

A century of family budgets in the United States

Throughout the past 100 years, family budgets have been produced using a variety of methodologies; these budgets are compared with new budgets that have been derived using actual expenditures of families

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The measurement of family budgets and budget standards dates back to the late 19th century. Such budgets have been used to develop cost-of-living estimates, to assess wage rates, and to examine the standard of living. Early budget standards and family budgets were based on two different methodologies: expert decisions were devised to ascertain how much income a family might require to reach a certain level of living, and estimates were obtained on the actual purchasing behavior of particular families. The first, prescriptive, method was often used to determine the “sufficient” amount needed to provide a “standard of health and decency” or some other measure of the level of living. The second, descriptive, method was often used to describe consumer spending and to determine cost-of-living indexes.¹

Prescriptive and descriptive types of family budgets were constructed at the Bureau of Labor Statistics throughout most of the 1900s. Prescriptive budgets attempt to determine a set of goods and the expenditures for each of the goods that might enable a family to attain a certain standard of living. These types of budgets were first developed in 1908–09, and there have been many subsequent estimates of fair, modest, adequate, and even minimally sufficient budgets. The BLS family budget program produced budget standards (using a prescriptive method) from 1966 to 1981. Alternatively, descriptive budgets

represent observed expenditures for particular families at some point in the distribution of income or expenditures. Each year, BLS produces average expenditures for various family types, which can be viewed as types of descriptive budgets.

This article reviews the historical estimates of these budgets and presents a descriptive budget that is constructed using expenditure data. Inspiration came from results presented by Peter Saunders at the 1998 International Association for Research on Income and Wealth Conference, in which he compared the budget standards in Australia for 1920, 1941–43, and 1997.² The article also examines the historical family budgets produced at BLS in 1908–09, 1919, 1947, 1966, and 1979. These are compared with family budgets for 1984, 1989, 1994, and 1998 that were constructed using the recommendations of the Expert Committee on Family Budget Revisions (Expert Committee), which was charged with reviewing and recommending revisions to the BLS family budget program. The article also presents a general description of family budgets and budget standards, reviews the history of family budgets and describes the latest family budget methodology, presents a descriptive family budget, and concludes with a review of the issues associated with adjusting budgets for different family types and locations, and over time.

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Although BLS has budgets that span 90 years, the budgets for the last 50 years share the most similar methodology. Research has found that, in 1998 dollars, the budget based on BLS Consumer Expenditure data for family consumption for a married couple with two children is about \$36,550 compared with a budget of \$18,210 in 1947 and \$13,430 (for a family of five) in 1919. These budgets have increased in real terms; however, they have not increased as much as changes in per capita gross domestic product (GDP), compared with Saunders' results for Australia. While he suggests that this increase represents a general increase in the standard of living, some of the increase could be due to changes in the relative definitions of the terms "modest" or "sufficient."³

The standard of living and budget standards

The standard of living can be viewed as the personal pleasure or utility one obtains⁴ or as a point on the relative income distribution.⁵ Amartya Sen has suggested that the standard of living is "in the living," illustrating its subjective and personal nature. This concept of the standard of living suggests that it is a relative concept, that is, it depends upon one's position in the distribution.

Other researchers have described how these standards of living are related to budget standards, stating: "A budget standard represents what is needed, in a particular place at a particular point in time in order to achieve a specific standard of living."⁶ While at least one researcher has suggested that the standard of living can be given by a function, $r(x)$, of the distribution, x ,⁷ most budget standards have been calculated by building up a budget that would provide families with a modest, fair, or sufficient income. These levels of modest, fair, and sufficient can represent a variety of standards of living, or points on the distribution of income (or well-being).

It has been suggested that there are three types of budget-based (or prescriptive) budget standards: a market basket approach (similar to that used in the former BLS family budgets), a multiplier approach (similar to that used in the official U.S. poverty thresholds), and a categorical approach.⁸ Other countries have also produced family budgets using a prescriptive approach.⁹ Still other economists have constructed a budget using both prescriptive and descriptive methods and compare it with various State-level estimates of similar family budgets.¹⁰

In 1978, BLS sponsored an Expert Committee on Family Budget Revisions.¹¹ The Committee recommended constructing a descriptive budget called the "prevailing family standard" (PFS). This standard reflected "the level of living achieved by the typical family" and was "set at the median

expenditure of two-parent families with two children." This was different than the original BLS family budget program in that it "abandon[ed] the notion of a rigidly fixed list of things that are interpretable as minimum needs in achieving a given level of living."

In addition, the Panel on Poverty of the National Research Council did not recommend constructing a budget-based poverty threshold.¹² The Panel recommended a poverty threshold based on a basic bundle of necessities (food, clothing, shelter, and utilities) that was set at a fixed percentage of the median expenditures for these items (and it used a multiplier to account for other items, for example, transportation and personal care).

The difference between the budget-based (or prescriptive) method and the descriptive method arises from the difference between choosing bundles of particular goods that provide a selected standard of living for each of the components individually and choosing a point on the distribution of utility, for example, the median (which could represent a moderate standard of living). This difference can be illustrated by supposing that a moderate standard of living requires a specific bundle of goods. This bundle produces an aggregate utility, and hence, cost. If each good yields the moderate standard, then the aggregate budget also yields a moderate standard. For example, the median of total expenditures might be similar to the sum of the medians for the components. Hence, the aggregate budgets might be fairly similar, while the components of the total budget might differ. In fact, it has been claimed that the budget experts always kept "one good eye on median patterns" in constructing their budgets.¹³ The differences between the components for the prescriptive and descriptive approaches would be the result of the norms used by the "experts" to determine the "moderate" standard of living.

History of budgets in the United States

The first standard budgets that the BLS developed were part of an exhaustive study of the conditions of cotton-mill workers in the South and in Fall River, Massachusetts in 1909. The study was the result of a congressional investigation into the condition of women and child workers. These were the first BLS budgets to be expressed in terms of quantities of goods and services to which prices were applied to determine the costs of the budgets (a market-basket approach). These were also the first budgets to define two levels of living—a "minimum standard of living of bare essentials," and a "fair standard of living" that provided some allowances for comfort. BLS Commissioner Charles P. Neill commented: "These standards, it should be emphasized, are the standards found to be actually prevailing among cotton-mill families

Table 1. Family budget and components, 1998 and 1984

Expenditure category	Amount	Percent share	
	1998	1998	1984
Total family budget	\$41,487	—	—
Food	6,657	16.0	17.5
Food at home	5,129	12.4	—
Food away from home	1,528	3.7	—
Alcoholic beverages	258	.6	1.2
Housing	14,648	35.3	32.3
Shelter	9,510	22.9	19.4
Owned dwellings	7,849	18.9	15.2
Rented dwellings	1,418	3.4	3.4
Other lodgings	244	.6	.8
Utilities, fuels, and public services	2,958	7.1	7.6
Household operations	876	2.1	2.2
Household furnishings and equipment	1,305	3.1	3.5
Apparel	1,639	4.0	5.2
Transportation	6,697	16.1	15.9
Vehicles	2,685	6.5	4.0
Gasoline and motor oil	1,358	3.3	5.9
Public transportation	260	.6	.3
Health care	1,979	4.8	3.5
Entertainment	2,480	6.0	5.0
Personal care	357	.9	.9
Reading	190	.5	.7
Education	470	1.1	.9
Tobacco	383	.9	1.2
Miscellaneous	769	1.9	1.4
Total family consumption	36,528	88.1	86.3
Personal insurance and pensions	4,483	10.8	11.8
Life and other personal insurance	573	1.4	1.7
Retirement, pension, Social Security	3,910	9.4	10.1
Cash contributions	476	1.1	1.9

of the several communities studied, and are not standards fixed by the judgment either of the investigators or of the Bureau of Labor."¹⁴

The next BLS budgets were developed at the request of Congress in 1919. World War I brought rapid and sharp increases in price levels that prompted Congress to ask the Bureau to prepare quantity and cost budgets for Government employees in Washington, DC. BLS prepared such budgets for a Government worker's family of five persons and also for single men and single women in Government service. The budgets were described as including "a sufficiency of food, respectable clothing, sanitary housing, and a minimum of essential sundries," but not "many comforts which should be included in a proper 'American standard of living.'"¹⁵ Although BLS priced these budgets only in Washington, DC, Professor William F. Ogburn of the University of Washington adapted the budgets for coal-mining families, and those

budgets were priced in a number of communities at the request of the U.S. Bituminous Coal Commission.

In response to the hard times of the depression period of the 1930s, the Works Progress Administration (WPA) proposed two budgets to help determine how much to pay workers in different parts of the country. One budget was described as a maintenance budget, above a minimum assistance level but which did not approach "the content of what may be considered a satisfactory American standard of living."¹⁶ The second budget was described as an emergency budget that was an attempt to show how the maintenance budget could be cut in emergency conditions with the least amount of harm. The budgets were for a family of four, consisting of a man (described as an unskilled manual worker), his wife, a boy aged 13, and a girl aged 8. The budgets were priced in 59 cities. BLS updated the WPA budgets for price increases through 1943.

