

The Consumer Price Index: History and Techniques

Bulletin No. 1517

UNITED STATES DEPARTMENT OF LABOR
W. Willard Wirtz, *Secretary*

BUREAU OF LABOR STATISTICS
Arthur M. Ross, *Commissioner*



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Preface

This bulletin presents an historical summary covering the scope and method of compiling the Consumer Price Index since its inception, a rather detailed explanation of present techniques, and a description of the 1964 comprehensive revision of the index. A bibliography of publications on methodology and analysis of price trends is included.

The bulletin was prepared by members of the staff of the Office of Prices and Living Conditions, under the supervision of Doris P. Rothwell, Chief, Division of Consumer Prices and Price Indexes and the general direction of Arnold E. Chase, Assistant Commissioner of Prices and Living Conditions. Several of the chapters were prepared primarily by a single individual who is listed as the author, and much of the material has been issued earlier as separate articles or releases. In some cases, supplemental material has been added for this bulletin.

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The Consumer Price Index: History and Techniques

Chapter I. Scope and Coverage of U. S. Consumer Price Index Prior to 1964

General Review

The present Consumer Price Index (CPI) for Urban Wage Earners and Clerical Workers, formerly called the "Cost-of-Living Index," was initiated at the time of World War I for use in wage negotiations. There had been even earlier studies of the cost of living for wage earners.

Statistical studies of prices and living conditions in the United States were an outgrowth of the tariff discussions of 1887 and 1888. Studies of family expenditures, covering the years 1888-90, were included in the Annual Reports of the Commissioner of Labor for 1890 and 1891.

The Early Food Index

The systematic collection of retail prices began in conjunction with a study of consumer expenditures and income in 1901. There had been only one earlier major price investigation in the United States—the imposing collection of wholesale price data included in the "Aldrich Reports" by the Senate Committee on Finance, in 1892 and 1893.

Extreme fluctuations in the "purchasing power" of money, resulting from great increases in the output of precious metals and from violent inflations during major wars, had led to many small-scale collections of information on price movements during the 18th and 19th centuries. These price data, recorded in account books, ledgers, and trade journals, contributed much to the understanding of economic conditions, and stimulated demands from American economists for more organized information. The long agricultural depression which began about 1884, and the disastrous panic of

1893 made unemployment, strikes, and the depletion of the gold reserve subjects of public policy. The worldwide rise in prices beginning in 1896 brought concepts of the "living wage" and "high cost of living" to the public forum. When the BLS began formal and regular collection of price data, the need for such facts generally was recognized, and their use in the arbitration of wage disputes was accepted readily by the public. For example, the report of the President's Anthracite Coal Strike Commission used the average change in food prices in the anthracite region as a basis for its wage-increase award in March 1903.

Initially, prices for about 30 foods were obtained retroactively from account books and records of about 800 firms in 171 cities throughout the country. Prices were obtained monthly from 1890 through 1903. As described in 1903, the program "had for its objective the collection of data which would show the extent of increase or decrease in retail prices of staple articles of food during the period and thus render it possible to determine, approximately at least, the changes in cost of living in the several years covered."¹ Indexes of retail food prices for the United States as a whole and for five geographic regions were compiled for all years back to 1890. The weighting pattern for these indexes was derived from detailed data for 2,567 families in the study of expenditures, covering 22,000 families, conducted by the Bureau in 1901-02.² The sample of cities was

¹ *Cost of Living and Retail Prices in the United States (1890-1903)*, (U.S. Bureau of Labor, Bulletin 54, 1904), p. 1129, and *Cost of Living and Retail Prices of Food* (18th Annual Report of the Commissioner of Labor, 1908), pp. 15-17.

² *Retail Prices of Food, 1890 to 1904* (U.S. Bureau of Labor, Bulletin 59, 1905).

reduced to 151 in 1904 and to 68 for the years 1905–07. Food pricing was discontinued temporarily from 1907–11; when resumed, prices were obtained retroactively in 1907 for 16 foods in 39 cities. At the same time, arrangements were made for a mail collection system, which was continued until 1933. The list of priced items gradually grew longer. Indexes for 39 individual cities became available beginning in 1913.

Between 1908 and 1920, much discussion and difference of opinion arose concerning the statistical methods used to measure price change and the commodity content of an index designed to measure changes in the “cost of living” or more specifically, the general consumer price level.³ In the period of rapidly increasing prices during and immediately following World War I, it became increasingly clear that a measure of change in food prices was not an adequate measure of the cost of living nor the general price level. Arbitration boards and commissions were considering many aspects of living costs in rendering rulings and awards, and their demands for data helped to shape the scope, concept, and procedures for the index.

