THE MEASURE OF POVERTY

Technical Paper IV

Bureau of Labor Statistics (BLS)
Family Budgets Program

By: Bureau of Labor Statistics
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I am pleased to forward Technical Paper IV, "Bureau of Labor Statistics Family Budgets Program". It contains supporting data for the report entitled The Measure of Poverty which was prepared in compliance with section 823 of the Education Amendments of 1974. This paper was prepared by Mark Sherwood, Bureau of Labor Statistics. The views presented are those of the individual author and not those of the Task Force as a whole.

The paper discusses the three hypothetical market baskets of goods and services for which BLS publishes annual cost estimates. This program is referred to as the standard budgets or family budgets program. The concepts and methodology underlying the construction and pricing of the market baskets is examined. Attention is given to the limitations of the family budgets as measures of income adequacy and to their use as indexes of interarea cost-of-living differences.

Bette Mahoney

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PREFACE

Section 823 of the Education Amendments of 1974 (PL 93-380) requires a thorough study of the manner in which the relative measure of poverty for use in the financial assistance program, authorized by Title I of the Elementary and Secondary Education Act of 1965, may be more accurately and currently developed.

That financial assistance program is administered by the Commissioner of Education, through the Office of Education, Department of Health, Education, and Welfare. An important feature is the use of a formula prescribed by Section 103 of the Elementary and Secondary Education Act for the annual distribution of Federal funds to school districts. A significant factor in the formula is the number of school-aged children 5 to 17 in poor families within each school district. The measure of poverty which is used, and which is the subject of the study mandated by Section 823, is the Federal government's official statistical definition of poverty (also known as the Orshansky, OMB, Census Bureau, or Social Security poverty lines).

Other work related to poverty measurement has been called for in recent legislative acts. In the Comprehensive Employment and Training Act, the Secretary of Labor is directed to develop and maintain comprehensive household budget data at different levels of living, including a "level of adequacy." Any such review of the level of adequacy must necessarily be closely related to measures of poverty. The Housing and Community Development Act of 1974 gives the Secretary of HUD authority to adjust the poverty measure to reflect local variations in the cost of living. The Conference Report accompanying it directs the Secretary to develop or obtain data with respect to the "extent of poverty" by metropolitan areas and to submit such data to the Congress as part of a March 31, 1977, report.

Because of the broad scope of the subject matter, coverage of the study of the measure of poverty mandated by Section 823 of the Education Amendments of 1974 was extended to include implications of the study findings for the poverty-related programs of all affected Federal departments and agencies. The Title I program of the Elementary and Secondary Education Act was given the most detailed treatment, to meet the legislatively-mandated specifications for the study as well as to serve as a primary example of application of the concepts of poverty measurement to Federal programs. The findings of the study are published in a report entitled, "The Measure of Poverty." An important objective of the study was full discussion and documentation of the major elements of currently applied and potentially usable poverty measures. Material containing essential supporting documentation for the study was assembled as technical papers. These have been written to stand alone as complete technical treatments of specific subjects.

The study was performed under the direct guidance of a Poverty Studies Task Force of the Subcommittee on the Education of the Disadvantaged and Minorities, Federal Inter-Agency Committee on Education. Technical papers were prepared at the request of, under the direction of, and subject to review by the Task Force members. Some papers are primarily the work of one or two persons; these are attributed to their authors. Others result from the collective input of Task Force members or advisors and no specific attribution is given except to the Task Force, as a whole.

The following listings show members of the Poverty Studies Task Force by appropriate Federal departments and agencies, and the titles and authors of the technical papers.

This report contains Technical Paper IV, Bureau of Labor Statistics (BLS) Family Budgets Program.

To obtain copies of the report, "The Measure of Poverty," or any of the technical papers, please write to:

Office of the Assistant Secretary for Planning and Evaluation
Department of Health, Education, and Welfare
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Federal Interagency Committee on Education
Subcommittee on Education for the Disadvantaged and Minorities

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TECHNICAL PAPERS

INTRODUCTION

The BLS publishes estimates of the annual costs of purchasing three hypothetical market baskets of goods and services for each of two urban family types. 1/ These estimates are referred to as standard budgets or as family budgets. The budgets include allowances for food, housing, transportation, clothing, personal care, medical care, and certain other consumption items. Other allowances consist of gifts and contributions, and for one family type allowances are also made for occupational expenses, Social Security, and personal income taxes. The three hypothetical market baskets, which will be described in more detail later in this paper, were originally constructed in an attempt to represent different standards of living. 2/ The standards are now referred to as lower, intermediate, and higher to reflect their relative as opposed to absolute nature.

One family type is a four person family comprised of a husband, age 38, employed full time; a wife who does not work outside the home; and two children, a girl of 8 and a boy of 13 years. The other family type is a retired couple consisting of a husband and wife, age 65 or over, who are assumed to be self-supporting, in reasonably good health, and able to take care of themselves. The remaining discussion will be addressed to the four person family budgets although a great deal of the information also applies to the retired couple's budgets.

Estimates of the budgets are published for the urban United States and 44 selected urban areas. 3/ By calculating ratios of the cost of the budgets in particular areas to the U.S. urban average cost of the budgets, it is possible to make comparisons of the costs among the 44 different areas. Such comparisons are sometimes referred to as interarea "living costs" comparisons. 4/ Indexes of comparative costs based on the lower, intermediate, and higher budgets are presented in Appendix 2.

Also, within the scope of the family budgets program the BLS publishes equivalence scales which allow for the adjustment of the total consumption cost in the four person family budgets for various other family sizes and types. The BLS equivalence scales are presented in Table 4 (see Appendix 2).

To summarize, the family budgets program provides: 1) estimates of budget levels originally constructed to represent standards of living; 2) interarea indexes of "living costs" based upon these budget estimates; and 3) adjustment factors to convert the budgets for other family sizes and types.

Because a definition of poverty is frequently desired which determines some minimum standard of income adequacy and also takes account of the varying needs of families of different sizes and types plus differences in the cost of living among different geographic areas, it has been suggested that parts or all of the family budgets program be used in defining poverty. However, because of limitations in the program, use of the estimates in this manner would constitute a misuse of the data. Because of the possibility that the definition of poverty would be used legislatively and administratively in the allocation of funds, such misuse could result in misallocations of monies; and because

of the possibility that the definition would be used as eligibility criteria for welfare and social programs, such use could unduly reward or penalize certain persons. A general misunderstanding on the part of the general public regarding the "precision" of such a definition would also quite likely occur.

This paper will discuss the limitations of the budgets program particularly as they apply to defining poverty.

GENERAL LIMITATIONS

Briefly, the general limitations of the budgets program with respect to defining poverty are:

1) As measures of income adequacy - The costs of purchasing the market baskets are often misinterpreted as objectively and rigorously determined dividing lines between "adequate" and "inadequate" levels of income. 5/,6/ However, presumably objective criteria, developed by scientists and technicians, for use in developing measures of adequacy are only availble for food and shelter. The remaining components of the budgets are based upon techniques which appear to be objective, but in fact are very dependent upon the subjective judgment of the budget makers. 7/

2) As measures of interarea cost of living differences - First, the content of the hypothetical market baskets of goods and services has been varied among the budget areas at the discretion of the budget makers to represent a constant level of satisfaction among the areas. In order to use the indexes based on the area costs of the budgets as geographic living cost indexes, users must make the strong assumption regarding consumer satisfaction or preferences that an individual would be equally satisfied with all of the market baskets in the different areas. The strength of this assumption will be discussed later in this paper.

Second, limited resources constrained the price data base for the family budgets program to being a modest augmentation of the price data collected for another BLS program. Because of conceptual and statistical problems that were encountered, the price data for the items in the family budget market baskets do not permit an assessment of the statistical reliability of the budget cost estimates in the different areas; consequently, no estimates of reliability can be assigned to the interarea indexes.

Finally, the budget costs are estimated for only 44 urban areas. No estimates are available for rural areas, states, regions, or other such geographic areas.

3) As adjustment factors for various sizes and types of families - The BLS equivalence scales are based upon an admittedly arbitrary assumption with respect to levels of equivalent consumption for families of different sizes and types. In addition, a technique called "smoothing by inspection," which implicitly relied upon the intuitive expectations of the budget makers, was applied to actual expenditure data to derive the published scales.

The remainder of this paper will be divided into a brief description of the manner of living represented by the market baskets in the family budgets, a discussion of the methodology used to establish the standards in the budgets program, a discussion of the price measurement problems, a discussion of geographic cost of living comparisons, and a discussion of the equivalence scales. A short section will be included at the end which

discusses areas for future research in this program which may be of value in future work related to defining poverty.

Description of the Manners of Living Represented by the Family Budget Market Baskets

The market baskets for the three budgets are precisely specified as to the quantitites and types of items included. 8/ Together with the assumptions regarding the reference family, these market baskets describe a certain manner of living. The following brief description of the manner of living may help to set the family budgets in perspepective for persons unfamiliar with the program.

The four person family is well established, living in an urban area, and headed by a 38 year old man who is a fully employed worker. The family possesses average inventories of items such as clothing and house-furnishings, and the market baskets reflect annual replacement rates for these items.

For the intermediate level budget, the family lives in either a five room, one bath rental unit or a five-six room, one or one and a half bath home which was purchased seven years ago. 9/ For the renter family, the market basket contains contract rent, fuel and utilities, when not included in the rent, replacement rates for a refrigerator and range, and an insurance policy for household contents. 10/ For the homeowner family, the market basket contains principal and interest payments, property taxes and homeowner insurance, fuel and utilities, repairs and maintenance, and replacement rates for a refrigerator and range.

If the family owns a car, it would have been two years old when the family bought it used. This car will be kept for four years before being sold and replaced by another two year old car. The market basket contains goods and services associated with maintaining and operating this car for a year plus an allowance for its eventual replacement.

In some of the larger urban areas, a certain percentage of these families do not own a car but rather use public transportation. The market basket contains an allowance for a certain number of rides on public transportation. There is an allowance for families who own cars, but also take some rides on public transportation.

The family is covered by a basic hospital and surgical insurance policy obtained by the husband at his place of employment, and the family makes a certain number of visits to the doctor and dentist each year.

The manner of living described for the lower budget differs from the manner described for the intermediate budget. The family does not own a home; but rather lives in a rental unit without air conditioning. Public transportation is used more; and if a car is owned, it is older. Also, the family performs more services for itself and takes advantage of free recreational facilities.

The manner of living described by the market basket in the higher budget compared to the manner described for the intermediate budget allows more families to own their homes and some families to own new cars. Also, more services and household appliances and equipment are bought.

In general, the differences in the manners of living described by the three budgets are varied according to assumptions such as those discussed above plus the inclusion in the market baskets of different quantities and qualities of goods and services

Methodology Used to Determine Standards of Living

In the 1940's the BLS was directed by a congressional subcomittee to determine "what it costs a worker's family to live in the large cities of the United States." 11/ To carry out this mandate the BLS, with the assistance of a Technical Advisory Committee, undertook the development of a list of goods and services which could be used to determine the dollar level required for the maintenance of health and social well-being, the nurture of children, and participation in community activities. A budget was derived in an attempt to describe a "modest but adequate" standard of living for a city worker's family.

The cost of this budget was estimated for spring 1946, summer 1947, autumn 1949, 1950, and 1951. Employing the same methodology as in the mid 1940's, a new list of goods and services was derived for an autumn 1959 interim revision of the budget.

With few exceptions, the market basket construction methodology employed in the mid 1940's and in 1959 to establish the budget level intended to represent a "modest but adequate" standard of living was again used in 1966 to derive a budget level for a "moderate" standard of living. In 1967 the BLS developed for the first time lower and higher budgets in response to user needs. The "moderate" level budget was then renamed the intermediate budget. Because the lower and higher budgets simply represent a scaling down and a scaling up of the intermediate budget, it is of interest here to discuss first the methodology employed to derive the intermediate budget. A discussion of the methodology used to derive the lower and higher budgets will follow.

The items and quantities which make up the intermediate budget basket were derived from two sources: 1) scientific judgments concerning the requirements for physical health and social well-being; and 2) analytical studies of the choices of goods and services made by consumers in successive income intervals.

Scientifically determined standards of adequacy were available for the food-at-home and the shelter components of the budget. Nutritionally adequate diets for individuals in different sex-age groups have been developed by the Food and Nutrition Board of the National Research Council, and translated into food plans at various cost levels by the U.S. Department of Agriculture. The

moderate cost food plan developed in 1964 is used for the food-at-home component of the intermediate budget.