By the end of World War II, the U.S. economy had improved to the point where norms for maintenance and subsistence levels were no longer as important. Members of Congress expressed some apprehension that employers had, on occasion, used the relief-type budgets as leverage against wage adjustments for "average" workers. Also, Federal income taxes were accounting for an increasing portion of lower level workers' incomes, which raised additional concern. These increases had been implemented as a means of financing the war effort. In the spring of 1945, Congress was thus spurred to request that BLS determine the cost of living for such a worker's family in large U.S. cities.

In order to carry out the mandate set by Congress, BLS appointed a Technical Advisory Committee composed of specialists and technicians recognized as authorities on studies of living costs who would guide the development of standards and methods to be used in the project. The Committee recommended using either scientific standards to derive items and quantities for different components or, when such standards were not available, actual spending patterns based on consumer expenditure surveys. The surveys BLS used in developing the family budget bundles of goods and services dated from 1929 to 1941. BLS derived quantities for the bundles of goods and services and obtained prices to estimate budget costs for 34 U.S. cities.¹⁷ The resultant City Worker's Family Budget for a family of four was described as "modest, but adequate." It applied to urban working families in general and not to a particular occupational group.

Table 2. Historical family budgets for family consumption, 1909–98

Year	Type of budget	Level of living	Budget amount	
			Current dollars	1998 dollars
1908–09	Cotton mill worker: Five person ¹	Fair	\$713	\$11,077
1919	District of Columbia Federal worker: Five person ¹	Health and decency	2,142	17,346
	BLS family budgets:			
1947	Five person ²	Modest but adequate	3,329	20,874
1947	Four person ²	Modest but adequate	2,904	18,209
1951	Four person ³	Modest but adequate	3,750	20,107
1959	Four person ³	Modest but adequate	5,180	24,873
1966	Four person ³	Moderate/Intermediate	7,329	31,593
1973	Four person ⁴	Intermediate	9,761	31,380
1979	Four person ⁵	Intermediate	15,353	32,280
1979	Revised Watts budget: Four person ⁵	Median (PFS)	16,129	33,912
1981	BLS family budget ⁶ : Four person ⁶	Intermediate	18,240	31,545
1984	Descriptive budget: Four person ⁷	Prevailing family standard (PFS) Median	20,531	30,921
1989	Four person ⁸	Median	27,143	34,723
1994	Four person ⁸	Median	31,817	34,760
1998	Four person ⁸	Median	36,528	36,528

¹ Bureau of Labor Statistics, *How American Buying Habits Change*, 1959, table 28.

² Bureau of Labor Statistics (1948) *Workers' Budgets in the United States: City Families and Single Persons, 1946 and 1947*, Bulletin 927; 4-person budget for median city (St. Louis); 5-person budget calculated using equivalence scale.

³ Bureau of Labor Statistics, *City Worker's Family Budget for a Moderate Living Standard*, Bulletin 1570-1, autumn 1966.

⁴ USDL, autumn 1973, Urban Family Budgets.

⁵ Expert Committee on Family Budget Revisions, "New American Family Budget Standards," IRP Working paper, 1980, p. 62.

⁶ "Final report on family budgets, 1981," *Monthly Labor Review*, July 1982, pp. 44–46.

⁷ John Rogers, "Estimating Family Budget Standards," BLS manuscript, 1987.

⁸ Calculations using 1989, 1994, and 1998 CE data and share of total budget spent on family consumption items.

Estimates of the costs of the four-person family budgets were published for March 1946 and June 1947. The budgets were then repriced each October, from 1949 through 1951. Further updating was ruled out because BLS believed that the bundles of goods and services were out of date and no longer represented the modest but adequate standard. It was anticipated that the 1950 Consumer Expenditure Survey would provide more current information on spending patterns that could be used to revise the budgets. Such a budget, termed the "Interim City Worker's Family Budget" was priced in 20 cities, but not until October 1959.

In 1963, BLS appointed another Advisory Committee to review the family budget methodology and to make recommendations for developing new family budget standards. The Committee was appointed in anticipation of more current expenditure data becoming available from the 1960–61 Consumer Expenditure Survey. The Committee made three primary recommendations in the following order of priority¹⁸:

- 1) Continue pricing a modest but adequate budget for a four-person family and for a retired couple. As in earlier budget studies, the Committee recommended that the standards of adequacy were to be based on scientific standards, such as nutrition standards for estimating food items and quantities, and on the judgment of experts based on the analysis of data from expenditure studies.
- 2) Estimate budget costs for the quantity budget for the total urban population of the United States and for selected cities.
- 3) Derive additional standard quantity budgets, both below and above the modest but adequate standard.

In addition to the Advisory Committee recommendations, the report included sections which discussed the basic concepts of family budgets and general comments on the meth-

Table 3. Shares of family consumption (for an urban family with one wage earner) using actual expenditures

[In percent]

Component	1917-19	1950	1960-61	1972-73	1986-87
Food	41.1	32.5	26.0	22.6	19.4
Housing	26.8	26.0	29.2	29.3	33.7
Transportation	3.1	13.8	15.1	24.1	25.7
Clothing	17.6	11.6	10.3	8.4	5.2
Health care	4.7	5.1	6.6	4.7	4.0
Other	6.7	11.0	12.8	10.9	12.0

SOURCE: Eva Jacobs and Stephanie Shipp, "How family spending has changed in the U.S.," *Monthly Labor Review*, March 1990, pp. 20-27.

odology for arriving at estimates for some of the budget components. The Committee acknowledged that developing lists of goods and services and specifying quantities that represented a "modest but adequate" standard would require a great deal of subjective judgment as scientific standards existed for only a few of the budget components (primarily food and housing). Even for these components, any number of alternative lists of quantities of goods and services could be specified (and at varying cost) that would meet the scientific standards. For the remaining components, budget makers relied heavily on data from expenditure surveys that showed how budget-type families spent their money.

While the majority of the 1963 Advisory Committee endorsed the idea of developing the lists of goods and services using a mix of scientific standards and standards derived from actual spending patterns, one committee member offered a dissenting view. Dorothy Durand, a private consultant on the development and use of standard budgets, suggested focusing on developing methods for estimating the total cost of a budget, rather than trying to arrive at a total by costing out a list of goods and services. She noted that scientific standards had been established for only a few of the many spending components, primarily food and housing. Even for those few components, she argued that the findings were not definitive. Her dissenting opinion, which broke with the long-established methodology for estimating budget costs, was a precursor of the recommendations of the next advisory committee, whose findings were summarized in a May 1980 report.

Guided by the criteria set forth by the 1963 Technical Advisory Committee, BLS developed budgets for a four-person family and for a retired couple. Budget estimates for a "moderate" living standard were published for autumn 1966 and three standards of living—described simply as lower, intermediate, and higher budgets—were

published for spring 1967. The family was described as an employed husband, aged 38; a wife not employed outside the home; and two children, a boy aged 13 and a girl aged 8; it was chosen to "represent a middle stage in the typical family life cycle." However, the report acknowledged the subjective nature of their budgets when it stated: "In short, there is no single answer to the question 'How much does it cost to live?,' since family size, age, and type have a significant effect on spending patterns, manner of liv-

ing and family needs."¹⁹

Budget cost estimates were published for 40 urban areas, four regional averages, and a U.S. urban average. As recommended by the Advisory Committee, BLS budget makers used a mix of scientific standards, where available, and standards derived from actual spending patterns to specify lists of goods and services as well as the quantities of those items. Prices collected for the BLS Consumer Price Index, along with some supplementary prices collected specifically for the family budgets, were used with the budget quantities to estimate the budget costs. The budgets were intended to measure equivalent levels of living in the different budget areas. Identical budgets were not priced in the 40 budget areas. The quantity weights were adjusted to account for regional preference or geographical patterns in several categories: for food among regions, for clothing and heating fuels among the cities to account for differing climates, and for automobile ownership and usage; differences were incorporated by city size, to account for availability and use of public transportation.

In 1968, BLS published an equivalence scale that allowed users to apply scale values to the four-person family consumption costs to estimate costs for different family sizes and types.²⁰ The scale values were estimated using data on food expenditures and income after taxes, for various family sizes and types from the 1960-61 Consumer Expenditure Survey. The last direct pricing of the budgets, that is, the last time that CPI prices and supplementary prices collected specifically for the family budgets were applied to the budget quantities in order to estimate budget costs, was in 1969. Subsequent to 1969, the budget costs were updated annually through 1981, by applying changes in the Consumer Price Index for summary component indexes that were available for each urban area.

By the late 1960s, BLS was increasingly uncomfortable with its role of making the normative judgments that were the basis of the family budget cost estimates. In 1969, BLS Commissioner Geoffrey Moore, wrote: "I do not think the BLS should set itself up as an authority on what is adequate or inadequate, what is a

Table 4. Historical shares of family consumption

[In percent]

Component	BLS family budgets				Descriptive method— Prevailing Family Standard (PFS)		
	1919 ¹	1947 ²	1966 ³	1979 ⁴	1979 ⁵	1984 ⁶	1998 ⁷
Food	36.1	36.4	29.2	32.9	22.6	20.2	18.2
Housing	20.0	24.2	30.2	29.9	33.0	37.4	40.8
Transportation	¹	9.0	11.1	12.1	20.5	18.4	18.3
Clothing	24.0	14.6	10.3	8.0	7.7	6.0	4.5
Health care	3.7	5.5	6.4	7.7	6.0	4.1	5.4
Other	¹ 16.2	10.3	12.7	9.5	10.3	13.9	12.8

¹ Bureau of Labor Statistics, *How American Buying Habits Change*, 1959, table 28; transportation included in "Other."

