Developing Statistics on the Distribution of State Personal Income

Dirk van Duym

BEA Advisory Committee Meeting, May 12, 2023

Goal and Motivation

- Goal: produce distributional statistics for state personal income

- Motivation
  - Allows for analysis of inequality by state (cross-sectionally and across time)
  - Benchmarked to BEA state personal income aggregates
  - Contributes to BEA's "GDP and Beyond" initiative
  - Fills need for subnational distributional and inequality statistics using a broad-based income measure

- Funding available for FY2023 to advance this work

- BEA working paper from last year with preliminary results for 2018

What we're looking for from this presentation

- Thoughts on the results?
- Outreach and presentational strategy
  - What results would be most interesting to emphasize?
- Methodological feedback?
- Thoughts on next steps?

Literature review

- The Census Bureau publishes state median household *money income* and Gini coefficients by state

- Several papers ((Rinz & Voorheis, 2023), (Manduca, 2021), (Sommeiller & Price, 2018)) estimate subnational inequality statistics

- National distribution of personal income (Fixler et al., 2021)

State personal income concept

- Includes income from production and current transactions (employment, businesses, ownership of assets, and transfers)
- Broad-based income concept
  - Captures wider array of transfer programs, imputed income types
  - Requires data to be combined from multiple sources

Source data

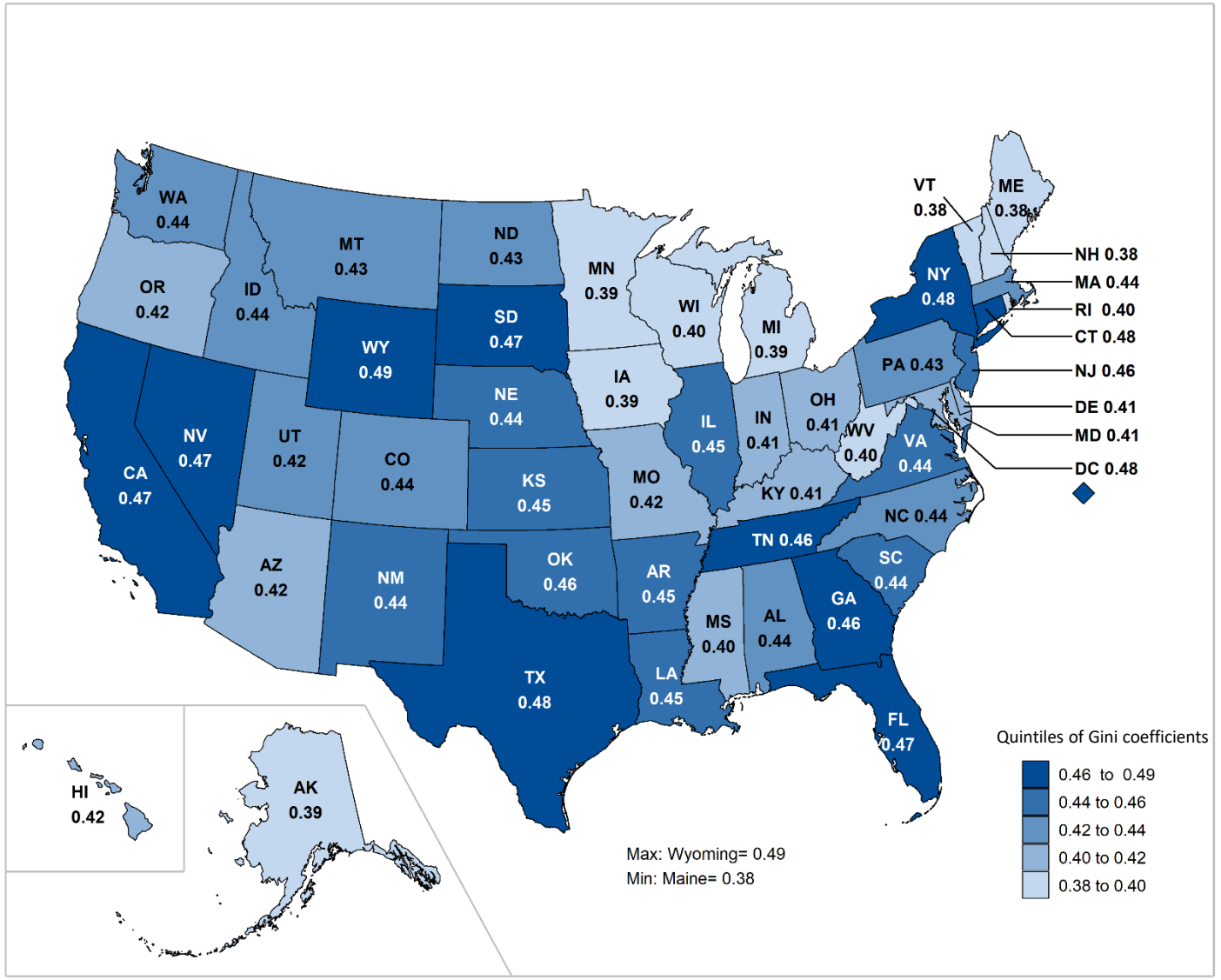
- CPS Annual Social and Economic Supplement (ASEC) microdata
  - Constitute the sample over which distributional statistics are computed
  - Contains very detailed income information
  - Small sample size in some states

