Consumer Expenditure Survey Research Highlights

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Symposium Objectives

- 1. Share CE research findings and redesign progress with stakeholders and other interested researchers
- 2. Spur a productive discussion about how CE and other survey data producers develop, implement, and evaluate their redesigns



Symposium Organization

- Morning
 - CE program & research highlights
 - Gemini project to redesign the survey
 - CNSTAT's efforts on CE's behalf
- Afternoon
 - Other large-scale redesign initiatives
 - Additional methods research findings
- Different perspectives on similar topics
- Additional time reserved at end of day 3



Presentation Structure

- I. CE Overview
- II. Redesign Motivation
- III. Research Findings
 - A. Reduce Measurement Error
 - B. Reduce Burden
 - C. Reduce Costs
 - D. Monitor Redesign Results
- IV. Redesign Challenges





I. CE Overview

- Collected for the Bureau of Labor Statistics by the Census Bureau
- Consists of 2 national HH surveys
- Provides:
 - Information on the buying habits of America's consumers, including expenditure, income, and HH data
 - The basis for revising the cost weights and associated pricing samples of the Consumer Price Index (CPI)



I. CE Overview

- Only Federal survey to provide information on a complete range of consumer expenditures, income, and HH characteristics
- Data users include economic policymakers, businesses, academic researchers, other Federal agencies, and CPI



I. CE Overview: CE Quarterly Interview

- 5 quarterly interviews, 4 used in final data
- CAPI, in-person (some telephone)
- 3-month recall
- Length: ~60 minutes
- Annual Sample: ~28,000 interviews
- Avg. Response Rate: 74% (CY 2010)



I. CE Overview: CE Diary

- 2 independent "weekly" diaries, 2 total weeks of diary-keeping
- Paper diary form, only 1 instrument,
 i.e., no individual diaries
- 3 interviewer visits, sometimes only 2
- Total recall / receipt entry conducted
- Annual Sample: ~14,000 one-week diaries



I. CE Overview: Survey Improvements

- 2003 CAPI (CEQ)
- 2004 CAPI (CED) demographics and income
- 2004 Income imputation
- 2005 Contact History Instrument (CHI)
- 2005 User friendly diary form
- 2005 Diary keying and auto-coding system
- 2009 Telephone thresholds (CEQ)
- Ongoing Biennial CEQ instrument revisions



II. Redesign Motivation

- Despite all of these improvements:
 - ► Evidence of underreporting
 - from benchmarking and subgroup analyses
 - ► CE is burdensome
 - ► CE is expensive
 - ► Trend of declining response rates
- Further, the basic design has been the same since 1980



II. Redesign Motivation: Objectives

- Reduce measurement error
 - ▶in particular, underreporting
- Reduce burden
- Reduce costs
- Monitor redesign results



Research agenda



- Reduce number of interviews
 - ►CE studies have found that there is little evidence of CEQ respondents are satisficing after more than one wave of the CEQ Survey (Edgar, 2005; Yan & Copeland, 2010)
- Reduce reference period length
 - Reducing to one month from one quarter had a positive impact on expenditure reporting rates, but higher attrition and burden (Creech et al. 2011)



- Reduce interview length
 - Research has been conducted to identify the impact of interview length on data quality, but the results have been inconclusive (Brattland et al. 2011)
 - Identifying the impact of interview length is ideally done in an experimental study, which is prohibitively expensive for the CE (2012 JPSM Practicum, forthcoming)



- Reduce proxy reporting
 - Proxy reporting is a source of underreporting in the CE surveys (Kojetin & Jerstad, 1997)
 - ►One approach is to give all household members a diary to record their expenses
 - ▶ 3 studies have found this to be an effective way to increase expenditure reports, but with risk to response rates (Edgar et al. 2006; NORC, 2001; Westat 2005)
 - ► Internet individual diary study planned