² Bureau of Labor Statistics (1948) *Workers' Budgets in the United States: City Families and Single Persons, 1946 and 1947*, Bulletin 927; 4-person budget for median city (St. Louis).

³ Bureau of Labor Statistics, *City Worker's Family Budget for a Moderate Living Standard*, Bulletin 1570-1, autumn 1966.

⁴ Bureau of Labor Statistics, "Family Budgets," *Monthly Labor Review*, August, 1980, pp. 29–30.

⁵ Expert Committee on Family Budget Revisions, "New American Family Budget Standards," IRP Working paper, 1980, using shares for renters and owners.

⁶ John Rogers, "Estimating Family Budget Standards," BLS manuscript, 1987.

⁷ Calculations using 1998 CE survey data.

luxury and what is not, etc., no matter how reasonable the position may seem to us."²¹ The belief was that such norms should be developed by an operating agency, such as the Department of Health, Education, and Welfare, rather than by a statistical agency such as BLS. However, the Bureau had a long history of developing and publishing family budgets, and much legislation had been passed incorporating the budget estimates, so it continued updating and publishing the series.

By the mid-1970s, the expenditure data used to derive the quantities of goods and services were a decade and a half old. BLS recognized that the budgets were increasingly outdated and began considering alternative methods for estimating budget standards. In 1978, the Bureau contracted with the Wisconsin Institute for Research on Poverty to do a thorough review of the family budget methods and procedures, and to make recommendations for revising the budgets. The Expert Committee on Family Budget Revisions, appointed by the Institute, presented its findings in a comprehensive report in May 1980. Its recommendations are discussed below. However, there was a substantial program reduction required during the fiscal 1981 budget cycle, and BLS did not believe it possessed adequate funding to implement the Expert Committee recommendations nor could it improve the budget estimates to meet the technical standards of the Bureau. The final budget estimates published by BLS were for autumn 1981.

Uses of budgets. Most of the important uses of the family budgets were associated with the cost of attaining the levels specified by the standards. Once the cost of the budgets was determined, the number of people or the proportion of spe-

cific groups of people with or without sufficient resources could be estimated. In its 1963 report, the Advisory Committee on Standard Budget Research cited three general groups of uses for the standard budgets. They were:

- 1) Appraisal of the economic condition of groups or of the total population.
- 2) Evaluation of the need for and the effect of specific laws and programs.
- 3) Guidance of administrative determination of need.

BLS published a specific list of uses of the budget standard associated with the budget series between 1966 and 1981. In particular, the Department of Labor continues to use the family budgets (from 1981) to update its guidelines for employment training programs. The Department of Education currently uses the equivalence scales from the family budgets in 1968 to adjust the income protection allowance in its Federal Student Aid calculations.

The Expert Committee cited several factors of the family budget estimates that allowed them to be "used for a wide variety of analytic, administrative, and programmatic purposes. Four elements, in particular, make them conducive to such uses: 1) an income norm or expenditure norm embodying a standard or level of living for a typical family type, 2) a basis for making standardized comparisons among different family types (the equivalence scale), 3) a basis for making comparisons over time, and 4) a basis for making comparisons among areas."²² These uses are also the most controversial issues in determining the appropriate family budgets.

BLS budget methodology. Throughout the period that the Bureau estimated family budgets, the theoretical basis for them hinged on the belief that scientific standards and expert judgment could be used to derive lists of goods and services and their quantities that embody certain standards of living. Costs of the budgets, and of the standards represented by the budgets, could then be estimated by applying prices to those quantities of goods and services. However, scientific standards existed for only two of the many budget components—food at home and shelter—and even for these components, the scientific standards affected the content but not the actual cost levels in the budgets. For the many other components, including transportation, medical care, clothing, recreation, and education, budget makers were forced to rely on a combination of actual spending patterns and related information, and their own judgment. (See box, p. 10, for a description of methodology used to derive these budget costs.)

Expert Committee recommendations. The Expert Committee on Family Budget Revisions met for a period of a year and a half and presented its findings and recommendations to BLS in a 1980 report. The Expert Committee recommendations called for a radical departure from past practices, such as abandoning attempts to derive detailed lists of goods and services that were intended to represent norms or standards in favor of estimating total budgets directly from expenditure survey data. The Bureau was, at that time, preparing to implement an ongoing Consumer Expenditure Survey that would provide a continuous source of expenditure survey data.

The reasoning behind the Expert Committee’s decision to change the methods for estimating the budgets was included in the following excerpt from a December 1980 *Monthly Labor Review* article by Harold Watts (Committee Chairperson):

The majority of the committee concluded that the main claimed advantage of lists of quantities of goods and services—that such lists assure the meeting of authoritative established needs—was in fact illusory. Any cost total derived from lists of commodities has perforce been based on a myriad of individual judgments. Consequently, the committee majority, recognizing that a judgment based on individual values and not on scientific requirements must be made at some stage whatever the method used, decided to exercise that judgment in the choice of an expenditure total rather than in several hundred item choices.²³

The Expert Committee made a number of recommendations to revise the Bureau’s Family Budget estimates:

- *Budget levels.* Replace the lower, intermediate, and higher family budgets with four budget levels. The standard designed to reflect the level of living achieved by the typical family would be set at the median expenditure of two-parent families with two children and be called the *Prevailing Family Standard* (PFS). Three additional standards are simply fixed proportions of the PFS: the *lower living standard* is set at two-thirds of the PFS and corresponds to the lower family budget; the *social minimum standard* is set at one-half the PFS and sets a level below which families face issues of deficiency and deprivation; and the *social abundance standard* is set fifty percent higher than the PFS and measures a level that affords a higher standard of living.
- *Equivalence scales.* The Expert Committee spent a great deal of time on estimating equivalence scales but found little success in developing new scales. The equivalence scale estimates included in the summary report were adapted from a set of proposed revised poverty thresholds developed by Mollie Orshansky and Carol Fendler. However, the Committee provided only a weak endorsement of those scales and proposed further research into developing new equivalence scales.
- *Interarea differentials.* The Expert Committee recommended continuing research on cost-of-living differences among cities. It favored producing interarea price indexes to provide price comparisons while recognizing that such indexes show neither the cost of achieving equivalent levels of living in different areas, nor observed expenditure patterns.
- *Method of updating.* The Expert Committee recommended estimating the standards directly from the on-

Table 5. Alternative equivalence scales

Family type	BLS family budgets	Expert Committee	Official poverty scales	Two parameter (F=0.65; P=0.7)	Three parameter
Single adults	0.360	¹ 0.540	¹ 0.513	0.451	0.463
Two adults .....	.600	¹ .670	¹ .660	.708	.653
Two adults, one child .....	.820	.800	.794	.861	.880
Two adults, two children	1.000	1.000	1.000	1.000	1.000
Two adults, three children	1.116	1.200	1.177	1.129	1.114
One adult, one child .....	.570	.670	.680	.637	.699
One adult, two children .....	.760	.800	.794	.797	.830

¹ Uses nonelderly scale.

Components of family budgets

Food at home. The U.S. Department of Agriculture publishes four food plans: the thrifty food plan (TFP), the low-cost food plan (LCFP), the moderate-cost food plan (MCFP), and the liberal food plan (LFP). The low-cost, moderate-cost, and liberal food plans were incorporated in the lower, intermediate, and higher family budgets. All four plans represent a healthy diet, as represented by a food market basket, at various costs for different age-gender groups. All four food plans meet the same nutritional standards for a healthy diet, including standards set in the Dietary Guidelines for Americans. The plans differ by types of foods to achieve a healthy diet and cost. The TFP is a minimal cost diet. TFP foods represent the least expensive foods one can purchase to meet nutritional standards, deviating as little as possible from existing consumption patterns. For the other three food plans, costs were set at approximately the midpoints of the second, third, and fourth quartiles of the distribution of food costs (based on a household food consumption survey). Based on the same nutritional standards and deviating as little as possible from existing consumption patterns at the various cost levels, these three food plans differ in the types of food they contain. The higher cost plans contain more expensive, but nutritionally similar foods.

Shelter. Standards for shelter were developed by the American Public Health Association and the U.S. Public Housing Administration. The standard described sleeping space requirements, essential household equipment (including plumbing), adequate utilities and heat, structural conditions, and neighborhood location. BLS specified that rental and homeowner units included in the budgets had to meet those standards. However, these were minimum standards, intended to prevent the erection or occupancy of unsuitable structures, or to ensure proper maintenance of existing structures, and to provide a guide for contractual arrangements. They were not intended for use in estimating the cost of adequate shelter, such as for the family budgets. As was the case for food, the budget makers relied on actual spending patterns to estimate the budget standards. Rents and market values of homes meeting the physical requirements were arrayed and divided into thirds and the mean values of each third were used in the budgets. For homeowners, the middle and

upper thirds were used for the intermediate and higher budgets, while for renters, the rental value for each third was used in the corresponding budget. Total shelter costs in the intermediate and higher budget were weighted averages of homeowner and renter costs, and actual consumption patterns were used in deriving those weights as well. As a result of these estimation procedures, shelter costs in the budgets were well above the level at which the physical standards could be met.