The shelter component of the budgets is based upon recommendations originally made by the American Public Health Association and the U.S. Public Housing Administration which describe sleeping space requirements, essential household equipment (including plumbing), adequate utilities and heat, structural condition, and neighborhood location. For the rental unit, an unfurnished five-room unit, a complete private bath, and for the homeowner unit a five- or six-room house with one- or one and a half baths was specified. Both the rental unit and the owned home had to be in sound structural condition, had to have a fully equipped kitchen, hot and cold running water, electricity, central or other installed heat, be located in neighborhoods free from hazards or nuisances, and have access to public transportation, schools, grocery stores, and play space for children.

It is important to note that although these specifications were established by experts, they do not determine the cost of maintaining a nutritionally adequate diet or an adequate standard of shelter. Rather, the level of cost at which these standards are to be maintained is determined by the budget makers. As an example, in the modest but adequate family budget of 1959, food-at-home costs were based on the average of the costs of the USDA low- and moderate-cost food plans. In the 1966 moderate budget, the moderate-cost food plan was chosen.

For the other components of consumption — food away from home, household furnishings and operations, transportation, clothing, personal care, medical care, reading, recreation, educational expenses, tobacco, alcohol, miscellaneous consumption expenses, gifts and contributions, and life insurance — no standards have been formulated by experts. For this reason, the budget makers attempted to use data on the actual spending patterns of families as collected in the BLS 1960-61 Survey of Consumer Expenditures and a statistical procedure known as the quantity-income-elasticity (q-i-e) technique to derive quantities of goods and services to represent a standard based on expressed social goals.

It was anticipated that expenditure data would show that as income increases, families would increase spending on a group of related items at an increasing rate; then expenditures would increase at a decreasing rate. It was expected that if expenditures in relation to income followed such a trend and if initially quantity not quality increased, then a quantity-income curve would take the same form, that is, an "S" shape. See Figure 1.

The inflection point of an "S" shape curve was interpreted as the point on the income scale where families stop buying "more and more" and start buying either "better and better" or something else less essential to them. Locating this income level would allow the budget makers to select the quantities of the particular group of items purchased at this level and use these quantities in the market baskets that describe a standard of living. 12/ The purpose of using the q-i-e technique was to locate the inflection point

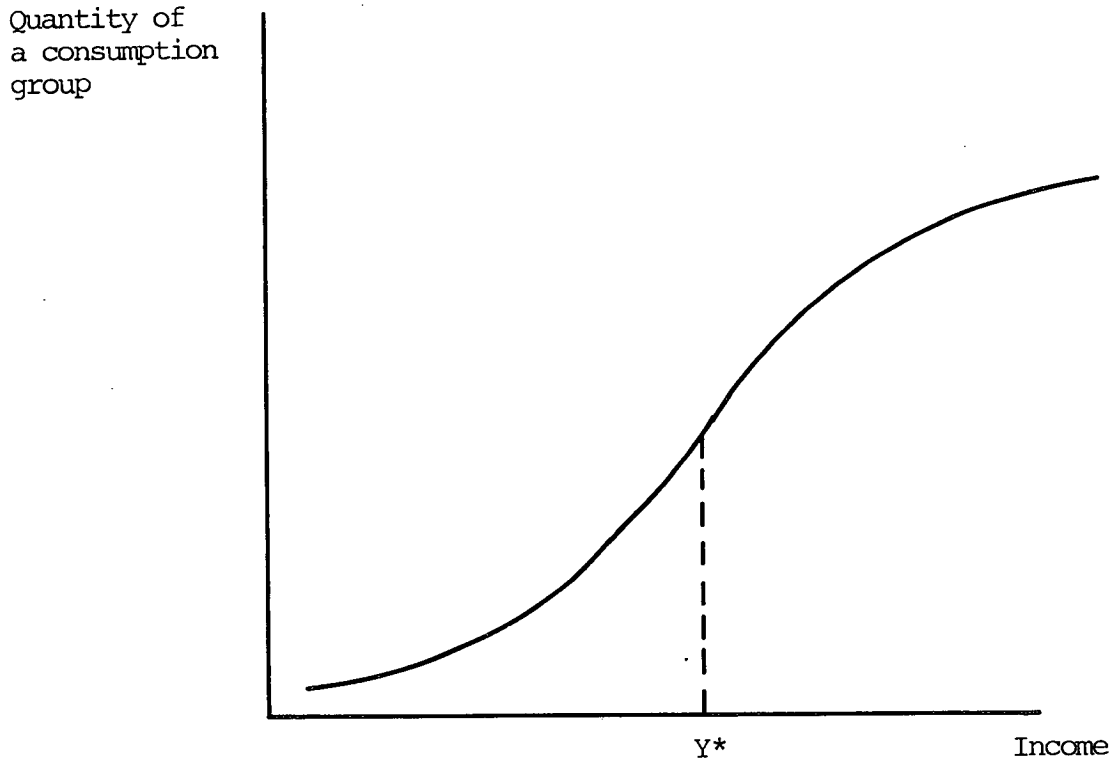

Figure 1

by determining the income level at which elasticity, defined as the percentage change in the quantity purchased divided by the percentage change in income, reached a maximum. 13/

In operational terms the budget makers calculated elasticity for a group of items according to the following formula:

$$E = \frac{\log Q_i - \log Q_{i-1}}{\log Y_i - \log Y_{i-1}}$$

where i = income interval i
Y_i = mean income for income interval i
Q_i = the number of items (or services) in a particular consumption group purchased on the average by income group i weighted by a fixed set of prices.

The income intervals used were $3,000-$3,999; $4,000-$4,999; $5,000-$5,999; $6,000-$7,499; $7,500-$9,999; $10,000-$14,999; $15,000 and above. An example of a consumption group would be personal care services which includes men's and boy's haircuts, women's and girl's haircuts, shampoos, etc. The following summary from an unpublished BLS working paper discusses the results. 14/

> ...numerous problems were encountered in analyzing the 1960-61 expenditure data to derive the 1966 budgets. (Problems also were encountered in the two earlier periods; but since these are primarily of historical interest, they are not dealt with here.) No S-shaped curve was apparent in expenditures (or quantities) for the transportation or medical care components, and these quantitites for the intermediate budgets actually represented average consumption for this family type. Elasticities for food away from home and alcoholic beverages were ever-increasing, and quantities were derived from the income class corresponding to the anticipated level of the budget. For a majority of sub-groups and the clothing components, the point of maximum elasticity was at the initial income class. There was no observable pattern of first rising and then falling elasticities as incomes increased, although in this component the analysis for the most part was based on reported quantities whereas for most of the other components quantities were derived from expenditures by use of an estimated average price. In housefurnishings, the method could not be used to derive major appliance quantities. In the remaining components -- household operations, personal care, reading, recreation, and tobacco -- the shape of the curve was difficult to perceive objectively except for tobacco. Quantities for the four-person budget were derived for all five of these components from the $6,000-$7,500 class, but for several of these groups a case could readily have been made for a higher inflection point.

Abstracting from the operational problems indicated by the above quotation, the interpretation that the quantities of items purchased at the inflection point represent adequate amounts of the items is inconsistent with the implicitly assumed notion of adequacy associated with the point of maximum elasticity. Referring back to footnote 13 and Figure 1 on page 6, it is the case that if expenditures (or quantities) do assume an "S" shape in relation to income and if a point of maximum elasticity does exist for the function, such a point is not located at Y*.

Once the intermediate level budget market basket was derived, the construction of the lower and higher level budgets consisted of an arbitrary scaling down and a scaling up of this intermediate standard. The lower and higher budgets were developed in response to user needs for dollar levels of costs which were either higher or lower than the former moderate budget and not as absolute levels of income adequacy.

For the components constructed with the q-i-e approach, quantities in the lower (higher) level budget were generally derived from the income interval below (above) the income interval in which maximum elasticity was estimated to have occurred. For food-at-home, USDA's low (liberal) cost food plan was incorporated for the lower (higher) budget. Shelter costs were primarily based on the mean contract rent for the lower (upper) third of the distribution of units

meeting the budget specifications, and house market values for the upper third of the distribution of units meeting the specification.

To conclude this section, the lower budget is not an objectively and rigorously determined dividing line between adequate and inadequate or subsistence and nonsubsistence levels of income. It is definable only as "lower than the intermediate level budget," which was shown to have neither rigorously nor objectively defined adequacy. Any attempt to adjust the lower budget level downward (or upward) to define poverty will end up layering another set of subjective decisions on top of those that were used to derive first the intermediate budget and then the lower budget.

Pricing Procedures

Once the market baskets of goods and services for the three budgets were constructed, it was necessary to collect and compile price data in the budget areas for the items in the market baskets in order to estimate the costs of the budgets in the areas and for the urban U.S. This section will briefly discuss the pricing procedures used in the family budgets program from 1966 on.

Due to resource constraints, pricing for the family budgets program involved an augmentation of the price data collected for the BLS Consumer Price Index (CPI) program, which measures the change in price levels over time for a market basket of goods and services purchased by urban wage earners and clerical workers. 15/ This presented a problem because the conceptual and statistical requirements for price data which are to be used in measuring the change in prices over time are not necessarily the same as the requirements for measuring the average cost of a market basket in a given area and for measuring the differences in prices among geographic areas at a point in time. For example, to make meaningful comparisons among geographic areas of the prices of items, it is necessary to collect prices for comparable items in all the selected outlets in all the areas; otherwise, a comparison of the costs will reflect not only price differences, but also possible quality differences in the items being compared. A lack of strict comparability among outlets and areas is acceptable for the CPI as long as the same item which was originally chosen to be priced in an outlet is priced in subsequent time periods or an adjustment is made if the item can no longer be found.

Further compounding the pricing problem for the budgets program was the need to collect prices for the three market baskets representing the three budget levels; this involved pricing different quality levels of items which were common to the market baskets.

Because of the limited amount of price data suitable for the family budgets program, several assumptions and techniques were used to "estimate" prices for the different budget areas. One consequence of using the price "estimation" procedures is that is is not possible to assign estimates of reliability to the individual area budget cost estimates and to the difference in costs among areas.

Thus, using the interarea cost differentials calculated for the family budgets to adjust a definition of poverty to account for geographic cost of living differences would not allow for the determination of whether the definition effectively accounted for differences in the cost of living among areas.

Geographic Comparisons of Costs of Living

A definition of poverty which takes account of differences in living costs among geographic areas is frequently desired and, in fact, Section 823 of the Education Amendments of 1974 (July 22, 1974) requires that this issue be examined within the context of an overall study of measures of poverty. The last section discussed the limitations of the interarea indexes of the family budgets program due to price data deficiencies. The notion that the content of the market baskets has been adjusted among the areas to represent a constant level of satisfaction will be discussed in this section.

In the economic literature a cost of living index is defined as the ratio of the costs of attaining a particular level of satisfaction in two price situations. 16/ To state this definition less succinctly, assume that an individual purchases a given market basket of goods and services in city A and that the market basket costs a certain amount. 17/,18/ Now place the individual in city B and find the minimum cost for the individual to purchase a market basket in city B, where prices may be the same or different than those in city A, that satisfies him just as much as the market basket which he had purchased in city A. A cost of living index would compare this cost with the cost of the market basket purchased in city A. In other words, this definition allows for the comparison of the costs of different market baskets of goods and services in different geographic areas if it can be demonstrated that a representative individual is indifferent between the two different market baskets.

In BLS technical bulletin it is stated that "...indexes based on a standard (family) budget measure differences in living costs and not differences in prices only." 19/ In the absence of any empirical support, this statement is true only if the strong assumption is made that an individual would derive equal satisfaction from the various market baskets priced in the different budget areas.

Interarea weight variations are incorporated into several major components of the area market baskets for the intermediate standard budgets. 20/,21/ The food-at-home component incorporates regional differences in food consumption patterns; the transportation component incorporates different weights assigned to the ownership and usage of automobiles, with lower proportions in large than in small cities; the shelter component incorporates varying quantities and types of fuel associated with climatic differences from place to place; the clothing component also incorporates different climatic requirements resulting in different quantities of selected items in different localities. Furthermore, in non-metropolitan

areas (places with populations of 2,500 to 50,000) some components incorporate differences in life style in comparison with metropolitan areas.

An implication of these weight variations, excluding the adjustments for climate, can be seen by examining the food component of the budgets. Regional variations are incorporated into the food-at-home component based upon regional consumption patterns as reflected in the U.S. Department of Agriculture's 1965 Household Food Consumption Survey. Larger weights are given to pork and lard in the south than in the northeast compared to larger weights for beef and butter in the northeast versus the south. In order to argue that these weight variations based upon regional consumption patterns are valid for use in a geographic cost of living index, the following questions would need to be answered. Would a representative individual be equally satisfied with either the southern or the northeastern market baskets of food when the southern basket contains more pork and lard and less beef and butter than the northeastern basket? Or is it the case that the different consumption patterns in the northeast and south might reflect differences in real incomes?

