Spring 2023 Data Visualization Final Project

Jiwan Lee, Yihang Sun, Eunho Cha

Title: Child poverty across time and states in the United States

Abstract: We are interested in mapping out the trends and geographic differences of child poverty rates as well as the role of government anti-poverty policies in the United States. We use nationally representative micro-level data from the Annual Social and Economic Supplement (ASEC) of the Current Population Survey (CPS) provided by Census Bureau and Columbia Center on Poverty and Social Policy's historical Supplemental Poverty Measure (SPM) data. We aim to explore the following research questions:

- How has the child poverty rate changed over time in the U.S.?
  - Does the trend differ by poverty measurements? (Official Poverty Measure vs SPM)
  - How have the official poverty rate and SPM poverty rate changed over time among families with and without young children?
- How much each type of government policy contributed to reducing the child poverty rate historically from 1967 to 2021?
- How much of the child poverty rate fell in each state by public policies in 2021?

Ideas to visualize
- *Interactive line graph*: Two trend lines represent the official child poverty rate and supplemental child poverty rate over time. Specific rates pops up through the user's interaction with the graph.
  - Users can add trend lines of subgroups on the graphic board by the age of the youngest child
- *Static bar + dot chart*: Users can set the mode either as OPM or SPM to see the chart. Bar chart displays the actual poverty rates by each year. Dot chart shows the simulated poverty rate of each year, namely the counterfactual poverty rate had the policy not existed.
  - Policies includes in-kind, cash transfer, and tax credits programs. The role of each type of policy will be distinguished with different color of dots.
- *Interactive map*: Users can select between OPM and SPM mode. Map illustrates the cross-state differences in the decline in poverty rate by public policies in 2021.
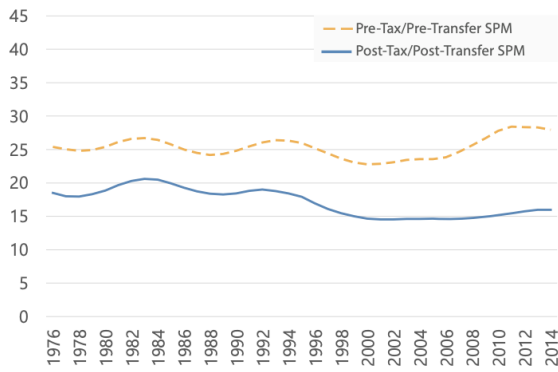
Data
1) CPS-ASEC 2021 data: the source of official national estimates of poverty levels and rates
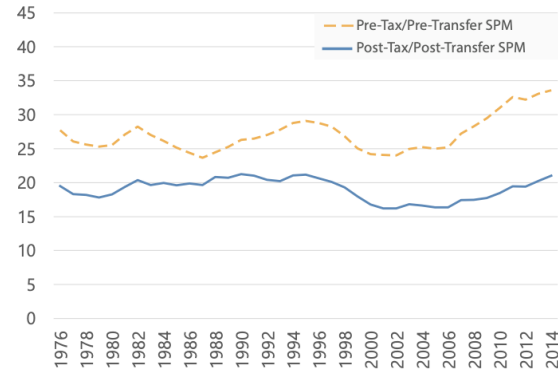2) Columbia's Historical Supplemental Poverty Measure data using CPS 1967-2021
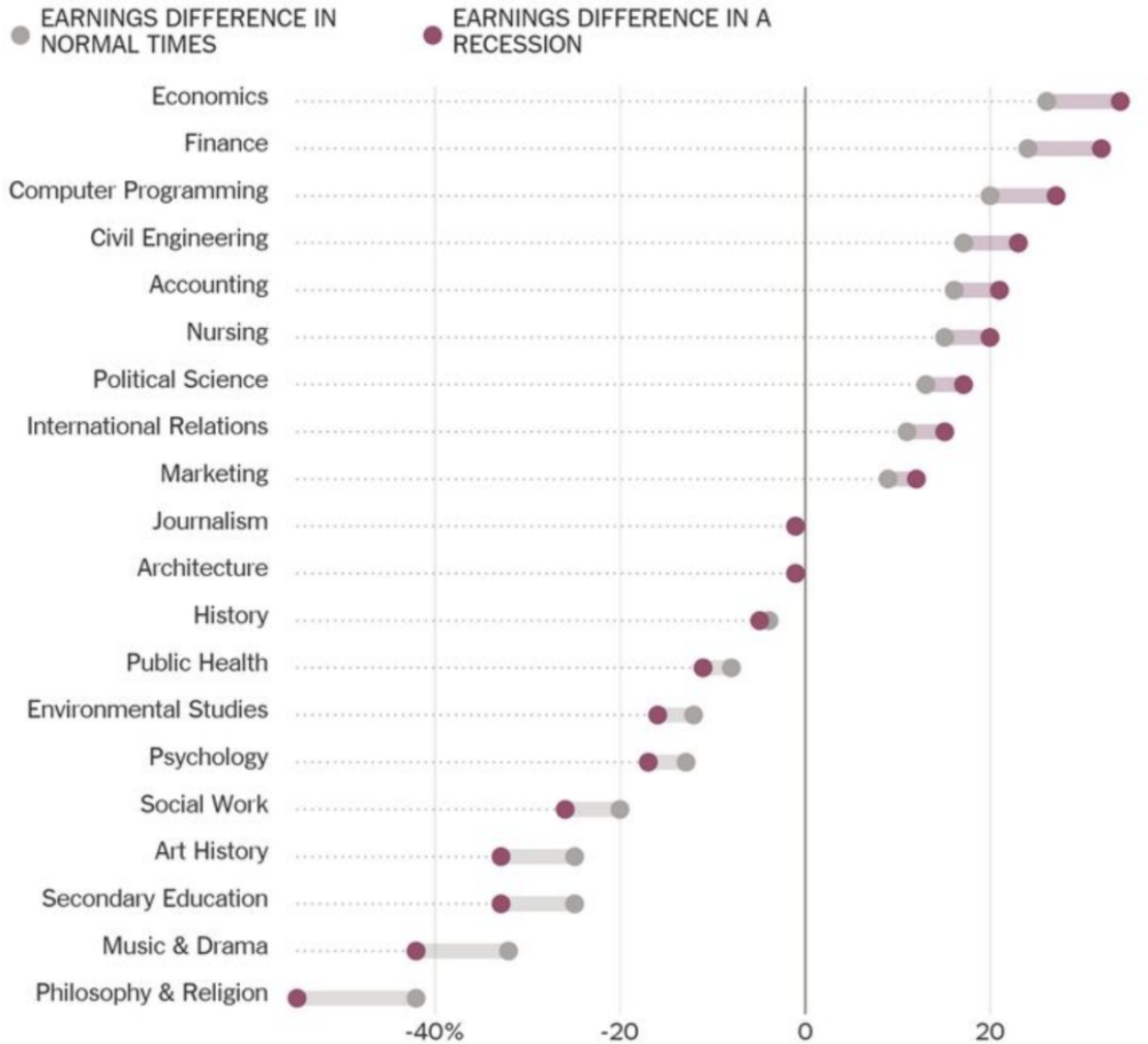
Examples

1. **Line graphs**

ANCHORED SPM POVERTY RATE IN THE U.S.

ANCHORED SPM POVERTY RATE IN ARIZONA

2. Dot/bar graph:

EARNINGS DIFFERENCE IN NORMAL TIMES

EARNINGS DIFFERENCE IN A RECESSION

3. Interactive map