The Future of Population Statistics in the United States

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Economic Commission for Europe
Conference of European Statisticians
Group of Experts on Population and Housing Censuses
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U.S. Census Bureau Looking Forward

- The Conundrum of the 2020 Census and our Traditional Household Surveys
- Base Evaluation Research Team
- Demographic Frame
- National Experimental Wellbeing Statistics

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The Conundrum of the 2020 Census and Traditional Household Surveys

- The 2020 Census was collected during a global pandemic
- We have found some data quality issues
  - Significant age heaping
  - The traditional undercount of young children and working-aged men
- We also introduced differential privacy as our new disclosure methodology which has led to delays in releasing the data
  - Released first detailed data file in May 2023
- Our traditional household surveys are experiencing decreases in response rates and increases in item nonresponse

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Never Waste a Good Crisis

- Viewed the data quality issues and the delay in releasing the 2020 census data as an opportunity
- Established the Base Evaluation Research Team to create the best possible base for the annual population estimates
- Created a Demographic Frame that links census, surveys, and administrative data
- Produced an experimental set of economic well-being statistics

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Population Estimates Methodology for the Nation, States, and Counties

Cohort-Component Method

- Cohort-component method measures population change since the last census using the most current administrative records on births, deaths, and migration
- Population base represents the date of the latest decennial census

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The Blended Population Estimates Base

- The latest census typically forms the base for the population estimates. However, any issues in the census continue on in the annual estimates.
- For counties and higher levels of geography, the “blended base” method incorporates April 1, 2020, data from:
  - The 2020 Census - differentially private population counts for households and group quarters (GQs) by major type
  - Vintage 2020 estimates (based on the 2010 Census)
  - National 2020 Demographic Analysis estimates

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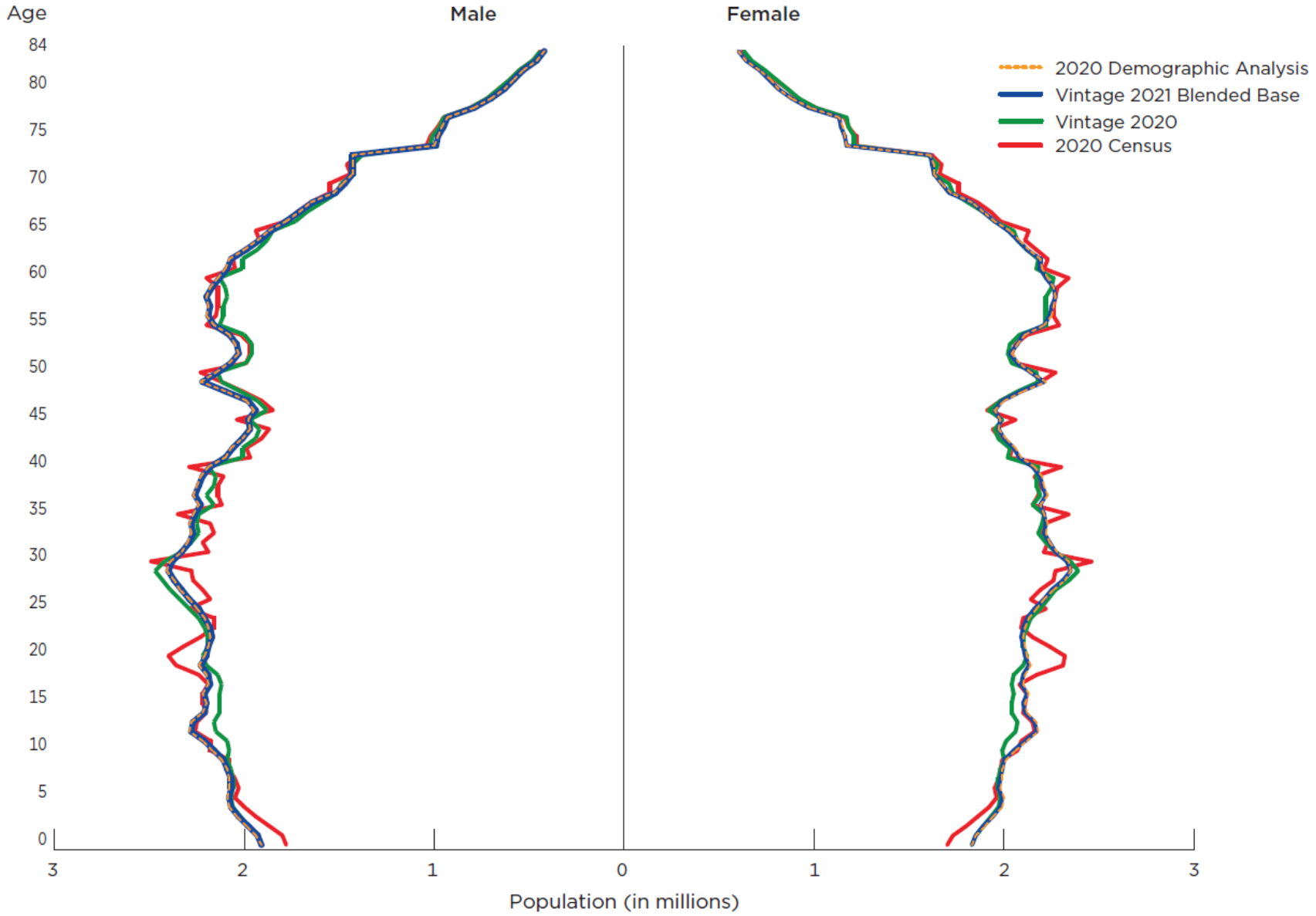
Figure 1. Vintage 2021 Blended Base, Base Inputs, and 2020 Census Data by Sex for Ages 0-84: April 1, 2020