- Supplemental data sources
  - Internal Revenue Service (IRS) Statistics of Income
  - Medical Expenditure Panel Survey
  - Survey of Consumer Finances
  - American Community Survey
  - Center for Medicare and Medicaid Services

Method

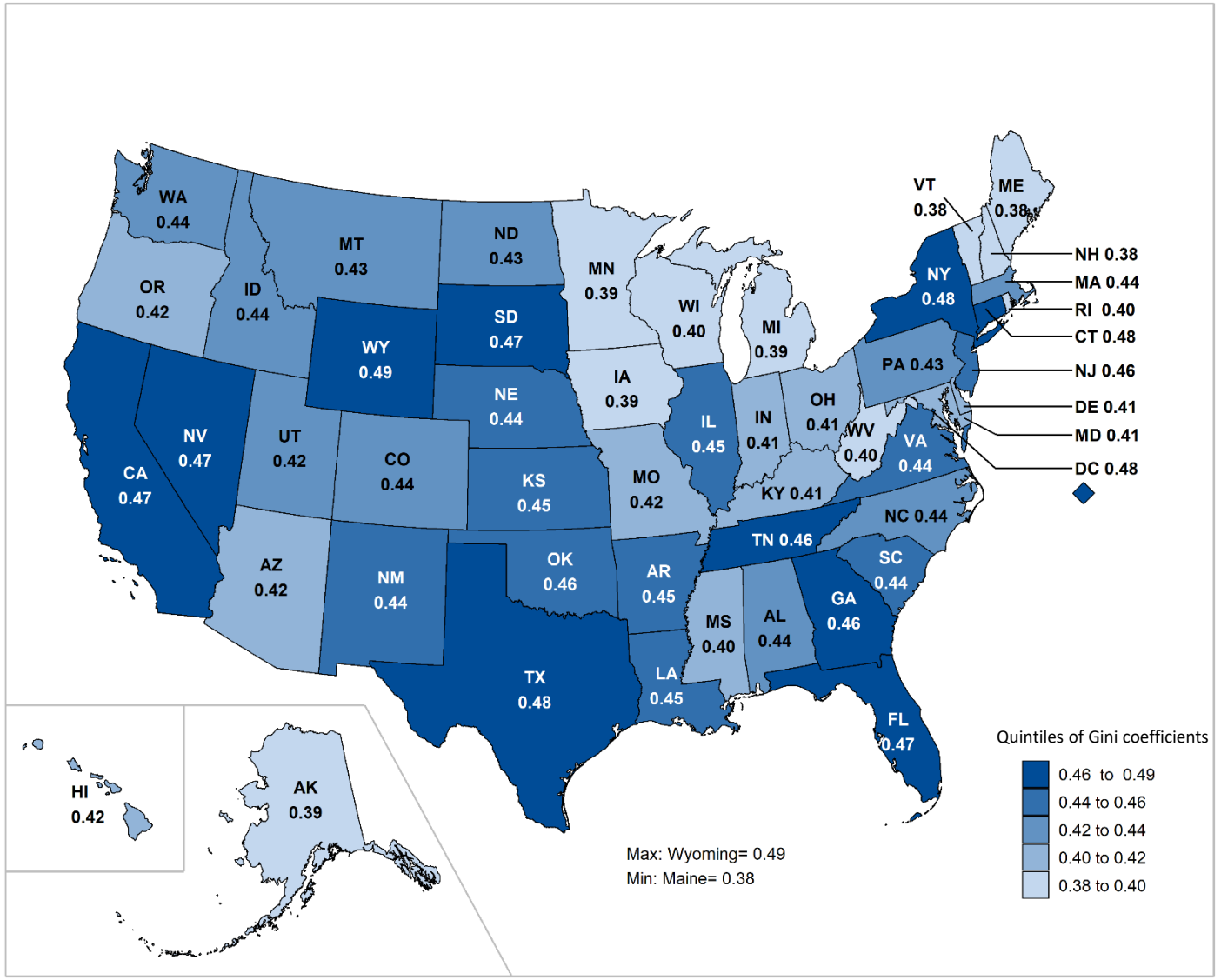
- Use 3-year-pooled CPS and supplementary data to allocate state personal income component totals to households
  - Household-level personal income sample consistent with state personal income component totals
- Household income is then equivalized for household size, using the number of people in the household, *n*
  - $Equivalized\ personal\ income = personal\ income/\sqrt{n}$
- Finally, distributional statistics are computed from the equivalized household personal income sample

