

Overview of the Consumer Expenditure Surveys (CE)

Microdata Users' Workshop

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Outline

- Mission and history of the CE
- CE terms
- Data uses
- Survey design
- Variance factors
- Gemini Project
- Other CE projects



Mission

- The mission of the CE is to collect, produce, and disseminate information that presents a statistical picture of consumer spending for the Consumer Price Index, government agencies, and private data users.
- The mission encompasses analyzing CE data to produce socio-economic studies of consumer spending, and providing CE data users with assistance, education, and tools for working with the data.



History

- **1888-1891:** First BLS expenditure survey
- **1972-1973:** Census Bureau begins survey collection for BLS. First use of weekly Diary and 3-month recall Interview instruments
- **1979:** The CE starts continuous data collection
- **2003:** Computer Assisted Personal Interview (CAPI) begins
- **2004:** Imputation for missing income variables is implemented
- **2013:** Model-based estimation of income taxes is introduced to replace collected and missing values
- **2015:** Elimination of the first (bounding) interview in Interview Survey



CE Terms

■ Consumer Unit (CU):

- ▶ all members of a particular household who are related by blood, marriage, adoption, or other legal arrangements;
- ▶ a person living alone or sharing a household with others or living as a roomer in a private home or lodging house or in permanent living quarters in a hotel or motel, but who is financially independent;
- ▶ or two or more persons living together who use their income to make joint expenditure decisions.

■ Reference Person:

- ▶ The first person listed by the respondent when asked who own or rents the home.

Data Tables

- Tables are broken out by 16 standard demographic characteristics
 - Pre-tax income class
 - Higher income class
 - Quintiles of income
 - Composition of CU
 - Size of CU
 - Age of reference person
 - Selected age of reference person
 - Highest level of education of member
 - Race
 - Hispanic Origin
 - Housing tenure and Urban/Rural
 - Number of earners
 - Occupation
 - Population size of area
 - Census Region
 - Deciles

Publications

- Comparison Articles
- Beyond the Numbers
- MLR Articles
- Spotlight on Statistics
- The Editor's Desk

Consumer Expenditure Survey
Anthology, 2005



U.S. Department of Labor
U.S. Bureau of Labor Statistics
April 2005
Report 561



CE Customers

- CPI - Expenditure weights for the index
- Government
 - ▶ Defense Department
 - ▶ IRS
 - ▶ BEA
 - ▶ HHS
 - ▶ USDA
- Media
- Market Research
- Academic Research
- *YOU!!!*



Department of Defense

- The Department of Defense uses CE data in calculating cost-of-living allowances for military personnel not living on military bases
- The CE annually provides 3-year compilations of expenditures by these personnel



IRS

- The CE produces special data tabulations on the purchase of taxable items for use in calculating sales tax deductions



BEA

- The CE produces special data tables on the estimated rental value and market value of owned homes for potential use as a data source in the national accounts.



HHS

- The CE produces special data tabulations on expenditures for and counts of health insurance policies by policy type and age.



USDA

- The Department of Agriculture uses CE microdata to construct its annual release estimating the cost of raising a child.



United States Department of Agriculture
Center for Nutrition Policy and Promotion

Expenditures on Children by Families



Sample Design

- National probability sample of households designed to represent the total U.S. civilian non-institutional population.
 - ▶ Includes: persons living in houses, condominiums, apartments, and group quarters such as college dormitories.
 - ▶ Excludes: military personnel living on base and nursing home residents, as well as people in prisons or other institutions.

