

Revising the Geographic Area Sample for the US Consumer Price Index

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Conditions

Meeting of Group of Experts on CPIs – Session 3
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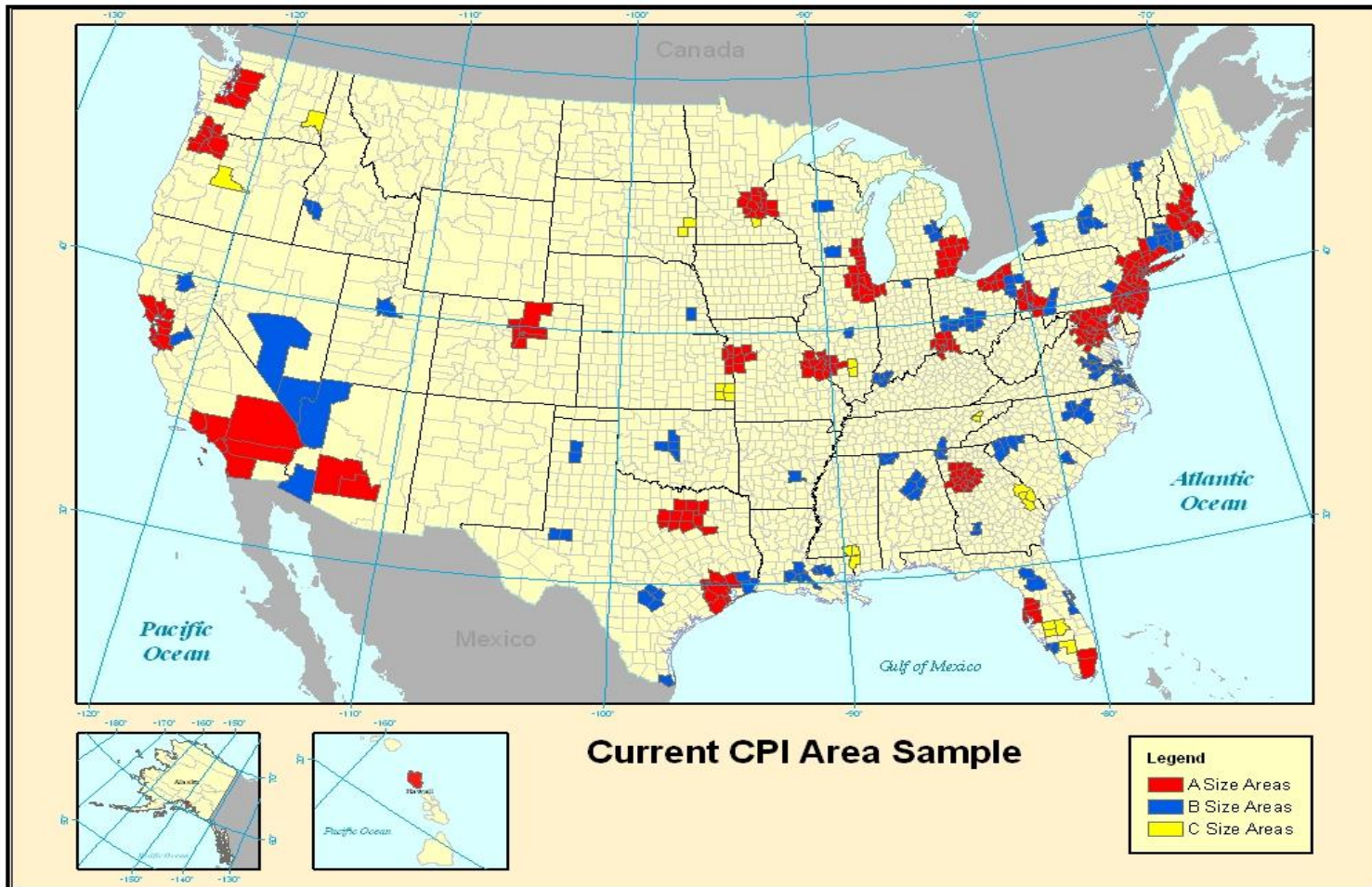


US CPI - Context

- Three main series: CPI-U, CPI-W, C-CPI-U
- Employ multi-stage sample design
- First stage – selection of geographic areas
- 2018 Geographic Revision is first one for CPI in twenty years
- Last piece of long-term effort to place CPI on new revision paradigm



Overview of current area sample



Goals of the 2018 Geographic Revision

- Update area sample to reflect 2010 Decennial Census
- Reflect OMB definitions for statistical areas- introduce Core Based Statistical Area concept
- Bring Consumer Price Index and Consumer Expenditure Survey (CE) area samples back into harmony
- Take opportunity to make methodology changes