Other components. For the many other components that made up the family budget bundles of goods and services, no scientifically based standards were available. To derive quantities for these other components, the budget makers first relied on a statistical procedure termed the quantity-income-elasticity (q-i-e) technique. For that analysis, expenditure data for major consumption groups were arrayed within family type by income class. The hypothesis underlying the q-i-e technique was that, at the lower end of the income scale, increased spending for items (or groups of items) is a result of increasing the *quantity* purchased of the item. At the higher end of the income scale, increased spending for items is the result of purchasing better *quality* of the item. In theory, the technique would yield an S-shaped curve when quantities and incomes are plotted, with the inflection point marking where families move from purchasing greater quantities of items to purchasing better quality items. This would mark the point at which incomes are sufficient to permit spending on things other than necessities. The quantities of items purchased at that level would be used for the intermediate budget as a standard of adequacy. In practice, the q-i-e technique proved acceptable for only a few components. In many cases, no S-shaped curve with a clear inflection point was found, while for others the point was outside the general range of what were considered acceptable expenditure patterns. Where no suitable estimate could be derived based on the q-i-e technique, the budget makers resorted to deriving the estimates based on prevailing consumption patterns of budget type families. In summary, the methods used to derive the quantities of items in the family budgets are based on a mix of scientifically based standards, actual expenditure patterns of budget type families, and the budget makers own good judgment.

SOURCE: Expert Committee on Family Budget Revisions "New American Family Budget Standards," Institute for Research on Poverty (IRP) Working paper, 1980, pp. 25-34.

Table 6. Comparison of total family budgets, medians vs. scales, 1998

Family type	BLS family budgets	Three parameter	Median, by type
Single adults	\$14,935	\$19,208	\$18,376
Married couples	24,892	27,091	32,259
Married couple with two children	41,487	41,487	41,487
Married couple with three children	46,299	46,217	¹ 42,025
Single parent with one child	23,648	28,999	² 21,453
Single parent with two children	31,530	34,434	—

¹ Includes all married couples with four or more children.
² Includes single parents with one or two children.

going CE Survey on an annual basis. To guard against short-run variation in median expenditures, however, the norms or standards should be maintained at their previous levels in real terms, should there be nominal declines. This feature was termed a “ratchet.” The Consumer Price Index would be used for estimating real expenditures from the prior period and preventing declines in the real levels of the standards.

The Expert Committee also recommended estimating the allocation of expenditures among components by using average allocations estimated from the CE Survey for six different types of families. The Expert Committee also was enthusiastic about the possibility of determining normative standards through a general public survey, such as by asking people how much it takes to just “get along,” or to live comfortably. Finally, the Committee recommended that a major report be published presenting the standards and related information, and that it should also include analytical and methodological articles.

BLS recognized that the four-person urban family budgets and retired couple’s budgets estimates were based on outdated information and did not represent standards of living typical of the later years (1970s through 1981) during which they were published. While the Bureau took into consideration the Expert Committee’s recommendation, this process occurred during a period of tightening budget restrictions that had been imposed on Federal agencies. Consequently, the budget series was discontinued with the final budget estimates published for 1981. BLS has not published family budget standards since then. Even so, the basic standards recommended by the Expert Committee are relatively simple to derive from the current, ongoing CE Survey and some preliminary estimates based on those recommendations are discussed below.

Estimates of descriptive family budgets

Consumer Expenditure Interview Data for 1989, 1994 and 1998 were used to estimate the median total expenditures for the reference family. (They were also compared with estimates from 1984.) The reference family consists of a married couple with two children under the age of 18 living in an urban area. This family is similar to the reference family used by the NRC Panel on Poverty.²⁴

The total budget levels for these reference families for 1989, 1994 and 1998 are shown below:

Family type	Budget for:		
	1989	1994	1998
Married couple, with two related children under 18, who are:			
Living in an urban area			
Total budget	\$31,562	\$36,571	\$41,487
Family consumption only (excludes cash contribution)	27,143	31,817	36,528
Living in either an urban or a rural area			
Total budget	29,933	35,729	39,229
Living in an urban area and is a complete income reporter			
Total budget	32,460	37,186	42,525

This budget represents the prevailing family standard²⁵ and includes the total outlays for the family (including expenditures on nondurable goods and services and purchase price for durable goods except when financed). For housing and financed vehicles, the mortgage interest *and* principal paid on an owned home or vehicle are included,²⁶ as are cash contributions, pension contributions, payroll and property taxes. Not included are income taxes and other forms of savings. This represents the total amount of outlays that the family spends for goods and services.

The total budgets are shown for the reference family and, for comparison to earlier years, the budget for family consumption (excluding cash contributions, pensions, and insurance). Also shown is the budget obtained by using both urban and rural families and the budget constructed from a sample restricted to only complete income reporters, which are those households that provide values for at least one major source of income such as wages and salary, self-employment income, and Social Security.²⁷

These reference families are predominantly non-black (92 percent) with a reference person who is 38 years old and has more than a high school education (64 percent). These families are predominantly homeowners (79 percent) that have

Table 7. Shares of total budgets for various families, 1998

[In percent]

Component	Married with two children	Married without children	Married with four or more children	Single parents with one or two children	Single nonelderly person
Food	16.0	15.6	17.3	19.0	16.0
Housing	35.3	35.5	39.9	41.5	39.2
Owned dwellings	18.9	15.6	22.6	8.8	7.8
Rented dwellings	3.4	5.4	4.2	16.0	20.0
Utilities	7.1	8.1	7.1	11.2	7.7
Other housing	5.8	6.3	6.0	5.5	3.7
Apparel	4.0	3.7	4.6	5.0	4.0
Transportation	16.1	15.9	15.3	13.5	14.6
Health care	4.8	8.2	4.2	4.0	3.4
Entertainment	6.0	4.8	4.6	3.9	4.7
Other ¹	5.8	5.4	4.5	5.3	8.8
Personal insurance and pensions	10.8	9.0	9.7	7.0	8.6
Cash contributions	1.1	2.0	.1	.8	.7

¹ Includes alcohol, tobacco, personal care, reading, education, and miscellaneous.

occurred in apparel, falling from 5.2 percent in 1984 to 4.0 percent in 1998. The budget share of tobacco fell from 1.4 percent in 1984 to 0.9 percent in 1998. The budget share of alcoholic beverages fell from 1.2 percent in 1984 to 0.6 percent in 1998.

Historical comparison. The total budgets (in constant and current dollars) are shown for family consumption for various years between 1909 and 1998 (family consumption includes spending on food, clothing, housing, entertainment, transportation, health care and miscellaneous, but does not include spending on contributions, life insurance or pensions). (See table 2, p. 31.) As discussed above, the 1908–09 cotton mill budgets were the first ones developed by BLS and represented

an average of 2.4 vehicles.

The reference family was originally chosen because it is the modal family type weighted by persons, that is, more people lived in these types of families than in any other types. In today's society, however, there may be many unmarried couples with children. Hence, the modal family type may consist simply of two adults and two children.²⁸ Using this more general reference family (consisting of two adults and two children) yields a total budget of \$39,870 in 1998, which is slightly lower than that for the married couple reference family.

The components of the budget for 1998 are shown in table 1. These components are calculated by using the expenditure shares of reference families in the middle quintile of total expenditures (outlays) and applying these shares to the median budget shown in the above tabulation.²⁹ The budget shares in 1998 are compared with those in 1984. In both 1998 and 1984, housing, transportation, and food were the top three expenditure items, accounting for 67.4 percent and 65.7 percent, respectively, of total expenditures, but the budget share of food in 1998 was lower than in 1984.

Among the aggregate expenditure categories, housing registered the largest change in budget allocation, increasing from 32.3 percent in 1984 to 35.3 percent in 1998. The increase in housing expenditures is attributable to the increase of the budget shares of owned dwellings (up by 3.5 percentage points). The next largest increase in the budget share of aggregate expenditure categories was in health care, increasing from 3.5 percent in 1984 to 4.8 percent in 1998.

The largest decrease in aggregate expenditure categories

occurred in apparel, falling from 5.2 percent in 1984 to 4.0 percent in 1998. The budgets for 1947 and 1951 represent the “modest but adequate” budgets, the budget for 1959 is an updated version of the 1951 budgets, and the BLS family budgets for 1966, 1973, 1979, and 1981 represent the “moderate” or “intermediate” budgets, which are updated for price changes. The revised budgets for 1984, 1989, 1994, and 1998 represent the Prevailing Family Standard (PFS), which is the actual median family consumption for a family of four.

As shown in earlier research results, the 1979 level of the intermediate budget is similar to that of the 1979 prevailing family standard.³⁰ (Future research proposed should include a reconstruction of these median budgets for 1917–19, 1934–35, 1950–51, 1960–61, 1972–73, and 1980–81.) Similar to the results of the Expert Committee in 1980, the 1973 PFS levels are only slightly higher than the 1973 BLS intermediate family budgets. In addition, the 1961 PFS levels are only slightly higher than the 1959 intermediate budgets adjusted for inflation. Hence, it may be seen that the total budgets obtained by either method yield similar estimates. The components, however, are different.