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Note: These 2020 Census data by age and sex represent a special tabulation of the 2020 Census with confidentiality protections applied using the 2020 Census Disclosure Avoidance System. The U.S. Census Bureau reviewed this data product for unauthorized disclosure of confidential information and has approved the disclosure avoidance practices applied to this release. (DRB clearance number CB-FY22-DSEP-001.)
Source: U.S. Census Bureau, 2020 Decennial Census; 2020 Demographic Analysis; Vintage 2020 and 2021 Population Estimates.

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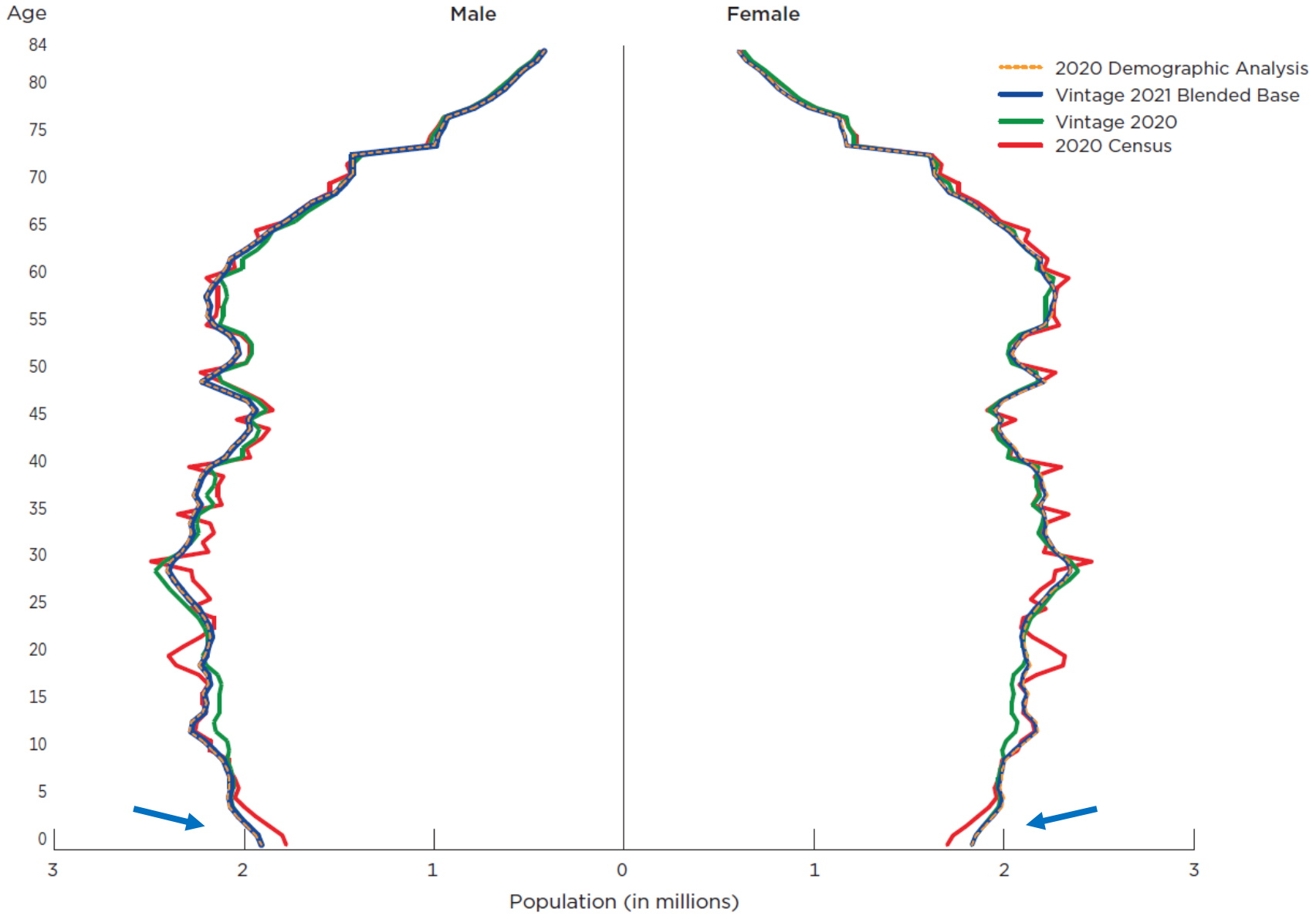