Cost-of-Living Index, 1913–35

The first BLS cost-of-living index grew out of a decision by the Shipbuilding Labor Adjustment Board during World War I. The Board was a product of an agreement between Government officials and labor chiefs. Its function was to adjust labor disputes so that national defense production would not be interrupted. In arriving at a “fair wage scale,” 1 of the 2 factors considered by the Board was “adjusting wages to the higher cost of living resulting from the war.”⁴ In November 1917, the Board determined that readjustment of wages in the shipbuilding yards was warranted when there had been a general and material increase in the cost of living. Even earlier, by joint resolution of Congress on December 20, 1916, the Department of Labor was directed to inquire into the cost of living of wage earners in the District of

Columbia.⁵ An index for Washington was published in mid-1919.

During 1918–19, in cooperation with the Shipbuilding Labor Adjustment Board, the Bureau investigated the cost of living in a number of shipbuilding and other industrial centers. Details of the cost of goods in the family market basket were obtained for a year within the period July 1917 to February 1919 from each of 12,000 wage-earner families in 92 cities. In addition, records of retail establishments provided prices for a large number of articles for December of each year from 1914–17 in 19 cities, and for only December 1917 in 13 additional cities. Regular price collection was initiated after 1917 in all 32 cities; prices were collected 1 to 4 times a year for about 145 commodities and services. In 1919, the Bureau began the publication of complete “cost-of-living” indexes at semiannual intervals for 32 large shipbuilding and industrial centers, using a weighting structure based on expenditures of wage-earner and clerical-worker families in 1917–19.⁶ Indexes were estimated for the United States back to 1913 based on wholesale price movements. The reference base period of the early CPI was 1913=100, later changed to 1923–25=100. In February 1921, regular, periodic publication of the U.S. index in roughly its present framework was established, although there have been many changes in scope, coverage, frequency, and publication format since then. Quarterly indexes were initiated in 1935. Monthly indexes were inaugurated at the request of the National Defense Advisory Commission beginning October 1940.⁷

Technological developments of the 1920’s contributed to the changing composition of the goods and services that constituted the “necessities” of life, and the growing body of empirical knowledge of price behavior tended to emphasize the significance of the “market basket” used in the construction of consumer price indexes. Surveys of expenditures by Federal employees in five cities in 1927–28 and in Washington, D.C. in 1933, and of Ford Motor Co. employees in Detroit in 1929, indicated the extent of the changes which were taking place in

³ The term “cost of living” was used to describe the Bureau’s index until its name was changed following the controversy in the World War II period over the index’s validity as a measure of cost of living. It has always been merely a measure of changes in prices for goods and services purchased for family living.

⁴ “Labor and the War,” *Monthly Review of the U.S. Bureau of Labor Statistics*, March 1918, pp. 67–76.

⁵ “Cost of Living in the District of Columbia,” *Monthly Labor Review*, June 1919, p. 117.

⁶ *Cost of Living in the United States* (BLS Bulletin 357, 1924).

⁷ “Changes in Cost of Living from Sept. 15 to Nov. 15, 1940,” *Monthly Labor Review*, January 1941, p. 146.

the type of goods purchased and the manner of living. However, the surveys' information on family expenditures of wage-earner and clerical-worker groups in large cities throughout the country was not complete enough to provide an adequate systematic basis for revision of the then existing "market basket."

Consumers' Price Index, 1935-52

On March 15, 1933, the Secretary of Labor requested that the American Statistical Association (ASA) appoint an Advisory Committee to advise the Department on its general statistical program. The committee, working closely with the Committee on Government Statistics and Information Services of the ASA, paid particular attention to cost-of-living indexes. Acting on the recommendations of the Advisory Committee, the Bureau initiated steps leading to a comprehensive revision of the index.

In 1934-36, the Bureau undertook a comprehensive survey of Money Disbursements of Wage Earners and Clerical Workers, which covered 14,500 families of two or more persons in 42 cities with population over 50,000. In 1935, while the surveys were underway, and pending completion of the comprehensive index revision, the Bureau incorporated methodological changes in price collection and index calculation, modifying both the weights used in combining group indexes to obtain the "all-items" index, and the population weights for combining cities.⁸ A complete revision of the system of food-item weights was inaugurated,⁹ with specific weights based on city food expenditure patterns replacing the regional weights formerly used. Also the principle of imputation was adopted, i.e., ascribing to a sample item the price change for groups of items presumed to have price movements similar to the sample item. In this way, imputation provides an estimate of a group's price change which is not measured directly. In addition to the weight revision, new commodities were added, and food indexes were constructed on the new basis back to March 1919.