Using expenditure data from historical CE surveys, researchers have shown that the components of family expenditures have changed dramatically during this century.³¹ (See table 3, p. 32). The share of family spending on food and clothing has dropped substantially (the share for both goods fell from 61 percent in 1901 to 25 percent in 1986–87), while the share of spending on transportation and hous-

Table 8. Comparison of interarea indexes (using total family consumption)

Area	BLS family budget program, fall 1981	BLS experimental interarea index, 1989	BLS experimental index shelter, 1995	NRC housing index, 1990 ¹
New York City	109	134	122	119
Philadelphia	102	106	103	119
Boston	112	122	114	121
Pittsburgh	97	95	94	97
Buffalo	101	99	96	97
N.Y.C. – Connecticut suburbs	109	128	119	119
N.Y.C. – New Jersey suburbs	109	118	113	119
Chicago	102	108	105	106
Detroit	99	97	98	106
St. Louis	98	94	94	103
Cleveland	102	95	95	106
Minneapolis	97	100	99	103
Milwaukee	102	98	102	99
Cincinnati	100	97	96	99
Kansas City	98	93	94	103
Washington	103	114	104	112
Dallas	95	97	94	100
Baltimore	97	104	100	112
Houston	98	97	93	100
Atlanta	93	105	97	112
Miami	—	99	101	112
Tampa	—	92	93	104
New Orleans	—	104	92	96
San Francisco	107	125	114	122
Seattle	106	108	105	122
San Diego	99	112	108	122
Portland	—	92	101	110
Honolulu	118	116	118	103
Anchorage	127	114	111	102
Denver	99	99	100	100
Greater Los Angeles	100	117	104	122
Los Angeles County	100	117	113	122

¹ Connie F. Citro and Robert T. Michael, eds., *Measuring Poverty: A New Approach* (Washington, National Academy Press, 1995), 194–97.

ing has increased (the housing share increased from 24 percent in 1901 to 34 percent in 1986–87).

Similar results are revealed for the expenditure shares of family consumption (which excludes insurance, pensions and contributions) for various years. (See table 4, p. 33.) There has been a shift away from food and clothing toward housing and transportation. (Since 1984, the increase in the share of housing is mostly due to the increased share of homeowners' shelter costs).

Issues

Family budgets can be used to make comparisons among different family types, among areas, and over time.³² These uses, though, rely on some of the more controversial assumptions or choices of the family budgets. These issues are similar to those

addressed in the literature on measuring poverty thresholds³³; they include:

- Choosing an equivalence scale to adjust the threshold or budget for differences in household sizes and types.
- Determining a geographical index for differences in prices across geographical areas.
- Updating the thresholds or budgets over time.

Equivalence scales. An equivalence scale is used to adjust the thresholds for differences in household size and composition. There are three approaches to choosing the equivalence scale³⁴:

- The analysis of behavior, using the consumption patterns of families to “compute” the scale economies.
- Arbitrary but transparent formulas, using the square root of family size.
- Asking people; using subjective responses related by family size.

All of these methods have problems and there is no consensus on the approach or the actual scale economies.

The Watts Commission recommended using a refined version of the revised Orshansky scales. They concluded that no others were demonstrably superior to the originals; despite that, they also claimed their choice merited scant weight.

The NRC panel also concluded that any choice of equivalence scales might be rather arbitrary. It reported that standard methods for using expenditure data to estimate various types of equivalence scales yield many different scales depending on the assumptions made about the measure of well-being, the estimation method, the types of households, and data used in the analyses.³⁵

The NRC panel recommended an arbitrary, but transparent formula: the thresholds for household types other than the reference type should be determined using an

equivalence scale that would adjust for the number of adults and children in the household. This two-parameter scale is given by $(A + PK)^F$, where A represents the number of adults and K represents the number of children. The Panel recommended that the scale economy factor, F , be set at either 0.65 or 0.75 and that the parameter P be set at 0.7.

The NRC panel's choice of a two-parameter scale was an attempt to be consistent with the cost-of-children literature and to remove the irregular increases in the scale for larger family sizes. This scale, however, may be inappropriate for childless families. The three-parameter scale attempts to reconcile the differences between singles and childless couples, single-parent and two-parent families, and the cost-of-children literature.³⁶ Compared with the NRC panel's recommendation, the three-parameter scale assumes more economies of scale between singles and childless couples and more similarity between the scales for families with one parent and two children and two-parent families with one child.

The most recent BLS family budgets used equivalence scales that were derived from differences in food expenditure patterns among different family types. These original scales are compared with three alternative equivalence scales: the one recommended by the Expert Committee, the official poverty scales, a two-parameter scale,³⁷ and an alternative three-parameter scale.³⁸ The scales are shown normalized, so that the scale for the reference family is 1.0. (See table 5, p. 34.) The three-parameter scales are flatter than those used in the BLS family budget program. That is, there are more economies of scale between families of different sizes.

The Expert Committee also recommended against using

the median family consumption for a wider variety of family types to determine their respective budgets. They believed that some family types—citing elderly singles or couples—do not necessarily enjoy the same high standards as the reference family and that using actual expenditures to estimate standards would merely “validate the status quo.” Recently, as an example, researchers have demonstrated that the economic well-being of single parents is much lower than that of married couples.

To show these differences, the median budget for various family types is compared with family budgets obtained using the family budget scales and the three-parameter scales. (See table 6, p. 36.) The first two columns are calculated by multiplying the respective scale shown in table 5 by the total budget of the reference family, whose figure is \$41,487. The last column shows the actual median expenditures for the various family types. The median expenditures for single nonelderly families lie between the budgets determined using the scales. The data confirm the observation that single parent families do not enjoy the same standard of living as the reference families. Also illustrated is the reason that the Expert Committee did not recommend using this method. Because single parent families tend to have access to fewer economic resources, their expenditures will be lower than those of other families. Hence, use of the actual expenditures of families may not provide a true estimate of the expenditures required to achieve similar levels of living.

While the total budget levels should not be calculated separately for each family type, the data can be used to compare the shares of the components for each family type. The shares for various components for select family types are shown. (See table 7, p. 37.) Housing and food expenditures amount to 51 percent for the reference family and for the married couple family without children, but 61 percent of total expenditures for single parents with one or two children.

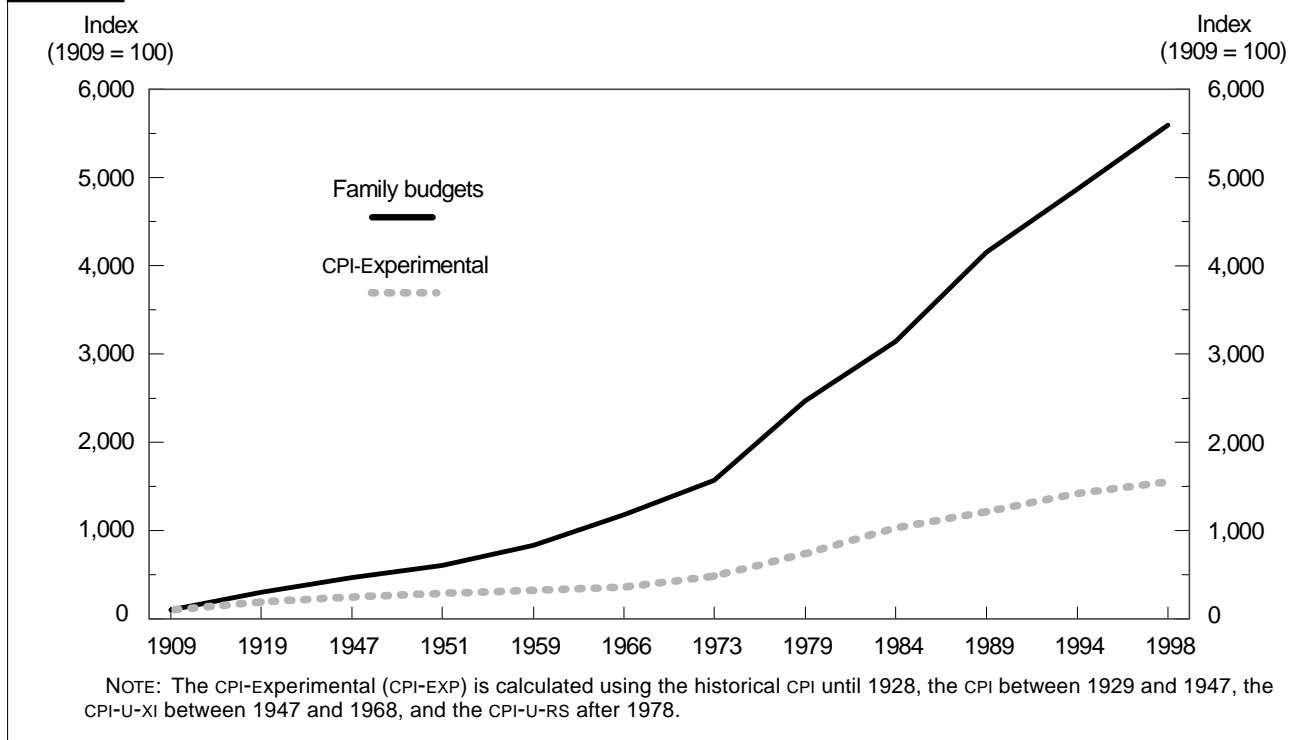
As do other household types, single nonelderly and single parents with one or two children allocate the largest portion of their budget to housing. Unlike the other household types, however, more than 60 percent of their housing expenditures go toward rent and utilities.