- Maximize record use & minimize recall
 - Findings show that recall aid use is associated with higher expenditure reporting (Safir & Goldenberg, 2008)
 - Confirmed anecdotally by interviewers (Shields, 2004)
 - ►But, encouraging use can be problematic (Edgar & Fricker, 2010; Geisen et al. 2011)
 - And recall aid use can be prohibitively time consuming (NORC, forthcoming)



- Incorporate new technology
 - ► CEQ/D: Financial software (PC or SP)
 - ► CED: Web, SmartPhone diaries

- Incorporate multi-mode interviewing
 - ► CEQ: In-person, plus telephone interviewing
 - ► CED: Paper, plus web and/or SmartPhone diaries



- Reduce number of interviews
 - ► As noted earlier, CE studies have found little evidence that CEQ respondents are satisficing after more than one wave of the CEQ Survey (Edgar, 2005; Yan & Copeland, 2010)
 - ► Suggests that although asking respondents to participate in 5 interviews is likely burdensome, there is no reason to reduce the number of interviews in an attempt to improve data quality



- Reduce interview length
 - ► Split questionnaire research
 - Preliminary simulation results indicate that split questionnaire designs for the CE can reduce survey length by at least 50%, with the impact on variances "varying" depending on the type of expenditure category (Gonzalez, 2012)
 - Depending on the type of split questionnaire design employed, there is the possibility of improving some other aspect of the survey process
 - Responsive split questionnaire designs show promise for improving data quality



- Reduce interview length
 - ► Global questions
 - A mixture of global questions (asked first) and detailed questions lead to higher data quality and more expenditure reports (Creech et al. 2011)
 - However, respondents use seemingly unreliable response strategies to arrive at answers to global questions (Edgar, 2012)



- Reduce interview length
 - Other methods associated with dropping questions:
 - Diary to interview imputation
 - Within-quarter interview imputation
 - Backcasting



III.C Reduce Costs

- Reduce interview length
 - ► Very little money is saved by shortening an interview (Elkin, 2011)
 - ► Most of the expense of an interview (especially the first one) is from contacting the respondent



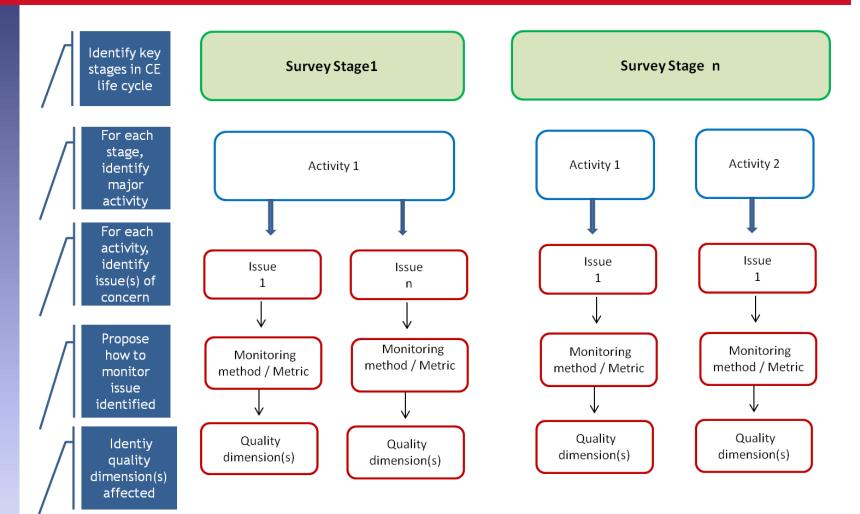
III.C Reduce Costs

- Reduce number of interviews
 - ► Bounding interview elimination
 - First interview data are used for bounding, and collecting rostering and inventory information
 - CE research has shown that the bounding interview may only be minimally effective in addressing telescoping errors (Elkin, 2012)
 - Significant cost savings could be realized by dropping the bounding interview
 - One implementation challenge is incorporating the rostering and inventory questions into the 2nd interview