Gini Coefficients, 2018



U.S. Bureau of Economic Analysis

Gini Coefficients, 2018



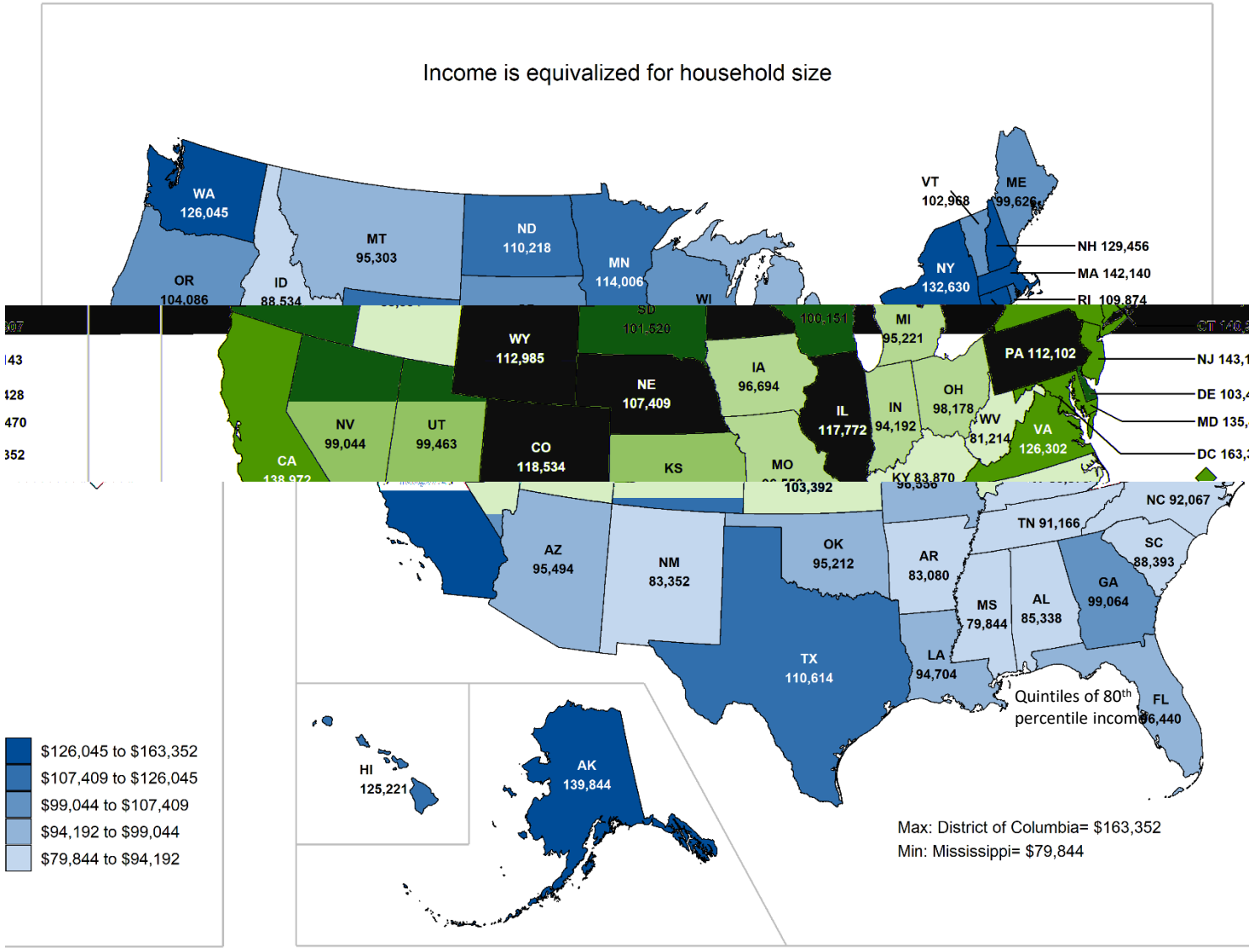
U.S. Bureau of Economic Analysis

Year	U.S. Gini
2000	0.45
2001	0.45
2002	0.44
2003	0.44
2004	0.45
2005	0.45
2006	0.45
2007	0.45
2008	0.45
2009	0.43
2010	0.43
2011	0.44
2012	0.45
2013	0.45
2014	0.45
2015	0.45
2016	0.44
2017	0.45
2018	0.45
2019	0.44
2020	0.42
2021	0.42