One more example of the variation in the market baskets will be discussed here. The weight variations between the metropolitan and nonmetropolitan areas' market baskets in the intermediate budget are based to a large extent on data from the BLS 1960-61 Survey of Consumer Expenditures concerning differences in expenditures for families living in these two types of areas. An examination of the quantities for housefurnishings shows that the market basket for persons living in metropolitan areas contains 1.44 sheets (i.e., the family purchases on the average 1.44 sheets/year) and the market basket for persons living in nonmetropolitan areas contains 1.30 sheets. There are probably many factors explaining why the data show such a difference in spending patterns. For whatever reason, in order to use the family budget indexes to make cost of living comparisons, it is necessary to assume that an individual living in a nonmetropolitan area would be just as satisfied replacing his sheets less frequently than if he lived in a larger area and replaced his sheets more frequently.

What implications can be drawn from this discussion regarding the use of the interarea indexes computed in the family budgets program to adjust a poverty threshold for geographic differences in cost of living? If the various market baskets in the budget areas do not represent an equal amount of satisfaction for an individual (and without empirical evidence there is no way to determine whether they do or not) then possible differential allocations of funds among areas based on this adjusted threshold may not really be accounting for cost of living differences. As a possible consequence, returning to the food example and ignoring the other components, poor people in the south may receive less money than someone in the northeast not because it costs an individual less to live in the south, but rather because people in the south can not afford to buy the same products as were bought in the northeast.

BLS Equivalence Scales

Because of resource and time constraints, the BLS was able to derive family budgets for only two family types, the four person family and the retired couple. Because users needed estimates of budget costs for other sizes and types of families, the BLS developed the equivalence scales. 22/ The revised scale published in BLS Bulletin 1570-2 [8] is of interest here.

The basic problem confronting the budget makers involved establishing an objective means for identifying equivalent levels of consumption or income for families of varying composition where the notion of equivalent income (or consumption) was not defined. Without defining equivalence, the following assumption was accepted in order to construct the scales. Assumption: Families spending an equal proportion of income on food have attained an equivalent level of total consumption.

This underlying assumption allows us to make a statement like: family A with an annual income of $100,000, comprised of four members, and spending 10 percent of its income or $10,000 on food comprised heavily of steaks and caviar is at an equivalent level of consumption (or income) as family B with an income of $5,000, comprised of two members, and spending 10 percent or $500 on food comprised heavily of rice and beans. Even if such a situation could not be found empirically, it illustrates the nature of the equivalence scales' foundation.

The scales, as calculated using data on U.S. average food expenditures and income after taxes for various urban family sizes and types behaved in what at first seems a peculiar fashion. Holding age of the head of the household (AHH) and age of the oldest child (AOC) constant, in certain cases the scales decreased when family size increased by another member.

There are several possible explanations for this result. One might be that holding AHH and AOC constant does not adequately control all of the variables other than family size that affect the scales. As an example, suppose in area A a family of three with an income of $20,000 spends $2,000 on food and in area B, where food prices are lower, a family of four with an income of $20,000 spends $1,500 on food. The equivalence scale calculated according to the BLS procedure would be lower for the four person than the three person family. Granted that the data used were aggregates composed of several observations for the particular family size-type, the example is one plausible explanation for the behavior of the scales. In fact, aggregation would only tend to combine many different possible influences.

The possible influence of uncontrolled variables on the scales was recognized by the BLS. On page 9 of reference [8] the following statement is made:

> In general these assumptions are reasonable for most families, but for some family types the percentage of income spent for food may not be an adequate measure of equivalent well-being.

> Even within the rather narrowly defined family types specified in table 1, there is room for considerable variation in composition and spending patterns, and such variations increases as number of children and the age of the oldest child rise. Also, the scales are based on the market behavior of families as recorded in the Survey of Consumer Expenditures, rather than on standards satisfying specified physical or social requirements. The nature of food expenditures makes them more flexible than those for housing or automobiles that frequently involve long-term obligations, and it may be easier for families to economize on food to offset temporary reductions in income than to reduce contractual payments. Implicitly, the averages on which the scale values are based take account of such variations among families of specified types, but the scales should be used as guidelines and not interpreted in too liberal or precise a manner.

However, rather than publishing the scales that behaved in that fashion, a smoothing technique was employed. The first smoothing described in [8] amounted to plotting the scales calculated with regional data for different sizes of families holding AHH and AOC constant and then visually fitting a curve that increased with family size.

In conclusion, the BLS equivalency scales cannot be considered an objective tool for adjusting a poverty definition to account for varying needs of families of different sizes and types.

Future Research

Irrespective of the normative issue of standards of living, research is needed in the field of interarea comparisons of price levels and/or cost of living. Constructing interarea price indexes is operationally more feasible given current technology than is constructing cost of living indexes. However, even the construction of interarea price indexes is not free of conceptual, statistical, and operational problems particularly in collecting and compiling price data for such indexes. The BLS is currently performing research in this area, and as time and resources permit will collect and compile reliable price data for use in making interarea comparisons.

Reliable interarea comparisons of at least price levels, if not cost of living, should be of value in future work involved with defining poverty.

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[12] U.S. Department of Labor, Bureau of Labor Statistics, "Three Budgets for a Retired Couple in Urban Areas of the United States, 1967-68" (Bulletin 1570-6, 1970).

[13] U.S. Department of Labor, Bureau of Labor Statistics, "Report of the Advisory Committee on Standard Budget Research," June 1963.

FOOTNOTES TO TECHNICAL PAPER IV

1. The term market basket is a convenient notation for a list of goods and services and the amounts of the goods and services. A market basket can contain more than just food items; such diverse items as haircuts, car batteries, and rent payments can be included.

2. A committee of experts from six different countries met at the request of the United Nations Economic and Social Council in 1954 and recommended that the following distinction be maintained between the terms "level" and "standard" of living: The "level of living" relates to the actual living conditions of a people. The "standard of living" relates to the aspirations or expectations of a people, that is, the living conditions which they seek to attain or regain, or which they regard as fitting and proper for themselves to enjoy.

3. The term area is being used in place of the proper terms Standard Metropolitan Statistical Areas (SMSA's), Standard Consolidated Areas (SCA's), and nonmetropolitan areas.

4. Although the term living costs or cost of living will be discussed later in this paper, some clarification is necessary at this time. The term is sometimes used in the following sense, how much does it cost to live in an area? In order to answer this question, it is necessary to know for what level of living a cost is desired. Since the discussion in this appendix is concerned with the family budgets, the phrase "the cost of the budget in an area" will be used instead of the phrase "the cost of living in an area." When discussing the question, how much does it cost to live in one area versus another, the terminology "interarea (or geographic) cost of living comparisons" will be used.

5. The budgets are also misinterpreted at times to be actual expenditure patterns.

6. For this paper "objectively determined" will mean that another group of individuals could use the same techniques and data and arrive at very similar results; subjective decisions would be kept at a minimum. Rigorous will mean that the techniques which are employed are strongly grounded in economic and statistical theory.

7. "The budget makers" will be used to refer to the BLS staff and any advisors who worked on constructing the family budgets program. The term has no other special connotation or significance.

8. See [11] for the actual quantities used in the family budget market baskets.

9. In the published intermediate budget estimates, shelter cost is 25 percent renter cost and 75 percent homeowner cost.

10. Contract rent is the monthly rent regardless of whether any furnishings, fuel and utilities, or services are included.

11. Spring 1945, Labor and Federal Security Subcommittee of the Committee on Appropriations of the House of Representatives.

12. It should be noted that even though locating the inflection point may involve an objective procedure, defining the quantities of the group of items as adequate is subjective.

13. Referring to the attached note, Cook has shown that even if there exists an income level that maximizes the elasticity of an "S" shaped quantity-income curve, the inflection point, i.e., Y*, and the elasticity maximizing point do not coincide. A further discussion will follow shortly.

14. Reference [2] pp. 9-10.

15. Prices were collected for the current budget series in 1966 and 1969. Item costs based on 1966 prices were updated to 1967 using the change in prices in the Consumer Price Index (CPI). Since 1969, budget costs have been estimated by updating costs for main classes of goods and services with the CPI.

16. For a theoretical discussion of cost of living, see [4] or [5].

17. It is important to discuss this issue in reference to a single individual or a "representative" individual. Otherwise interpersonal comparisons of satisfaction are required.

18. The minimum cost for the given level of satisfaction.

19. See [11] p. 26.

20. In the case of the family budget market baskets, the term "weights" refers to the quantities of the items.

21. See appendix tables in [7] and [11] for the actual interarea weight variations in the intermediate family budget market basket.

22. The actual mechanics of the estimation procedure are presented in [8] for those who are interested. A little explanation may be helpful for readers seeking the derivation of two formulae on page 2 of the bulletin. First to derive equation (1), recall that elasticity is defined as

$e = \frac{dy}{y} \cdot \frac{x}{dx}$, multiply both sides by $\frac{dx}{x}$ and then integrate,

both sides holding e constant. Second, in order to derive equation (2) or the equation just above it, the underlying assumption must be restated

as: families have attained an equivalent level of total consumption if, and only if the families spend an equal proportion of income on food. Assuming equivalence, then

$\frac{y_i}{x_i} = \frac{y_4}{x_4}$ and the two formulae can be derived.

APPENDIX 1

A Note on the Validity of the Quantity-Income-Elasticity Technique

By: John S. Cook
August 1975

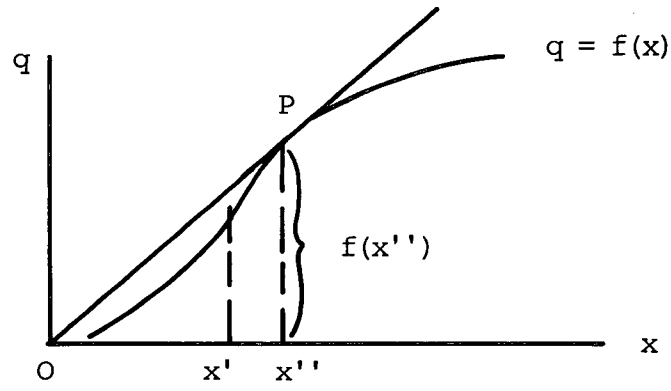
Introduction

Although scientifically determined standards of "adequacy" existed for the food-at-home and shelter components of the U.S. Bureau of Labor Statistics 1966 intermediate family budget describing a modest but adequate standard of living, no such objective standards were available for the other components of consumption-food away from home, transportation, clothing, recreation, educational expenses, etc. Consequently, the budget makers used actual expenditure pattern data and the quantity-income-elasticity technique to derive the quantities of these other items to be used in the market basket representing an adequate standard of living. In particular, the consumption level of a given group of related items deemed adequate was defined to be the level at which the quantity consumed stopped increasing at an increasing rate, and began increasing at a decreasing rate with respect to family income. That is, the budget makers presumed an "S-shaped" relationship between quantity consumed and income, and interpreted its inflexion point as representing the adequate consumption level. The budget makers attempted to locate the income level corresponding to adequate consumption by calculating the level at which the elasticity of quantity consumed, defined as the ratio of the proportional change in consumption to the proportional change in income, was maximized. The quantity consumed corresponding to the elasticity maximizing income level was then included in the market basket describing an adequate standard of living.

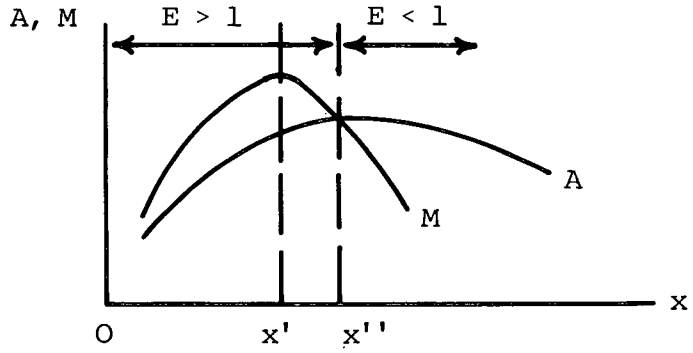
The purpose of this note is to analyze the relationship between the slope of the quantity-income function and its elasticity. In particular, we shall demonstrate that the procedure of locating the inflexion point income level by computing the elasticity maximizing level is conceptually unfounded. For, we shall show that the slope maximizing and the elasticity maximizing income levels never coincide for a S-shaped quantity function. Indeed, for a rather large class of such functions there exists no elasticity maximizing income level. Clearly then, the quantity-income-elasticity technique is inconsistent with the expressed objective of deriving adequate (i.e., inflexion point) consumption quantities for inclusion in the intermediate budget market basket.