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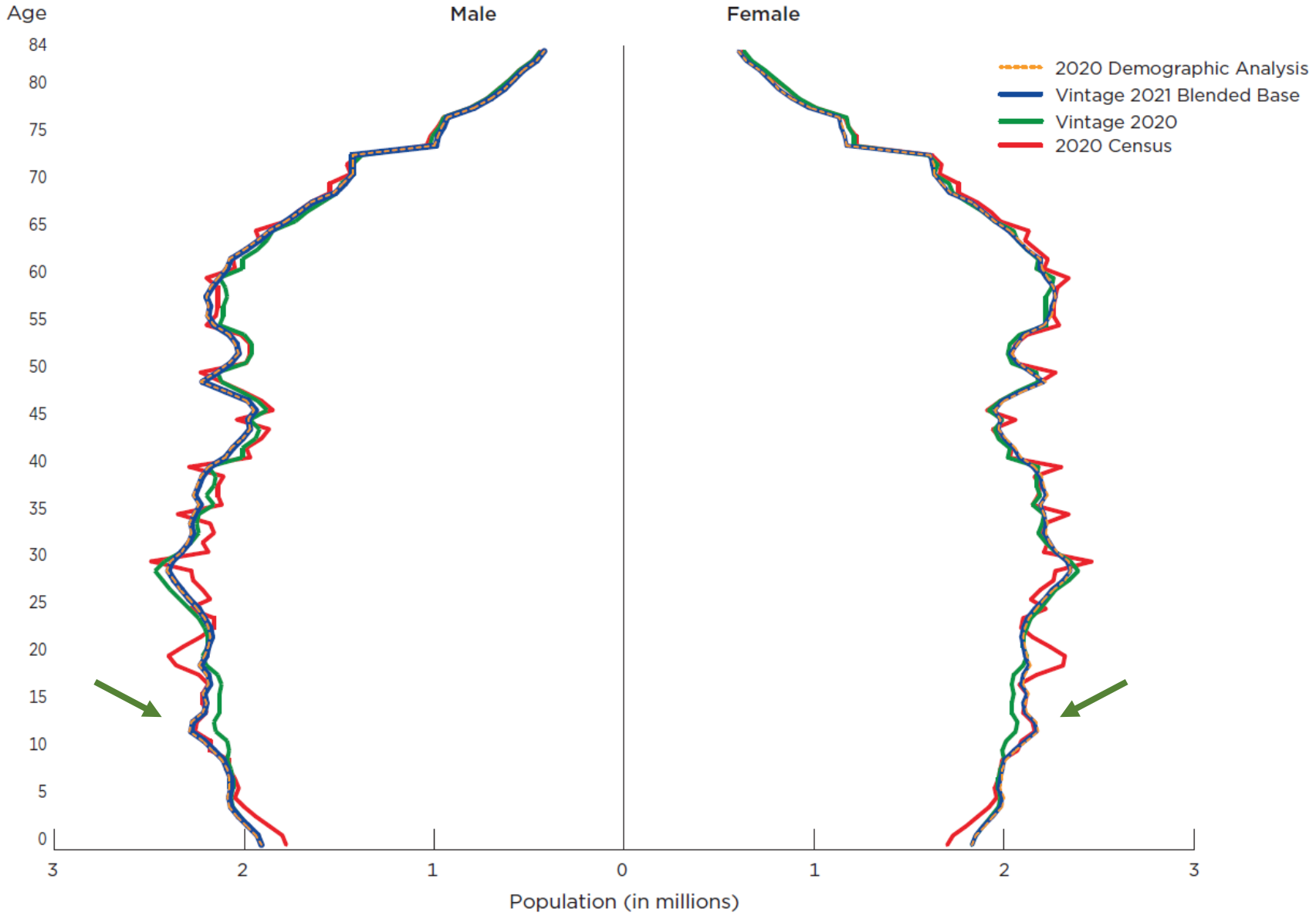