- Data Quality Profile
 - A consistent, well-defined set of metrics can be used to establish baselines for monitoring trends in the quality of routine survey production activities over time (Fricker & Tan, 2012)
 - ► These metrics also can be drawn upon to evaluate the impact of survey design options under consideration, as well as external interventions that affect the survey







- Measurement Error Tracking
 - ► Determine sources of measurement error on expenditure reporting
 - Is the CE Program's focus on under-reporting appropriate? (e.g., records study results)
 - Distinguish between under-reporting (unreported incurred expense) and underestimation (incurred expenditure reported at a lower value)
 - ► Develop a methodology for tracking and evaluating changes in measurement error due to design changes



■ Burden Index

- ► Burden (actual or perceived) has been posited as one of the contributing causes to measurement error (Fricker et al. 2012)
- The ability to measure the effect of alternative design options on respondent burden would be a useful evaluation tool
- Further, a measure of burden could facilitate a more systematic examination of the association between burden and other survey measures of interest



IV. Challenges

- Synthesizing research results into a comprehensive redesign plan
- Budget for research, testing, evaluation, and implementation
- Sample size requirements
- Timing of research findings
- Pace of technological change
 - \triangleright Rs → PC → Laptop → SmartPhone → ??



Reduce Measurement Error

Number of Interviews

- Measurement Issues Study Final Report
 Creech, B., J. Davis, S. Fricker, J. Gonzalez, M. Smith, L. Tan, and N. To (2011)
- CE Data User's Survey Edgar, J. (2005)
- Panel Conditioning in Consumer Expenditure Interview Survey Yan, T., and K. Copeland (2010)

Interview Length

- Order Effects Test Final Report
 Brattland, J., J. Edgar, S. Maloney, P. Murphy, B. Steinberg, and N. Tseng (2011)
- 2012 JPSM Practicum Report JPSM Practicum students (forthcoming)



Reduce Measurement Error

Proxy Reporting

- Individual Diary Feasibility Test
 Edgar, J., Spell, S., Verlander, R., & Wetzel, G. (2006)
- The Quality of Proxy Reports on the Consumer Expenditure Survey Kojetin, B. and S. Jerstad (1997)
- Individual Diaries: Literature Review NORC (2001)
- A Field Test of a Multiple Diary Procedure for the Consumer Expenditure Survey Westat (2005)



Reduce Measurement Error

Record Use

- CE Validation Study (presentation)
 Edgar, J. & Fricker, S. (2010)
- U.S. Consumer Expenditure Records Study Geisen, E., A. Richards, C. Strohm (2011)
- Records Information and Feasibility of Use Report NORC (forthcoming)
- Mode Effects in a Survey of Consumer Expenditures Safir, A., and K. Goldenberg (2008)
- CEQ Field Conference Focus Groups Results from Supervisors Group Shields, J. (2005)



Burden

- Measurement Issues Study Final Report
 Creech, B., J. Davis, S. Fricker, J. Gonzalez, M. Smith, L. Tan, and N. To (2011)
- CE Data User's Survey Edgar, J. (2005)
- Global Clothing Questions Cognitive Testing Results Edgar, J. (2011)
- The Use of Responsive Split Questionnaires in a Panel Survey (presentation) Gonzalez (2012)
- Panel Conditioning in Consumer Expenditure Interview Survey Yan, T., and K. Copeland (2010)



Costs

- Cost Savings from Shortening Interview 1 Project Report Elkin, I. (2011)
- Recommendations Regarding the Use of a CE Bounding Interview Elkin, I. (2012)

Monitoring Results

- A proposal for a preliminary framework for monitoring and reporting on data quality for the Consumer Expenditure Survey Fricker, S., and L. Tan (2012)
- Exploratory Research on the Construction of a Summary Index for Respondent Burden Fricker, S., C. Kreisler, and L. Tan (2012)



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