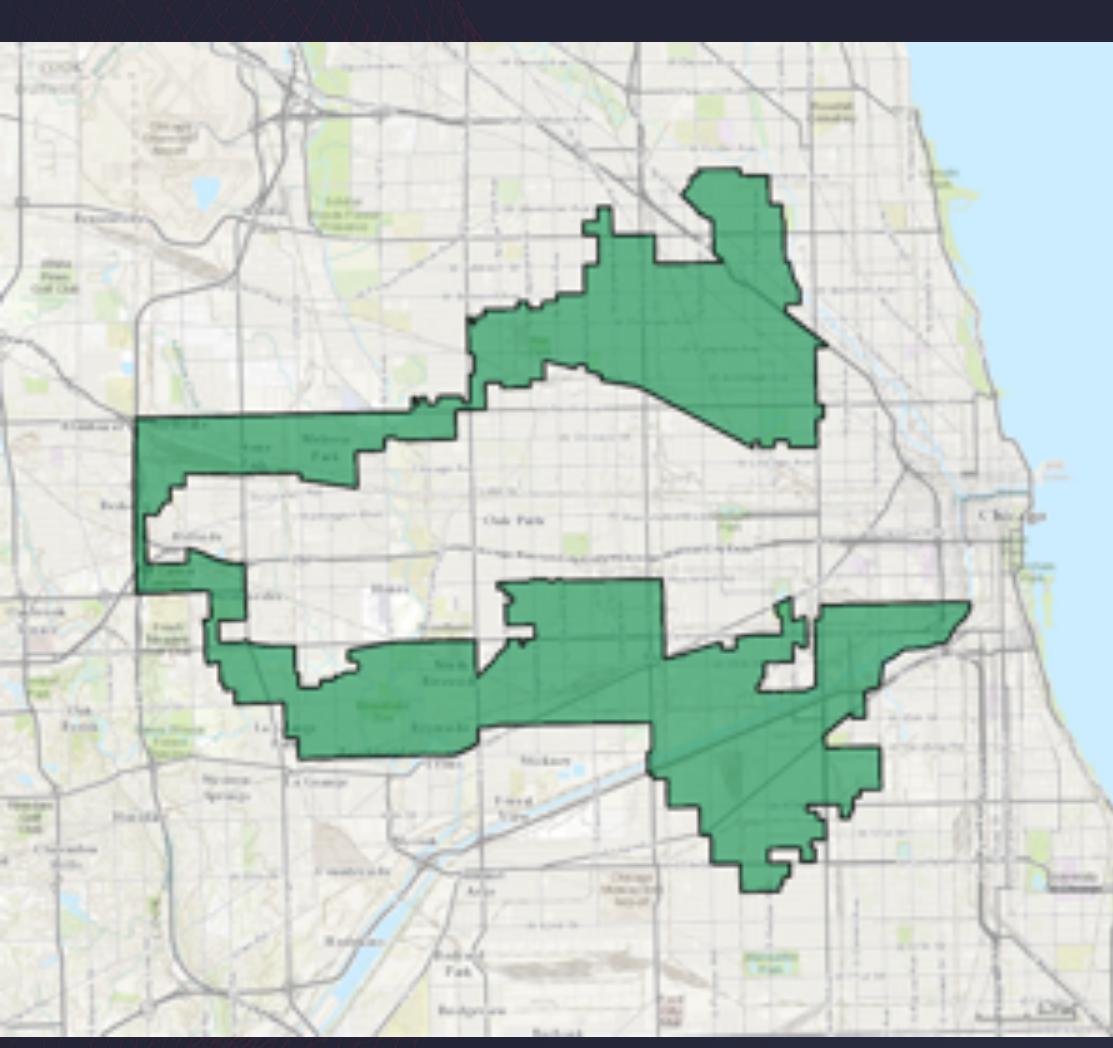
50 PRECINCTS
60% BLUE
40% RED



5 DISTRICTS
5 BLUE
0 RED
BLUE WINS

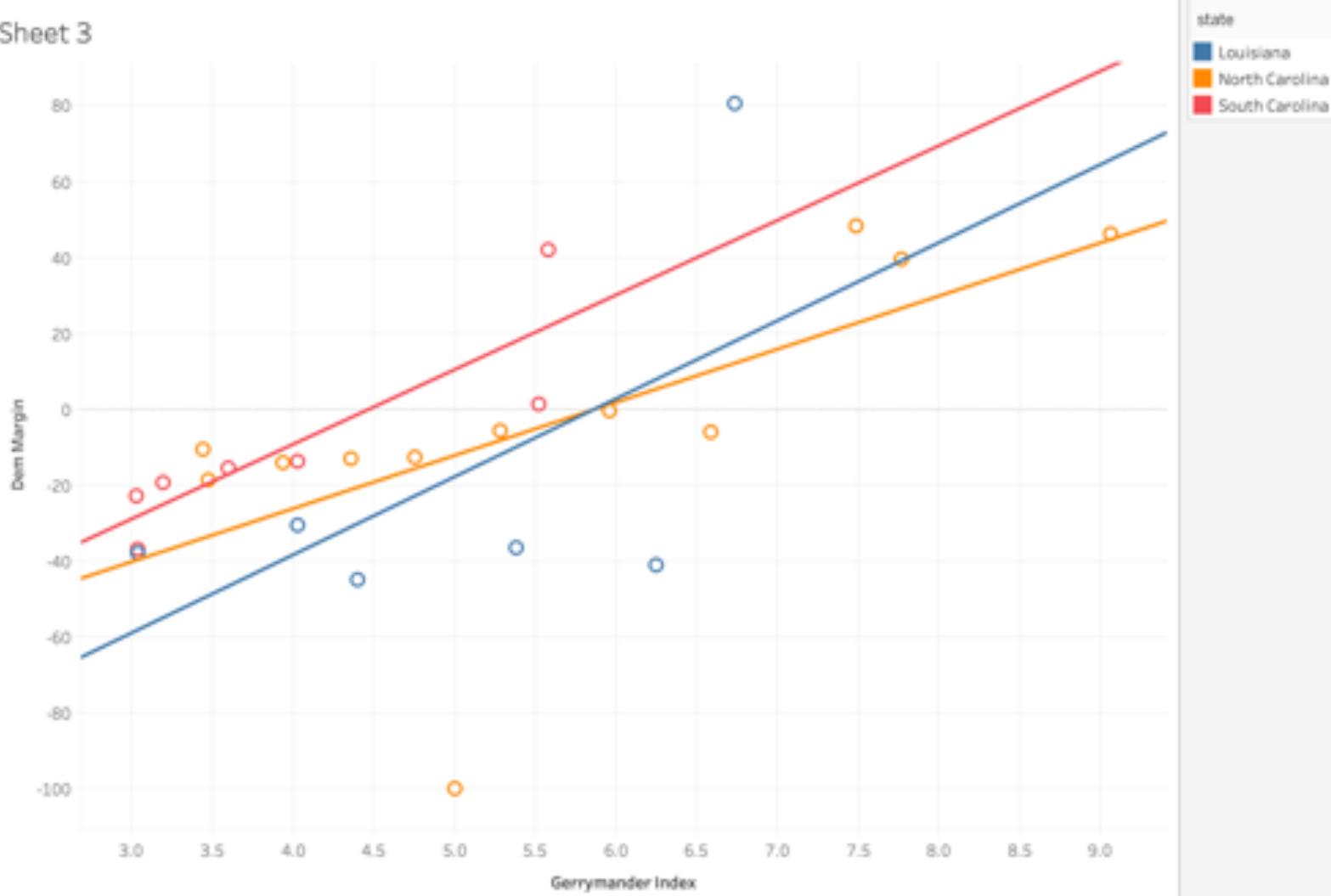


