

CPI Outlet Frame Survey Redesign

Madeleine Saxton

Division of Consumer Prices and Price Indexes

FedCASIC

April 18, 2018



Transitioning Outlet Collection

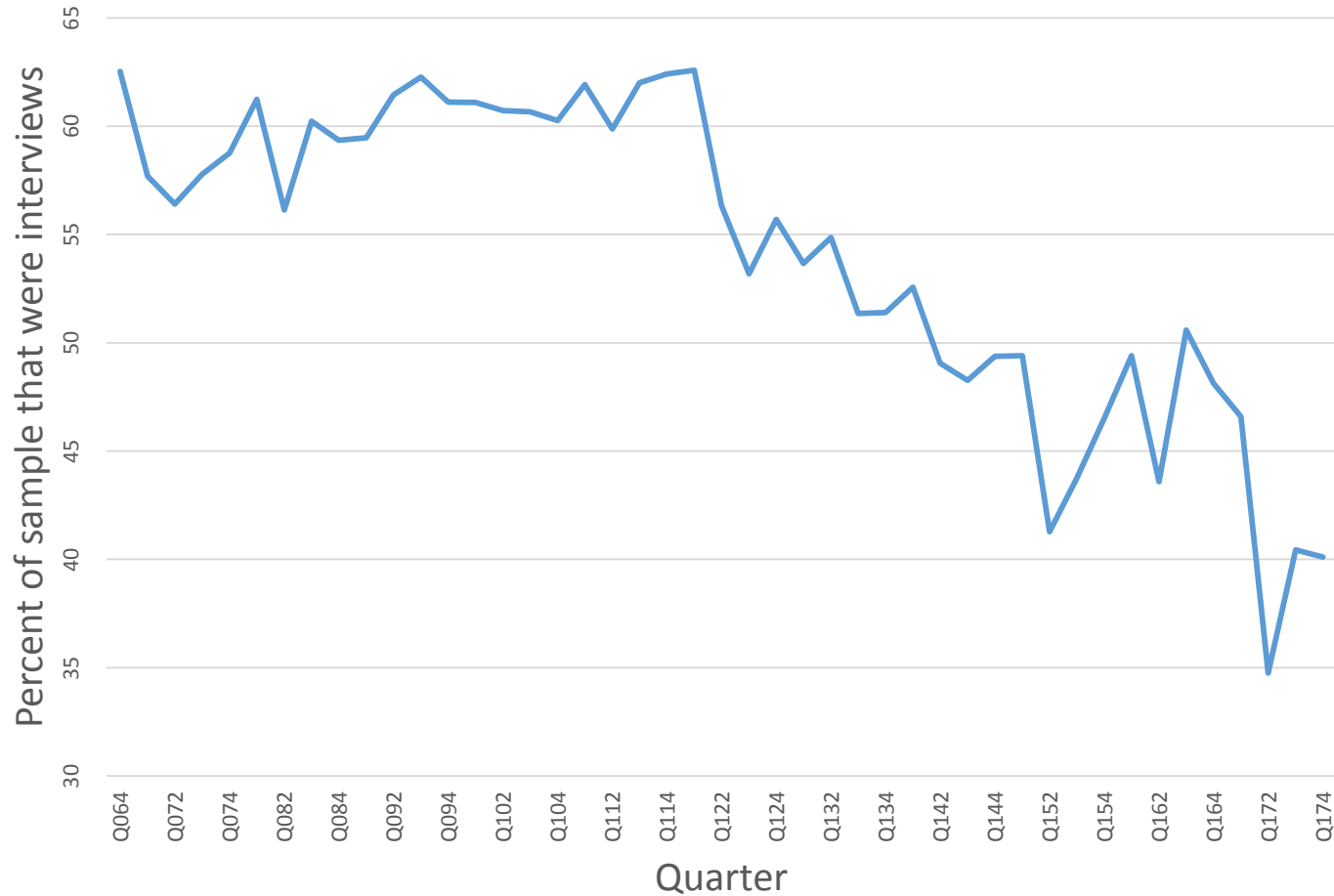
- Issues with current surveys
- Temporary solutions
- Replacement options
- Replacement selection
 - ▶ Overcoming hurdles
 - ▶ Outlet collection design

