

Getting the most from Consumer Expenditure Survey (CE) tables

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This page contains tips on how to understand and utilize all the information on the CE tables.

Consider the Variance when interpreting the numbers

Care should be taken when analyzing detailed expenditure subcategories in both the standard and prepublication tables, as a small number of households reporting an expenditure can cause the mean dollar estimate to be imprecise. Users should consider the coefficient of variation (CV) published with the dollar amounts. Expenditures with CVs of 25% and over are generally considered unreliable. For further information on standard error and variance in the CE, see: http://www.bls.gov/cex/ce_se_2014.pdf

Consider Characteristics while interpreting the numbers

There are a number of demographic characteristics at the beginning of the tables that can be used to assist in analyzing data in a column, or when comparing different columns in a table or tables. Nationally published articles often site the Bureau of Labor Statistics CE data in a manner that may appear misleading by not having mentioned or considered the characteristics. Customers using our tables often contact us to verify that they are interpreting our data correctly and quite often they are not seeing the whole picture. They hone in on particular expenditures or income mean estimate that they are interested in, and overlook the beginning of our table. Some characteristics and examples follow.

Number of [Consumer units](#) (in thousands)

This is the first row on the top of our published tables. It is the weighted US population from the Interview survey. For 2014 the published weight is 127,006 representing 127 million Consumer units. While this figure applies to the Income statistics which all come from the Interview survey, it cannot be used to multiply food expenditures and other items which come from the Diary. For the All consumer units column the calculation would be very close but in the other table columns with smaller subsets of the total population the disparity in weights is sometimes quite significant. For example, using the Income table from 2014 we have an *All consumer unit* column Diary weight that is 99.8% (126,735,589/127,005,859) of the Interview weight. The Less than \$5,000 income column on the other hand has a Diary weight that is only 78.3% (4,786,967/6,115,236) of the Interview weight. These weights can be found at the very last rows of the integrated prepub tables, available on [request](#).

Average number of people in the consumer unit

Our 2014 quintile table shows the lowest and highest quintile mean food expenditures of \$3,667 and \$11,595 respectively. The highest quintile spends 316 percent, or more than three times as much on food than the lowest 20 percent. Although the two columns each represent an equal number of weighted Consumer units, these households are not similar in size. Taking into

account that the lowest quintile has an average of 1.7 people per consumer unit while the highest quintile has 3.2 persons the apparent difference *per person* changes considerably. Per-capita food spending by the top quintile was 168% higher than the lowest quintile: \$3,623 compared to \$2,157.

Number Earners in consumer unit

One may want to consider this characteristic when looking at *Money income before taxes*, especially the *Wages and salaries* component. In the published version of the 2014 Quintile table we can see that the lowest quintile has on average one half of an earner for per consumer unit while the highest quintile has on average more than two earner for per consumer unit. In addition in the income section, we see that wages and salaries make up about a third of total income for the first quintile but accounts for over 80 percent of the highest quintile's total income. If one is interested consumer units with more than two earners, for example use the Number of Earners table where those estimates are shown as a subset of the full population.

Adults 65 and older

Looking at the people that make up the first and fifth quintiles we see that *Adults 65 and older* make up about one quarter of the first quintile and around one sixteenth of the top quintile. If interested in seniors there is a column in the Age table where the reference person of the Consumer unit is 65 or older. The *Adults 65 and older* row has a mean that shows they make up about three quarters of the population in this column: 1.4 of the 1.8 average number of people. These consumer units have on average one half of an earner for every consumer unit, and Wages and salaries that are about one third of total income similar to what we saw in the lowest quintile. Their average Total income, and Wages and salaries however are more than four time greater than the lowest quintile. Those in the *65 and older* column CUs are spread out among the different quintiles. If one is interested, we have two-year tables with Age cross tabulated by income. We use two years of data to produce these tables to get a sufficient sample. Even with the larger sample the data are subject to large variances and fluctuations. Theses tables are on the web under the section [Current Cross-tabulated tables](#). They are not produced in the larger prepublication version because of the sample size, and they only contain mean values. The methodology for producing and providing variances for these tables is being researched.

Housing tenure: Percent Homeowners or Renters

We often receive queries from customers using our *All Consumer unit* column asking how the published average rent could be so low. In 2014 the *Rented dwellings* row under the Housing section has an average annual expenditure of \$3,631; dividing this by 12 months would equal just over \$300 a month -- no wonder this average rent would be questioned. If one looks at the characteristics however, you see that only 37 percent of Consumer units are renters. One should divide the dollar average for all consumer units by .37. This equals an average rent for renters being about \$800 a month, a much more reasonable figure. An alternative to this extra calculation would be to use the CE *Housing tenure and type area* table and look at just the subset of renters in the *Renters* column. Here the average annual rent is \$9,559 or \$797 a month. You could take this one step further and use the Interview table along with an associated explanation

page and calculate reported rent by renters in a given quarter and discover that only about 95 % of renters actually report out of pocket *Rented dwelling* expenditures making the average by those who pay cash rent closer to \$840. Similar calculations can be made for Homeowners, such as for *Homeowner insurance*. When looking at mortgage payments and *mortgage interest and charges*, there is a further breakdown of Homeowners for those with and those without mortgages. Keep in mind that the principal portion of a mortgage payment is collected as a reduction to liabilities and is not considered an expenditure.

Number of Vehicles owned or leased

This is another useful characteristic that is often used when comparing transportation expenditures. It would be a factor to consider when looking at expenditures for items such as *Vehicle insurance*, *Gasoline and motor oil*, and *Other vehicle expenses*.

Integrated table results

All published tables are integrated, meaning they use data from the two different CE surveys. The means are annualized.

Interview survey expenditures are collected for a quarter through a recall method asking about the previous three months before the interview takes place, and are multiplied by four to get an annual amount. Tables cover an expenditure 12 month time period, and not the collection year. For example in the 2014 annual table there are expenditures that were collected in January, February, and March of 2015. January interviews are all mapped to the previous year. February Interviews would be divided by month with the January expenditure reported for that year and November and December expenditures would go to the previous year's table.

Diary survey data are collected for a week of expenditures and multiplied by 52 for use in the 12 month tables.

New and ending rows for expenditures from the Interview survey generally begin in April collection, therefore those rows may not have a complete year of data in them. The row title would be annotated with a "from" or "thru" quarter remark such as *Residential telephone/pay phones (thru Q20131)* or, *Assets taken from farm or business (thru Q20131)*.

Percent reporting cannot be annualized

The percent of consumer units making an expenditure can only be reported covering the time period in which the data were collected. For example, the percent reporting for vehicle insurance is per quarter, and most households do not pay car insurance premiums every 3 months. The percent reporting will be either weekly or quarterly depending on the survey used as the source of that expenditure item. Aggregated rows that have data from both surveys do not have a percent reporting calculation. To see the percent reporting numbers for disaggregated rows one should [request](#) the Interview or Diary survey prepublication data table.

Aggregate Shares

Aggregate shares are produced in a [separate run](#) of the published annual calendar year tables. They are not calculated in a prepublication format.