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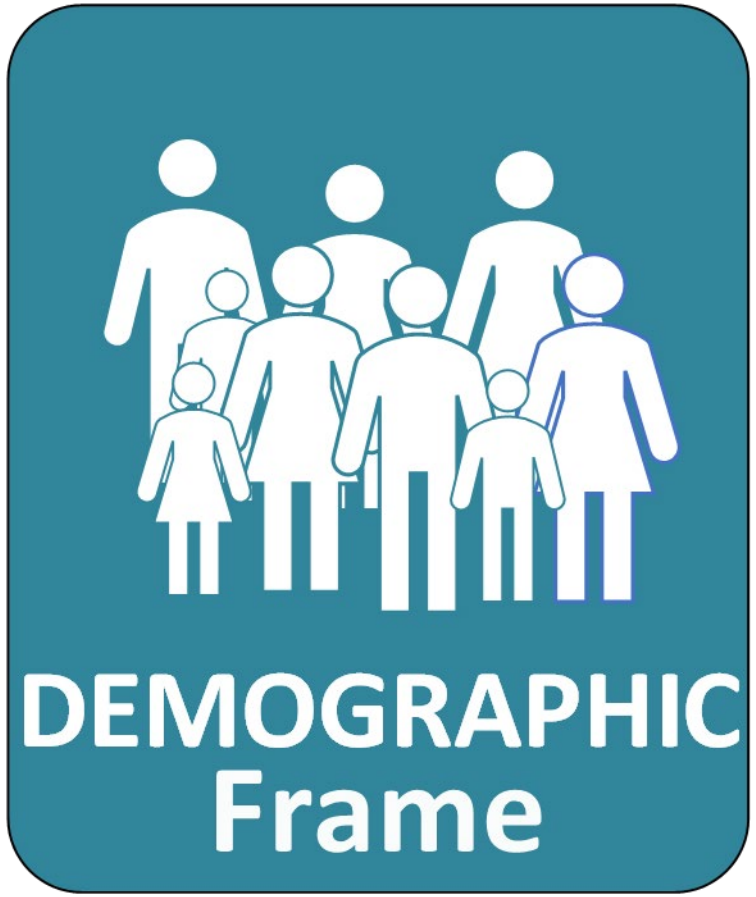
The Demographic Frame is a comprehensive database of person-level data that:

- Contains demographic characteristics and addresses associated with each person
- Is derived from administrative, third-party, census, and survey data sources
- Includes unique person-level identifiers used to link individuals across datasets
- Can be linked to information in other enterprise frames
- Is available only to approved, internal users in a secured computing environment



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Applications of the Demographic Frame

- **Serve as a sampling frame for population surveys** where a focus on ensuring a representative sample around the characteristics of people is a better foundation than an address-based approach
- **Support enterprise initiatives such as census and survey taking**, including reducing the burden on our respondents by using information already available to the federal government instead of asking questions.
- **Creating blended data products**, including merging Frame data on topics not currently asked about on a survey or the census, to provide even more detailed information about U.S. communities
- **Improving data quality by drawing upon the Frame for data editing and imputation**, rather than just statistical approaches to assigning values

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National Experimental Wellbeing Statistics (NEWS)

- We are rethinking how we can produce income and resource statistics
  - What is the best possible estimate given all the data currently available at the U.S. Census Bureau for a given income/resource statistic?
- Address multiple sources of bias simultaneously

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How Does NEWS Do This?

