



FOCUS on Prices and Spending

Consumer Expenditure Survey



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Current Price Topics

Household energy spending: two surveys compared

This report compares spending on selected household energy items as measured by the Bureau of Labor Statistics (BLS) Consumer Expenditure Survey (CE) and by the Residential Energy Consumption Survey (RECS), sponsored by the Energy Information Administration (EIA) of the U.S. Department of Energy. The CE data are compared with the RECS data for 2001 and 2005. (RECS data for 2005, published in 2009, are the most recent available.)

There are many differences between the CE and the RECS and adjustments were made to the data from both surveys to make them more comparable for this analysis. (See the section on Methods for Comparison below.) After the adjustments, the

results in table 1 show that the difference in comparable total expenditures for selected energy items reported by the two surveys for the 2 years compared was less than 10 percent. In 2005, the CE reported \$204.5 billion in spending for electricity, natural gas, fuel oil, and bottled gas (liquefied petroleum gas (LPG)) compared with \$191.6 billion reported by the RECS, a difference of 7 percent.

As shown in table 1, the CE-RECS ratios are relatively stable over the years 2001 and 2005 and the CE estimates are consistently higher, with the exception of the estimates for fuel oil and LPG. Among the energy components, CE-RECS ratios were higher for electricity and natural gas and lower for fuel oil and LPG, which dropped from 0.99 in 2001 to 0.71 in 2005. The 91-percent increase from 2001 to 2005 in the RECS estimate for fuel oil and LPG exceeded the 36-percent increase reported by the CE and

Table 1. Aggregate consumer expenditures on energy, total and selected household energy items, adjusted for renters energy costs, Consumer Expenditure Survey (CE) and Residential Energy Consumption Survey (RECS), 2001 and 2005
[In billions of nominal dollars]

YEAR	Total			Electricity			Natural gas			Fuel oil and liquefied petroleum gas		
	CE	RECS	CE- RECS ratio	CE	RECS	CE- RECS ratio	CE	RECS	CE- RECS ratio	CE	RECS	CE-RECS Ratio
2005	\$204.5	\$191.7	1.07	\$134.3	\$121.1	1.11	\$55.2	\$49.2	1.12	\$15.1	\$21.4	0.71
2001	166.7	153.4	1.09	110.5	97.2	1.14	45.1	44.7	1.01	11.1	11.2	0.99

accounted for the decline in the ratio. The small sample size of households using fuel oil and LPG could explain the volatility of the ratios for these fuels.

Chart 1 shows the total expenditures reported by the CE and the RECS for selected energy items. The CE aggregate expenditure estimates for electricity consistently exceed those reported by the RECS. Aggregate electricity expenditures account for 66 percent of total energy expenditures in the CE and 63 percent of the total in the RECS in both years.

Features of the Surveys

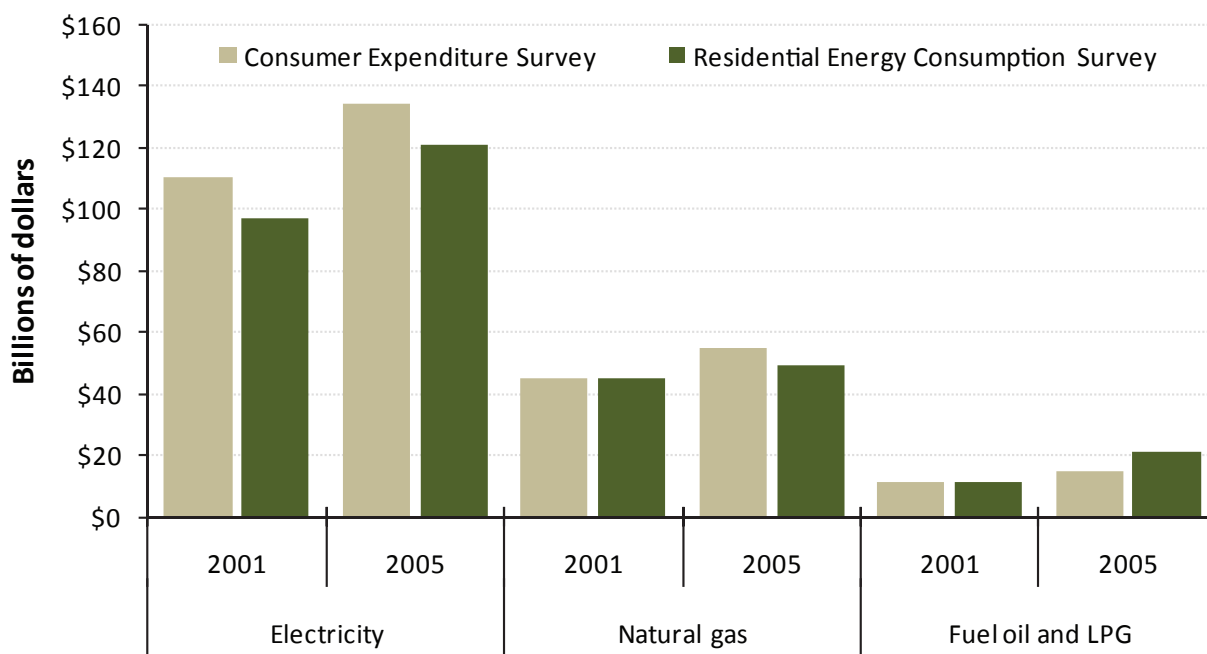
Many key elements distinguish the two surveys:

- The CE is a comprehensive survey that col-

lects data on all household expenditures and financial data, whereas the RECS is a special-purpose survey that collects specific data on household energy use and spending.

