

The Intersection of Poverty and Income Inequality in Metropolitan Statistical Areas (MSAs): 2005 to 2015

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MOTIVATION

Poverty and income inequality are two important measures of economic well-being. The poverty rate, the 50-10 ratio, and the 90-50 ratio all increased for the United States from 2005 to 2015. However, poverty rates increased for less than half of all Metropolitan Statistical Areas (MSAs), the 50-10 ratio increased for 57% of all MSAs, and the 90-50 ratio increased for 71% of all MSAs. We know what happened to poverty and income inequality separately, but not as much about the relationship between the two. For example, are MSAs that are experiencing higher poverty over time also experiencing higher income inequality?

INEQUALITY & POVERTY DEFINITIONS

- Average poverty = average annual poverty rate across MSAs*
 - 2005 = 12.8% 2015 = 14.3%
- Income = after-tax, after-cash-transfer household income adjusted by the size of household**
- 50-10 ratio = how much larger income is at the median (50th percentile) relative to the bottom (10th percentile) of the income distribution. This ratio is informative about the level of inequality in the bottom half of the income distribution.
- 90-50 ratio = how much larger income is at the top (90th percentile) of the income distribution relative to the median (50th percentile). This ratio is informative about the level of inequality in the top half of the income distribution.
- Average income inequality = average annual income inequality across MSAs
 - 50-10 ratio: 2005 = 3.020 2015 = 3.075
 - 90-50 ratio: 2005 = 2.180 2015 = 2.244
- Above average = greater than or equal to average

RESEARCH QUESTIONS

- How has the relationship between income inequality and poverty in MSAs changed over time?
- How have populations grown in each of the poverty and income inequality intersection categories?
- How do the poverty and income inequality intersections differ by region?
- How do the answers to these questions differ by income inequality ratio?

DATA

- 2005 (first available) and 2015 (most recent) American Community Survey one-year estimates***
- Universe includes all 381 MSAs (86% of U.S. population):
 - MSA delineations have changed over time
 - MSA county definitions from 2015 were used to create comparable MSAs in 2005

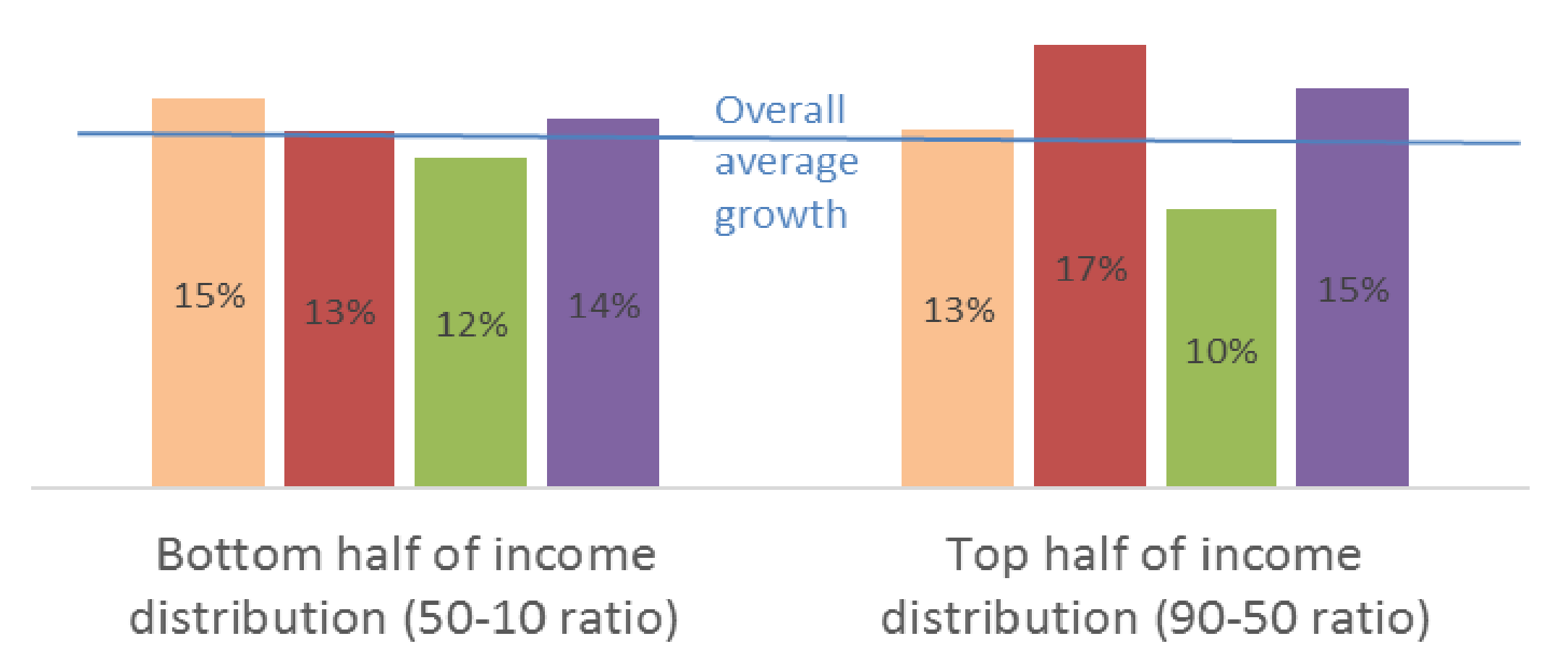
Note: *Poverty rate is based on the official poverty measure and uses pre-tax income.
**Tax estimates used to calculate after-tax income come from NBER's TAXSIM program.
***For more detail on the ACS, including its sample size and questions, see www.census.gov/acs.