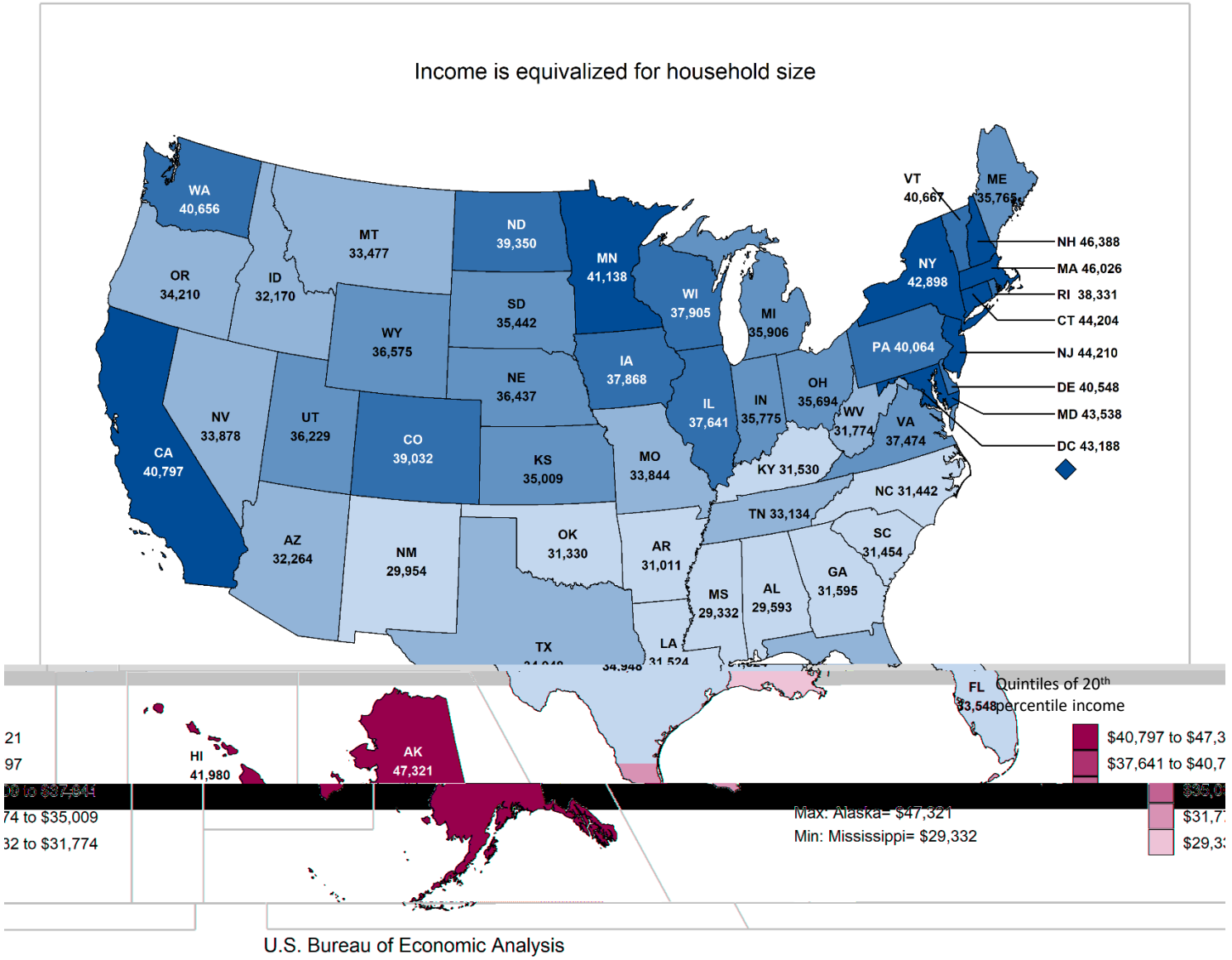
Deflating with regional prices

- We can deflate state personal income with BEA's Regional Price Parities
- This does not affect a within-state distribution, because the same adjustment is applied to each household