- Some consumers receive assistance paying their utility bills. Both the CE and the RECS report the utility amount cost regardless of the actual out-of-pocket expenditure.
- The CE energy data are based upon expenditure information provided by survey respondents who are interviewed about their utility bills every 3 months over a 12-month period. The RECS data are obtained from the administrative records of energy providers to the sample-housing unit. The RECS procedure involves a field representative visiting the unit and conducting a 45-minute interview to collect information regarding demographic

Chart 1. Residential Energy Expenditures, Consumer Expenditure Survey and Residential Energy Consumption Survey, 2001 and 2005



characteristics of the occupants and physical characteristics of the housing unit. The interviewer also collects detailed data regarding how the various types of energy are used within the home for appliances, heating, cooling, and so forth. At the conclusion of the interview, the field representative asks the respondent to sign an authorization form allowing the various energy providers to the housing unit to release all associated consumption and expenditure data to the EIA.

- Both surveys sample a similar population with a few technical differences. Neither survey samples institutionalized populations. The RECS does sample housing units other than barracks that are located on military bases; the CE does not. Additionally, the RECS measures spending by household¹ as defined by the U.S. Census Bureau whereas the CE measures spending by consumer units (CUs).² Because there can be multiple CUs per household, the total number of households reported by the RECS is smaller than the total number of CUs reported by the CE. For 2005, the RECS collected 4,381 annual interviews and the CE collected approximately 7,500 interviews each quarter. Both have similar response rates.

- The CE and RECS treat renters whose rent payments include home energy costs differently. The CE does not attempt to estimate the cost of home energy included in the rent and assigns the total contract rental payment to the rent of dwellings category. In 2005, 13.9 percent of all renters in the CE reported that electricity was included in their rental pay-

ment; 18.9 percent reported that natural gas was included. In contrast, the RECS field representatives visit rental agents or building management to determine the actual energy expenditures attributable to the sampled rented housing unit.

- The CE apportions energy costs from homeowners' association, cooperative, and condominium fees where owners of such housing units pay for utilities such as electricity, natural gas, water, and so forth as part of the organizations' monthly fee. In contrast, RECS works with building management and service providers to estimate the energy expenditures for individual housing units.
- The CE collects energy expenditure data attributable to vacation and second homes whereas the RECS does not.
- The RECS is conducted once every 4 years, whereas the CE is a continuous survey.


Methods for Comparison

For the purposes of this report, the published CE data were first adjusted to make them more comparable with the RECS published expenditure data. Since RECS does not collect vacation home data, the comparison above excludes expenditures reported by the CE for owned or rented vacation homes. The CE collects data for all energy types including coal, wood, and other fuels. The RECS collects expenditure data for electricity, natural gas, fuel oil, LPG, and kerosene. Due

to a coding change implemented by the CE in 2005, it is no longer possible to identify kerosene expenditures in the CE data. For continuity and comparability, coal, wood, and kerosene expenditures from both surveys were excluded for both years. Coal, wood, and kerosene constitute a very small portion of energy spending in both years.

The RECS data were also adjusted to remove energy expenditures paid indirectly through rent. Variables identifying how renters paid for their energy components became available in the 2001 RECS microdata. Table 1 contains the 2001 and 2005 results less the amount the RECS estimated renters paid implicitly through rental contracts. Because contract rents and utilities paid indirectly cannot be adjusted out in

previous years, the RECS data cannot be made similarly comparable with the CE data in the years prior to 2001.

This study is part of the on-going BLS effort to compare CE data with other federal sources of expenditure and income data. Other studies include comparing CE income data with the Current Population Survey, aggregate expenditures with Personal Consumption Expenditures from the Bureau of Economic Analysis (BEA), and medical expenditures with the Medical Expenditure Panel Survey and the National Health Expenditure Accounts. 

Questions? Please contact the [Consumer Expenditure Survey](#) program at cexinfo@bls.gov or (202) 691-6900.

Notes

¹ Household—includes all the persons who occupy a housing unit. A housing unit is a house, an apartment, a mobile home, a group of rooms, or a single room that is occupied (or if vacant, is intended for occupancy) as separate living quarters. Separate living quarters are those in which the occupants live and eat separately from any other persons in the building and which have direct access from the outside of the building or through a common hall. The occupants may be a single family, one person living alone, two or more families living together, or any other group of related or unrelated persons who share living arrangements. (People not living in households are classified as living in group quarters.)

² Consumer unit—A consumer unit comprises either: (1) all members of a particular household who are related by blood, marriage, adoption, or other legal arrangements; (2) a person living alone or sharing a household with others or living as a roomer in a private home or lodging house or in permanent living quarters in a hotel or motel, but who is financially independent; or (3) two or more persons living together who use their income to make joint expenditure decisions. Financial independence is determined by the three major expense categories: Housing, food, and other living expenses. To be considered financially independent, at least two of the three major expense categories have to be provided entirely, or in part, by the respondent.