Figure 1: Poverty and Income Inequality Correlations among MSAs



Source: Author's calculations, 2005 and 2015 American Community Survey. For more information on the ACS, see census.gov/acs.

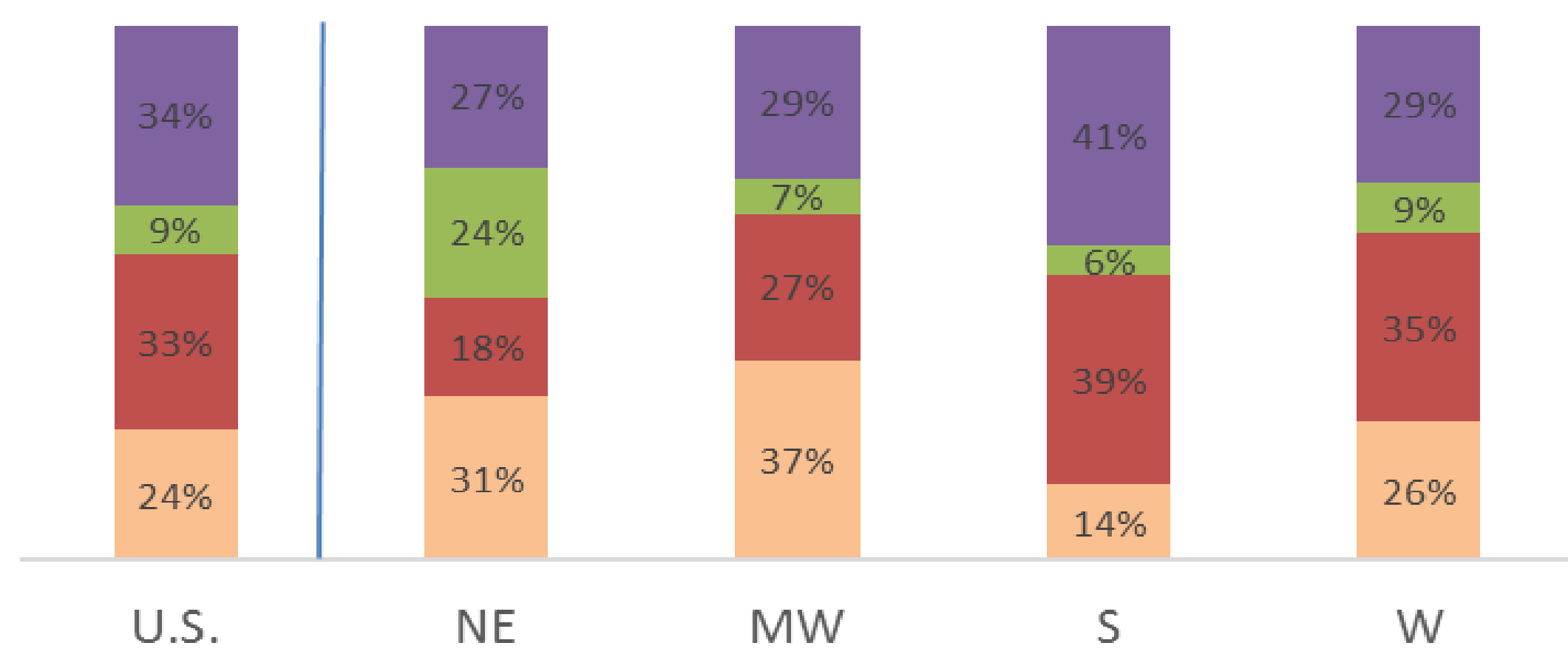
Figure 2: Average Population Growth from 2005 to 2015 Among MSAs in each Category