- However, it does change the mean, median, and other percentiles of the distribution which can be compared across states
- A state-level-RPP-adjusted national Gini would be lower than the published national Gini

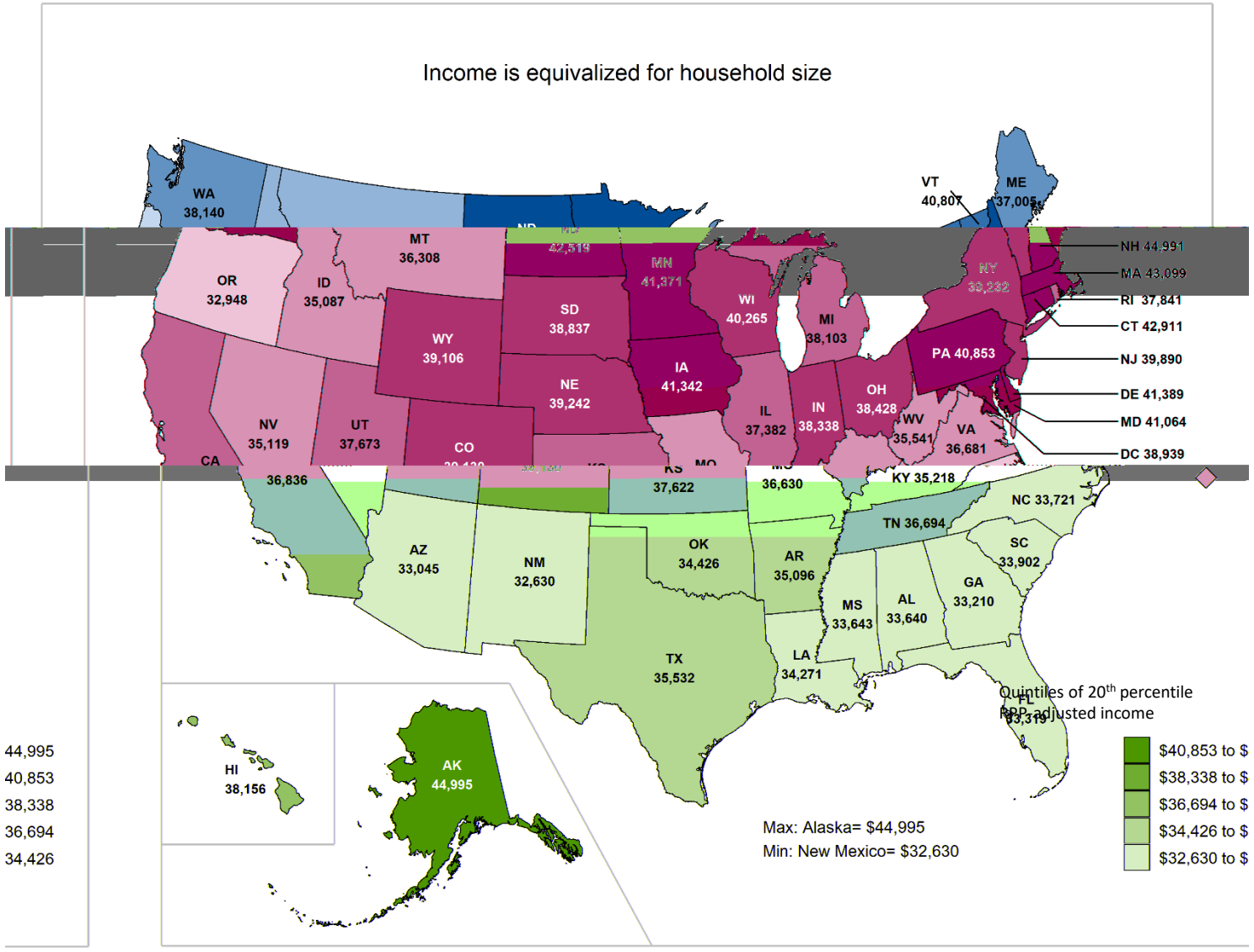
80th Percentile of Equivalized SPI, 2018