The comprehensive revision of the index was completed in 1940.¹⁰ New weights were intro-

duced, and revised indexes were computed back to 1935. Indexes were partially revised using new group weights back to 1925. See appendix table II. At the same time, the reference base period was shifted to 1935-39=100 on advice of the Central Statistical Board (predecessor of the present Office of Statistical Standards of the Bureau of the Budget).

During World War II, temporary adjustments in pricing and weights for foods, fuels, transportation, and other selected items were made to take account of rationing and wartime shortages.¹¹ These adjustments were necessarily imperfect. Proper allowance for wartime quality deterioration could not be made, although wartime specifications replaced prewar standard qualities; black-market prices could not be measured except to a limited degree; comprehensive revision of weights for changed family expenditure patterns could not be undertaken. However, weights were reduced on rationed foods such as meat and sugar. Wartime product specifications were priced and, following institution of rent controls, collection of rent data directly from tenants instead of from management was instituted. Pricing of non-available items such as automobiles, washing machines, and radios were dropped temporarily and the index values assigned to those items were adjusted each month based on the change in the prices of all items. In 1946, when wartime restrictions were eased, the prewar weight patterns were restored, and long-time comparison of prices for these items before and after the war was made. The difference in price movement resulting from imputation to other items and the actual long-time change was reflected in the index. This long-term method of reintroducing the item and grade priced before the war was adopted to adjust the level of the index for any errors made in handling wartime quality changes in the index calculation.

Prior to World War II, the weights and "market basket" content used in a price index continued to be a subject of discussion among statisticians and economists. However, evidence of the relatively greater influence that price movements have on the course of the index shifted the main area of controversy back to

⁸ "Revision of Index of Cost of Goods Purchased by Wage Earners and Lower Salaried Workers," *Monthly Labor Review*, September 1935, pp. 819-887.

⁹ *Retail Prices of Food, 1923-36* (BLS Bulletin 635, 1938).

¹⁰ *Changes in Cost of Living in Large Cities in the United States, 1913-41* (BLS Bulletin 699, 1941).

¹¹ "BLS Cost of Living Index in Wartime," *Monthly Labor Review*, July 1943, pp. 82-95, and *Consumers' Prices in the United States, 1942-48* (BLS Bulletin 966, 1949).

pricing problems during World War II. Between 1925 and 1940 there had been considerable development of statistical methodology, particularly in data collection and sampling techniques. Statisticians began to center their attention on the reliability of the basic data used in compiling the index, the design of schedules and questionnaires, the phrasing of interview questions, training of data collection agents, representativeness of samples, and errors of response. When, in 1943-45, the index was undergoing critical appraisal because of special wartime conditions, it was natural for economists and statisticians to raise questions about the basic reliability of observations.

In 1946, a number of important changes were made in the processing of food prices. A system was instituted whereby separate average prices for chain and independent stores were computed, and these averages were combined using fixed (internal) weights. Also, the food outlet samples were revised, taking into account type of store, sales volume, and location. Up to this time, price changes for food had been computed by comparing, in successive periods, prices from a matched sample of outlets. The improvement in outlet sample design, the system of internal weights, and the large size of the store sample made it possible for the Bureau to abandon the more costly matched sample procedure. Instead, the average of all price quotations obtained was compared with the average in the previous period. This system has been continued up to the present time for food in large cities. However, the limited samples for the small cities added to the index in 1953 necessitated a return to the matched sample procedure for these cities. A reduction of one-third in appropriations for fiscal year 1948 necessitated changes in the frequency of pricing for nonfood items and in the number of items currently priced.

Postwar changes in consumption patterns of wage-earner and clerical-worker families, revealed in expenditure surveys conducted in a few cities in 1947-49, indicated a serious need for revision of the index weights used and the market-basket items selected for periodic comparison.¹² In 1949, the Congress authorized a large-scale 3-year program for modernization of the index. By this time, the postwar rise in

prices, which followed elimination of price controls in mid-1946, appeared to have run its course; prices had begun to decline from their postwar peaks, and the period 1951-52 was expected to be characterized by relatively stable economic conditions.