Geographic indexes: adjusting for interarea price differences. The Watts Commission agreed that the budgets ought to be different for different geographic areas, but, as with the equivalence scale findings, their empirical attempts did not produce “consistent and robust findings.” The NRC Panel also noted: “there is wide agreement that it is desirable to adjust poverty thresholds for differences in prices...[however]...there are no geographic area cost-of-living indexes that correspond to the CPI.”³⁹ Determining interarea adjustments is one of the

Table 9. Comparison of family budgets and lower living standard income levels for select cities

City	1998 PFS (using 1989 BLS experimental indexes)	Lower level (67 percent of 1998 PFS) ¹	DoL lower living standard income levels, 1998
Philadelphia	\$43,679	\$29,265	\$27,540
Boston	49,523	33,180	29,730
Chicago	44,409	29,754	27,440
St. Louis	39,295	26,328	25,270
Minneapolis	41,487	27,796	25,550
Washington	46,601	31,223	29,810
Atlanta	43,313	29,020	24,870
San Francisco	50,619	33,915	28,800
Anchorage	46,601	31,223	35,430
Los Angeles County	47,697	31,957	28,200

¹The budget levels are calculated by applying the indexes in table 8 to family consumption (\$36,528) and then adding the amount of pensions, life insurance and contributions (\$4,959).

Chart 1. Index values for CPI-Experimental and family budgets, 1909–98

more controversial components of the experimental poverty measure.⁴⁰ The following is a comparison of some of these alternative approaches.⁴¹

BLS family budget program. Budget cost estimates were published for 40 urban areas, four regional averages, and a U.S. urban average. The budgets were intended to measure equivalent levels of living in the different budget areas; however, identical budgets were not priced in the 40 budget areas. The quantity weights were adjusted to account for regional preference or geographical patterns: for food among regions, for clothing and heating fuels among the cities to account for differing climates, and for automobile ownership and usage; differences were incorporated by city size, to account for availability and use of public transportation.

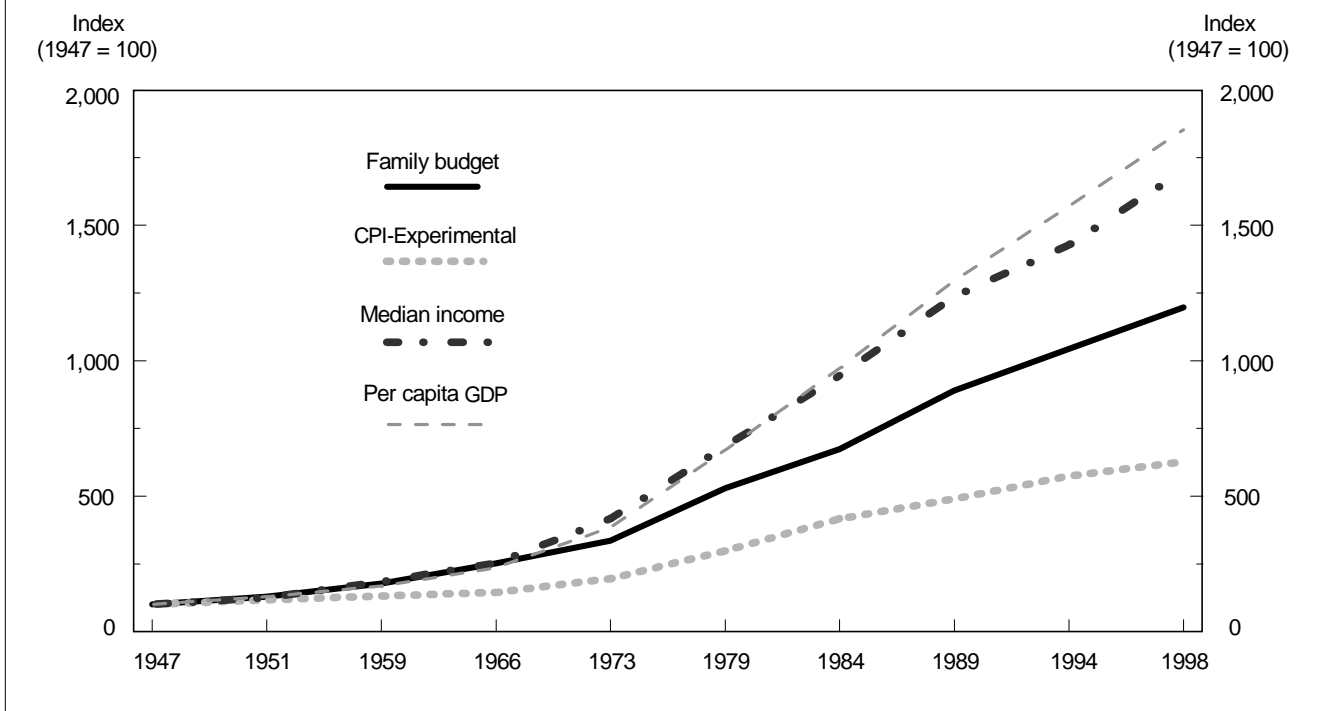
BLS experimental interarea indexes. In this article, interarea price indexes are constructed using preliminary research conducted at BLS.⁴² Researchers used a hedonic methodology and monthly CPI-U price data for July 1988 through June 1989 to produce experimental interarea price indexes; indexes were computed for the 44 CPI publication geographic areas.⁴³ These experimental interarea price indexes were created at the lowest level of CPI price data available and were aggregated to form index factors for 11 major expenditure

categories. The resulting 11 expenditure categories total about 90 percent of the total family consumption budget. Although the interarea price indexes are preliminary and of experimental status, no other suitable data currently are available that can be utilized to estimate interarea price differences.

BLS revised experimental interarea indexes for shelter. In 1995, the shelter indexes were updated.⁴⁴ Using similar methods and more recent data, new indexes were created. These new interarea indexes were very similar to the original indexes for shelter (correlation coefficient of 0.98).

NRC Panel on Poverty. The Panel developed an interarea price index for shelter. This index focused on shelter because housing expenditures were the largest component of the Panel's budget and because variations in housing costs are significant across regions and by population size. Using the 1990 decennial census, the Panel used methods similar to those used to produce the fair market rents and computed index values for each of the 341 metropolitan areas. The index values were based on the cost of housing at the 45th percentile of the distribution for each area. The data were then grouped into six population size categories within each of the nine census regions, which produced a final set of 41 index values.

Chart 2. Index values for family budgets, CPI-Experimental, median family income, and per capita GDP, 1947–98



These various indexes are shown for the major CPI cities. (See table 8, p. 38.) The indexes are calculated by adjusting the particular expenditure items included in the index and then adding the other components included in total family consumption. For example, the NRC index values were further adjusted for the estimated fraction of the budget accounted for by housing (including utilities), which was set at 44 percent. The NRC indexes are for specific area-size regions, and they are similar for similar sized cities in the same region (such as Los Angeles and San Francisco).

The indexes for many areas are similar across methods. (See table 8, p. 38.) For example, Boston is consistently high for all methods, while Minneapolis is consistently average (around 100). In fact, the rank correlation between the family budget index and the experimental index is fairly high. The correlation between the overall experimental and revised shelter indexes is the highest (at 91 percent).