The Telephone Point of Purchase Survey

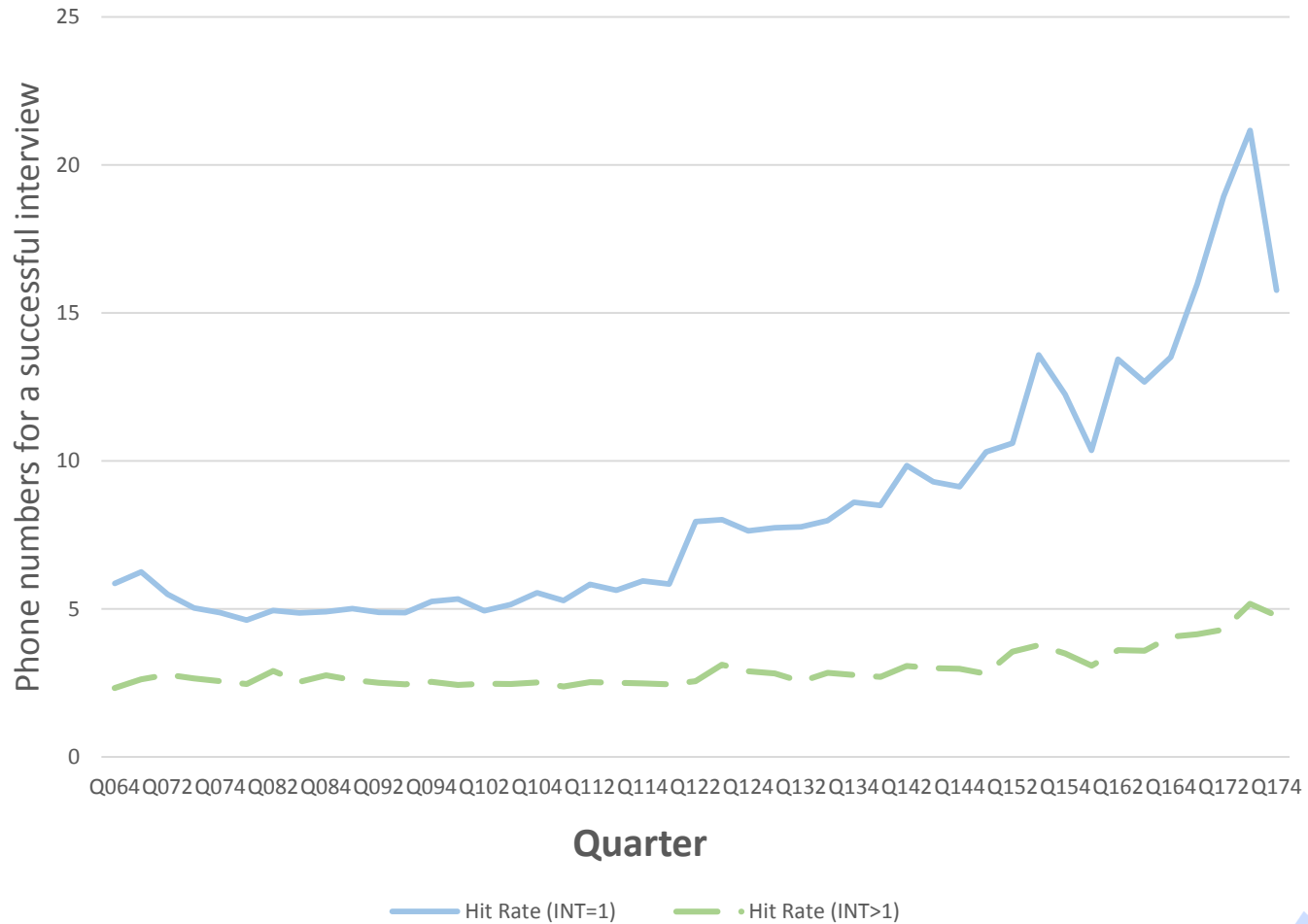
- Telephone survey conducted by Census for BLS
- The last random digit dialed CATI survey
- Rotating panel survey with 184 categories in 16 questionnaires
- Collects where urban consumers spend money and how much they spend
- Serves as the main source for CPI's sampling frames for its Commodities and Services Initiation and Pricing Surveys