The reliability of data continued to be a central statistical issue; however, precision of definitions and biases in the index also received increasing attention. For instance, critics pointed out that the BLS method of measuring rent change was not able to reflect the difference between rents of newly constructed housing units and those of comparable units already in the rental market. Because of the impossibility of judging comparability of quality for different housing units, BLS based its rent index (and continues to do so) on comparisons of average rents for identical housing units in two successive periods. New units can be introduced into the sample from time to time, but the initial rent for such units cannot be compared with those for units already in the sample. Under ordinary circumstances, new units rent at about the same levels as do existing units of comparable quality; thus the index can be said to reflect rents for new units. However, during the period of rent control in the 1940's when market forces which tend to equate rents for new and comparable existing units were not permitted to function, new units tended to rent at a premium over existing units. The fact that the technique of pricing identical units did not permit the index to reflect the higher rents as price changes, resulted in a downward bias during this period. This bias was known as the "new unit bias."¹³

Interim Adjustment, 1950

The outbreak of hostilities in Korea was accompanied by sharp and diverse price increases in the United States. These divergent price changes, coupled with widespread use of the index in wage escalation contracts, made adjustment of the index weights to post-World War II patterns extremely urgent. Pending completion of the comprehensive revision in 1953, an interim revision was carried out.¹⁴ Using data

¹² "Estimate of New Unit Bias in CPI Rent Index," *Monthly Labor Review*, July 1949, pp. 44-49.

¹⁴ *Interim Adjustment of Consumers' Price Index* (BLS Bulletin 1039, 1952).

¹³ "Revision of the Consumers' Price Index," *Monthly Labor Review*, July 1950, pp. 129-132.

from expenditure surveys in seven cities conducted in 1947-49, group weights were adjusted; 25 additional items were selected for pricing; and 1950 population weights were introduced into the index. To correct for the "new unit bias," the rent index was raised 6.8 index points and the all items index by 1.3 points. The correction was spread over the period back to 1940. Both the "old series" index and the adjusted index were published simultaneously through 1952, when the "old series" was discontinued.¹⁵

Consumer Price Index, 1953-63

A comprehensive revision of the index was begun in 1949 and completed in 1953. Surveys of consumer expenditures were conducted in 91 cities, the index concepts were reexamined completely, and the index reference base was changed from 1935-39 to 1947-49. The general concept of the index as a measure of price change for a fixed market basket of goods and services was retained; but a major change in CPI scope was made; the purchase of a home was included in the weighting diagram. The classification of goods and services into groups and subgroups was revised, and indexes were computed retroactively on the new base period (1947-49) for the new major groups by recombining appropriate data for individual items from the old index. The revision introduced a new sample of 46 index cities out of the 91 cities in the CES, including for the first time small urban places down to 2,500 population as well as large cities; revised weights reflected the 1950 spending pattern of wage-earner and clerical-worker families adjusted to 1952; and the list of items priced was expanded to include new products such as television, frozen foods, and items which had not been priced previously, such as restaurant meals and owned homes.¹⁶ The new index was linked to the adjusted index at December 1952 to form a continuous series.

In January 1962, the reference base period was changed to 1957-59=100 (in keeping with the recommendation of the Office of Statistical Standards for all Government general-purpose indexes). The Bureau continued to publish indexes on the 1947-49 base as well.

¹⁵ "Correction of New Unit Bias in the Rent Component of CPI," *Monthly Labor Review*, April 1951, pp. 437-444.

¹⁶ *Consumer Prices in the United States, Price Trends and Indexes, 1953-58* (BLS Bulletin 1256, 1959).

By the late 1950's, it became apparent that the index weights should not go unrevised for more than a decade. The Bureau asked for and received authorization for a 5-year revision program, which was begun in 1959. Surveys of consumer expenditures for 1960 and 1961 were conducted to provide the basic data for selecting a new sample of goods and services and for computing new weights for the index. The revised index was first issued for January 1964. It is described in detail in subsequent chapters.

Appraisals of the CPI

Throughout its history, the index has been used extensively in the evaluation and adjustment of wages and, for this reason, has been subjected to public scrutiny repeatedly. The Department of Labor's Conciliation Service, organized in 1913, made use of the Bureau's cost-of-living data in mediation and conciliation of labor disputes. Change in the cost of living was one of the main factors governing the recommendations of the Railway Wage Commission, the Shipbuilding Labor Adjustment Board, the Bituminous and Anthracite Coal Commission, and other boards and commissions active during and following the First World War.¹⁷ General use of the index in wage negotiations was expanded gradually, and when World War II began, an increasing number of union-management agreements specified automatic wage adjustments based on changes in the index. The index came into great prominence in 1942 when the National War Labor Board originated the "Little Steel Formula" as a guiding policy in the control of wage rates. This formula stabilized wages at prevailing levels but permitted increases up to 15 percent above January 1941 levels to compensate for the approximate rise in the index from January 1941 to May 1942. This use of the index led to protracted arguments over its nature and accuracy.