Inflexion Points and Elasticity

We now turn to an examination of the "relationship" between the inflexion point and the point of maximum elasticity for the quantity-income function. In the interest of generality, we assume, here, that the quantity function, $q = f(x)$, is any arbitrarily selected S-shaped function. Under this assumption, the average quantity (consumed), $A(x) = q/x$, and the marginal quantity (or rate of change in quantity consumed with respect to a small change in income), $M(x) = \frac{dq}{dx}$, curves are well defined, and exhibit the shapes and interrelationships shown below.



S-shaped quantity function



Average and Marginal quantity functions; relationships

By assumption, i.e., the S-shape, $f(x)$ increases at an increasing rate up to (say) the income level x'. That is, $f'(x) = \frac{dq}{dx} = M > 0$, and increasing up to x'. After the inflexion point x', $f(x)$ continues to increase, but at a decreasing rate, i.e., $f'(x) = M > 0$ and decreasing after x'. Geometrically, we may represent the average value of $f(x)$, i.e., the average quantity consumed, at any income level x, $A(x) = \frac{f(x)}{x}$, as the slope of the ray drawn from the origin to the point on the quantity curve $q = f(x)$ corresponding to the income level x in question. Thus, $A(x'') = \frac{f(x'')}{x''}$ is the slope of the ray from O to point P shown. Clearly then, as x increases toward x'', $A(x)$ is positive and increasing. At x'', $A(x'')$ is maximized; and, for $x > x''$, $A(x)$ is positive and decreasing.

Note 1: At x'', $A(x'') = \frac{f(x'')}{x''}$ equals $f'(x'') = M(x'')$.

Note 2: The inflexion point is $x' < x''$. Since $M = \frac{dq}{dx} = f'(x)$ is maximized at x', it follows that M reaches its maximum before A reaches its maximum. (A is maximized at x'').

Note 3: $M(x') = f'(x') > A(x'')$; thus, the maximum value of M exceeds the maximum value of A.

Note 4: These remarks justify the curves and their relationships as indicated in the above diagram.

Given the S-shaped quantity function, the corresponding average and marginal functions and their interrelationships, we now examine the relationship between the slope and income elasticity of $q = f(x)$. Note, again, that $f'(x) = M$ is maximized at the inflexion point x'.

However, the income elasticity of $q = f(x)$ at any point x is defined as:

$$E(x) = \frac{d(\log q)}{d(\log x)} = \frac{x\ dq}{q\ dx} = \frac{f'(x)}{q/x} = \frac{M(x)}{A(x)} .$$

Hence, it follows that:

if $0<x<x''$, $E(x) > 1$, since $M(x) > A(x)$;

if $x = x''$, $E(x) = 1$, since $M(x) = A(x)$; and,

if $x > x''$, $E(x) < 1$, since $M(x) < A(x)$.

Clearly, then, if there exists an income level x at which E is maximized, then $x < x''$. Intuitively, however, the above results suggest that elasticity may be monotonically decreasing as x increases. That is, there may be no E maximizing value of x; in which case, of course, the slope maximizing value x', does not coincide with the E maximizing value.

In any event, we may demonstrate that for the S-shaped quantity function, the inflexion point and the elasticity maximizing value of x (if it exists) do not coincide. For, suppose they do coincide, i.e., assume that the inflexion point x' maximizes not only the slope of $q = f(x)$, but also its income elasticity. Then, $f''(x') = 0$, and $E'(x') = 0$. But, $E'(x') = 0$ implies that

$$\frac{x'}{f(x')}\ f''(x') + f'(x')\ \frac{[f(x') - x'f'(x')]}{f(x')^2} = 0, \text{ or,}$$

simplifying, that

$$\frac{f''(x')}{f'(x')} = \frac{f'(x')}{f(x')} - \frac{1}{x'} .$$

Since $f''(x') = 0$ and $f'(x') > 0$, it follows that

$$\frac{f'(x')}{f(x')} - \frac{1}{x'} = 0, \text{ or that } f'(x') = \frac{f(x')}{x'} .$$

But, this result states that at x', $M = A$, which is clearly not the case. That is, as demonstrated above, we know that for the S-shaped quantity function and the marginal and average functions derived from it, $M(x') > A(x'') > A(x')$. Thus, by virtue of this contradiction, we have established that the slope maximizing and elasticity maximizing points can not coincide.

An Illustration

We now illustrate the above discussion for a rather large class of S-shaped quantity functions. In particular, we shall demonstrate that there exists no elasticity maximizing income level for functions of this class.

Let the quantity consumed depend upon income according to the following rule:

$q = f(x) = -ax^3 + abx^2$, where $x > 0$, and a, and b denote arbitrarily chosen positive constants. Given this quantity function, the corresponding average and marginal functions are:

$$A(x) = -ax^2 + abx,$$
$$M(x) = \frac{dq}{dx} = -3ax^2 + 2abx .$$

In order to construct the graphs of these functions, we make the following observations:

i) since a and b are positive constants, the rules specifying A(x) and M(x) define parabolas that open downward.

ii) Setting $A'(x) = \frac{dA}{dx} = -2ax + ab$ equal to zero, we obtain $x=b/2$ as the value of x that maximizes A, since $A''(b/2)=-2a<0$. Note that if $0 < x < b/2$, then $-2ax > -ab$; hence, $-2ax + ab = A'(x) > 0$. Thus, A is increasing as x increases toward b/2. At $x = b/2$, $A = \frac{ab^2}{4} > 0$.

iii) If $0 < x < b$, $-ax^2 > -axb$; hence, $-ax^2 + abx = A(x) > 0$. Also, if $0 < x < \frac{2}{3} b$, then $-3ax^2 > -2abx$; hence, $-3ax^2 + 2abx = M(x) > 0$.

iv) Setting $M'(x) = \frac{d^2q}{dx^2} = -6ax + 2ab$ equal to zero, we obtain $x=b/3$ as the value of x that maximizes M(x), since $M''(b/3) = -6a < 0$. Note that if $0 < x < b/3$, then $-6ax > -2ab$; hence, $-6ax + 2ab = M'(x) > 0$. Therefore, M is increasing as x increases toward b/3. At $x=b/3$, $M(b/3) = \frac{ab^2}{3}$.

v) If $x=b/2$, $M= \frac{-3ab^2}{4} + \frac{2abb}{2} = \frac{1}{4}\ ab^2$;
also, $A= \frac{-ab^2}{4} + \frac{abb}{2} = \frac{1}{4}\ ab^2$. Thus, M=A at x=b/2, i.e., at the income level at which A is maximized.

vi) If $0 < x < b/2$, then $-2x > -b$, and, adding x to both sides of the latter inequality, $-x > x-b$, i.e., $b-x > x$. Thus, $2b -3x > x+b -2x = b-x$. Hence, if $0 < x < b/2$, $M(x) = ax(2b-3x) > ax(b-x) = A(x)$.

In view of these remarks, it follows that the quantity function, and the derived average and marginal functions possess the shapes and interrelationships indicated in the diagram on the following page.

We may now observe that the quantity function $q= -ax^3 + abx^2$ is of the S-shaped variety over the income range $0<x < 2/3b$. Furthermore, the derived functions, A(x) and M(x), possess the shapes and interrelationships over this interval typical of the S-shaped quantity function case. In particular, since b can be any arbitrarily large positive constant, the income range $0 < x < 2/3b$ can be constructed to be as large as is feasible to consider. Thus, restricting $q = -ax^3 + abx^2$ to this interval implies no meaningful limitation on the applicability of this class of functions.

Now, the inflexion point of this quantity function occurs at $x = b/3$. However, since

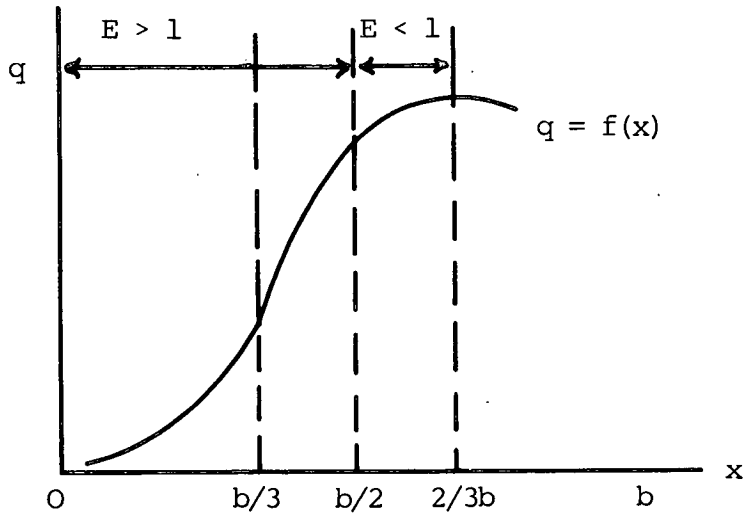
$$E(x) = \frac{M(x)}{A(x)}, \quad E(x) > 1, \text{ if } 0 < x < b/2;$$

$$E(x) = 1, \text{ if } x = b/2; \text{ and}$$

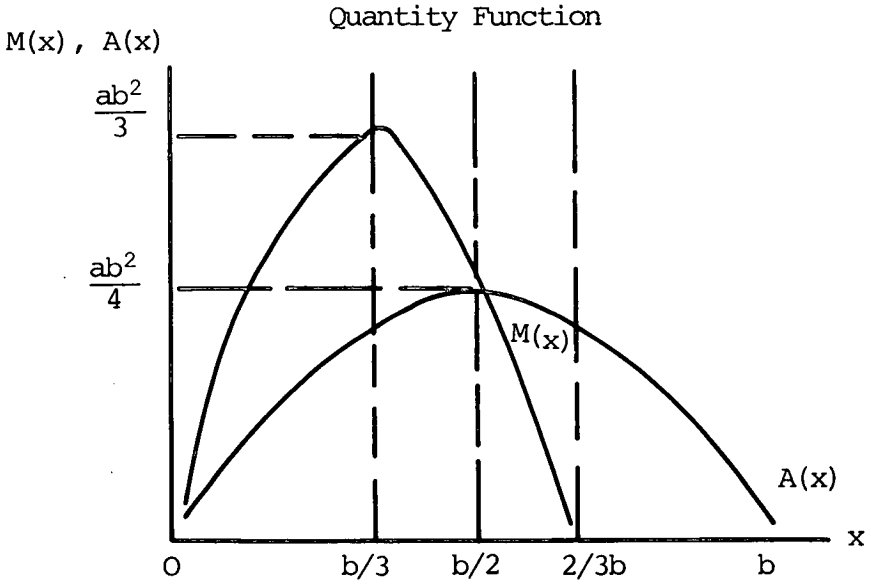
$$0 < E(x) < 1, \text{ if } b/2 < x < 2/3\ b.$$

In particular, since $M(b/3) > A(b/3)$, E(x) is not maximized at the slope maximizing point. Indeed, E(x) decreases continuously as x increases over the range $0 < x < 2/3b$. For,

$$E(x) = \frac{M(x)}{A(x)} = \frac{-3ax^2 + 2abx}{-ax^2 + abx}\ ; \text{ and}$$



Quantity Function



Average and Marginal Functions; Relationships

$$E'(x) = \frac{(-ax^2 + abx)(-6ax + 2ab) - (-3ax^2 + 2abx)(-2ax + ab)}{(-ax^2 + abx)^2}$$

$$= \frac{-a^2bx^2}{(-ax^2 + abx)^2} = \frac{-a^2bx^2}{A(x)^2} < 0 , \quad 0 < x < 2/3b .$$

Thus, as x decreases toward zero from the right, E(x) increases continuously, i.e., there does not exist an E maximizing income level x for this S-shaped quantity function in the range $0 < x < 2/3b$.

Conclusion

In conclusion, it would appear that the procedure of locating the income level at which the quantity purchased is "adequate" by deriving the income level at which elasticity is maximized is conceptually baseless. For, if the former income level is interpreted to be the inflexion point of a S-shaped quantity-income function, then that level and the income level maximizing elasticity never coincide. Indeed, theoretically, the latter income level may not even exist. Consequently, if, in fact, the quantity-income relation is S-shaped, if its inflexion point is to denote the point of adequacy, and if, therefore, the budget maker's objective is to obtain the inflexion point quantities for inclusion in the intermediate budget market basket, a technique other than the quantity-income-elasticity approach must be used. One possible procedure, of course, may be to fit the quantity-income data with a S-shaped functional form, and calculate its inflexion point income and consumption levels. It is to be hoped, however, that a more tractable approach can be devised.