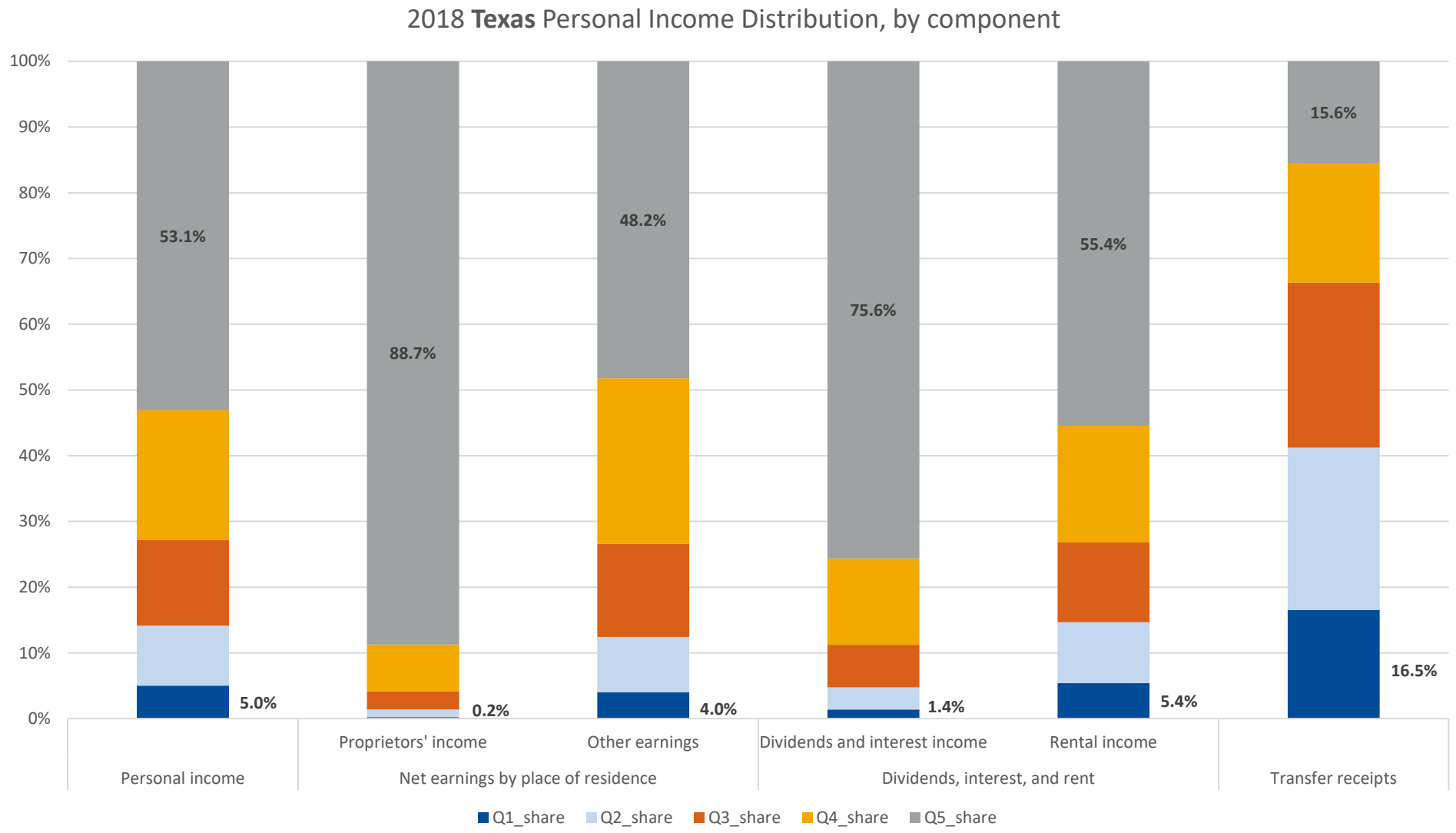
20th Percentile of Equivalized SPI, 2018