TPOPS Declining Response Rates



Phone numbers needed to obtain an interview

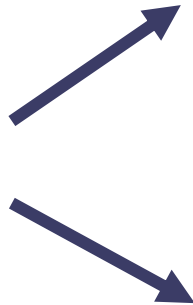


No significant increase in budget



Two Parallel Tracks

TPOPS



Mitigation strategies

Replacements

Mitigation strategies

- Increase the number of advance letters
- Reduce the number of call attempts
- Reduce the number of refusal conversion attempts
- Change to an eight panel design
- Decrease the target number of interviews each quarter

Big data replacements

- Census of Retail Trade
 - ▶ No access to data on small businesses
- Online quota surveys
 - ▶ Low response rates, high non-response bias
- BLS' Longitudinal Database
 - ▶ All items a business sells is unknown
 - ▶ CPI needs where people spend, not businesses in a city
- Adding outlet questions to the Consumer Expenditure Surveys

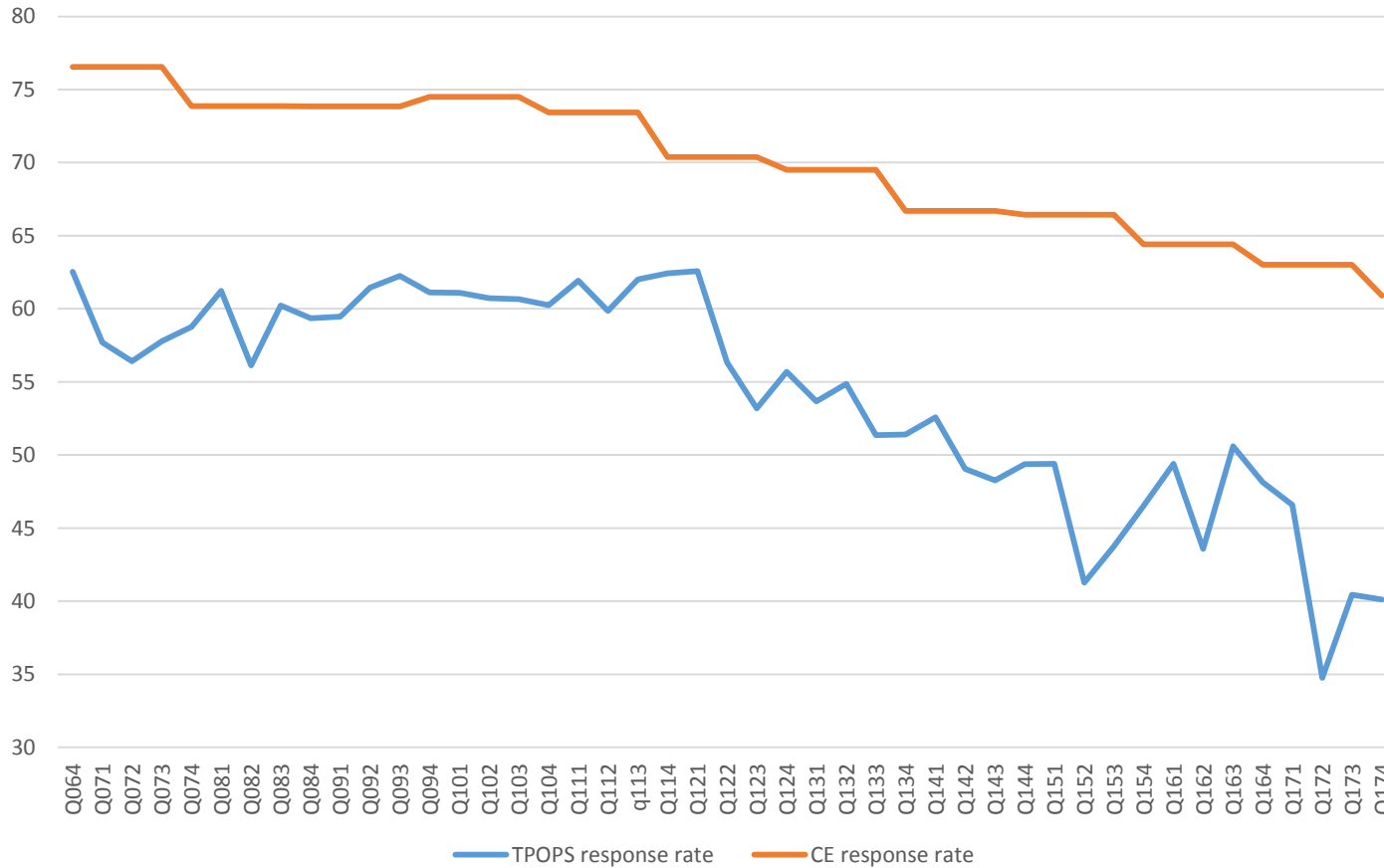
Consumer Expenditure Surveys

- Personal visit surveys
- Conducted by Census for BLS
- Two surveys
 - ▶ Quarterly Interview
 - CAPI
 - Once a quarter for four quarters
 - ▶ Diary
 - Two consecutive one-week diaries

Advantages of CE