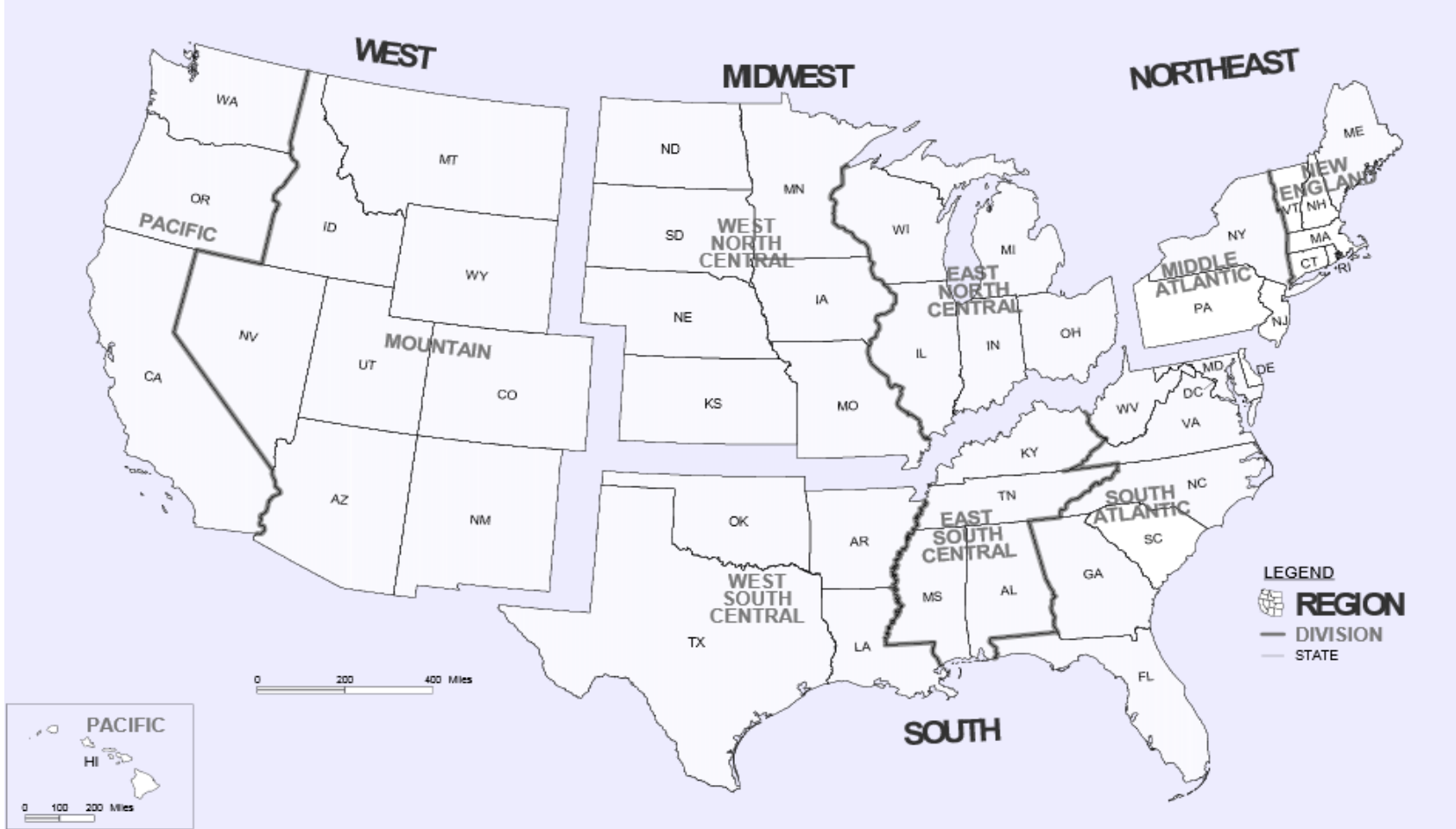


Sample classification variables

- Move to use of Census divisions
- Two population size classes – self-representing and non-self-representing
- Benefits include implementation cost savings and helping address current small sample bias issue



Census Regions and Divisions of the United States



Constructing Primary Sample Units (PSUs)

- Use of Core Based Statistical Area (CBSA) concept
- Use of Metropolitan & Micropolitan CBSA definitions for non-self-representing areas
- Adhere to Metropolitan Statistical Area definitions for self-representing areas
- CPI-U coverage will increase to 94 percent of US population (from current 89 percent)

Determine number of sampled PSUs

- Total budget and impact on accuracy influenced decisions
- Reduce total number of PSUs to 75 – bring urban areas in alignment with CE sample & increase average number of quotes per area
- Self-representing area population cutoff of 2.5 million
- Number of basic indexes will decline by 16%

Stratifying Non-Self-Representing PSUs

- Extensive research into potential use of American Community Survey demographic variables
- Final stratification model
 - ▶ Normalized Latitude
 - ▶ Normalized Longitude
 - ▶ Median Property Value
 - ▶ Median Household Income