Source: Author's calculations, 2005 and 2015 American Community Survey. For more information on the ACS, see census.gov/acs.

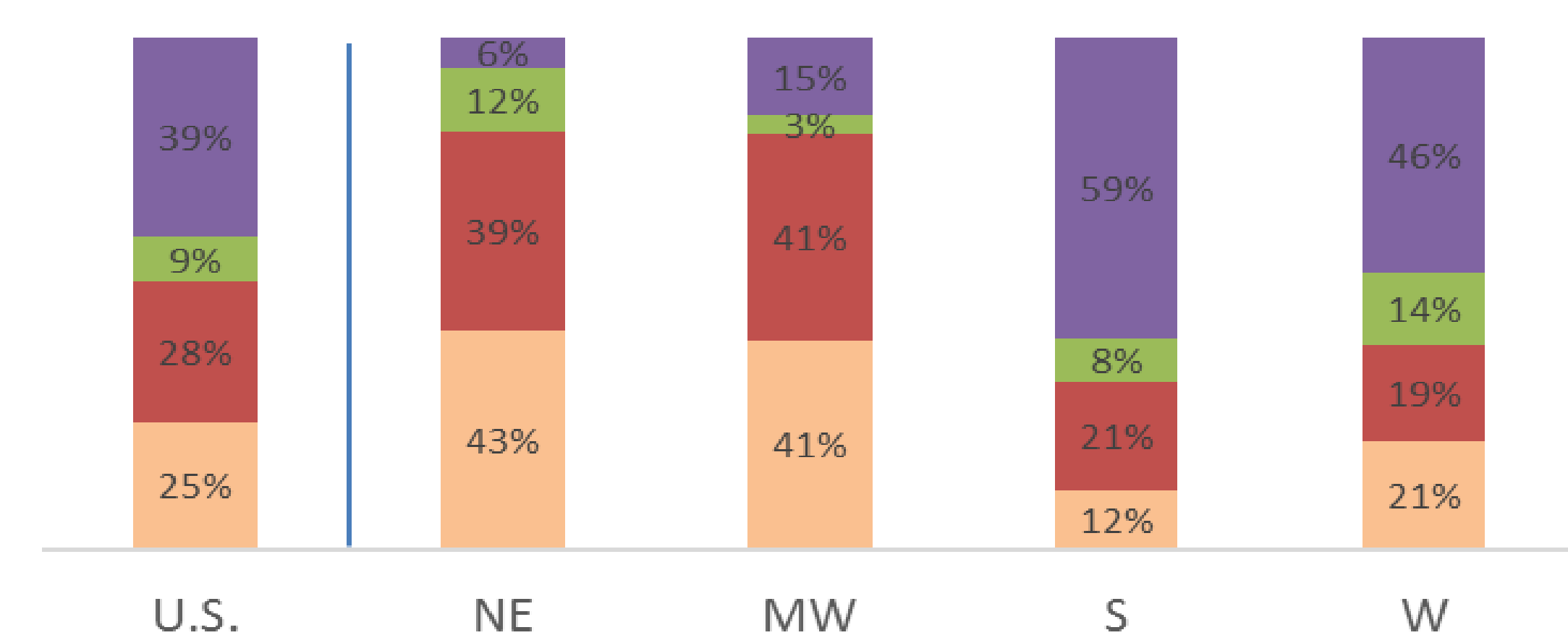
- Below Average Poverty and Below Average Income Inequality
- Below Average Poverty and Above Average Income Inequality
- Above Average Poverty and Below Average Income Inequality
- Above Average Poverty and Above Average Income Inequality