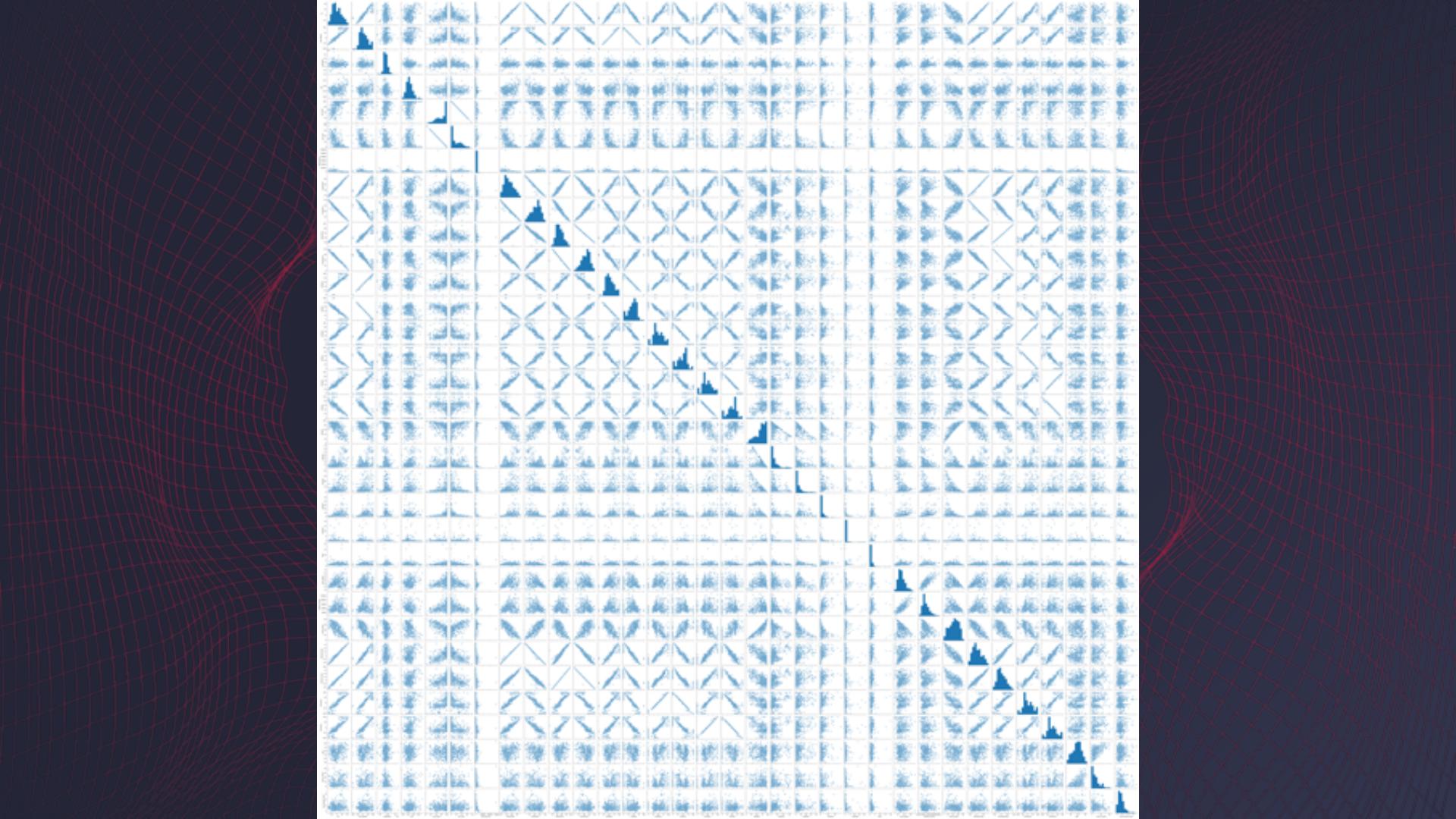
5 DISTRICTS
3 RED
2 BLUE
RED WINS



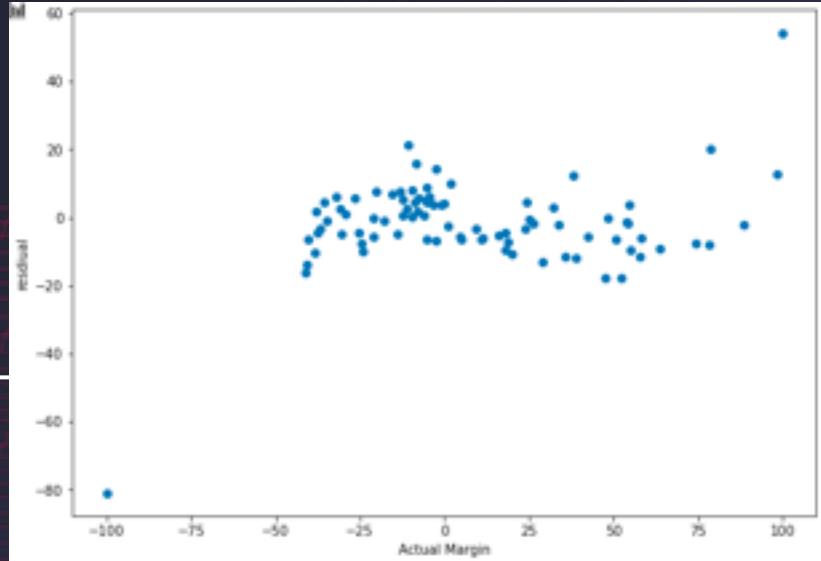