- CE already collects expenditures used by the CPI
- Collects expenditures at the level needed for stores
- Better response rates

TPOPS and CE response rates 2006-2017



Challenges: Adding outlet questions to CE

- Different cities
- Outlet and expenditure data quality
- Respondent burden
- Outlet yield



Geographic Revision 2010

- CE implemented the geographic revision based on the 2010 Census in 2015
- CPI published indexes for the new geography beginning in January 2018

Outlet question tests in CE

- Third quarter 2016 added outlet questions
 - ▶ Only fourth interviews
 - ▶ Outlet questions for TVs, some apparel and event tickets
- Second and third quarters 2017: respondents received subsets of questions
- Third quarter 2018 will continue to add additional outlet questions
- Second quarter 2019 will add all outlet questions

Conclusions from production tests

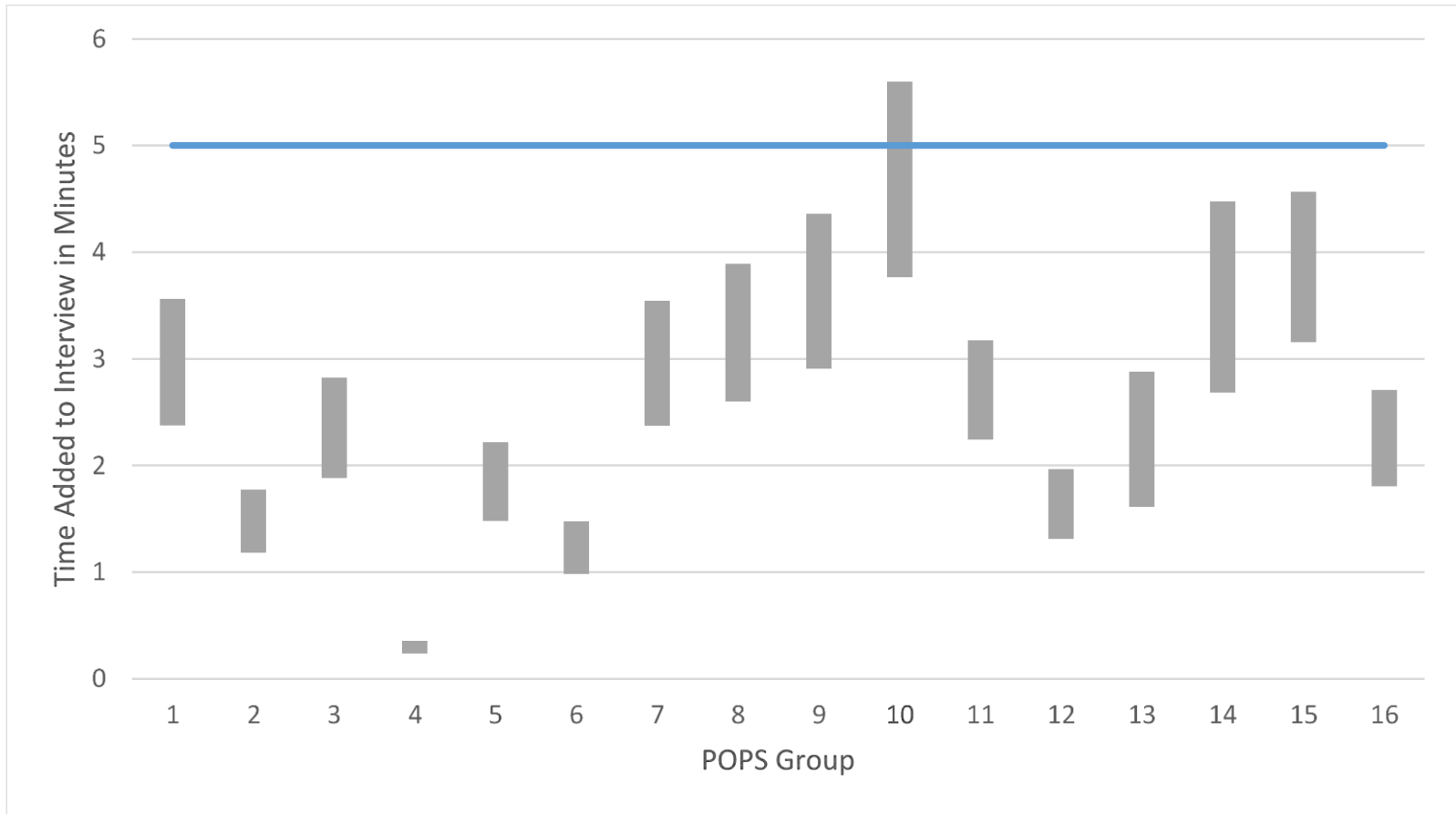
- Adding outlet questions does not negatively impact reported expenditures
- Respondents are able to report where they purchased items
- Allowed for estimates of burden and outlet yield