At the end of the war, there was a decided increase in the number of agreements which related wage adjustments and the reopening of wage contracts to changes in the CPI. In 1948, one of the most important agreements using the index was made between the General Motors Corp. and the UAW-CIO; a number of similar agreements were quickly concluded in which

¹⁷ See *The Use of Cost-of-Living Figures in Wage Adjustment* (BLS Bulletin 869, 1925).

wages were tied directly to the CPI by specific escalator clauses. Use of the index in this manner expanded rapidly until by the end of 1957 the wages of over 4 million workers were adjusted automatically in accord with contract provisions,¹⁸ and for millions more, movements of the index were a consideration in collective bargaining. Subsequently, with greater price stability, there was some lessening in the direct use of the index in escalator clauses, but in 1964, when the revised index was issued, there were still 2 million workers or more whose wages were tied to the index.

In addition to this use in wage adjustment, the index is employed widely in other types of contract-escalation provisions, such as those concerning property rentals, service contracts, annuities and pensions, welfare allowances, alimony payments, etc.

The CPI is used extensively as a guide to public economic policy decisions—administration of wartime price and rent controls, establishment of income and excise tax rates, and generally as a measure of inflation in the determination of various fiscal, public finance, international trade, and monetary policies. As a measure of change in purchasing power of the consumer dollar, it is used in calculating changes in real earnings and its component indexes are essential statistical tools for deflation of the national accounts.

As one of the most used of all statistical measurements, it has perhaps been the subject of more analysis and appraisal than any other series. One of the first comprehensive reviews of the index was made in 1933–34 by the Advisory Committee appointed by the American Statistical Association, at the request of the Secretary of Labor. This review led to improvement of data collection and calculation methods, ending with the comprehensive revision of the index in 1940.

The increasing significance of the index in wage and price stabilization during World War II, and misunderstanding as to its intended purpose (stemming largely from its title, "The Cost of Living Index") led to discussions over the correctness of the index as a measure of the effect of price change on the wartime cost of living. In the spring of 1943, the Secretary of Labor, anticipating controversy over the accu-

racy of the index arising out of the Little Steel Formula, asked the ASA to appoint another committee to review and appraise the index. This committee, under the chairmanship of Professor Fredrick C. Mills, concluded "First, that within the limitations established for it, the cost-of-living index provides a trustworthy measure of change in the prices paid by consumers for goods and services. Second, that many of the difficulties and doubts which have arisen concerning the index have their origins in attempts to use it uncritically for purposes to which it is not adapted."¹⁹

However, the intensity of the controversy over the index increased and caused the President to ask the Chairman of the War Labor Board, Mr. William H. Davis, to form a tripartite committee representing labor, business, and Government, "to look into the question and try to answer and make clear how the index figure is arrived at, whether any changes should be made in its component parts, or other improvements." The two labor members of the committee, Mr. George Meany of the AFL and Mr. R. J. Thomas of the CIO, presented their own report in January 1944 alleging that the index greatly understated the wartime rise in the cost of living. The President's Committee examined materials and testimony prepared by the BLS, the "Mills Committee," the labor unions, a technical committee under the chairmanship of Dr. Wesley C. Mitchell, the National Industrial Conference Board, and various other groups and individuals. After this searching review, the committee concluded that the BLS index figures "constitute a competent measure of price changes for goods customarily purchased by families of wage earners and lower salaried workers living in large cities;"²⁰ that much of the public misunderstanding was created by use of the term "cost of living" when referring to the index; that under the exceptional market conditions which exist in wartime, allowance should be made for certain increases in the cost of living due to quality deterioration, disappearance of cheaper goods, decrease of special sales, underreporting of prices actually charged, and other temporary disadvantages of the buyer in a seller's market

¹⁸ "An Appraisal of the U.S. Bureau of Labor Statistics Cost-of-Living Index," *Journal of the American Statistical Association*, December 1943, p. 388.

²⁰ *Report of the President's Committee on the Cost of Living*, (Office of Economic Stabilization, 1945), p. 14.

not measurable by the index; and that there should be an additional upward adjustment if the index were used to represent workers in small as well as large cities.

Following this investigation and on the advice of the committee, the title of the index was changed in September 1945 to "Consumers' Price Index for Moderate Income Families in Large Cities," to make clear that the index was solely a measure of price change. This title was later shortened to the "Consumer Price Index." The committee recommended that an allowance (estimated later at 5 percentage points as of September 1945), be used in the application of the index to wage stabilization in the war economy, but that the allowance not be incorporated into the official figures. From June 1944 through December 1946, each month's report on the CPI explained that "the index does not show the full wartime effect on the cost of living of such factors as lowered quality, disappearance of low-priced goods, and forced changes in housing and eating away from home." By the end of 1946, a number of these factors had disappeared or decreased in importance and the statement was dropped from BLS reports. Committee recommendations that were adopted for the revised index included coverage of small cities; pricing of restaurant meals, children's clothing and owned homes, and adjustment of the rent index for new unit bias.