Survey Design

■ Interview Survey

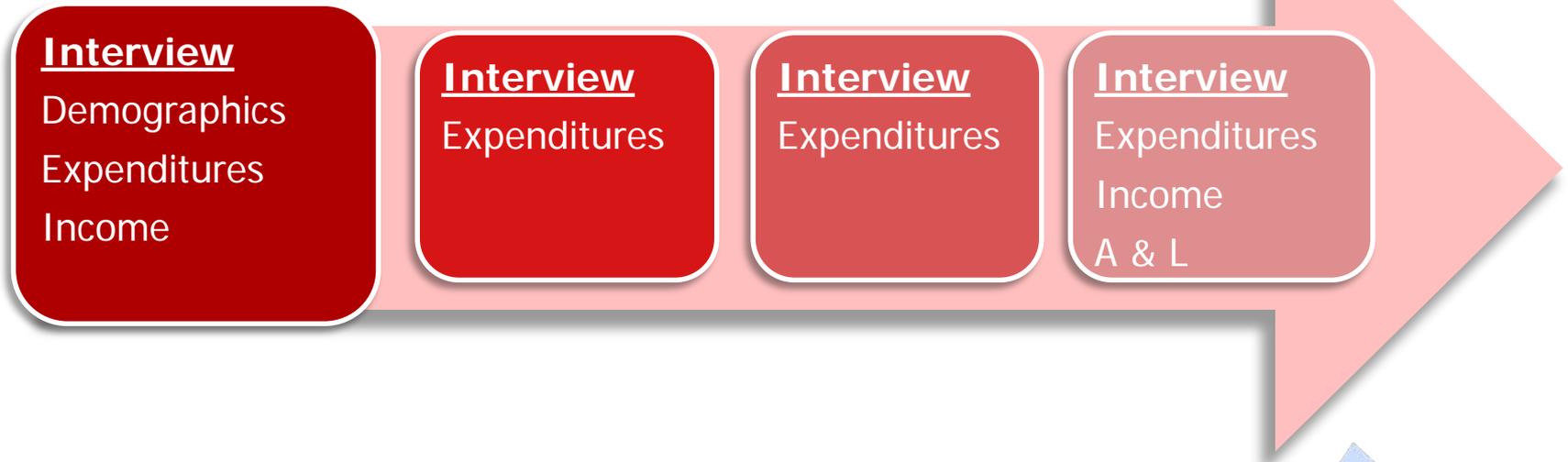
- ▶ designed to collect data on the types of expenditures that respondents can be expected to recall for a period of 3 months or longer (e.g. vehicles, appliances, rent).

■ Diary Survey

- ▶ designed to collect detailed expenditure data on small, frequently purchased items (e.g. food, personal care items).

Interview Survey Design

- Quarterly interviews with 22 sections
- Sample: 7,000 CU's
 - ▶ About 28,000 interviews annually



Diary Survey Design

- 2 consecutive one-week diaries
- Respondent records every item purchased in a diary.
- Sample: 7,000 CU's
 - ▶ about 14,000 Diaries annually

Survey Integration

■ Published Tables:

- ▶ Neither survey collects the entire universe of expenditures.
- ▶ Some data are only collected in one instrument.
- ▶ Some data are collected in both instruments these areas we determine which is the best source and use that in our publications.

Data Availability

- Published tables online
 - ▶ Annual tables (calendar year)
 - ▶ Mid-year tables (July 1 – June 30)
- Prepublication tables
 - ▶ Greater demographic detail (by request only)
 - ▶ All CU prepublication table is online currently.
- Microdata
 - ▶ Greatest detail

Things to keep in mind while using CE data

- Spending based on CU
 - ▶ Not per capita
- Income and expenditures
 - ▶ Collected over different reference periods
- Out-of-pocket expenditures
- Very limited spatial data is public
 - ▶ Not all states are sampled
 - ▶ Most geographic data are suppressed

Variance Factors

■ Sampling error

▶ Standard errors measured by BRR (Balanced Repeated Replication)

- Select balanced half-samples from the full sample
- Calculate the weighted mean from each half sample
- Estimate the variance of the mean based on the sum of the mean squared difference between the half-sample and full-sample means divided by the number of half-samples.

■ Non-Sampling error

- ▶ Proxy reporting
- ▶ Lack of proper cues
- ▶ Unwillingness to disclose information