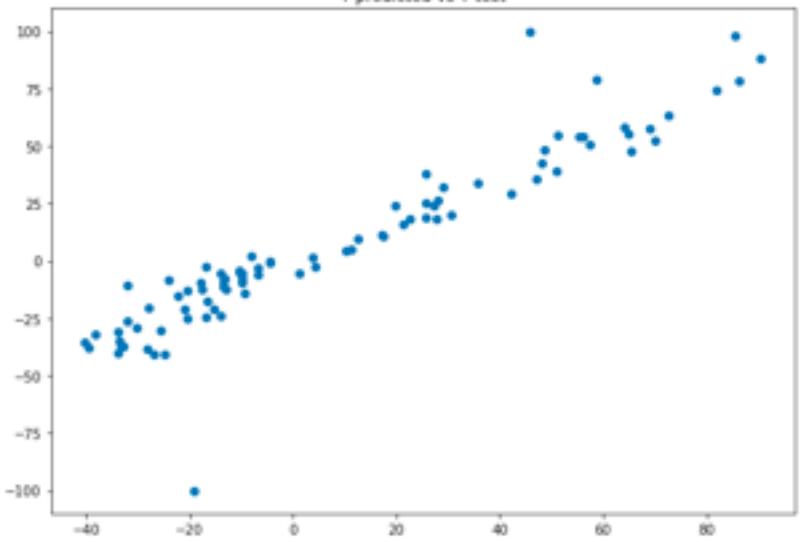
US Congressional districts since 2013
Source: <http://nationalatlas.gov>, 1 Million Scale project.