Following the outbreak of hostilities in Korea, the Wage Stabilization Board promulgated a 10 percent wage formula analogous to the Little Steel Formula of World War II. Thus, the CPI again became a controlling factor in wages, and criticism of the index again began to be expressed. Partly to forestall repetition of the 1943-44 debates, in the spring of 1951, a subcommittee of the Committee on Education and Labor of the House of Representatives under the chairmanship of Representative Tom Steed initiated an investigation of the Consumer Price Index, for the following reasons: "(1) The Consumers' Price Index has become an extremely important factor in maintaining harmonious labor-management relations. (2) The Consumers' Price Index affects, in numerous ways, all the citizens of the country. (3) Since the index is a statistic promulgated by a governmental agency, it should be the best and most accurate available. (4) Any governmental

statistics of such paramount importance as the Consumer Price Index should be understood by the public so that it will receive proper confidence and respect."²¹ With these purposes in mind, the subcommittee heard many witnesses, including officials of the BLS, members of the American Statistical Association, and users of the index from both labor and management. These hearings clarified the meaning, construction, uses, and limitations of the index. On the basis of the testimony presented, the subcommittee concluded that "the Consumer Price Index of the Bureau of Labor Statistics is an excellent index and that it enjoys widespread confidence among labor and management groups and the general public."²² The subcommittee expressed approval of the improvements in index construction and coverage that were underway at the time.

Wider application of the CPI in evaluating economic conditions and the use of these evaluations as a basis for vital Government and private policy decision have focused attention on the validity and accuracy of the index for these purposes, as well as for wage adjustment. In its report on "Employment, Growth and Price Levels in 1959,"²³ the Joint Economic Committee of the Congress included a brief evaluation of the nature and limitations of the CPI. In regard to its use as a measure of inflation, the report pointed out that the index "does not presume to represent all consuming units, though there is no obvious reason to believe it understates or overstates the movement of consumer prices to other persons in the economy—self-employed, nonurban, or extreme income groups."²⁴ This report also mentions "several important deficiencies, most of which are extremely difficult to deal with by precise statistical techniques;"²⁵ for example, problems are faced in dealing with changes in the quality of items included in the index, and in determining when, which, and by what methods entirely new items are to be introduced into the index.

In July 1959, a Price Statistics Review Committee under the chairmanship of Dr. George

²¹ *Consumers' Price Index* (U.S. House of Representatives, Special Subcommittee of the Committee on Education and Labor, 80th Cong., 2d sess., 1951), p. 1.

²² *Ibid.*, p. 81.

²³ *Employment, Growth and Price Levels* (Staff Report, Joint Economic Committee, 86th Cong., 2d sess., December 1959).

²⁴ *Ibid.*, p. 106.

²⁵ *Ibid.*

Stigler was created by the National Bureau of Economic Research under contract with the Office of Statistical Standards of the Bureau of the Budget. The committee's function was to review the basic concepts and procedures underlying data collection and calculation procedures for the various price series published by the Federal Government and to make suggestions for their extension and improvement. The committee met at approximately monthly intervals beginning in the fall of 1959. A substantial amount of special work, including tabulation of data and staff consultation, was performed by BLS at the request of the committee. The committee's report, submitted in November 1960,²⁸ had an important impact upon the conduct of the CPI revision project then underway. It became the subject of hearings by the subcommittee on Economic Statistics of the Joint Economic Committee of the Congress in January and May 1961.

The Review Committee's major recommendation was that the CPI should be moved toward becoming an index of welfare or constant utility rather than remaining a price index. The concept of a constant utility index, which bases price change upon a comparison of different market baskets which are judged to be "equivalent" in some objective sense is extremely complex. It has not yet been formulated in operational terms. The committee made specific recommendations for different treatment for a very few components. Therefore, after serious consideration, the Bureau decided to maintain the basic historical orientation of the index as a "constant market basket" index, but many of the Review Committee's other recommendations did influence the structure of the revised index (first published in 1964 and referred to as "new series"). Among recommendations incorporated in the new series are more extensive use of probability sampling, establishment of a research division for developing methods of adjusting for quality changes and other purposes, use of greater flexibility in specification pricing, better documentation of procedures, and inclusion of single persons in the index population. Implementation of certain other recom-

mendations is dependent upon availability of additional resources, not yet provided.