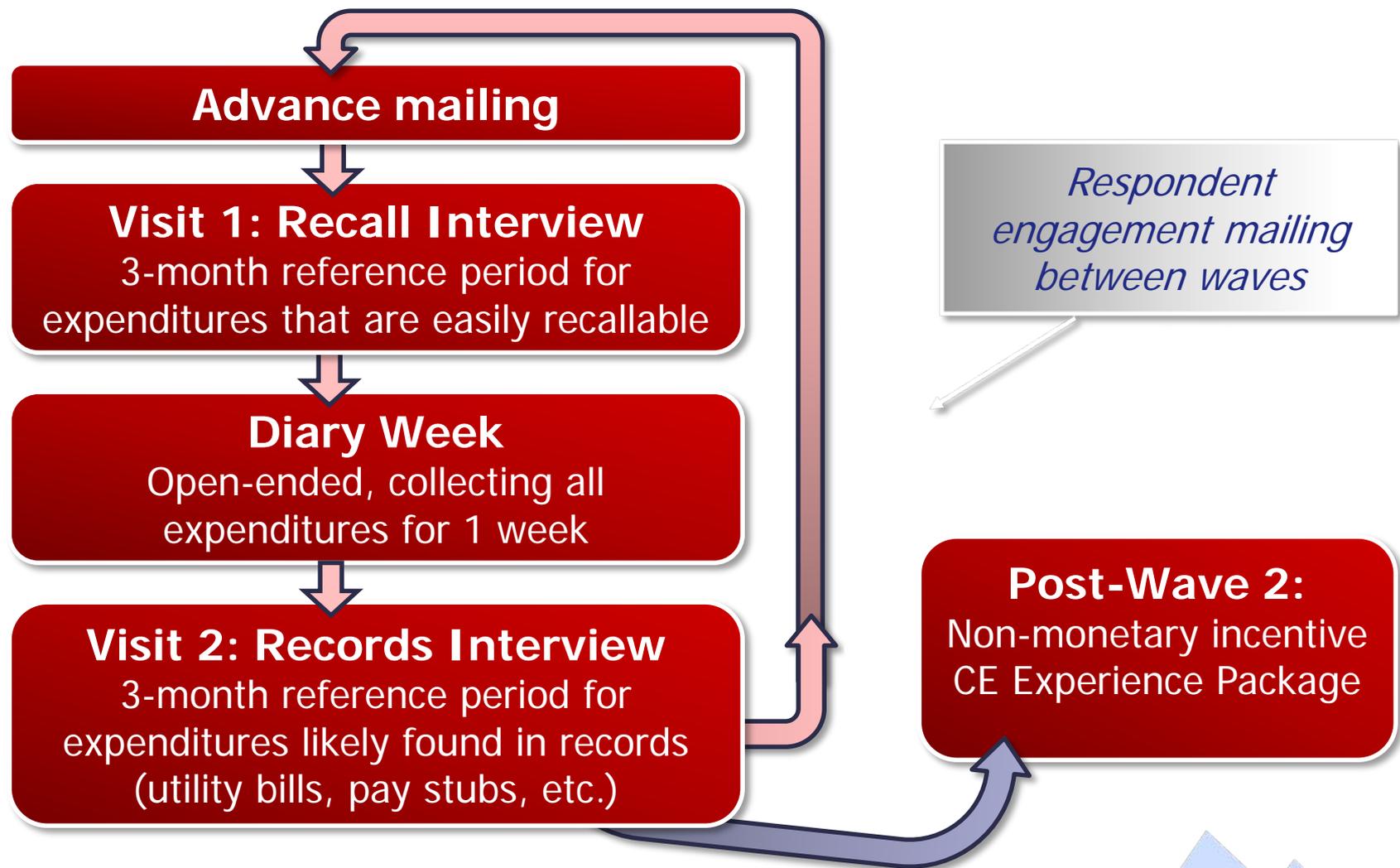
Gemini Project

- Mission: Focus on reducing measurement error
- Motivation:
 - ▶ Same basic design for past 30 years
 - ▶ Evidence of measurement error
 - ▶ Technological advances
- Events and activities:
 - ▶ July – March 2017 Incentives Field Test
 - ▶ September 2016 Analysis from Gemini Proof of Concept Field Test
 - ▶ August 2016 Online Diary Improvement Project
- <http://www.bls.gov/cex/geminimaterials.htm>

Gemini Proposal

- Single sample of CUs, participating in two waves of data collection, 12 months apart.
- Monetary incentives for survey participation.
- Each wave comprised of two visits with one CU respondent, plus weekly electronic diary for each CU member age 15 and older.

Gemini Proposal



Other CE Projects

- New CE Tables
- Data Quality Profile
- Administrative data
- Feasibility of collecting outlet information
- Biennial Questionnaire Revision (2017)

CE Website

- Beyond the Numbers
- Data comparisons
- Microdata documentation
- Microdata
- CAPI survey forms
- Glossary
- Data tables
- Respondent website

Contact Information

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