Figure 3: Percent of MSAs in each category for the 50-10 Ratio: 2015



Source: Author's calculations, 2015 American Community Survey. For more information on the ACS, see census.gov/acs.

Figure 4: Percent of MSAs in each category for the 90-50 Ratio: 2015



Source: Author's calculations, 2015 American Community Survey. For more information on the ACS, see census.gov/acs.

DISCUSSION

- Summary simple linear correlation results**
- In 2005, but not in 2015:
 - The relationship between the 90-50 ratio and the poverty rate was stronger than the relationship between the 50-10 ratio and the poverty rate.
 - From 2005 to 2015:
 - The relationship between income inequality ratios and the poverty rate among MSAs became weaker.
 - The relationship between income inequality in the top half and the bottom half of the income distribution became weaker.

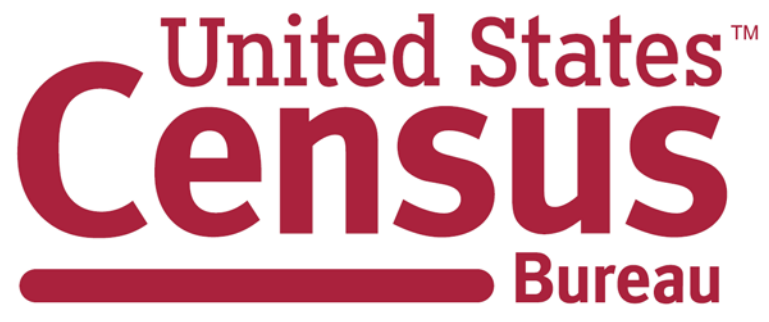
- Bottom half of the income distribution (50-10 ratio)**
- Populations grew fastest amongst MSAs with below average poverty and income inequality
 - The shares of MSAs with below average poverty and income inequality were higher in the Northeast, Midwest, and West and lower in the South than in the U.S. overall.
 - The shares of MSAs with above average poverty and income inequality were lower in the Northeast, Midwest, and West and higher in the South than in the U.S. overall.

- Top half of the income distribution (90-50 ratio)**
- Populations grew fastest in MSAs with below average poverty and above average income inequality.
 - The shares of MSAs with below average poverty and income inequality were higher in the Northeast and Midwest and lower in the South and West than in the U.S. overall.
 - The shares of MSAs with above average poverty and income inequality were lower in the Northeast and Midwest and higher in the South and West than in the U.S. overall.

- Bottom half vs. top half of the income distribution**
- There was a higher share of MSAs with above average poverty and above average income inequality in the bottom half than in the top half of the income distribution in the Northeast and Midwest, while the opposite was true in the South and West.

FUTURE WORK

- Perform similar analysis using the Supplemental Poverty Measure in place of the official poverty measure.
- Regress poverty/income inequality status on MSA variables in order to determine MSA characteristics that are associated with different poverty/income inequality groupings.



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