

Response Rates in the Consumer Expenditure Survey

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Response rates are one of the most important indicators of a survey's quality. It is important to monitor survey participation and to monitor response rates because non-response can introduce bias into any survey's published estimates. When a survey's responders and nonresponders differ in terms of the characteristic being measured, great care must be taken to produce accurate estimates for the population as a whole. Although most surveys have procedures to adjust for nonresponse, any imperfection in them is magnified when response rates decline. Therefore, it is important to monitor response rates and keep them as high as possible.

This article describes how the Consumer Expenditure Survey (CE) categorizes the outcomes of visits to survey households in terms of response and nonresponse, and explains how the U.S. Bureau of Labor Statistics (BLS) calculates the CE response rates.

Selection of households

The CE selects a representative sample of households from across the Nation to find out how Americans spend their money. Specific households to visit are drawn from the decennial census 100-percent-detail file, which is a complete list of addresses of American households. Independent samples of households are selected for the Interview and Diary components of the CE.

Field representatives visit households in each survey's sample to collect data. For the Interview survey, people living at an address answer the survey questions five times, with the interviews conducted at 3-month intervals for 5 quarters. For the Diary Survey, people living at an address answer the survey questions two times, keeping a diary for two 1-week periods. Gaining cooperation at each household is important because each household in the sample represents many American households.

Nonresponse types and outcome codes

Like any survey, the CE does not get responses from every household in its sample. At most addresses, a household member participates, giving a "completed interview." However, at some addresses, the survey's field representative finds an occupied housing unit but either is unable to contact an eligible household member or is unable to convince a reluctant household member to participate in the survey. At still other addresses, the housing unit is unoccupied, or the structure is nonresidential or otherwise not eligible to participate in the survey. Such cases are called "nonresponders."

Field representatives assign outcome codes to each address that they visit. Multiple visits to an address may be necessary before a final outcome code

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can be assigned. Sometimes, multiple visits are made in an attempt to convince reluctant households to respond to the survey; other times, it takes more than one visit before a field representative actually contacts an eligible household member. When field representatives make multiple visits and are still unable to find anyone home, they may obtain information from neighbors or people in the area to verify the status of the housing unit. Sample households are assigned a separate outcome code for each quarter in the Interview survey and for each week in the Diary survey. Although field representatives assign the outcome code, BLS may make some changes later based on criteria that measure the completeness of respondents' reporting of household income and expenditures.

Field representatives can select from more than 30 different outcome codes to describe the nonresponse situation that they find at an address. These outcome codes are categorized as Types A, B, and C nonresponses. Some common outcome codes for Type A nonresponses are as follows: Temporarily absent; No one home (unable to contact); Refused—hostile respondent; Refused—time-related excuses; and Refused—language problems. Some common outcome codes for Type B nonresponses are: Occupied by persons with usual residency elsewhere; Vacant for rent; Vacant for sale; and Unit under construction. Some common outcome codes for Type C nonresponses are: Dwelling demolished; House or trailer moved; Dwelling condemned; and Located on military base or post.

Two essential concepts when classifying sample addresses in terms of response and nonresponse are “eligible” and “in scope.” Completed interviews and Types A and B nonresponders are all “in scope,” while Type C nonresponders are “out of scope” for the CE. In scope refers to addresses that have residential housing units. Out-of-scope addresses are generally nonresidential.

An address is eligible to participate in the survey if the residential housing unit at the address is occupied by its

usual residents; otherwise, it is not eligible. Completed interviews and Type A nonresponders are eligible, but Types B and C nonresponders are not eligible. Only eligible addresses are used in the response rate calculations.

Type A nonresponders are both in scope and eligible, because their housing units are occupied by the usual residents. Type B nonresponders are in scope, but they are not eligible, because the housing units are not occupied or the housing units are occupied solely by persons whose usual place of residence is elsewhere. Interviews are not possible for Type C nonresponders, because these cases are out of scope and permanently not eligible to participate in the CE; empty lots or buildings used for nonresidential purposes fall into this category.