Respondent burden

Interview

- 143 POPS categories
- Broken up into 16 groups of expenditure categories or 'POPS groups'
- One POPS group asked each quarter
- Asking only outlet name, city, and state
- Minimizes respondent burden to 1-5 additional minutes

Total added burden by POPS group



Respondent burden Diary

- 41 POPS categories
- All outlets over two week period reported
- Only outlet name will be collected

DAY-1

ENTER
DAY-AND
DATE

...See pages 2-3 for examples. If you need additional space, use pages 18-23

Food and Drinks for Home Consumption

	What did you buy or pay for?	Is this item? Mark (X) one				Cost without tax	Mark (X) if purchased for someone not on your list	Store or Website where purchased
		fresh	frozen	bottled/canned	other			
101		1	2	3	4			
102		1	2	3	4			
103		1	2	3	4			
104		1	2	3	4			
105		1	2	3	4			
106		1	2	3	4			
107		1	2	3	4			
108		1	2	3	4			
109		1	2	3	4			
110		1	2	3	4			
111		1	2	3	4			
112		1	2	3	4			
113		1	2	3	4			



Outlet yield

- Defined as the number of outlets collected for each CPI frame
- Need enough outlets to select a representative sample
- Current desired yield: 6-8 times the number of outlets that will be selected



Outlet yield concerns

- TPOPS has variable recall periods
 - ▶ One week for frequently purchased items
 - ▶ Five years for infrequently purchased items
- CE Interview – Three month recall period
- CE Diary – One week recall period

Outlet yield concerns

- TPOPS' sample = 40,000 interviews/year
- CE Interview's sample = 33,000* interviews/year
- CE Diary's sample = 15,000* interviews/year

