

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

Questions and feedback are ***encouraged***

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
- Avg. Response Rate: 77% (CY 2010)

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

III.A Reduce Measurement Error

- 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)

III.A Reduce Measurement Error

- 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)

III.A Reduce Measurement Error

- 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

III.A Reduce Measurement Error

- 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)

III.A Reduce Measurement Error

- 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

III.B Reduce Burden

- 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

III.B Reduce Burden

■ 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

III.B Reduce Burden

■ 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)

III.B Reduce Burden

- 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*

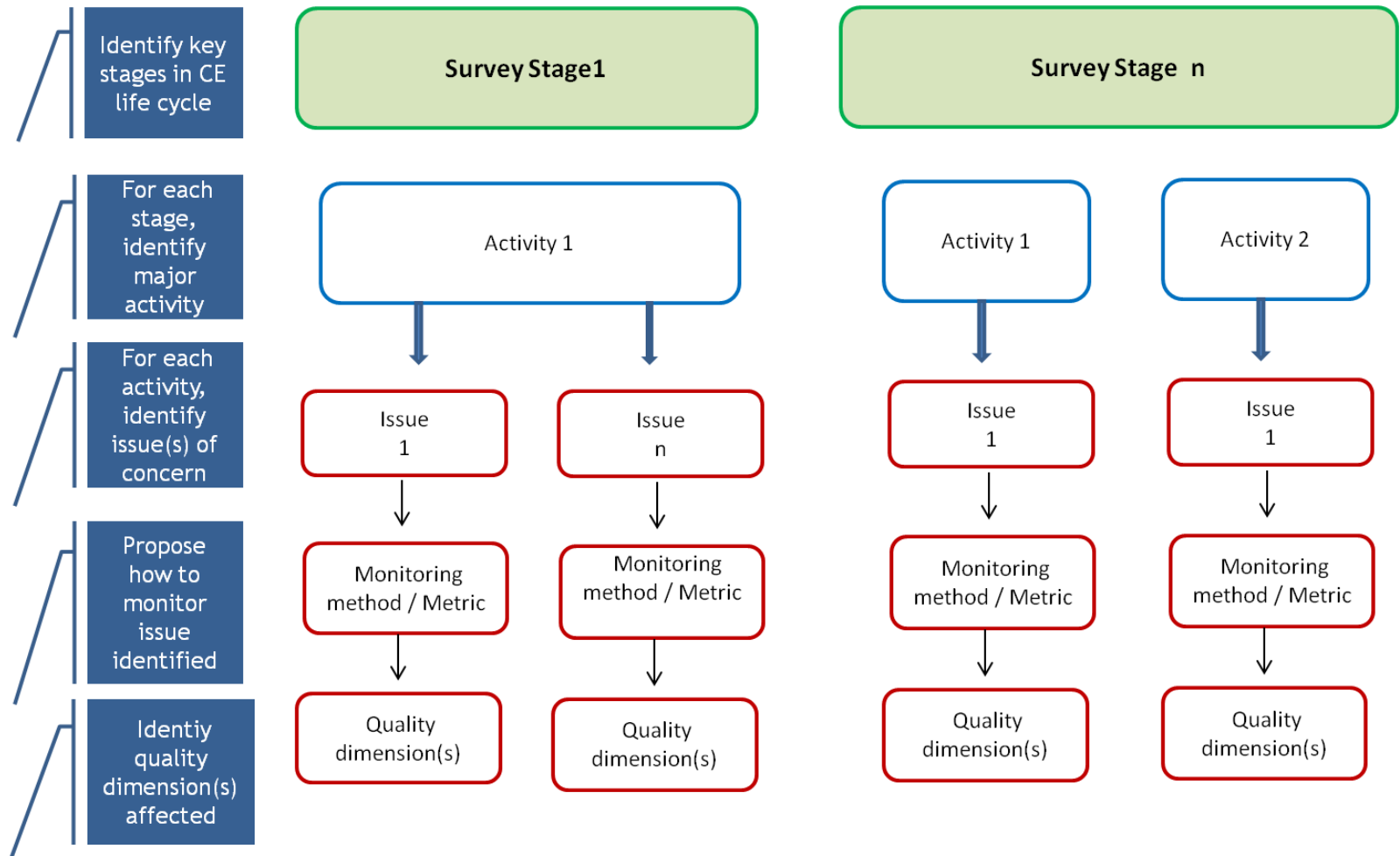
- First interview data are used for bounding, and collecting rostering and inventory information
- CE research has shown that the bounding interview may only be minimally effective in addressing telescoping errors (Elkin, 2012)
- Significant cost savings could be realized by dropping the bounding interview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

III.D Monitor Redesign Results

■ 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

III.D Monitor Redesign Results



III.D Monitor Redesign Results

- 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

III.D Monitor Redesign Results

■ 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



References

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)

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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)

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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)

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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)

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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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