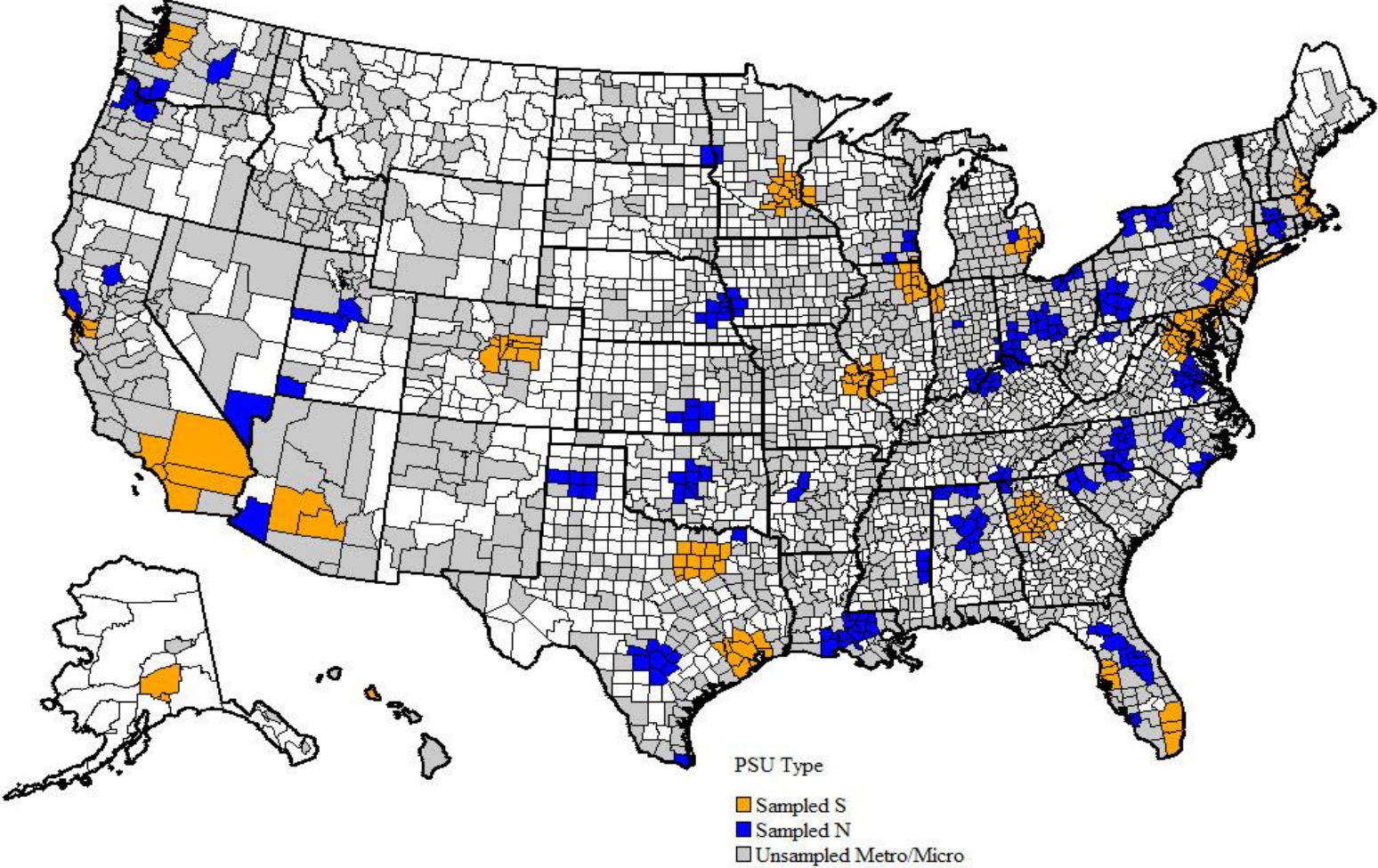
Allocating Sample

- 23 self-representing PSUs – 39 percent of US population & 42 percent of CPI-U population
- 52 non-self-representing PSUs distributed to Census divisions proportional to population size – 58 percent of CPI-U population
- Assigned non-self-representing PSUs into strata using final stratification model

Selecting the sample

- Sample overlap procedure used to increase expected number of non-certainty geographic areas reselected in new design
- Controlled selection – control number of micropolitan areas sampled
- After procedures applied, one PSU per stratum randomly selected

CPI area sample for 2018 revision



Implementation Plan – Phased-in Approach

- 21 new PSUs divided into groups to be introduced over four-year span to distribute costs
- Start calculating indexes under new design with introduction of first group – use of proxy PSUs until rotation complete
- Criteria established for groups
- Four “waves” with similar timelines – rotation complete in 2021

Summary

- Last major step toward continuous updating of all CPI samples including area sample
- Places CPI and CE surveys back in alignment
- Use of new area concepts
- Increase in coverage of US population
- Improvements include addressing small sample bias issue
- New sample will be used for first time with release of January 2018 indexes



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