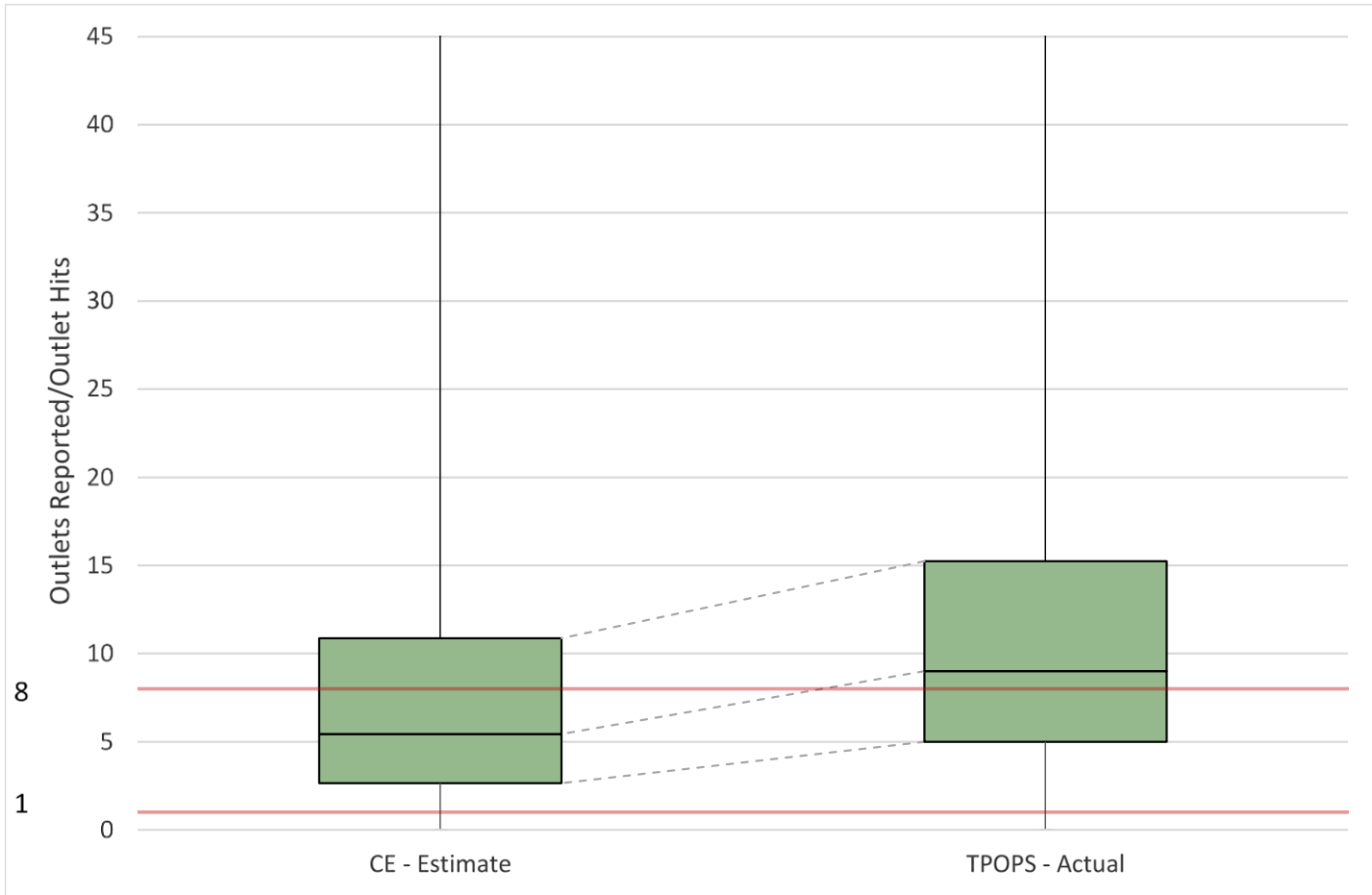
* Includes estimated sample increase

Estimates of outlet yield

- TPOPS median outlet yield ratio is 9
- The CE highest *estimated* median outlet yield ratio is 5.4



Distribution of outlet yield ratios



Extended recall questions

- Outlet yield analysis show that CPI will need more outlets than are expected to be collected in the body of the Interview
- For questions with no reported expenditures, an extended recall question will be asked at the end of the survey
- Extended recall will use TPOPS recall periods*

* 30-90 day recall periods will be extended to six months



Final design

■ Quarterly Interview

- ▶ Outlet questions asked in all interviews
- ▶ Rotating panels
 - 16 POPS groups
 - Outlet questions from one POPS group per quarter per city
 - All items asked over four year period
- ▶ Extended recall section

■ Diary

- ▶ Outlet column added to three sections

Contact Information

Madeleine Saxton

Economist

Division of Consumer Prices and Price
Indexes

www.bls.gov/cpi

202-691-6874

saxton.madeleine@bls.gov