APPENDIX 2

Table 1. Annual Costs of a Lower Budget for a 4-Person Family, 1/ Autumn 1975 (Revised May 5, 1976)

Area	Total Budget 2/	Family Consumption						
		Total Consumption	Food			Housing 3/		
			Total	Food at Home	Food Away From Home	Total 4/	Shelter 5/ (Renter)	House-Furnishings & Operations
Urban United States	9588	7795	2952	2563	389	1857	1391	467
Metropolitan Areas 11/	9720	7883	2987	2583	404	1886	1427	459
Nonmetropolitan Areas 12/	9002	7400	2793	2474	319	1728	1227	501
Northeast:								
Boston, Mass.	10500	8304	3089	2706	383	2189	1723	466
Buffalo, N.Y.	9733	7865	2965	2567	398	1861	1368	493
Hartford, Conn.	10117	8346	3105	2695	410	2179	1725	454
Lancaster, Pa.	9494	7609	3023	2641	382	1810	1379	431
New York-Northeastern, N.J.	10266	8218	3248	2792	456	1966	1489	477
Philadelphia, Pa.-N.J.	9847	7815	3200	2752	448	1719	1280	439
Pittsburgh, Pa.	9205	7410	2972	2553	419	1637	1201	436
Portland, Maine	9917	8144	3096	2708	388	2142	1641	501
Nonmetropolitan Areas 12/	9487	7696	2987	2655	332	1789	1332	457
North Central:								
Cedar Rapids, Iowa	9322	7543	2734	2352	382	1877	1425	452
Champaign-Urbana, Ill.	10076	8157	2956	2609	347	2125	1652	473
Chicago, Ill.-Northwestern, Ind.	9919	8058	3020	2640	380	1960	1514	446
Cincinnati, Ohio-Ky.-Ind.	8920	7333	2947	2589	358	1572	1152	420
Cleveland, Ohio	9489	7782	2980	2519	461	1732	1289	443
Dayton, Ohio	8971	7420	2940	2569	371	1655	1190	465
Detroit, Mich.	9501	7684	2949	2536	413	1659	1252	407
Green Bay, Wis.	9172	7346	2687	2356	331	1858	1343	515
Indianapolis, Ind.	9385	7670	2904	2536	368	1792	1335	457
Kansas City, Mo.-Kan.	9373	7672	3019	2636	383	1666	1213	453
Milwaukee, Wis.	9727	7731	2771	2406	365	1942	1502	440
Minneapolis-St. Paul, Minn.	9593	7657	2946	2556	390	1809	1374	435
St. Louis, Mo.-Ill.	9201	7550	3030	2650	380	1659	1209	450
Wichita, Kan.	9379	7689	2909	2540	369	1840	1367	473
Nonmetropolitan Areas 12/	9187	7498	2765	2472	293	1866	1399	467
South:								
Atlanta, Ga.	8924	7423	2856	2484	372	1681	1211	470
Austin, Tex.	8412	7091	2626	2252	374	1555	1082	473
Baltimore, Md.	9828	7781	2771	2372	399	1996	1496	500
Baton Rouge, La.	8588	7207	2880	2534	346	1520	1069	451
Dallas, Tex.	8730	7333	2699	2275	424	1616	1169	447
Durham, N.C.	9267	7500	2768	2413	355	1814	1348	466
Houston, Tex.	8968	7495	2851	2420	431	1636	1152	484
Nashville, Tenn.	8697	7301	2736	2375	361	1706	1218	488
Orlando, Fla.	8902	7455	2617	2238	379	1956	1480	476
Washington, D.C.-Md.-Va.	10105	8051	2960	2548	412	2146	1687	459
Nonmetropolitan Areas 12/	8551	7127	2725	2400	325	1582	1054	528
West:								
Bakersfield, Calif.	9101	7521	2819	2440	379	1733	1275	458
Denver, Colo.	9319	7607	2876	2495	381	1664	1183	481
Los Angeles-Long Beach, Calif.	10009	8159	2902	2480	422	2026	1582	444
San Diego, Calif.	9682	7923	2845	2423	422	1905	1491	414
San Francisco-Oakland, Calif.	10509	8510	3015	2633	382	2219	1751	468
Seattle-Everett, Wash.	10209	8411	3098	2706	392	2148	1647	501
Honolulu	12226	9507	3667	3272	395	2644	2103	541
Nonmetropolitan Areas 12/	9445	7664	2774	2455	319	1880	1374	506
Anchorage, Alaska	15226	11812	3715	3322	393	3943	3121	822

(See footnotes following Table 3.)

Lower Budget Continued: (Revised May 5, 1976)

Area	Family Consumption						Other Items 10/	Social Security & Disability Payments	Personal Income Taxes
	Transportation 7/		Clothing	Personal Care	Medical Care 8/	Other Family Consumption 9/			
	Total	Automobile Owners							
Urban United States	702	939	771	248	818	447	436	577	781
Metropolitan Areas 11/	666	968	778	255	844	467	439	586	811
Nonmetropolitan Areas 12/	860	860	738	216	703	362	424	532	645
Northeast:									
Boston, Mass.	698	1149	791	254	786	497	451	614	1131
Buffalo, N.Y.	726	1001	884	256	705	468	438	583	847
Hartford, Conn.	704	975	795	296	765	502	452	591	728
Lancaster, Pa.	645	864	787	245	680	419	430	556	899
New York-Northeastern, N.J.	602	993	752	247	904	499	449	625	974
Philadelphia, Pa.-N.J.	629	1042	711	246	848	462	436	583	1013
Pittsburgh, Pa.	661	891	736	246	709	449	424	538	833
Portland, Maine	645	896	804	237	744	476	446	579	748
Nonmetropolitan Areas 12/	895	895	739	206	718	362	433	577	781
North Central:									
Cedar Rapids, Iowa	608	842	874	268	721	461	428	544	807
Champaign-Urbana, Ill.	639	887	933	258	804	442	447	591	881
Chicago, Ill.-Northwestern, Ind.	697	1130	762	263	876	480	444	579	838
Cincinnati, Ohio-Ky.-Ind.	632	881	772	231	710	469	422	522	643
Cleveland, Ohio	692	960	801	301	798	478	435	556	716
Dayton, Ohio	632	856	757	238	724	474	425	527	599
Detroit, Mich.	679	920	784	271	879	463	433	556	828
Green Bay, Wis.	624	869	793	259	674	451	422	538	866
Indianapolis, Ind.	702	936	747	246	802	477	432	550	733
Kansas City, Mo.-Kan.	704	932	780	285	763	455	432	547	722
Milwaukee, Wis.	663	882	863	268	769	455	434	567	995
Minneapolis-St. Paul, Minn.	650	898	773	269	748	462	432	562	942
St. Louis, Mo.-Ill.	705	980	715	270	722	449	429	538	684
Wichita, Kan.	646	890	781	263	798	452	433	550	707
Nonmetropolitan Areas 12/	828	828	784	219	668	368	427	537	725
South:									
Atlanta, Ga.	627	861	742	258	788	471	425	521	555
Austin, Tex.	638	899	790	250	776	456	415	491	415
Baltimore, Md.	669	930	750	256	878	461	435	573	1039
Baton Rouge, La.	648	895	771	259	679	450	418	503	460
Dallas, Tex.	671	919	701	260	918	468	422	509	466
Durham, N.C.	617	862	726	263	843	469	427	544	796
Houston, Tex.	660	894	747	265	888	448	427	527	519
Nashville, Tenn.	651	900	795	236	716	461	421	509	466
Orlando, Fla.	663	902	683	231	845	460	426	521	500
Washington, D.C.-Md.-Va.	693	952	707	235	834	476	444	593	1017
Nonmetropolitan Areas 12/	851	851	697	216	697	359	416	504	504
West:									
Bakersfield, Calif.	688	978	715	241	907	418	428	622	530
Denver, Colo.	669	918	959	231	766	442	430	544	738
Los Angeles-Long Beach, Calif.	740	1031	804	246	999	442	447	675	728
San Diego, Calif.	721	995	811	243	968	430	440	657	662
San Francisco-Oakland, Calif.	726	1046	862	281	942	465	457	704	838
Seattle-Everett, Wash.	690	977	876	263	868	468	454	597	747
Honolulu	762	1086	793	292	860	489	487	714	1518
Nonmetropolitan Areas 12/	885	885	806	221	737	361	432	553	796
Anchorage, Alaska	1136	1136	966	309	1285	458	556	868	1990

(See footnotes following Table 3.)

Table 2. Annual Costs of an Intermediate Budget for a 4-Person Family, 1/ Autumn 1975 (Revised May 5, 1976)

Area	Total Budget 2/	Family Consumption								
		Total Consumption	Food			Housing 3/				
			Total	Food at Home	Food Away From Home	Total	Shelter			House-Furnishings & Operations
							Total 4/	Renter 5/	Homeowner 6/	
Urban United States	15318	11725	3827	3242	584	3533	2737	1802	3048	797
Metropolitan Areas 11/	15638	11951	3875	3260	615	3633	2848	1870	3174	785
Nonmetropolitan Areas 12/	13886	10715	3610	3165	445	3089	2241	1498	2488	848
Northeast:										
Boston, Mass.	18090	13512	4128	3532	596	4865	4074	2122	4725	791
Buffalo, N.Y.	16283	12278	3915	3304	611	3785	2942	1953	3272	843
Hartford, Conn.	16314	12893	4117	3467	650	4120	3347	2060	3776	773
Lancaster, Pa.	14939	11384	3989	3415	574	3186	2454	1808	2669	732
New York-Northeastern, N.J.	17498	13126	4343	3590	753	4353	3539	2123	4011	814
Philadelphia, Pa.-N.J.	15689	11877	4231	3549	682	3384	2616	1621	2947	768
Pittsburgh, Pa.	14587	11106	3927	3302	625	2984	2228	1468	2481	756
Portland, Maine	15684	12219	4171	3616	555	3674	2830	1920	3134	844
Nonmetropolitan Areas 12/	15221	11639	3911	3430	481	3675	2900	1668	3311	775
North Central:										
Cedar Rapids, Iowa	15265	11524	3477	2926	551	3544	2790	1878	3094	754
Champaign-Urbana, Ill.	15721	12146	3770	3262	508	3739	2935	2294	3149	804
Chicago, Ill.-Northwestern, Ind.	15712	12139	3838	3272	566	3788	3019	2023	3351	769
Cincinnati, Ohio-Ky.-Ind.	14645	11284	3741	3211	530	3273	2548	1440	2917	725
Cleveland, Ohio	15570	12078	3788	3135	653	3730	2945	1572	3403	785
Dayton, Ohio	14193	11055	3741	3209	532	3091	2309	1521	2572	782
Detroit, Mich.	15701	11936	3777	3161	616	3680	2952	1680	3376	728
Green Bay, Wis.	15111	11172	3402	2918	484	3530	2656	1698	2976	874
Indianapolis, Ind.	15090	11683	3719	3177	542	3490	2725	1733	3055	765
Kansas City, Mo.-Kan.	14868	11435	3824	3280	544	3141	2362	1613	2611	779
Milwaukee, Wis.	16293	11969	3549	2981	568	3943	3179	1886	3610	764
Minneapolis-St. Paul, Minn.	15709	11548	3762	3178	584	3456	2711	1776	3022	745
St. Louis, Mo.-Ill.	14805	11405	3877	3286	591	3245	2447	1488	2766	798
Wichita, Kan.	14426	11180	3644	3132	512	3109	2312	1715	2511	797
Nonmetropolitan Areas 12/	14022	10746	3515	3106	409	3196	2407	1748	2627	789
South:										
Atlanta, Ga.	14166	10972	3748	3188	560	2928	2150	1506	2364	778
Austin, Tex.	13422	10658	3404	2874	530	2855	2070	1381	2299	785
Baltimore, Md.	15226	11294	3694	3060	634	3166	2277	2014	2364	889
Baton Rouge, La.	13771	10808	3795	3246	549	2793	2030	1306	2271	763
Dallas, Tex.	13924	11025	3513	2903	610	3035	2294	1583	2531	741
Durham, N.C.	14871	11205	3642	3120	522	3228	2455	1791	2676	773
Houston, Tex.	14020	11095	3721	3089	632	2938	2137	1453	2365	801
Nashville, Tenn.	14003	11078	3565	3045	520	3184	2369	1524	2650	815
Orlando, Fla.	13680	10837	3410	2856	554	3154	2369	1807	2556	785
Washington, D.C.-Md.-Va.	15890	11929	3902	3300	602	3651	2838	2018	3111	813
Nonmetropolitan Areas 12/	13253	10331	3574	3124	450	2802	1909	1295	2113	893
West:										
Bakersfield, Calif.	14019	10820	3536	3010	526	2932	2163	1648	2335	769
Denver, Colo.	14724	11246	3623	3069	554	3120	2276	1513	2530	844
Los Angeles-Long Beach, Calif.	15186	11679	3656	3020	636	3441	2684	1920	2939	757
San Diego, Calif.	15036	11580	3572	2953	619	3437	2743	1768	3068	694
San Francisco-Oakland, Calif.	16415	12589	3825	3229	596	4045	3221	2559	3442	824
Seattle-Everett, Wash.	15630	12358	3924	3303	621	3842	3011	2085	3320	831
Honolulu	18694	13703	4603	3967	636	4415	3527	2647	3820	888
Nonmetropolitan Areas 12/	13801	10551	3423	2995	428	3027	2161	1524	2373	866
Anchorage, Alaska	21229	15865	4581	4018	563	5838	4437	3792	4652	1401

(See footnotes following Table 3.)

