

## **Recall Period in the Consumer Expenditure Surveys Program**

### **1. Background Statement**

Memory studies consistently demonstrate that recent events are recalled more accurately than events occurring further in the past (Groves 1989), that memory decay increases with longer recall periods, and that memory decay is greater for less salient events (Silberstein 1989). The resulting recall error, or misreporting of events due to problems in recall, may stem from both errors of omission, such as the simple forgetting of events, as well as errors of commission, such as misreporting due to telescoping events from an earlier or later period into the recall period.

The CEQ currently employs a three-month recall period. The length of this three-month recall period, combined with the wide range of question types asked, is generally thought to represent a substantial cognitive burden for respondents. Furthermore, there are different approaches to asking about the three-month recall period, which may compound the cognitive burden for respondents. For example, some CEQ questions ask about cumulative expenses over the entire three-month recall period, other questions ask respondents about total monthly expenditures for the first, second, and third month of the recall period, and still others ask respondents for average weekly expenses over the recall period. As Mathiowetz (1987) summarizes, these variations in the reference period require that respondents search their memory for several different time periods, often without regard for the best way of grouping the various types of recall questions together. For example, all questions using the three-month “cumulative expenses” format might be grouped in a single block of questions, rather than being interspersed with other question formats and grouped by type of expenditure.

### **2. Relevant Work**

CE is currently investigating the impact of a one-month versus three-month recall period in a study which was fielded in June of 2010. Previous research on recall effects in CEQ has generally shown a negative relationship between the length of recall period and the level of expenditures reported. In an early study testing the accuracy of recall of durable and other goods for varying periods of 3, 6, and 12 months, Sudman and Ferber (1971) found a sharp decline in reported recall of durable purchases as the recall period increased across interview versions. For

reports of furniture, rugs, draperies, and major appliances, the 3-month recall resulted in an estimated downward bias of 11 percent, the 6-month recall resulted in a 41 percent bias, and the 12-month recall resulted in a 47 bias. Additionally, within the 12-month recall version, the average number of purchases reported in the twelfth month was 78 percent less than the number reported in the first month.

Additional CEQ studies underscore this negative relationship between length of the recall period and the degree of recall error across expenditure categories. In an analysis of recall effects for several expenditure categories, Silberstein and Jacobs (1989) found that within the same 3-month recall period, mean expenditures were between 15 and 40 percent lower for the most distant recall month compared to the most recent. Chopova et al. (2000) also noted that within a 3-month recall period, the level of reported expenditures tends to decrease across recall months, with the highest expenditure reported for the most recent recall month (recall month 1), a lower amount for the middle month (recall month 2), and the lowest for the most distant month (recall month 3). Finally, Cho et al. (2004) found that reporting rates exhibited a statistically significant decline from the closest to the furthest month.

To make the issue of recall error more complex, Sudman and Ferber (1971) also found that larger households with three or more members and households above the median income show sharp declines in the levels of recall in months 2 and 3 as compared to month 1, while other households do not decline as much. Research by Silberstein (1989) corroborates this finding, in which recall effects are found to not be solely a function of recentness of events, but that respondent characteristics also play a role. For example, Silberstein found a positive relationship between recall error and family size, noting that “the respondent's family setting is important in relationship to recall effects; size and type of the consumer unit are especially noteworthy. The findings suggest what seems logical: it is easier to report when fewer family members are involved and more difficult when there are more members.” Finally, Hurd and Rohwedder (2008) report on an innovative approach involving varying recall periods in the Health and Retirement Consumption and Activities Mail Survey (HRS-CAMS), in which respondents are given the option of choosing from a set of reference periods of different lengths. The authors found that respondents who chose a short reference period exhibit higher spending than those who chose a longer reference period, “that is, they tend to self-select into the more appropriate time frame.”

### **3. Key Issues**

The research cited above provides supporting evidence that when looking within a three-month recall period, the month closest to the time of interview exhibits a higher level of reporting than the month further away in time. More broadly, the research results point to a general association between a decrease in the length of recall period and an increase in reporting levels. However, since many expenditure categories asked about in CEQ represent relatively infrequent purchases (e.g., a car or major appliance), decreasing the recall period could require an increase in sample size to account for a resulting increase in variance estimates. For example, changing from a three-month to a one-month recall period for 100 respondents might require adding 200 respondents in order to maintain reasonable variances for these infrequent expenditures. The cost of increasing sample size in this fashion would be prohibitive.

Further, the impact of using varying recall period by expenditure item within a single survey has not been adequately researched in the context of the current CEQ interview<sup>1</sup>. For example, using a one-year recall period for major purchases and a one-month recall period for more minor purchases might improve reporting for minor purchases without a significant decrease in reporting for major purchases, but that outcome has not been tested and the impact on estimation, variances, and field costs is unknown.

### **4. Discussion Points**

We seek recommendations for both alternative designs for the CE Surveys and for research that could be conducted to determine the optimal design. CE has grappled with the question of whether an expected increase in reporting accuracy resulting from a decrease in the recall period outweighs the possible impact on cost and sample size. The primary constraint to any design change in the survey is that in order to meet its objectives, CE must produce detailed monthly expenditure estimates as well as annual expenditure estimates at the household level. In the discussion of this issue for CEQ, the following questions might be considered:

1. What are the key aspects of recall period that CEQ should address during the redesign process?

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<sup>1</sup> Although the 1972–73 Interview Survey used varying recall periods for different sections of the survey instrument, no evaluation work was done to assess the impact of the varying periods. However, varying recall periods are used in a related BLS survey, the Telephone Point of Purchase Survey (TPOPS).

2. How should CEQ approach balancing low item-incidence levels and sample size requirements with a shorter recall period?
3. Are there any other tradeoffs that CEQ should balance when dealing with the topic of recall period?
4. What are best-practices for determining ideal the recall period for the various expenditure categories within the CEQ questionnaire?
5. What are best-practices for grouping questions using varying recall periods within a survey?
6. What should the next steps be to explore and research this issue for a possible change in CE methods?
7. How would you design a survey, or set of surveys, to collect detailed monthly data on a comprehensive range of expenditures? The proposed design should address recall period as well as other relevant survey design issues, while meeting the requirements specified in the CPI Requirements Document.

## 5. References

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