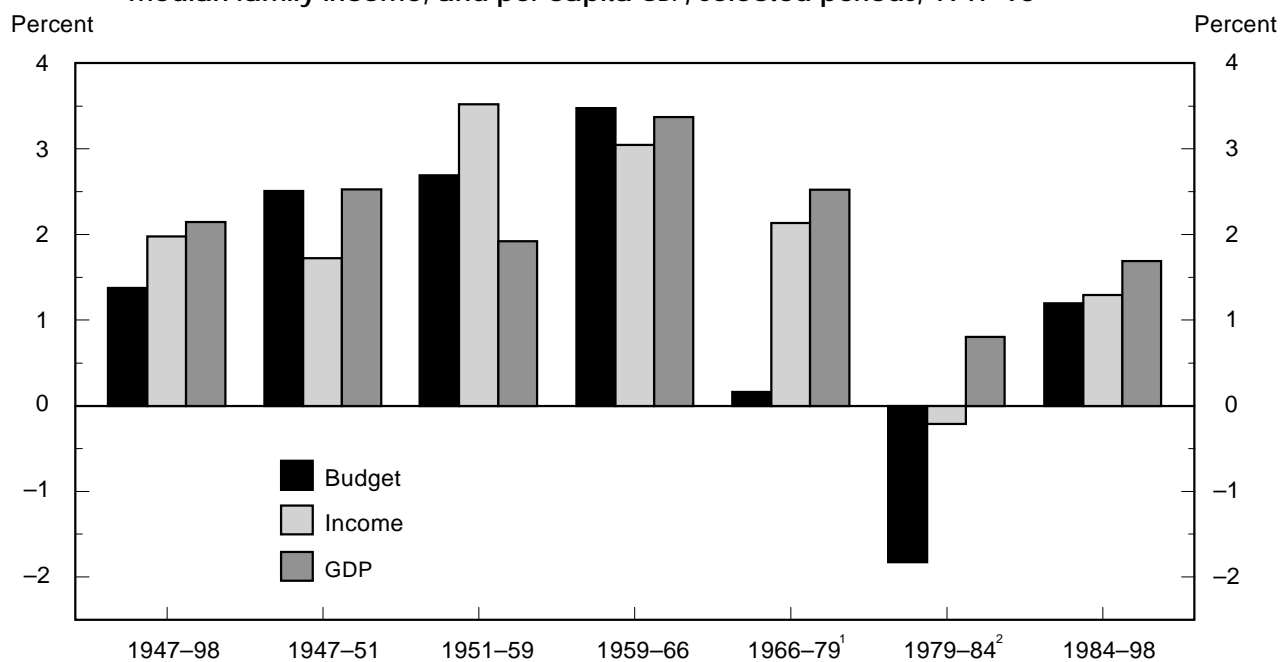
Budgets are compared for particular cities with the budgets used by the Department of Labor in the implementation of the Workforce Investment Act. (See table 9, p. 39.) This act continues to use updated figures from the 1981 BLS family budget program for selected cities to determine the lower living standard income level (LLSIL). These LLSILs are used to determine whether an individual qualifies for job training assistance.

The second half of the table compares these LLSILs with the lower living level, recommended by the Expert Committee, of 67 percent of the PFS. Again, it is shown that either method yields similar budgets for many areas (for example, Philadelphia). In fact, the average LLSILs for the major cities differ by only \$300 from the average lower level budget using 67 percent of the median budget.

Updating the budgets over time. The Expert Committee recommended that the standards be updated using the change in the median budget for the reference family as estimated annually using the CE survey data. They intended to use an adjustment factor that increases more than inflation and that would be a more “relative” updating mechanism. Specifically, they proposed that the budgets be updated annually by re-computing the median expenditure of the reference family each year from CE survey data. They also recommended a “ratchet” method, such that, if the change in the median were less than the inflation rate, then the inflation rate would be used to update the budget.

This method is similar to that recommended by the NRC Panel for updating the poverty thresholds. The NRC Panel recommended that the poverty thresholds, once determined, should be updated over time using the change in median expenditures for the basic bundle of goods.⁴⁵ The NRC Panel

Chart 3. Real average annual percent changes in family budgets, CPI-experimental, median family income, and per capita GDP, selected periods, 1947–98



¹ 1979 represents the BLS family budget.

² 1979 represents the prevailing family budget (PFS).

expected that this updating method would produce thresholds that would increase by more than the inflation rate but by less than the change in per capita Personal Consumption Expenditures. The Panel's motivation came from the observation that the poverty threshold had not increased in real terms, while real median income had increased since the 1960s. The Panel's report showed that the poverty threshold rose less than the change in after-tax median income mainly during the 1960s and early 1970s.⁴⁶ The NRC Panel estimated that the elasticity of the basic bundle to total consumption minus health care was 0.65. Others have estimated various elasticities of poverty lines with respect to changes in income.⁴⁷

The key issue is which components of the measure are relative and which are fixed over time. James Foster has claimed that "the key distinction between absolute and relative thresholds is not seen in the specific values at a given date, but in how the values change as the distribution changes."⁴⁸ The difference between the changes in the budgets and the changes in the consumer price indexes can be seen. (See table 3, p. 32.) The budget increased much more than the inflation rate and for almost all time periods. The trends in these two series between 1909 and 1998 are shown. (See chart 1, p. 40.) Here, the CPI-EXP is constructed using the CPI-U-RS⁴⁹ for 1978–1998, the CPI-U-X1 for 1947–77, the

CPI (base 1982–84) for 1929–1947 and the CPI (base 1967)⁵⁰ for 1909–1928. This shows that the budget increased 56 fold between 1909 and 1998,⁵¹ while the CPI increased only 16 times (for a real increase of 230 percent). Even during the post-war period of 1947–1998, the budget increased 12 times compared with 6.3 times for the CPI (note this CPI-EXP is lower than the CPI-U; the CPI-U increased 7.3 times during this post-war period.)

To further examine these differences, changes are compared in alternative indexes for 1947–98. The trends in the family budgets, CPI-EXP, median income for a family of four, and the per capita gross domestic product (GDP) are compared. (See chart 2, p. 41.) While the family budgets increased much more rapidly than the inflation rate during this period, they did not increase as much as median income or per capita GDP.

To determine the "true" increase in the standard of living, it must be determined how much of the increase is due to changes in the definition of the "standard" (for example, the difference between a "modest" budget and a "fair" budget) and how much is due to actual changes in the level of a consistent "standard." For the earlier periods, it could be that the fair standard used in 1909 implied a lower standard of living than the "modest but adequate" level used in 1947. For the post-war period, however, it seems reasonable that

the “modest but adequate,” “moderate,” and “intermediate” levels should have represented similar standards. In fact, the 1966 report (City worker’s family budget) claimed that “almost all of the improvement in the real level of living [between 1951 and 1966]...has been reflected in the standard.”⁵² By showing that the change in the after-tax income for these reference families increased by the same amount as the change in the budget, the report notes that the budget “continues to represent the same relative position on the scale of consumption over the past two decades.”

These are still relatively subjective concepts, and their translation into actual dollar figures might be highly variable. Research on subjective measures shows that the interpretations of measures such as “sufficient” and “good” produce dollar amounts that are widely separated.⁵³ Still other research has revealed an estimate that the average cost level required to obtain a “good” income was higher than that for a “sufficient” income.⁵⁴

The average annual percent changes in real dollars for selected periods between 1947 and 1998 are shown. (See chart 3.) Overall, the budgets increased in real terms during this period. Between 1947 and 1979, the composition of the budgets changed twice (a modest change in 1959, and a more dramatic change in 1966). The composition of the budget changes each year using the PFS method. It may be seen that the real average annual change in the budget between 1947 and 1966 was similar to the change in median income (as suggested above), with a smaller real change between 1947 and 1951. This occurs because the budgets between these years were updated using price changes. Similarly, no real change occurred in the budget between 1966 and 1979; this is because the budgets were simply updated with price changes.

Between 1979 and 1984, the budgets fell in real terms, while median income remained almost unchanged. Some of this may be due to the slightly different methodologies used in calculating the budgets. Finally, between 1984 and 1998 the average annual increase in the budgets was similar to the increases in median income. The elasticity with respect to

changes in real income can be calculated.⁵⁵ For the entire period between 1947 and 1998, the elasticity of the budget is 0.59. The elasticity is higher for the prescriptive period between 1947 and 1979, with an elasticity of 0.68. Using the descriptive methods presented in this paper, the most recent period (1984–98) yields an elasticity of 0.92.

THE PRODUCTION OF FAMILY BUDGETS and budget standards, which occurred at BLS throughout the last century, has provided a vital, dynamic source of data for numerous studies and research activities. This article has reviewed this history and has used actual expenditure data to construct a descriptive family budget using the methodology as recommended by the Expert Committee in 1980. These budgets are relatively simple to derive from the current, ongoing Consumer Expenditure Survey; they are calculated for 1989, 1994, and 1998 and compared with earlier estimates of 1984. These estimates are also compared with earlier budget standards that were constructed using an alternative budget-based method. These budgets have not increased as much as per capita GDP or median family income.⁵⁶ They have, however, increased more than inflation. Over the past 50 years, the increase in real family budgets has an elasticity of about 0.60 with respect to median family income.

Similarly to earlier work, the descriptive budgets derived from the median total expenditures are close to the “expert” budgets that are constructed to provide a “moderate” or “intermediate” standard of living. While it would be inappropriate for a statistical agency such as BLS to make the necessary subjective determinations of the initial level of the family budget (as Commissioner Moore and others have stated), this article has constructed a descriptive family budget without specifying a subjective standard of living. The Expert Committee suggested that these family budgets could be used to compare the level of living among different family types and areas. The results of these comparisons, however, depend on the method used to determine the equivalence scales or interarea indexes. □

Notes

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¹ Gordon Fisher, “From Hunter to Orshansky: An Overview of (Unofficial) Poverty Lines in the United States from 1904 to 1965,” Poverty Measurement Working paper (Department of Commerce, Bureau of the Census, 1997); and “Poverty Lines and Measures of Income Inadequacy in the United States since 1870,” paper presented at the meeting of the Social Science History Association, October 1997.

² Peter Saunders, “Household Budgets and Income Distribution Over the Longer-term: Evidence for Australia,” paper presented at the 25th General Conference of The International Association for Research on Income and Wealth, August 1998.

³ Ibid.

⁴ Amartya Sen, *The Standard of Living* (Cambridge, Cambridge University Press, 1988).