Intermediate Budget Continued: (Revised May 5, 1976)

Area	Family Consumption						Other Items 10/	Social Security & Disability Payments	Personal Income Taxes
	Transportation 7/		Clothing	Personal Care	Medical Care 8/	Other Family Consumption 9/			
	Total	Automobile Owners							
Urban United States	1279	1342	1102	331	822	831	701	834	2057
Metropolitan Areas 11/	1283	1362	1114	337	848	861	709	841	2136
Nonmetropolitan Areas 12/	1262	1262	1044	307	707	695	666	803	1703
Northeast:									
Boston, Mass.	1330	1582	1150	332	791	916	764	825	2989
Buffalo, N.Y.	1386	1386	1276	337	709	870	721	840	2444
Hartford, Conn.	1405	1405	1143	407	768	933	742	825	1854
Lancaster, Pa.	1251	1251	1139	322	681	816	689	825	2041
New York-Northeastern, N.J.	1181	1387	1088	331	906	924	750	849	2773
Philadelphia, Pa.-N.J.	1204	1431	1022	321	852	863	707	833	2272
Pittsburgh, Pa.	1229	1275	1075	324	713	854	680	825	1976
Portland, Maine	1302	1302	1155	310	749	858	718	825	1922
Nonmetropolitan Areas 12/	1290	1290	1030	294	722	717	698	846	2038
North Central:									
Cedar Rapids, Iowa	1314	1314	1249	356	728	856	694	825	2222
Champaign-Urbana, Ill.	1313	1313	1351	343	810	820	716	825	2034
Chicago, Ill.-Northwestern, Ind.	1319	1565	1106	343	877	868	716	825	2032
Cincinnati, Ohio-Ky.-Ind.	1304	1304	1107	302	715	842	686	825	1850
Cleveland, Ohio	1312	1366	1151	399	804	894	714	825	1953
Dayton, Ohio	1240	1240	1089	310	727	857	678	825	1635
Detroit, Mich.	1255	1305	1130	360	885	849	709	825	2231
Green Bay, Wis.	1264	1264	1130	334	675	837	682	825	2432
Indianapolis, Ind.	1394	1394	1075	325	804	876	700	825	1882
Kansas City, Mo.-Kan.	1362	1362	1126	377	766	839	691	825	1917
Milwaukee, Wis.	1273	1273	1237	348	773	846	710	825	2789
Minneapolis-St. Paul, Minn.	1258	1258	1110	354	753	855	695	825	2641
St. Louis, Mo.-Ill.	1355	1415	1032	345	726	825	690	825	1885
Wichita, Kan.	1304	1304	1119	349	802	853	682	825	1739
Nonmetropolitan Areas 12/	1247	1247	1098	313	674	703	667	815	1794
South:									
Atlanta, Ga.	1240	1240	1075	341	795	845	675	825	1694
Austin, Tex.	1304	1304	1140	322	779	854	664	784	1316
Baltimore, Md.	1256	1308	1100	342	882	854	686	825	2421
Baton Rouge, La.	1267	1267	1111	339	680	823	669	807	1487
Dallas, Tex.	1334	1334	1019	343	924	857	677	813	1409
Durham, N.C.	1224	1224	1053	342	847	869	683	825	2158
Houston, Tex.	1291	1291	1085	349	891	820	679	819	1427
Nashville, Tenn.	1292	1292	1154	311	718	854	679	819	1427
Orlando, Fla.	1279	1279	992	305	850	847	670	801	1372
Washington, D.C.-Md.-Va.	1318	1368	1018	331	838	871	709	825	2427
Nonmetropolitan Areas 12/	1263	1263	1004	304	701	683	653	779	1490
West:									
Bakersfield, Calif.	1357	1357	984	316	909	786	670	909	1620
Denver, Colo.	1275	1275	1316	312	774	826	685	825	1968
Los Angeles-Long Beach, Calif.	1336	1392	1110	326	1001	809	700	915	1892
San Diego, Calif.	1353	1353	1117	320	976	805	696	915	1845
San Francisco-Oakland, Calif.	1348	1405	1190	383	947	851	732	915	2179
Seattle-Everett, Wash.	1309	1309	1196	353	873	861	724	825	1723
Honolulu	1438	1438	1096	385	864	902	771	825	3395
Nonmetropolitan Areas 12/	1234	1234	1118	319	740	690	660	807	1783
Anchorage, Alaska	1523	1523	1330	463	1286	844	846	868	3650

(See footnotes following Table 3.)

Table 3. Annual Costs of a Higher Budget for a 4-Person Family, 1/ Autumn 1975 (Revised May 5, 1976)

Area	Total Budget 2/	Family Consumption								
		Total Consumption	Food			Housing 3/				
			Total	Food at Home	Food Away From Home	Total	Shelter			House-Furnishings & Operations
							Total 4/	Renter 5/	Homeowner 6/	
Urban United States	22294	16141	4819	3874	945	5353	3687	2843	3836	1508
Metropolitan Areas 11/	22940	16551	4914	3895	1020	5535	3858	3055	4000	1497
Nonmetropolitan Areas 12/	19412	14312	4393	3784	609	4540	2922	1894	3103	1554
Northeast:										
Boston, Mass.	27000	18942	5143	4138	1005	7417	5683	3300	6103	1555
Buffalo, N.Y.	23617	16562	4855	3874	981	5521	3726	2680	3911	1616
Hartford, Conn.	22864	17295	4981	4065	916	6054	4322	2823	4586	1553
Lancaster, Pa.	21098	15476	4972	4003	969	4728	3144	2495	3259	1405
New York-Northeastern, N.J.	27071	18541	5497	4195	1302	6726	4938	4420	5029	1609
Philadelphia, Pa.-N.J.	22717	16463	5263	4168	1095	5174	3487	3578	3471	1508
Pittsburgh, Pa.	20998	15408	4922	3893	1029	4686	3047	1976	3236	1460
Portland, Maine	21733	16194	5158	4245	913	5196	3448	2419	3629	1569
Nonmetropolitan Areas 12/	20955	15314	4731	4029	702	5153	3647	2020	3934	1442
North Central:										
Cedar Rapids, Iowa	22119	15898	4439	3521	918	5375	3762	2986	3899	1434
Champaign-Urbana, Ill.	22822	16834	4778	3946	832	5762	4043	3196	4192	1540
Chicago, Ill.-Northwestern, Ind.	22592	16680	4892	3961	931	5513	3845	3122	3973	1489
Cincinnati, Ohio-Ky.-Ind.	20480	15158	4721	3894	827	4742	3189	1825	3430	1374
Cleveland, Ohio	22200	16445	4814	3792	1022	5464	3791	2207	4071	1494
Dayton, Ohio	20637	15432	4741	3875	866	4951	3303	2598	3427	1469
Detroit, Mich.	22947	16558	4814	3849	965	5677	4049	2836	4263	1449
Green Bay, Wis.	22510	15501	4277	3526	751	5362	3533	2408	3732	1650
Indianapolis, Ind.	21389	15925	4746	3859	887	5240	3597	2176	3848	1464
Kansas City, Mo.-Kan.	21723	15918	4956	3977	979	4907	3240	2323	3402	1488
Milwaukee, Wis.	23719	16202	4572	3643	929	5612	3989	2541	4244	1444
Minneapolis-St. Paul, Minn.	22993	15799	4857	3848	1009	5121	3501	2594	3661	1441
St. Louis, Mo.-Ill.	21223	15613	4976	3981	995	4769	3065	2013	3251	1525
Wichita, Kan.	20676	15345	4626	3786	840	4703	3005	2226	3142	1519
Nonmetropolitan Areas 12/	19741	14466	4338	3777	561	4713	3168	2106	3355	1481
South:										
Atlanta, Ga.	20362	14992	4756	3822	934	4413	2851	2162	2973	1383
Austin, Tex.	19413	14879	4379	3436	943	4470	2858	2114	2989	1433
Baltimore, Md.	22204	15617	4775	3678	1097	4782	2974	2633	3034	1629
Baton Rouge, La.	20204	15260	4808	3893	915	4659	3108	2079	3289	1372
Dallas, Tex.	20197	15435	4486	3474	1012	4870	3324	3124	3359	1367
Durham, N.C.	21207	15202	4608	3757	851	4685	3111	2171	3277	1395
Houston, Tex.	20090	15357	4759	3707	1052	4563	2937	2129	3079	1447
Nashville, Tenn.	20038	15331	4450	3637	813	4919	3277	2336	3443	1463
Orlando, Fla.	19737	15116	4270	3418	852	5035	3421	2048	3663	1435
Washington, D.C.-Md.-Va.	23090	16329	4920	3969	951	5395	3725	2914	3868	1491
Nonmetropolitan Areas 12/	18522	13839	4342	3726	616	4189	2545	1719	2691	1580
West:										
Bakersfield, Calif.	19792	14588	4419	3633	786	4422	2787	1997	2926	1456
Denver, Colo.	21312	15459	4690	3715	975	4716	3026	2781	3069	1511
Los Angeles-Long Beach, Calif.	22627	16417	4783	3665	1118	5422	3824	3311	3915	1419
San Diego, Calif.	22110	16091	4572	3569	1003	5497	4018	3176	4167	1300
San Francisco-Oakland, Calif.	24073	17293	4923	3906	1017	5989	4227	3522	4351	1583
Seattle-Everett, Wash.	22206	16855	4964	3999	965	5795	4086	2993	4279	1530
Honolulu	28302	19180	5888	4759	1129	6867	5097	3871	5313	1591
Nonmetropolitan Areas 12/	19541	14116	4134	3618	516	4531	2764	1917	2913	1703
Anchorage, Alaska	30385	21112	5624	4850	774	8408	5731	4780	5899	2613

(See footnotes at end of table.)

Higher Budget Continued: (Revised May 5, 1976)

