

The Data Incubator

Capstone Project: factors correlated with poverty rate in the US

Motivation



Federal and State
Policymakers

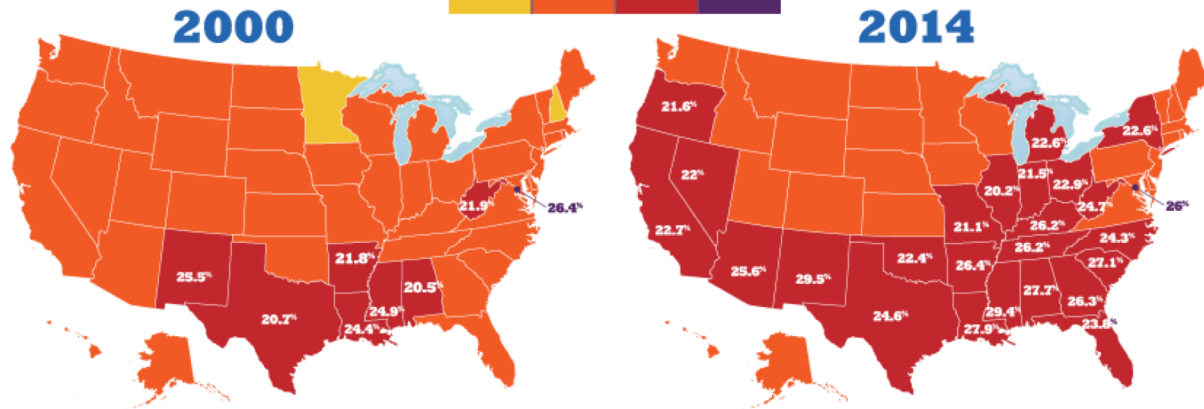
Community
Stakeholders



Percentage of children in poverty*

*Ages birth (0 years) –17 years

10% 20% 30%



Definition of "poverty areas" in the U.S.: poverty rates $\geq 20\%$



Economic

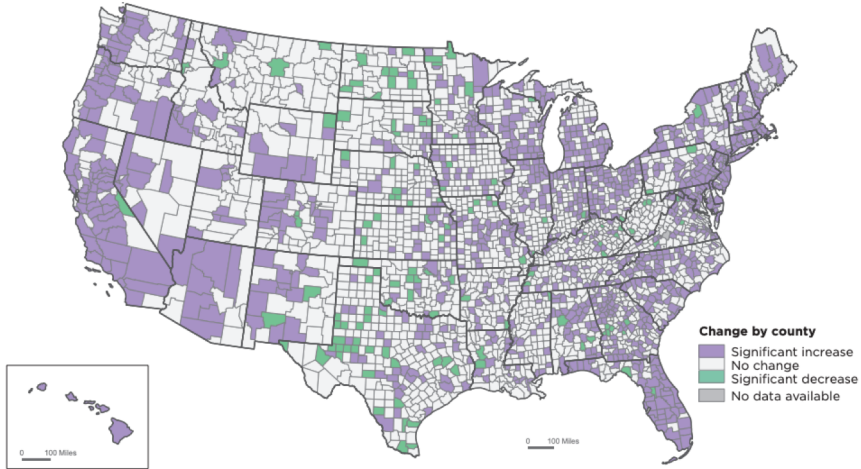
Social

Source: 1. <https://www.indepthnews.net/index.php/the-world/usa-and-canada/1566-un-expert-reveals-shocking-facts-about-poverty-in-the-u-s>

2. <https://www.aft.org/growth-child-poverty-mapped-county-50-states>



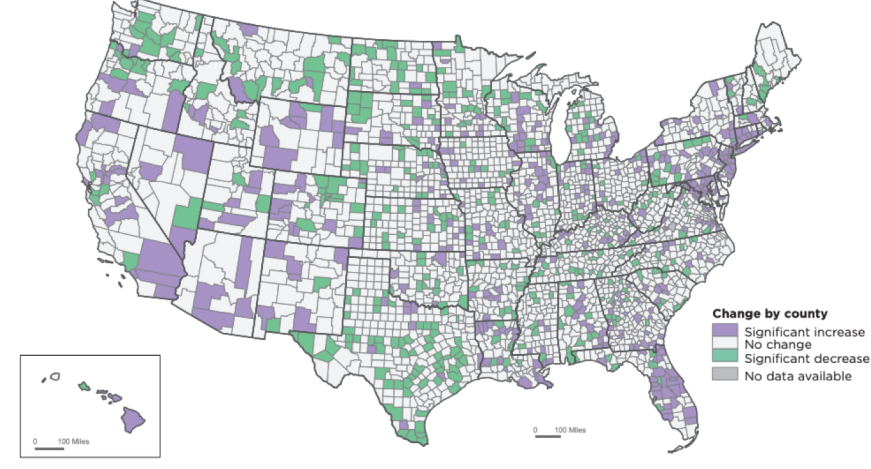
Figure 1.
Change in Percentage of People in Poverty From 2005-2009
to 2010-2014



