

## Comparing global questions and answers to results from detailed specific questions: Data on food expenditures from the Consumer Expenditure Survey

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How do the dollar amounts collected from global questions on spending categories compare to answers gathered by specific questions? Are they higher or lower, or similar? A study comparing 14 years of reports of itemized expenditures on food at home and food away from home from the Consumer Expenditure Survey (CE) Diary instrument with the responses from the global food questions from the CE Interview Survey show that *it depends*. Using data from 1998 to 2011, the aggregate dollars reported in the Diary for specific food purchases for eating at home are **always lower** than the global estimates from the Interview. The Diary to Interview ratio for this group of food at home items has consistently ranged between 77 percent and 82 percent. Conversely, the expenditures reported for eating at restaurants and away from home collected in the Diary are **always higher** than the global estimates from the Interview survey. The range is greater, from 166 percent higher to 189 percent higher between 1998 and 2006, and then from 104 percent higher to 122 percent between 2007 and 2011. There was a change in how the global question in the Interview Survey was asked in 2007 which caused a shift in the ratios.

### Results:

Table 1 shows the Diary/Interview ratios for Food at Home, with the amounts adjusted for comparability. See the Methodology section below for how the categories were adjusted. Reported itemized purchases in the Diary are consistently lower than the global estimates from the Interview.

**Table 1**  
**Itemized expenditures for Food at Home from the Diary**  
**compared to Interview Global Estimates**  
**Diary/Interview Ratio**  
(comparable categories only)

Year	Percent
1998	78%
1999	81%
2000	81%
2001	81%
2002	80%
2003	81%
2004	82%
2005	79%
2006	78%
2007	77%

2008	78%
2009	80%
2010	77%
2011	78%

Table 2 shows the adjusted Diary/Interview ratios for Food away from Home. Respondents in the Diary consistently report higher spending on itemized meals away from home than the global estimates provided by respondents in the Interview Survey.

**Table 2**  
**Itemized expenditures for Food away from Home from the Diary**  
**compared to Interview Global Estimates**  
**Diary/Interview Ratio**  
(comparable categories only)

Year	Percent
1998	166%
1999	172%
2000	169%
2001	185%
2002	189%
2003	178%
2004	185%
2005	192%
2006	189%
2007	104%
2008	121%
2009	122%
2010	117%
2011	121%

### **Methodology and Data Used**

Published total annual food expenditures primarily come from the Diary, however a few expenditures in the integrated total are sourced from the Interview Survey. For this comparison, the only Food at Home expenditure that comes from the Interview -- food for home consumption purchased on trips -- was subtracted from the total before calculating the ratios. For calculating the Diary-to-Interview ratios for Food away from Home, the amounts for integrated categories that come from the Interview, i.e., board, catered affairs, meals during out of town trips, school lunches, and meals as pay, were subtracted from the total.

### **Analysis**

Why are expenditures for itemized food at home purchases from the Diary always lower than global Interview responses? There are two suggested causes.

1. There is a difference in how consumers estimate their usual weekly amount compared to their actual itemized expenses, and the weekly estimated amount is not cognitively the same. In addition to asking respondents to record each food purchase, Diary respondents are asked the same global questions about food purchases as the respondents in the Interview Survey. Research using 2011 Diary data showed that the weekly itemized total is higher one third of the time than the global estimate from that same household – that is, respondents spent more this week than their estimate of a usual week – but is lower in approximately two thirds of the cases. Investigating these cases further, over 10% of all the 2011 Diary households reported zero purchases in a week. They indicated that they bought no groceries in that time period. However at the same time, those households responded to the global question that their average weekly grocery bill was \$98. These zeroes lower the published average for Diary food, and cause the global estimated amount to be higher than the published itemized amount.
2. The global estimate for food at home is calculated as the difference between total purchases at grocery stores minus the purchase of non-food items, plus other purchases of food other than at grocery stores. Because the amount spent on food is the residual, the cause of the higher ratio may be consumers consistently underestimating the non-food amount of their usual weekly grocery shopping trip.

Why are itemized food away from home purchases always higher than global estimates? What caused the change in the ratios from 2006 to 2007? There are two key findings.

1. When asked a global question, respondents have always underestimated their actual costs or perhaps the number of times they eat out over an average length of time compared to filling out a diary. Fourteen years of data show a consistent pattern: asking for specific restaurant expenditures yields a higher dollar total.
2. Secondly, the longer the time period over which respondents are asked to provide an expenditure estimate to a global question, the more respondents under-report their spending on food away from home. From 1998 to 2006 Interview participants were asked to estimate how much per month they spent eating out. The Diary/Interview ratio was between 166 to 192 percent higher. In 2007 the global question was changed from “monthly” to “weekly.”  
The new question is “What has been your or your CU's usual WEEKLY expense for meals, or snacks from restaurants, fast food places, cafeterias, carryouts or other such places?”  
The pre-2007 question had been “What was the usual MONTHLY expense for these purchases?”  
The shorter reference period brought the ratio closer to 100 percent. Note that in 2007 the

estimates from the Interview and Diary were almost identical – the Diary to Interview ratio was only four percent higher that year. Economists in the CE Production Branch suggest there was some overlap that year in how the global question was asked; perhaps some field representatives were still asking for “monthly estimates” out of familiarity with the old survey question, while the computer system was recording the amount as weekly. As shown in Table 2, the Diary/Interview ratio then changed to 21 percent higher in 2008 and has stayed between 17 and 22 percent higher each year since then.