Area	Family Consumption						Other Items 10/	Social Security & Disability Payments	Personal Income Taxes
	Transportation 7/		Clothing	Personal Care	Medical Care 8/	Other Family Consumption 9/			
	Total	Automobile Owners							
Urban United States	1658	1658	1613	470	857	1371	1182	841	4130
Metropolitan 11/	1685	1685	1633	474	884	1426	1202	843	4343
Nonmetropolitan Areas 12/	1540	1540	1522	448	739	1130	1091	831	3178
Northeast:									
Boston, Mass.	1881	1881	1709	463	827	1502	1322	825	5911
Buffalo, N.Y.	1650	1650	1881	477	739	1439	1203	840	5012
Hartford, Conn.	1669	1669	1692	569	800	1530	1240	825	3504
Lancaster, Pa.	1524	1524	1690	457	708	1397	1149	825	3648
New York-Northeastern, N.J.	1753	1753	1619	476	945	1525	1302	839	6379
Philadelphia, Pa.-N.J.	1727	1727	1516	448	890	1445	1198	833	4223
Pittsburgh, Pa.	1552	1552	1598	453	744	1453	1145	825	3620
Portland, Maine	1566	1566	1697	436	770	1371	1184	825	3529
Nonmetropolitan Areas 12/	1585	1585	1502	438	751	1154	1141	846	3654
North Central:									
Cedar Rapids, Iowa	1602	1602	1818	493	756	1415	1170	825	4226
Champaign-Urbana, Ill.	1616	1616	1984	487	839	1368	1217	825	3946
Chicago, Ill.-Northwestern, Ind.	1853	1853	1616	473	910	1423	1209	825	3878
Cincinnati, Ohio-Ky.-Ind.	1558	1558	1615	414	745	1363	1133	825	3364
Cleveland, Ohio	1629	1629	1681	556	840	1461	1197	825	3733
Dayton, Ohio	1551	1551	1592	433	756	1408	1147	825	3233
Detroit, Mich.	1576	1576	1654	495	929	1413	1203	825	4361
Green Bay, Wis.	1551	1551	1647	455	816	1393	1150	825	5034
Indianapolis, Ind.	1662	1662	1575	459	835	1408	1171	825	3468
Kansas City, Mo.-Kan.	1705	1705	1645	529	795	1381	1171	825	3809
Milwaukee, Wis.	1541	1541	1813	483	801	1380	1185	825	5507
Minneapolis-St. Paul, Minn.	1529	1529	1615	490	787	1400	1165	825	5204
St. Louis, Mo.-Ill.	1763	1763	1524	463	756	1362	1156	825	3629
Wichita, Kan.	1652	1652	1639	490	834	1401	1142	825	3364
Nonmetropolitan Areas 12/	1488	1488	1634	460	705	1128	1098	825	3352
South:									
Atlanta, Ga.	1562	1562	1598	478	828	1357	1125	825	3420
Austin, Tex.	1651	1651	1687	447	813	1432	1119	825	2590
Baltimore, Md.	1585	1585	1643	494	920	1418	1156	825	4606
Baton Rouge, La.	1603	1603	1644	473	706	1367	1138	825	2981
Dallas, Tex.	1694	1694	1521	484	958	1422	1147	825	2790
Durham, N.C.	1554	1554	1573	478	874	1430	1135	825	4045
Houston, Tex.	1634	1634	1617	489	929	1366	1143	825	2765
Nashville, Tenn.	1658	1658	1714	441	749	1400	1141	825	2740
Orlando, Fla.	1635	1635	1466	433	882	1395	1131	825	2665
Washington, D.C.-Md.-Va.	1723	1723	1510	490	872	1419	1191	825	4745
Nonmetropolitan Areas 12/	1559	1559	1473	438	734	1104	1067	829	2787

Higher Budget Continued: (Revised May 5, 1976)

Area	Family Consumption						Other Items 10/	Social Security & Disability Payments	Personal Income Taxes
	Transportation 7/		Clothing	Personal Care	Medical Care 8/	Other Family Consumption 9/			
	Total	Automobile Owners							
West:									
Bakersfield, Calif.	1648	1648	1397	448	945	1309	1104	915	3185
Denver, Colo.	1563	1563	1844	448	806	1392	1148	825	3880
Los Angeles-Long Beach, Calif.	1761	1761	1586	462	1047	1356	1194	915	4099
San Diego, Calif.	1630	1630	1580	442	1022	1348	1180	915	3924
San Francisco-Oakland, Calif.	1732	1732	1689	547	992	1421	1240	915	4625
Seattle-Everett, Wash.	1582	1582	1689	489	905	1431	1218	825	3308
Honolulu	1914	1914	1547	545	901	1518	1334	825	6963
Nonmetropolitan Areas 12/	1479	1479	1545	475	771	1181	1081	825	3519
Anchorage, Alaska	1800	1800	1823	710	1331	1416	1431	868	6974

1/ The family consists of an employed husband, age 38, a wife not employed outside the home, an 8-year-old girl, and a 13-year-old boy.
2/ Total budget costs include personal income taxes, social security, other items and total consumption.
3/ Housing includes shelter, housefurnishings and household operations. The higher budget also includes an allowance for lodging away from home city.
4/ The average costs of shelter were weighted by the following proportions: Lower budget, 100 percent for families living in rented dwellings; intermediate budget, 25 percent for renters, 75 percent for homeowners; higher budget, 15 percent for renters, 85 percent for homeowners.
5/ Renter costs include average contract rent plus the costs of required amounts of heating fuel, gas, electricity, water, specified equipment, and insurance on household contents.
6/ Homeowner costs include interest and principal payments plus taxes; insurance on house and contents; water, refuse disposal, heating fuel, gas, electricity, and specified equipment; and home repair and maintenance costs.
7/ The average costs of automobile owners and nonowners in the lower budget were weighted by the following proportions of families: Boston, Chicago, New York and Philadelphia, 50 percent for both automobile owners and nonowners; all other metropolitan areas, 65 percent for automobile owners, 35 percent for nonowners; nonmetropolitan areas, 100 percent for automobile owners. The intermediate budget proportions are: Boston, New York, Chicago and Philadelphia, 80 percent for owners, 20 percent for nonowners; Baltimore, Cleveland, Detroit, Los Angeles, Pittsburgh, San Francisco, St. Louis, and Washington, D.C., with populations of 1.4 million or more in 1960, 95 percent for automobile owners and 5 percent for nonowners; all other areas, 100 percent for automobile owners. The higher budget weight is 100 percent for automobile owners in all areas.
8/ In total medical care, the average costs of medical insurance were weighted by the following proportions: 30 percent for families paying full cost of insurance; 26 percent for families paying half cost; 44 percent for families covered by noncontributory insurance plans (paid by employer).
9/ Other family consumption includes the average costs for reading, recreation, tobacco products, alcoholic beverages, education and miscellaneous expenditures.
10/ Other items include allowances for gifts and contributions, life insurance and occupational expenses.
11/ As defined in 1960-61. For a detailed description of these and previous geographical boundaries, see the 1967 edition of Standard Metropolitan Statistical Areas, prepared by the Office of Management and Budget.
12/ Places with population of 2,500 to 50,000.

Table 4. Indexes of Comparative Costs Based on a Lower Budget for a 4-Person Family, 1/ Autumn 1975 (Revised May 5, 1976) (U.S. Urban Average Cost = 100)

Area	Total Budget	Cost of Family Consumption												Personal Income Taxes
		Total Consumption	Food		Housing		Transportation 7/		Clothing	Personal Care	Medical Care 8/	Other Family Consumption 9/		
			Total	Food at Home	Total 4/	Renter 5/	Total	Automobile Owners						
Urban United States	100	100	100	100	100	100	100	100	100	100	100	100		100
Metropolitan Areas 2/	101	101	101	101	102	103	95	103	101	103	103	104		104
Nonmetropolitan Areas 3/	94	95	95	97	93	88	123	92	96	87	86	81		83
Northeast:														
Boston, Mass.	110	107	105	106	118	124	99	122	103	103	96	111		145
Buffalo, N.Y.	102	101	100	100	100	98	103	107	115	103	86	105		108
Hartford, Conn.	106	107	105	105	117	124	100	104	103	120	93	112		93
Lancaster, Pa.	99	98	102	103	97	99	92	92	102	99	83	94		115
New York-Northeastern, N.J.	107	105	110	109	106	107	86	106	98	100	110	112		125
Philadelphia, Pa.-N.J.	103	100	108	107	93	92	90	111	92	99	104	103		130
Pittsburgh, Pa.	96	95	101	100	88	86	94	95	95	99	87	100		107
Portland, Maine	103	104	105	106	115	118	92	95	104	96	91	106		96
Nonmetropolitan Areas 3/	99	99	101	104	96	96	128	95	96	83	88	81		100
North Central:														
Cedar Rapids, Iowa	97	97	93	92	101	102	87	90	113	108	88	103		103
Champaign-Urbana, Ill.	105	105	100	102	114	119	91	94	121	104	98	99		113
Chicago, Ill.-Northwestern, Ind.	103	103	102	103	106	109	99	120	99	106	107	107		107
Cincinnati, Ohio-Ky.-Ind.	93	94	100	101	85	83	90	94	100	93	87	105		82
Cleveland, Ohio	99	100	101	98	93	93	99	102	104	122	98	107		92
Dayton, Ohio	94	95	100	100	89	86	90	91	98	96	88	106		77
Detroit, Mich.	99	99	100	99	89	90	97	98	102	109	107	103		106
Green Bay, Wis.	96	94	91	92	100	97	89	93	103	105	82	101		111
Indianapolis, Ind.	98	98	98	99	96	96	100	100	97	99	98	107		94
Kansas City, Mo.-Kan.	98	98	102	103	90	87	100	99	101	115	93	102		92
Milwaukee, Wis.	101	99	94	94	105	108	95	94	112	108	94	102		127
Minneapolis-St. Paul, Minn.	100	98	100	100	97	99	93	96	100	109	91	103		121
St. Louis, Mo.-Ill.	96	97	103	103	89	87	100	104	93	109	88	100		88
Wichita, Kan.	98	99	99	99	99	98	92	95	101	106	98	101		91
Nonmetropolitan Areas 3/	96	96	94	96	100	101	118	88	102	88	82	82		93
South:														
Atlanta, Ga.	93	95	97	97	91	87	89	92	96	104	96	105		71
Austin, Tex.	88	91	89	88	84	78	91	96	102	101	95	102		53
Baltimore, Md.	102	100	94	93	107	108	95	99	97	103	107	103		133
Baton Rouge, La.	90	92	98	99	82	77	92	95	100	105	83	101		59
Dallas, Tex.	91	94	91	89	87	84	96	98	91	105	112	105		60
Durham, N.C.	97	96	94	94	98	97	88	92	94	106	103	105		102
Houston, Tex.	94	96	97	94	88	83	94	95	97	107	109	100		66
Nashville, Tenn.	91	94	93	93	92	88	93	96	103	95	88	103		60
Orlando, Fla.	93	96	89	87	105	106	95	96	89	93	103	103		64
Washington, D.C.-Md.-Va	105	103	100	99	116	121	99	101	92	95	102	106		130
Nonmetropolitan Areas 3/	89	91	92	94	85	76	121	91	90	87	85	80		65
West:														
Bakersfield, Calif.	95	96	96	95	93	92	98	104	93	97	111	93		68
Denver, Colo.	97	98	97	97	90	85	95	98	124	93	94	99		95
Los Angeles-Long Beach, Calif.	104	105	98	97	109	114	105	110	104	99	122	99		93
San Diego, Calif.	101	102	96	95	103	107	103	106	105	98	118	96		85
San Francisco-Oakland, Calif.	110	109	102	103	119	126	103	111	112	113	115	104		107
Seattle-Everett, Wash.	106	108	105	106	116	118	98	104	114	106	106	105		96
Honolulu	128	122	124	128	142	151	109	116	103	118	105	109		194
Nonmetropolitan Areas 3/	99	98	94	96	101	99	126	94	105	89	90	81		102
Anchorage, Alaska	159	152	126	130	212	224	162	121	125	125	157	102		255

(See footnotes following Table 6.)

Table 5. Indexes of Comparative Costs Based on an Intermediate Budget for a 4-Person Family, 1/ Autumn 1975 (Revised May 5, 1976) (U.S. Urban Average Cost = 100)