Notes: A significant change is statistically different from zero at the 90 percent confidence level. Due to the county boundary changes that occurred within the 2005-2009 and 2010-2014 time periods, the following county equivalents appear in the "No data available" category: Petersburg, Alaska; Prince of Wales-Hyder, Alaska; Hoonah-Angoon, Alaska; Bedford, Virginia; and Bedford City, Virginia. For more information, see <www.census.gov/acs>. Source: U.S. Census Bureau, 2005-2009 and 2010-2014 American Community Surveys, 5-Year Estimates.



Figure 3.
Change in Percentage of People in Poverty From 2005-2009
to 2015-2019



Notes: A significant change is statistically different from zero at the 90 percent confidence level. Due to the county boundary changes that occurred within the 2005-2009 and 2010-2014 time periods, the following county equivalents appear in the "No data available" category: Petersburg, Alaska; Prince of Wales-Hyder, Alaska; Hoonah-Angoon, Alaska; Bedford, Virginia; and Bedford City, Virginia. For more information, see <www.census.gov/acs>. Source: U.S. Census Bureau, 2005-2009 and 2015-2019 American Community Surveys, 5-Year Estimates.

13.5%
2005-2009

2010-2014
15.6%

Poverty Rate

Source:
<https://www.census.gov/content/dam/Census/library/publications/2020/acs/acsbr20-008.pdf>

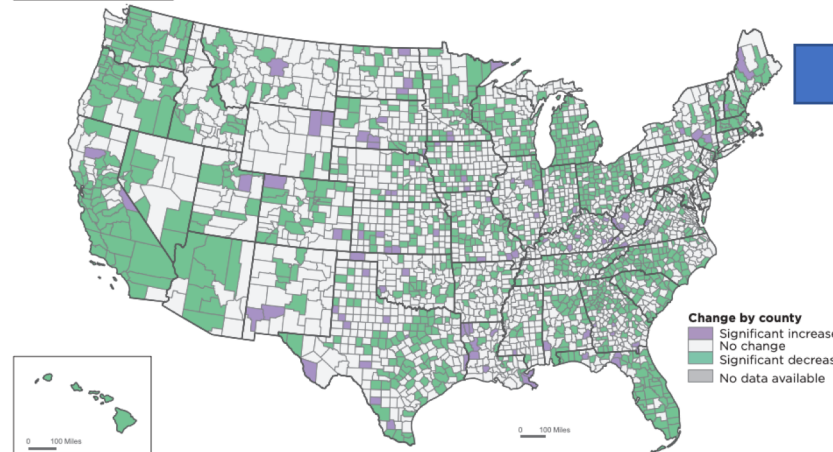
15.6%
2010-2014

2015-2019
13.4%

Poverty Rate



Figure 2.
Change in Percentage of People in Poverty From 2010-2014
to 2015-2019



Notes: A significant change is statistically different from zero at the 90 percent confidence level. Due to the county boundary changes that occurred within the 2005-2009 and 2010-2014 time periods, the following county equivalents appear in the "No data available" category: Petersburg, Alaska; Prince of Wales-Hyder, Alaska; Hoonah-Angoon, Alaska; Bedford, Virginia; and Bedford City, Virginia. For more information, see <www.census.gov/acs>. Source: U.S. Census Bureau, 2010-2014 and 2015-2019 American Community Surveys, 5-Year Estimates.