Population Representation

Historically, the CPI has been designed to measure the price experience of a specific group of the U.S. population—until 1964, families of wage earners and clerical workers living in urban places. In the revision completed in 1964, the index coverage was extended to include single workers living alone. Thus, beginning in 1964, the index became more representative of the total urban wage-earner and clerical-worker population.

This representation has been accomplished by deriving the index weights and item content from expenditure data obtained from this more inclusive group. The pattern of expenditures derived from these data covers all consumer goods and services purchased by the group in a specified year. In effect the goods and services purchased provides weights for the CPI market basket, although quite often the specific set of items selected for pricing has been described as the "market basket."

Variation among families in the quantities of goods and services purchased and the amounts spent in any given year is very great. Some families spend nothing for a specific item while others have large expenditures for the item, depending on their income, family composition and other characteristics, place of residence, living conditions, and the choices they make in the market place. Because of this variability which is inherent in family spending, the index has been representative of all urban wage-earner and clerical-worker families, considered as a group, but not necessarily of any one type of family or individual family included in the group. Various procedures have been followed at different times in the collection and compilation of data to reduce or adjust for the variability of the expenditure data and thus obtain a more stable, balanced, and representative weight base for the index.

Until the 1953 revision, the desired results were obtained primarily by eliminating from the averages data for families who, because of their composition or economic condition, might be expected to contribute most to the total variability. Rather elaborate sets of "eligibility requirements" were developed to eliminate such

²⁸ See *Government Price Statistics, Pt. I* (Hearings before the Subcommittee on Economic Statistics, Joint Economic Committee, 87th Cong., 1st sess., Jan. 24, 1961, Pt. II, May 1, 2, 3, 4, and 5, 1961).

families. Appendix table I shows the characteristics of the families whose expenditures were used in the derivation of index weights. In addition to this method of controlling variability, a method of grouping data for cities within regions was employed to average out large random variations in expenditures for clothing and housefurnishing items.

Restrictions, placed on the economic level and other characteristics of families whose expenditures were included in the basic weight data, were not meant to restrict the representativeness of the index. Orientation of the index towards the urban worker has always been the Bureau's objective. Most of the restrictions were aimed at eliminating aberrations that were peculiar to the period of the expenditure survey and which would not be expected to continue as the economic status of workers advanced; for example, the presence of boarders and lodgers, families on relief and underemployed during the great depression, and low economic status of Negro workers.

On the other hand, the character of the urban wage-earner family has changed over the years, and this fact has been reflected in the index structure. In the earlier periods, wage earners and clerical workers could be characterized realistically as being of "low income." Clerical and sales workers were identified as "lower salaried" workers, and the index was referred to as one for "low and moderate-income" families. There were renters primarily, living in the more densely populated city centers, and including relatively more of the older established households and larger families. The large increase in the size of the middle-income group that took place in the last two decades and population movement to the suburbs reflected to a large degree the improving economic status of the worker included in the CPI population. Thus, the occupational classification of the group as wage earners and clerical workers lost much of its significance because of the similarity in the manner of living of this group as compared with the total urban population in the middle-income range. Also, the continuing high level of American economic prosperity reduced to some degree the extreme variations in family spending patterns that were of considerable concern earlier. The 1953 revision of the index, therefore, placed no eligibility restrictions on the population whose expenditures were used

in weight derivation, except those which preserved the definitional base of the index—urban families, whose heads were classified as wage earners or clerical workers.²⁷ The index, however, is no longer properly related to low and middle income workers.

City Coverage

As indicated previously, the work of the Bureau on consumer prices began with collecting food prices.

The retail food index initiated in 1903 was based on prices from a varying number of cities from 1890 to 1911. In 1911, 39 cities were included. After 1912, additional cities were added from time to time; by 1920 the sample of cities for the food index had been increased to 51. In 1943, the number was increased to 56 cities, which were retained for the food index through 1952.

In 1918, the Bureau began to compile and publish price indexes of all goods and services for 48 shipbuilding and industrial centers and for Washington, D.C. In 1919, an estimated index for the United States based on a weighted combination of 32 of these cities was published; in 1940 and 1941, 2 other cities were added to complete the list of 34 cities (plus 22 additional cities for food). The 34 cities were included in the index sample through 1952, and a separate index was published for each city.

Up to the 1953 revision, the cities priced for the index were not chosen by systematic sampling methods to represent the total U.S. urban population. They were selected primarily because of their individual importance in wage negotiations. Some effort was made to obtain regional representation for the food index, but not through systematic sampling procedures. Small cities (under 50,000 population) were not represented. During World War II, special indexes were calculated for 20 small cities and 12 cities where rapid expansion of war activities had created emergency situations; and prices of foods, fuels, and rents were obtained in 7 additional cities, for which indexes were estimated. Data for these 39 places were never included in the national average.