⁵ James E. Foster, “Absolute Versus Relative Poverty,” *American Economic Review* (May 1998), pp. 335–41.

⁶ Peter Saunders, Jenny Chalmers, Marilyn McHugh, Collete Murray, Michael Bittman and Bruce Bradbury, “Development of Indicative Bud-

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⁷ Foster, “Absolute Versus Relative Poverty,” p. 335–41.

⁸ Harold W. Watts, “A review of budget-based expenditure norms,” comments presented to the NRC Panel of Poverty, Spring 1993. Also see Trudy J. Renwick and Barbara R. Bergmann, “A budget-based definition of poverty with an application to single-parent families,” *Journal of Human Resources*, 1993, Winter 1993, pp. 1–24, for a presentation of budget-based standards.

⁹ Saunders, et al., “Development of Indicative Budget Standards for Australia,” 1998.

¹⁰ Jared Bernstein, Chauna Brocht and Maggie Spade-Aguilar, *How Much is Enough? Basic family budgets for working families* (Washington, Economic Policy Institute, 2000).

¹¹ See Harold W. Watts, “Special panel suggests changes in BLS Family Budget Program,” *Monthly Labor Review*, December 1980, pp. 3–10.

¹² Connie F. Citro and Robert T. Michael, eds., *Measuring Poverty: A New Approach* (Washington, National Academy Press, 1995).

¹³ Harold W. Watts, “A review of budget-based expenditure norms,” comments presented to the NRC Panel of Poverty, spring 1993.

¹⁴ *Report on Conditions of Woman and Child Wage-Earners in the United States*, Vol. XVI, *Family Budgets of Typical Cotton-Mill Workers* (Bureau of Labor, 1911), p. 9.

¹⁵ “Tentative Quantity-Cost Budget Necessary to Maintain Family of Five in Washington, D.C.,” *Monthly Labor Review* (December 1919), pp. 22–25.

¹⁶ *Intercity Differences in Cost of Living in March 1935, 59 cities*, Research Monograph XII (Washington, Works Progress Administration, 1937), p. xiv.

¹⁷ Workers’ Budgets in the United States: City Families and Single Persons, 1946 and 1947, Bulletin 927 (Bureau of Labor Statistics, 1948).

¹⁸ *Report of the Advisory Committee on Standard Budget Research* (Bureau of Labor Statistics, 1963).

¹⁹ *City Worker’s Family Budget for a Moderate Living Standard*, Bulletin 1570-1 (Bureau of Labor Statistics, Autumn 1966), p. v.

²⁰ *Revised Equivalence Scale for Estimating Equivalent Incomes or Budget Costs by Family Type*, Bulletin No. 1570-2 (Bureau of Labor Statistics, 1968). BLS also included equivalence scale adjustments for the 1947 City Worker’s budgets; see *Workers’ Budgets in the United States: City Families and Single Persons, 1946 and 1947*, Bulletin 927 (Bureau of Labor Statistics, 1947).

²¹ Joseph P. Goldberg and William T. Moye, *The First Hundred Years of the Bureau of Labor Statistics* (Bureau of Labor Statistics, 1985), p. 233.

²² See Expert Committee on Family Budget Revisions “New American Family Budget Standards,” Institute for Research on Poverty (IRP) Working paper, 1980, p. 9.

²³ Watts, “Special panel,” p. 8.

²⁴ Citro and Michael, *Measuring Poverty*.

²⁵ This is the standard as recommended by Harold W. Watts, “Special panel suggests changes ...,” *Monthly Labor Review*, December 1980, pp. 3–10.

²⁶ The total outlays are used instead of the total expenditures for the consumer unit (see John M. Rogers and Maureen B. Gray, “CE data: quintiles of income versus quintiles of outlays,” *Monthly Labor Review*, December 1994, pp. 32–37). The main difference between this measure and the one recommended by the Expert Committee is that the purchase price of vehicle is replaced with the principal payments.

²⁷ See Expert Committee on Family Budget Revisions, “New Ameri-

can Family Budget Standards,” IRP Working paper, 1980. This restriction was used by the Expert Committee and in the budgets constructed by Rogers (1994).

²⁸ David Johnson, Stephanie Shipp, and Thesia Garner, “Developing Poverty Thresholds Using Expenditure Data,” *Proceedings of the Government and Social Statistics Section* (Alexandria, VA, American Statistical Association, August 1997), pp. 28–37.

²⁹ To compare with earlier studies, the mean personal income taxes also are calculated for reference families in the middle income quintile using the Current Population Survey; the figure is \$6,177.

³⁰ Expert Committee, “New American Family Budget Standards,” IRP Working paper, 1980.

³¹ Eva Jacobs and Stephanie Shipp, “How family spending has changed in the U.S.,” *Monthly Labor Review*, March 1990, pp. 20–27.

³² Watts, “Special panel suggests changes ...,” *Monthly Labor Review*, December 1980, pp. 3–10.

³³ See Citro and Michael, *Measuring Poverty*, p. ?; and Johnson, et al., “Developing Poverty Thresholds ...,” *Proceedings of the Government and Social Statistics Section*, pp. 28–37.

³⁴ Angus Deaton, “Frontiers of Poverty Measurement in Economics,” talk given at the Consultation on Values, Norms and Poverty, Johannesburg, South Africa, January 1999.

³⁵ David Johnson, “The Two-Parameter Equivalence Scale and Inequality Between and Within Households,” paper presented at the 1996 General Conference of the International Association for Research in Income and Wealth, August 1996.

³⁶ David Betson, “Is Everything Relative? The Role of Equivalence Scales in Poverty Measurement,” University of Notre Dame, March 1996; and K. Short, Thesia Garner, David Johnson, and Pat Doyle, *Experimental Poverty Measures, 1990–1997*, P60–205 (U.S. Department of Commerce, Bureau of the Census, 1999).

³⁷ Citro and Michael, *Measuring Poverty*.

³⁸ Kathleen Short, et al., *Experimental Poverty Measures, 1990–1997*, P60–205.

³⁹ Citro and Michael, *Measuring Poverty*, pp. 182–83.

⁴⁰ Thomas Corbett, “Poverty: Improving the Measure After Thirty Years, A Conference,” *Focus* (Spring 1999); and, also, Gary Burtless, “The Political Consequences of a New Poverty Measure,” presented to a conference “Poverty: Improving the Definition after Thirty Years,” April 1998.

⁴¹ See also Stephen Malpezzi, “Remarks on Geographic Variation in Housing Prices and the Measurement of Poverty,” presented to a conference “Poverty: Improving the Definition after Thirty Years,” April 1999, for other possible methods.

⁴² Mary F. Kokoski, Patrick Cardiff, and Brent Moulton, “Interarea Price Indices for Consumer Goods and Services: An Hedonic Approach Using CPI Data,” Working paper 256 (Bureau of Labor Statistics, 1994). See also Johnson for a similar approach used to adjust poverty thresholds.

⁴³ The BLS interarea index research is still in progress and the current indexes are of experimental status. They do not reflect official BLS published data.

⁴⁴ “Interarea comparisons of compensation and prices,” *Report on the American Workforce* (Bureau of Labor Statistics, 1997.)

⁴⁵ Citro and Michael, *Measuring Poverty*.

⁴⁶ Citro and Michael, *Measuring Poverty*, p. 35.

⁴⁷ See the literature review in Gordon Fisher, “Is There Such a Thing as an Absolute Poverty Line Over Time? Evidence from the United States, Britain, Canada, and Australia on the Income Elasticity of the Poverty Line” Poverty Measurement Working paper, U.S. Bureau of the Census,

1995.

⁴⁸ Foster, "Absolute Versus Relative Poverty," *American Economic Review*, pp. 335–41.

⁴⁹ See Kenneth J. Stewart and Stephen B. Reed, "CPI research series using current methods, 1978–98," *Monthly Labor Review*, (June 1999), pp. 29–38.

⁵⁰ *Handbook of Labor Statistics*, Bulletin 1865 (Bureau of Labor Statistics, 1975) p. 313.

⁵¹ The percent changes between 1909–1947 are calculated using the 5 person family budgets, the changes between 1947–1979 are calculated using the BLS family budgets for 4 persons, and the changes between 1979 and 1998 are calculated using the changes in the PFS budgets.

⁵² *City Worker's Family Budget for a Moderate Living Standard*,

Bulletin 1570-1 (Bureau of Labor Statistics, Autumn 1966).

⁵³ Citro and Michael, *Measuring Poverty*; and, also, Bernard M. S. Van Praag and Nico L. Van der Sar, "Household Cost Functions and Equivalence Scales," *Journal of Human Resources*, Spring 1988, 193–210.

⁵⁴ *Ibid.*

⁵⁵ The approach used here follows that outlined in Gordon Fisher, "Is There Such a Thing as an Absolute Poverty Line Over Time? Evidence from the United States, Britain, Canada, and Australia on the Income Elasticity of the Poverty Line" Poverty Measurement Working paper, U.S. Bureau of the Census, 1995.

⁵⁶ See, for example, Peter Saunders, et al., "Development of Indicative Budget Standards for Australia," Policy Research paper No. 74, Department of Social Security, Canberra, Australia, 1998.

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