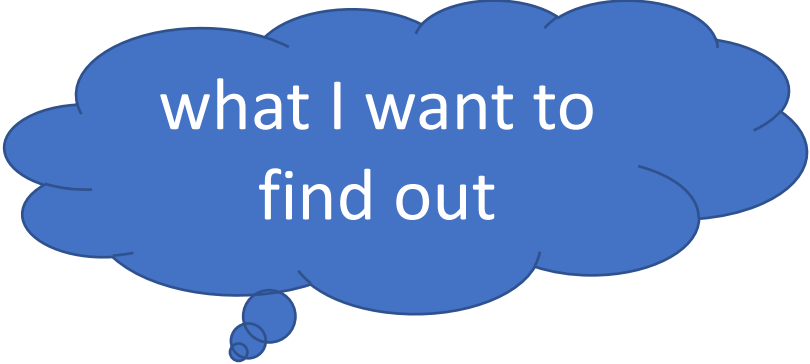
13.5%
2005-2009

2015-2019
13.4%

Poverty Rate

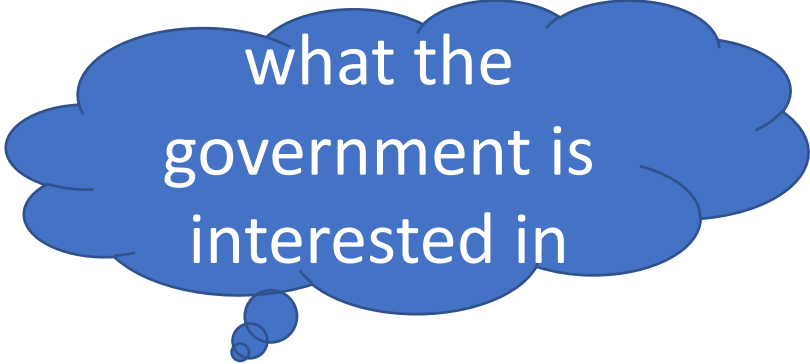
What the census official report tells us:

From 2005–2009 to 2015–2019, a period that spanned both the Great Recession and the subsequent economic expansion, the poverty rate increased in 429 counties and decreased in 409 counties.



what I want to
find out

&



what the
government is
interested in

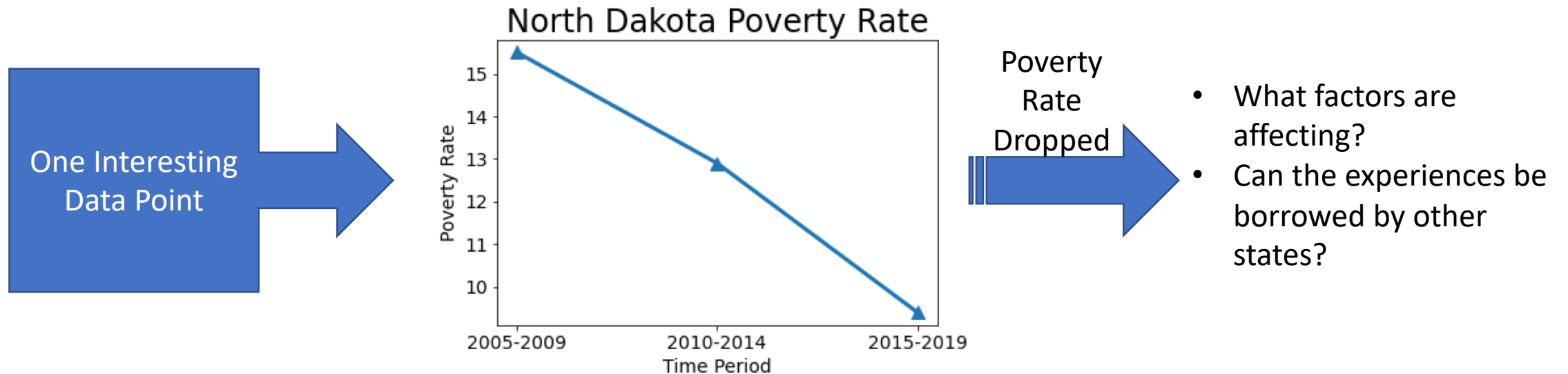
From the data's point of view:

- ❖ What other factors besides the economic recession and expansion are causing the poverty rate changes?
- ❖ What actions/programs the government can take to lower the poverty rate, e.g.
 - Adjusting state tax rate?
 - Making new laws?
 - Providing incentives for better education/training?

Plan

To look at the following aspects for each state during the three time period (2005-2009, 2010-2014, 2015-2019):

1. State tax rate changes
2. New state laws being passed
3. Education level changes
4. Geographical mobility of poverty population



Tools: Python (pandas, numpy, scipy, matplotlib, scikit-learn)