Area	Total Budget	Cost of Family Consumption													Personal Income Taxes
		Total Consumption	Food		Housing			Transportation 7/		Clothing	Personal Care	Medical Care 8/	Other Family Consumption 9/	
			Total	Food at Home	Total 4/	Renter 5/	Home-Owners 6/	Total	Automobile Owners						
Urban United States	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Metropolitan Areas 2/	102	102	101	101	103	104	104	100	101	101	102	103	104	104
Nonmetropolitan Areas 3/	91	91	94	98	87	83	82	99	94	95	93	86	84	83
Northeast:														
Boston, Mass.	118	115	108	109	138	118	155	104	118	104	100	96	110	145
Buffalo, N.Y.	106	105	102	102	107	108	107	108	103	116	102	86	105	119
Hartford, Conn.	107	110	108	107	117	114	124	110	105	104	123	93	112	90
Lancaster, Pa.	98	97	104	105	90	100	88	98	93	103	97	83	98	99
New York-Northeastern, N.J.	114	112	113	111	123	118	132	92	103	99	100	110	111	135
Philadelphia, Pa.-N.J.	102	101	111	109	96	90	97	94	107	93	97	104	104	110
Pittsburgh, Pa.	95	95	103	102	84	81	81	96	95	98	98	87	103	96
Portland, Maine	102	104	109	112	104	107	103	102	97	105	94	91	103	93
Nonmetropolitan Areas 3/	99	99	102	106	104	93	109	101	96	94	89	88	86	99
North Central:														
Cedar Rapids, Iowa	100	98	91	90	100	104	102	103	98	113	107	89	103	108
Champaign-Urbana, Ill.	103	104	99	101	106	127	103	103	98	123	103	99	99	99
Chicago, Ill.-Northwestern, Ind.	103	104	100	101	107	112	110	103	117	100	103	107	104	99
Cincinnati, Ohio-Ky.-Ind.	96	96	98	99	93	80	96	102	97	100	91	87	101	90
Cleveland, Ohio	102	103	99	97	106	87	112	103	102	104	120	98	108	95
Dayton, Ohio	93	94	98	99	87	84	84	97	92	99	94	88	103	79
Detroit, Mich.	103	102	99	97	104	93	111	98	97	103	109	108	102	108
Green Bay, Wis.	99	95	89	90	100	94	98	99	94	103	101	82	101	118
Indianapolis, Ind.	99	100	97	98	99	96	100	109	104	98	98	98	105	91
Kansas City, Mo.-Kan.	97	98	100	101	89	90	86	106	101	102	114	93	101	93
Milwaukee, Wis.	106	102	93	92	112	105	118	100	95	112	105	94	102	136
Minneapolis-St. Paul, Minn.	103	98	98	98	98	99	99	98	94	101	107	92	103	128
St. Louis, Mo.-Ill.	97	97	101	101	92	83	91	106	105	94	104	88	99	92
Wichita, Kan.	94	95	95	97	88	95	82	102	97	102	105	98	103	85
Nonmetropolitan Areas 3/	92	92	92	96	90	97	86	97	93	100	94	82	85	87
South:														
Atlanta, Ga.	92	94	98	98	83	84	78	97	92	98	103	97	102	82
Austin, Tex.	88	91	89	89	81	77	75	102	97	103	97	95	103	64
Baltimore, Md.	99	96	97	94	90	112	78	98	97	100	103	107	103	118
Baton Rouge, La.	90	92	99	100	79	72	75	99	94	101	102	83	99	72
Dallas, Tex.	91	94	92	90	86	88	83	104	99	93	103	112	103	69
Durham, N.C.	97	96	95	96	91	99	88	96	91	96	103	103	105	105
Houston, Tex.	92	95	97	95	83	81	78	101	96	99	105	108	99	69
Nashville, Tenn.	91	94	93	94	90	85	87	101	96	105	94	87	103	69
Orlando, Fla.	89	92	89	88	89	100	84	100	95	90	92	103	102	67
Washington, D.C.-Md.-Va.	104	102	102	102	103	112	102	103	102	92	100	102	105	118
Nonmetropolitan Areas 3/	87	88	93	96	79	72	69	99	94	91	92	85	82	72
West:														
Bakersfield, Calif.	92	92	92	93	83	91	77	106	101	89	95	111	95	79
Denver, Colo.	96	96	95	95	88	84	83	100	95	119	94	94	99	96
Los Angeles-Long Beach, Calif.	99	100	96	93	97	107	96	104	104	101	98	122	97	92
San Diego, Calif.	98	99	93	91	97	98	101	106	101	101	97	119	97	90
San Francisco-Oakland, Calif.	107	107	100	100	114	142	113	105	105	108	116	115	102	106
Seattle-Everett, Wash.	102	105	103	102	109	116	109	102	98	109	106	106	104	84
Honolulu	122	117	120	122	125	147	125	112	107	99	116	105	109	165
Nonmetropolitan Areas 3/	90	90	89	92	86	85	78	96	92	101	96	90	83	87
Anchorage, Alaska	139	135	120	124	165	210	153	119	113	121	140	156	102	177

(See footnotes following Table 6.)

Table 6. Indexes of Comparative Costs Based on a Higher Budget for a 4-Person Family, 1/ Autumn 1975 (Revised May 5, 1976) (U.S. Urban Average Cost = 100)

Area	Total Budget	Cost of Family Consumption												Personal Income Taxes
		Total Consumption	Food		Housing			Transportation 7/	Clothing	Personal Care	Medical Care 8/	Other Family Consumption 9/		
			Total	Food at Home	Total 4/	Renter 5/	Home-Owner 6/							
Urban United States	100	100	100	100	100	100	100	100	100	100	100	100		100
Metropolitan Areas 2/	103	103	102	101	103	107	104	102	101	101	103	104		105
Nonmetropolitan Areas 3/	87	89	91	98	85	67	81	93	94	96	86	82		77
Northeast:														
Boston, Mass.	121	117	107	107	139	116	159	113	106	99	96	110		143
Buffalo, N.Y.	106	103	101	100	103	94	102	99	117	102	86	105		121
Hartford, Conn.	103	107	103	105	113	99	120	101	105	121	93	112		85
Lancaster, Pa.	95	96	103	103	88	88	85	92	105	97	83	102		88
New York-Northeastern, N.J.	121	115	114	108	126	155	131	106	100	101	110	111		154
Philadelphia, Pa.-N.J.	102	102	109	108	97	126	90	104	94	95	104	105		102
Pittsburgh, Pa.	94	95	102	100	88	70	84	94	99	96	87	106		88
Portland, Maine	97	100	107	110	97	85	95	94	105	93	90	100		85
Nonmetropolitan Areas 3/	94	95	98	104	96	71	103	96	93	93	88	84		88
North Central:														
Cedar Rapids, Iowa	99	98	92	91	100	105	102	97	113	105	88	103		102
Champaign-Urbana, Ill.	102	104	99	102	108	112	109	97	123	104	98	100		96
Chicago, Ill.-Northwestern, Ind.	101	103	102	102	103	110	104	112	100	101	106	104		94
Cincinnati, Ohio-Ky.-Ind.	92	94	98	101	89	64	89	94	100	88	87	99		81
Cleveland, Ohio	100	102	100	98	102	78	106	98	104	118	98	107		90
Dayton, Ohio	93	96	98	100	92	91	89	94	99	92	88	103		78
Detroit, Mich.	103	103	100	99	106	100	111	95	103	105	108	103		106
Green Bay, Wis.	101	96	89	91	100	85	97	94	102	97	95	102		122
Indianapolis, Ind.	96	99	98	100	98	77	100	100	98	98	97	103		84
Kansas City, Mo.-Kan.	97	99	103	103	92	82	89	103	102	113	93	101		92
Milwaukee, Wis.	106	100	95	94	105	89	111	93	112	103	93	101		133
Minneapolis-St. Paul, Minn.	103	98	101	99	96	91	95	92	100	104	92	102		126
St. Louis, Mo.-Ill.	95	97	103	103	89	71	85	106	95	99	88	99		88
Wichita, Kan.	93	95	96	98	88	78	82	100	102	104	97	102		81
Nonmetropolitan Areas 3/	89	90	90	97	88	74	87	90	101	98	82	82		81
South:														
Atlanta, Ga.	91	93	99	99	82	76	78	94	99	102	97	99		83
Austin, Tex.	87	92	91	89	84	74	78	100	105	95	95	104		63
Baltimore, Md.	100	97	99	95	89	93	79	96	102	105	107	103		112
Baton Rouge, La.	91	95	100	100	87	73	86	97	102	101	82	100		72
Dallas, Tex.	91	96	93	90	91	110	88	102	94	103	112	104		68
Durham, N.C.	95	94	96	97	88	76	85	94	98	102	102	104		98
Houston, Tex.	90	95	99	96	85	75	80	99	100	104	108	100		67
Nashville, Tenn.	90	95	92	94	92	82	90	100	106	94	87	102		66
Orlando, Fla.	89	94	89	88	94	72	95	99	91	92	103	102		65
Washington, D.C.-Md.-Va.	104	101	102	102	101	103	101	104	94	104	102	103		115
Nonmetropolitan Areas 3/	83	86	90	96	78	60	70	94	91	93	86	81		67

Table 6. (Continued)

Area	Total Budget	Cost of Family Consumption												Personal Income Taxes
		Total Consumption	Food		Housing			Transportation 7/	Clothing	Personal Care	Medical Care 8/	Other Family Consumption 9/		
			Total	Food at Home	Total 4/	Renter 5/	Home-Owner 6/							
West:														
Bakersfield, Calif.	89	90	92	94	83	70	76	99	87	95	110	95	77	
Denver, Colo.	96	96	97	96	88	98	80	94	114	95	94	102	94	
Los Angeles-Long Beach, Calif.	101	102	99	95	101	116	102	106	98	98	122	99	99	
San Diego, Calif.	99	100	95	92	103	112	109	98	98	94	119	98	95	
San Francisco-Oakland, Calif.	108	107	102	101	112	124	113	104	105	116	116	104	112	
Seattle-Everett, Wash.	100	104	103	103	108	105	112	95	105	104	106	104	80	
Honolulu	127	119	122	123	128	136	138	115	96	116	105	111	169	
Nonmetropolitan Areas 3/	88	87	86	93	85	67	76	89	96	101	90	86	85	
Anchorage, Alaska	136	131	117	125	157	168	154	109	113	151	155	103	169	

1/ The family consists of an employed husband, age 38, a wife not employed outside the home, an 8-year-old girl, and a 13-year-old boy.

2/ As defined in 1960-61. For a detailed description of these and previous geographical boundaries, see the 1967 edition of Standard Metropolitan Statistical Areas, prepared by the Office of Management and Budget.

3/ Places with population of 2,500 to 50,000.

4/ Housing includes shelter, housefurnishings and household operations. The higher budget also includes an allowance for lodging away from home city.

5/ Renter costs include average contract rent plus the cost of required amounts of heating fuel, gas, electricity, water, specified equipment, and insurance on household contents.

6/ Homeowner costs include interest and principal payments plus taxes; insurance on house and contents; water, refuse disposal, heating fuel, gas, electricity and specified equipment; and home repairs and maintenance costs.

7/ The average costs of automobile owners and nonowners in the lower budget were weighted by the following proportions of families: Boston, Chicago, New York and Philadelphia, 50 percent for both automobile owners and nonowners; all other metropolitan areas, 65 percent for automobile owners, 35 percent for nonowners; nonmetropolitan areas, 100 percent for automobile owners. The intermediate budget proportions are: Boston, New York, Chicago, and Philadelphia, 80 percent for owners, 20 percent for nonowners; Baltimore, Cleveland, Detroit, Los Angeles, Pittsburgh, San Francisco, St. Louis, and Washington, D.C., with populations of 1.4 million or more in 1960, 95 percent for automobile owners and 5 percent for nonowners; all other areas, 100 percent for automobile owners. The higher budget weight is 100 percent for automobile owners in all areas.

8/ In total medical care, the average costs of medical insurance were weighted by the following proportions: 30 percent for families paying full cost of insurance, 26 percent for families paying half cost; 44 percent for families covered by noncontributory insurance plans (paid by employer).

9/ Other family consumption includes average costs for reading, recreation, tobacco products, alcoholic beverages, education and miscellaneous expenditures.

Table 7. Revised Equivalence Scale 1/ for Urban Families of Different Size, Age, and Composition (4-Person Family--Husband, Age 35 to 54, Wife, 2 Children, Older 6 to 15 = 100)

Size and Type of Family 2/	Age of Head			
	Under 35	35-54	55-64	65 or Over
One person	35	36	32	28
Two persons: average 3/	47	59	59	52
Husband and wife	49	60	59	51
One parent and child	40	57	60	58
Three persons: average 3/	62	81	86	77
Husband, wife, child under 6	62	69	--	--
Husband, wife, child 6-15	62	82	88	81
Husband, wife, child 16-17	--	91 4/	88	--
Husband, wife, child 18 or over	--	82	85	77
One parent, 2 children	67	76	82	75
Four persons: average 3/	74	99	109	91
Husband, wife, 2 children, (older under 6)	72	80	--	--
Husband, wife, 2 children, (older 6-15)	77	100	105	95
Husband, wife, 2 children, (older 16-17)	--	113	125	--
Husband, wife, 2 children, (older 18 or over)	--	96	110	89
One parent, 3 children	88	96	--	--
Five persons: average 3/	94	118	124	--
Husband, wife, 3 children, (oldest under 6)	87	97	--	--
Husband, wife, 3 children, (oldest 6-15)	96	116	120	--
Husband, wife, 3 children, (oldest 16-17)	--	128	138	--
Husband, wife, 3 children, (oldest 18 or over)	--	119	124	--
One parent, 4 children	108	117	--	--
Six persons or more: average 3/	111	138	143	--
Husband, wife, 4 children or more, (oldest under 6)	101	--	--	--
Husband, wife, 4 children or more, (oldest 6-15)	110	132	140	--
Husband, wife, 4 children or more, (oldest 16-17)	--	146	--	--
Husband, wife, 4 children or more, (oldest 18 or over)	--	149	--	--
One parent, 5 children or more	125	137	--	--

1/ The scale values shown here are the percentages of the cost of goods and services for family consumption of the base family (4 persons--husband, age 35-54, wife, 2 children, older child 6-15 years) required to provide the same level of living for urban families of different size, age, and composition.

2/ Husband-wife and one-parent families with their own children (including adopted and step-children) present, but with no other persons living with the family.

3/ Scale values for individual family types weighted by the number of families of each type in the universe. The averages include some types for which values were not shown separately because of the small number of such families in the sample.

4/ Revised.

Source: Derived from BLS Survey of Consumer Expenditures, 1960-61.

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