

Data Sources and Descriptive Statistics

We constructed true-cost-of-food indexes from Engel curves estimated from data taken from the Continuing Consumer Expenditure Survey (CES) for 1990-95. The CES grew out of consumer expenditure surveys of American households that the U.S. Department of Labor's Bureau of Labor Statistics (BLS) had been conducting periodically at about 10-year intervals since 1888.

A major objective of the first surveys was to collect the expenditure information needed to construct CPI's. However, the BLS found that the decennial surveys were inadequate. The bureau initiated a continuing survey of consumer expenditures and expanded the survey objectives in late 1979. The survey was broadened to gather a continuous flow of information on the buying habits of Americans, not only for revising the CPI's but also for government, business, labor, and university research.

The CES is composed of two components, each with its own questionnaire and sample. The first is an interview panel survey in which each of approximately 5,000 households is surveyed every 3 months over a 1-year period. The second is a diary survey of approximately the same sample size in which households keep an expenditure diary for two consecutive 1-week periods. The diary survey obtains data on small, frequently purchased items normally difficult to recall, consisting of food and beverages, tobacco, housekeeping supplies and nonprescription drugs, personal care products and services, fuels, and utilities.

We used the 16 food categories from the diary survey: cereals, bakery products, dairy, eggs, fresh fruit, fats and oils, fresh vegetables, nonalcoholic beverages, beef, poultry, pork, other meats and fish, processed fruit, processed vegetables, sugar and sweeteners, and miscellaneous prepared foods. We assumed that these food categories were disaggregated enough to allow us to capture the substitution effects as relative prices changed over the study period. We obtained the CPI subindexes for all 16 categories from the food-at-home index of the CPI.

Before discussing empirical results, we describe prices, budget shares, and expenditures for the 16 food categories in our study as well as some income statistics. Table 1 shows the CPI for the 16

Table 1—Consumer Price Index (CPI) for food at home, 1991-95

Food category	1991	1992	1993	1994	1995
<i>1990 = 100</i>					
Bakery products	104.0	108.0	111.9	116.3	120.3
Beef	102.8	102.7	106.4	105.6	104.7
Cereals	104.5	108.6	111.9	116.8	118.5
Dairy	98.9	101.6	102.3	104.1	105.0
Eggs	97.7	87.3	94.4	92.1	97.1
Fresh fruit	113.5	107.8	110.5	117.7	128.1
Fats and oils	104.3	102.8	102.9	105.7	108.7
Fresh vegetables	102.2	104.5	111.4	114.0	127.8
Miscellaneous prepared food	104.5	106.8	109.5	112.3	115.1
Nonalcoholic beverages	100.5	100.7	101.0	108.5	116.0
Other meats and fish	102.2	103.6	106.1	109.7	113.1
Pork	103.3	98.5	101.5	103.2	103.9
Processed fruit	96.3	100.6	96.6	97.2	100.2
Poultry	99.2	99.2	103.3	106.8	108.3
Processed vegetables	100.8	101.0	102.6	107.1	108.5
Sugar and sweeteners	103.7	106.7	107.0	108.4	110.3
Food at home	102.6	103.4	105.9	108.9	112.5

Source: USDA, ERS.

food categories when 1990 equals 100. Overall, total prices for food at home increased by 12.5 percent over the 6-year period. Individual categories that rose more than this were cereals (up 18.5 percent), bakery (up 20.3 percent), other meats and fish (up 13.1 percent), fresh fruit (up 28.1 percent), fresh vegetables (up 27.8 percent), and nonalcoholic beverages (up 16 percent). The only decline was for eggs, which fell 2.9 percent. Beef was relatively flat, increasing only 4.7 percent over the 6-year period.

Table 2 presents the average budget shares and expenditures for the total population and low-income households from 1990 through 1995. It is somewhat surprising just how close the budget shares of the low-income households are to the budget shares for the total population. The difference between the two never exceeds 0.6 percentage point, except for miscellaneous prepared foods, where the total population's budget exceeded that of the low-income households by 1.2 percentage points. The big difference between the two populations lies in the dollar amounts spent on food at home. The total population averaged \$57.53 per week on food at home, while the low-income households spent about \$38.87 per week. The greatest budget shares for total and low-income households went for miscellaneous prepared foods (14.1 and 12.8 percent), and the smallest for eggs (1.2 and 1.6 percent). In fact, miscellaneous prepared foods, dairy, and bakery products accounted for approximately one-third of the food-at-home budget for both groups.