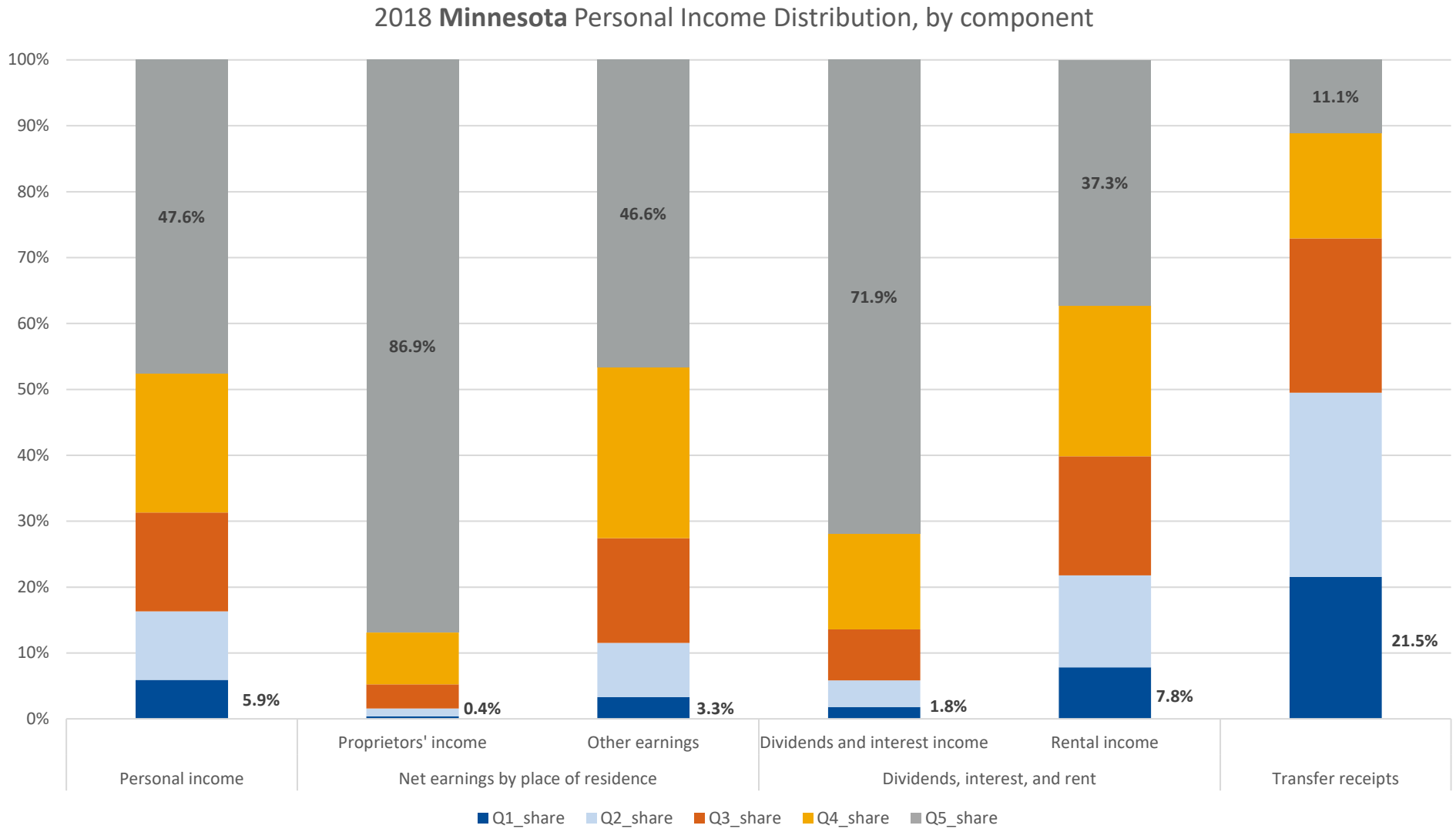
20th Percentile of RPP-Adjusted Equiv. SPI, 2018



Quintile shares of personal income components, 2018



Quintile shares of personal income components, 2018



Next steps

- Publish prototype state statistics for public comment
- Update time series for more recent years
  - Modify pooling strategy for pandemic years
- Update method to align as closely as possible with BEA's methods for the production of national distributional statistics

Questions for discussion

- Thoughts on the results?
- Outreach and presentational strategy
  - What results would be most interesting to emphasize?
- Methodological feedback?
- Thoughts on next steps?