In summary, results of visits to the sample addresses are divided into four main categories:

- Completed Interviews (eligible cases that are interviewed—in scope)
- Type A nonresponses (eligible cases that are not interviewed—in scope)
- Type B nonresponses (cases that are not eligible for interview—in scope)
- Type C nonresponses (cases that are not eligible for interview—out of scope)

Response rates

The CE program defines the response rate as the percent of eligible house-

holds that actually are interviewed for each survey. Types B and C nonresponders are not part of the response rate, because they are not eligible for the survey.

Response rates are reported separately for the Interview and Diary components of the CE. When calculating a response rate for the Interview survey, BLS generally uses outcome information only from the second through fifth interviews. Information from the first interview is used only for “bounding” purposes, which address a common problem in which survey respondents tend to report expenditures to have been made more recently than they were actually made. When calculating a response rate for the Diary survey, BLS uses outcome information from the two 1-week periods a household is in the sample.

The sample size and response status for housing units “designated” for the Interview survey in 2004 and 2005 are shown in table 1. The CE counts each of the four “nonbounding” interviews at a household (interviews 2–5) separately when reporting the number of housing units designated for the Interview survey; in other words, interviews 2–5 at one household generally represent four housing units designated for the survey. In 2005, there were 49,242 housing units designated for the Interview Survey. Field representatives occasionally find more than one housing unit at the addresses they visit, so the number of housing units designated is slightly more than the number of addresses selected for the sample. Those 49,242 housing units designated for the survey contained 39,988 eligible units and 9,254 ineligible units. The 39,988

Table 1. Analysis of response in the CE Interview Survey, 2004 and 2005

Sample unit	2004	2005
Housing units designated for the survey	50,509	49,242
Less: Type B or C nonresponses	9,626	9,254
Equals: Eligible units	40,883	39,988
Less: Type A nonresponses	9,798	10,184
Equals: Interview units	31,085	29,804
Percent of eligible units interviewed	76.0	74.5

eligible units produced 29,804 completed interviews, yielding a response rate of 74.5 percent ($29,804/39,988=0.745$).

In 2005, the CE's sample design was changed. The list of addresses from which the sample is drawn was updated by replacing the 1990 decennial census 100-percent-detail file with the 2000 decennial census 100-percent-detail file. Under special procedures, all households selected from the 2000 Census-based sample in January 2005 were treated as first interviews during the transition. Hence, as shown in table 1, the number of Interview survey

housing units designated in 2005 is less than normally would be expected.

The sample size and response status for housing units "designated" for the Diary survey in 2004 and 2005 are shown in table 2. The CE counts each of the two 1-week diary periods at a household separately when reporting the number of housing units designated for the Diary survey. In 2005, there were 26,054 housing units designated for the Diary survey. (The two diaries are counted as separate interviews.) Field representatives occasionally find more than one housing unit at the addresses they visit, so the number of

housing units designated is slightly more than the number of addresses selected for the sample. Those 26,054 housing units designated for the survey contained 21,309 eligible units and 4,745 ineligible units. The 21,309 eligible units produced 15,126 completed interviews, yielding a response rate of 71.0 percent ($15,126/21,309=0.710$).

For both the Interview and Diary surveys, the number of Types B and C nonresponses decreased from 2004 to 2005. This decrease can be attributed to the more up-to-date list of addresses used to select the sample in 2005.

Conclusion

The CE collects expenditure data from a representative sample of American households. Like any survey, the CE does not get responses from every household in its sample. This article has described how the CE categorizes the outcomes of visits to survey households and how it calculates response rates. It is important to monitor response rates and to keep them as high as possible in order to minimize the amount of bias that can be introduced into the survey estimates. ■

Table 2. Analysis of response in the CE Diary Survey, 2004 and 2005

Sample unit	2004	2005
Housing units designated for the survey	27,385	26,054
Less: Type B or C nonresponses	5,746	4,745
Equals: Eligible units	21,639	21,309
Less: Type A nonresponses	6,722	6,183
Equals: Interview units	14,917	15,126
Percent of eligible units interviewed	68.9	71.0