Table 3 shows differences in household income and food expenditures. In dollar terms, the lowest income quintile received an average of \$6,388 per household in 1990 and \$7,508 in 1995, for a gain of about 17.5 percent (a quintile represents 20 percent of the population). However, the highest income quintile received \$80,287 and \$89,306 for the same 2 years, a gain of about 11 percent. If we deflate incomes by the CPI, we find that in real terms the lowest income quintile remained about constant over the 6-year period, while the highest income quintile was off slightly by about 5 percent.

Over the sample period, the lowest income quintile received 3.68 percent of all income in 1990 and 3.83 percent in 1995. Contrasted to this, the highest income quintile received about 46 percent of all income in 1990 and about 45.5 percent in 1995. All quintiles except the highest saw their relative shares increase slightly in 1990-95. Data other than the CES have shown that the highest quintile gained relative to the lowest. For instance, data from the U.S. Census Bureau indicate that the low-

Table 2—Average budget shares and expenditures, 1990-95

Food category	Total population		Low-income households	
	Budget share	Expenditure	Budget share	Expenditure
	<i>Percent</i>	<i>Dollars</i>	<i>Percent</i>	<i>Dollars</i>
Bakery products	10.32	5.82	9.69	3.57
Beef	7.84	4.75	7.90	3.31
Cereals	5.66	3.26	6.07	2.39
Dairy	11.54	6.24	12.05	4.41
Eggs	1.22	.64	1.62	.60
Fresh fruit	5.34	2.96	5.30	1.98
Fats and oils	3.08	1.82	3.22	1.30
Fresh vegetables	5.20	2.92	5.17	2.00
Miscellaneous prepared food	14.05	8.24	12.82	5.07
Nonalcoholic beverages	8.77	4.83	8.72	3.24
Other meats and fish	6.61	4.04	6.30	2.60
Pork	5.18	3.19	5.68	2.37
Processed fruit	3.81	2.12	3.75	1.39
Poultry	4.69	2.78	5.02	1.97
Processed vegetables	2.80	1.64	2.97	1.18
Sugar and sweeteners	3.89	2.27	3.72	1.47
Total		57.53		38.87

Source: USDA, ERS.

est income quintile declined from 4.6 percent in 1990 to 4.2 percent in 1994 (the last year reported), while the highest income quintile increased from 44.3 to 46.9 percent over the same time period.

Table 3 also shows the share of total national food expenditures for each quintile. The pattern is similar to that for income, with the lowest quintile having the smallest share and the highest quintile having the largest share.

Table 3—Household food expenditures by income level, 1990-95

Item	1990	1991	1992	1993	1994	1995
<i>Percent</i>						
Share of U.S. income by quintile:						
Q1	3.68	3.83	3.88	3.73	3.69	3.83
Q2	9.31	9.25	9.43	9.11	9.13	9.40
Q3	15.90	15.81	16.03	16.39	15.67	15.99
Q4	25.16	24.93	25.33	25.09	25.13	25.29
Q5	45.95	46.18	45.33	45.68	46.38	45.50
Share of U.S. food spending by quintile:						
Q1	15.65	15.01	15.51	15.27	15.89	15.16
Q2	17.78	18.14	18.11	17.54	18.03	18.18
Q3	20.13	19.56	19.86	20.32	19.63	20.26
Q4	22.57	21.94	21.76	22.26	22.22	22.71
Q5	23.87	25.35	24.75	24.62	24.24	23.69
<i>Dollars per household</i>						
Average income by quintile:						
Q1	6,388	6,656	6,887	6,908	7,946	7,508
Q2	16,175	16,037	16,713	17,066	16,984	18,419
Q3	27,776	27,461	28,454	29,980	29,346	31,377
Q4	43,135	43,494	44,581	46,481	46,991	49,563
Q5	80,287	79,729	81,030	84,627	86,864	89,306

Source: USDA, ERS.