- Pull together all available data: survey, census, administrative records, commercial (third-party) data
  - Often need ***linked*** data to address bias correctly
- Do everything in a transparent, replicable, evidence-based manner
- Engage research community
  - Will create linked microdata and code database for access in our Federal Statistical Research Data Centers
  - Code will be shared publicly (subject to disclosure constraints)

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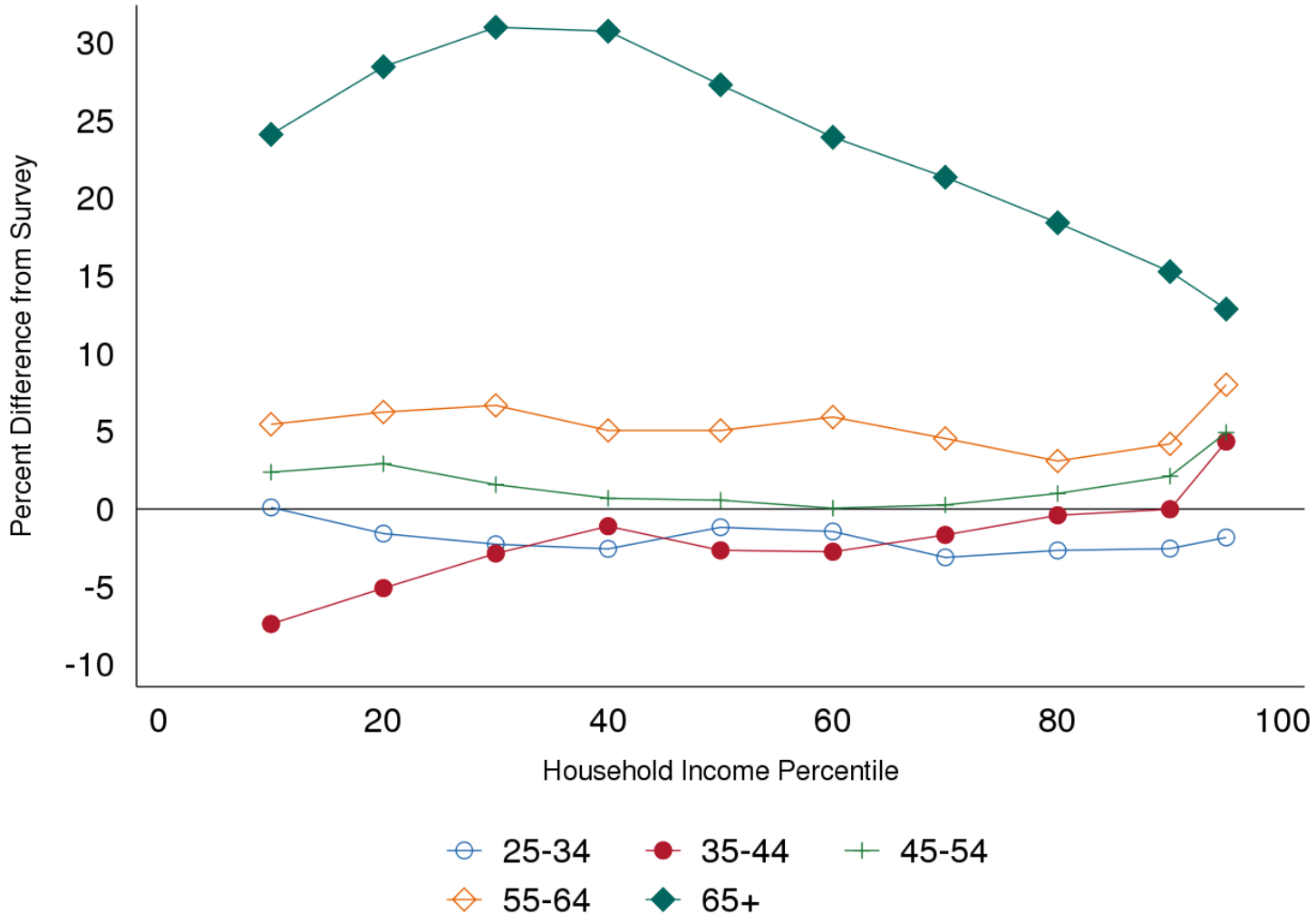
Figure 2. Household Income from NEWS Relative to Survey Data By Age



Source: 2019 Current Population Survey Annual Social and Economic Supplement linked to administrative, decennial census, and third-party data.

Conclusion

- The issues with the 2020 Decennial Census gave us an opportunity to improve population statistics in new ways.
- Annual population estimates are corrected for known issues in the census
- Declining response rates and increasing item nonresponse gave us an opportunity to get creative
- Demographic frame will create more opportunities to improve data products
- NEWS is the future of how we will create statistics

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Thank you!

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