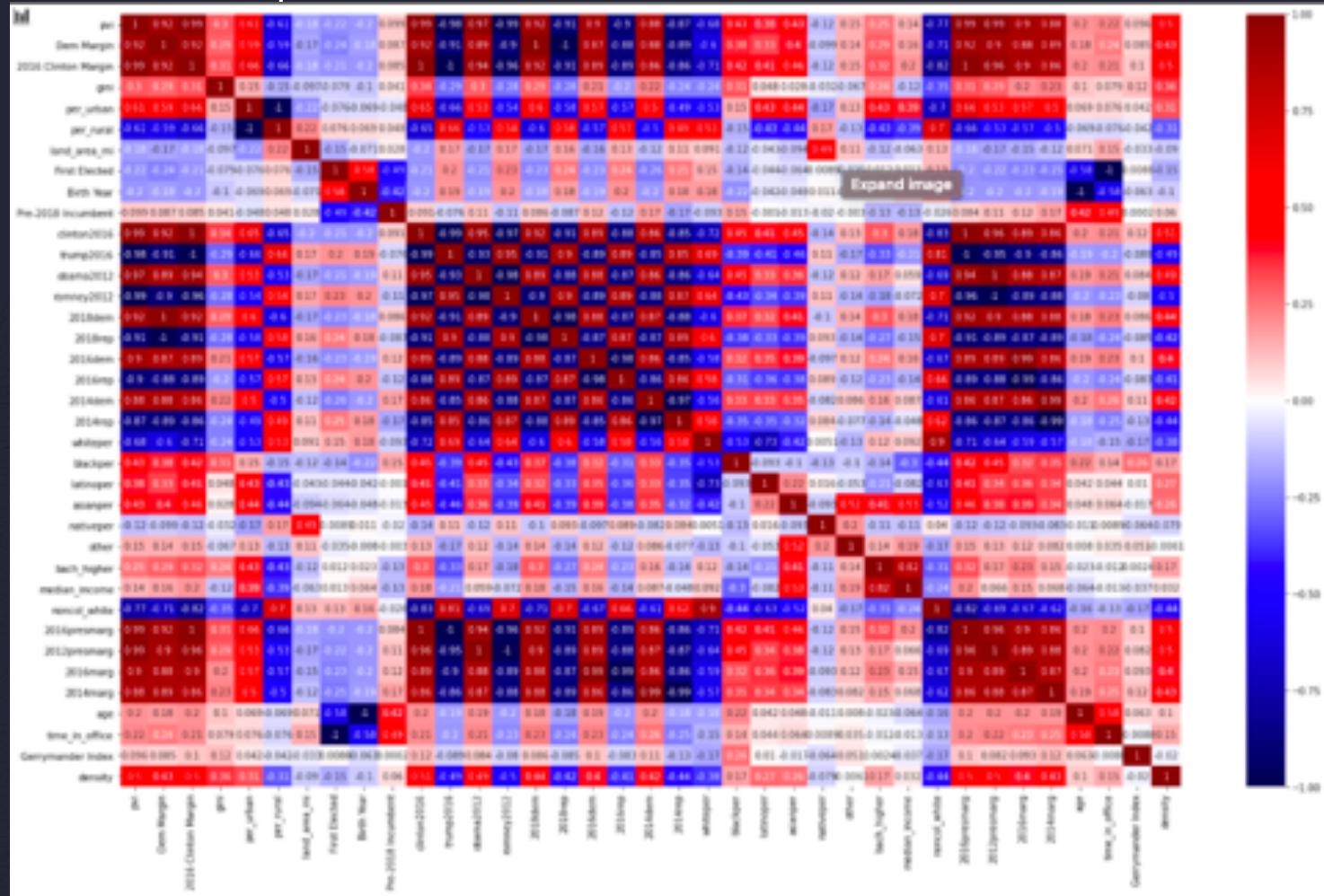
Sheet 3





\hat{Y} predicted vs Y test





Appendix



Python

- BeautifulSoup
 - Selenium
- sci-kit learn
 - pandas
 - numpy



CSV

Table Capture for Chrome
Google Sheets
Excel



Presentation

PowerPoint
slidesgo.com
seaborn
matplotlib