²⁷ In the 1953 revision, an upper limit of \$10,000 family income was imposed as a means of insuring the correct occupational classification. In the 1964 revision, because of better coding, by occupational classification, no income restriction was needed.

In the 1953 revision, a new sample of 46 urbanized areas and small cities was selected systematically²⁸ to represent urban places of all sizes down to 2,500 persons. The sample included all of the 12 cities having populations of 1 million or more in 1950, and a representative sample of three other strata (other large, medium-size, and small cities) classified by climate, population density, income level and, for small cities, distance from a major market. Through this sampling procedure, only 20 of the 34 large cities formerly included in the U.S. index were retained in the sample, and city indexes were continued only for these 20. The 1953 revision placed emphasis on the importance of the national average. City indexes, except those for very large cities, were considered to be byproducts of the U.S. index calculation. No indexes have been published for the 26 smaller cities.

The 50 city sample of the 1964 revision is described later.

Frequency of Pricing

Not all cities have been priced monthly nor have U.S. indexes always been calculated monthly. Prior to September 1940, indexes were calculated for the United States and individual cities at irregular intervals. Subsequently, a monthly U.S. all-items index was estimated back to 1913 based on food prices and estimates for other groups assuming an even rate of change between pricing dates. In the 1940 revision, which established the 34-city index, monthly pricing was established, with funds provided by the Office of Price Administration. A limited list of items in all groups was priced monthly in 21 cities, and the full list of items was priced quarterly in all 34 cities on the March, June, September and December cycle. National indexes based on all 34 cities (56 cities for food) were published monthly, but the indexes for the interquarterly months were published as preliminary indexes and occasionally revised, if necessary, using straight-line interpolation between quarterly pricing dates by group.

The serious cut in budget appropriations for fiscal year 1948 necessitated a reduction in the

²⁸ The selection was made by a Latin Square design. No additional cities were selected for food pricing. See "Selection of Cities for Consumer Expenditures Survey, 1950," *Monthly Labor Review*, April 1951, pp. 430-436.

frequency of pricing in individual cities. Monthly food pricing was continued in all 56 cities formerly priced, but pricing of fuels was restricted to the 34-city sample rather than the 55 cities formerly priced for fuel. Monthly pricing for other groups was confined to 10 cities, rather than the 21 cities previously priced monthly, and quarterly pricing of the remaining 24 cities on a rotating cycle was instituted. To make possible calculation of the national index monthly, account was taken each month of every city in the sample by making estimates for unpriced cities. The first such estimates were based on price movement in one of the priced cities; however, later, estimates were based on the average price movement in the 10 cities priced monthly. This procedure resulted in errors of estimate in monthly price movements but no long-term error, since estimates for unpriced cities were automatically corrected at the next pricing in each city.

The use of a rotating cycle as a device for spreading pricing among more cities has been continued. In the 1953 and 1964 revisions, only the five largest cities were established for monthly pricing of all items. Food and fuel were priced monthly in all cities but other groups in other cities were priced every 3 months or every 4 months. From 1953 to early 1963, unpriced cities were estimated between pricings on the basis of the average change in the five monthly cities. This procedure (as would any explicit estimating procedure) sometimes overestimated price changes, necessitating corrections in the opposite direction when the estimates were compared with actual data in the next pricing period. Therefore, it was discontinued. Instead, the latest available prices are used, in effect holding prices constant from the last pricing for all cities not actually priced. This tends to introduce a slight lag in reflecting price changes in the national index, but it avoids the necessity for making corrections to compensate for overestimates.

Item Coverage

The index is designed to measure the change in prices of a fixed market basket of consumption goods and services purchased by urban wage earners and clerical workers. Historically, the total index coverage has been for "current consumption expenditures" including applicable

taxes, made in retail stores and service establishments by "index families." Other outlays, such as for life insurance, income and other personal taxes, savings and investments, have been excluded since they do not involve the direct purchase of goods and services in the market place, or expenditures necessary for continued ownership and use of goods purchased. Before 1953, the purchase of a home was considered to be an investment outlay, and homeowner cost items included in the index were limited to insurance, real estate taxes, and interest payments. After that date, following lengthy discussions, the concept of home purchase for index purposes was changed. Expenditures for purchase of a home were added to the index coverage, and prices of homes have been treated in index compilation in the same way as those for consumer durable goods. Consumption of goods not involving cash outlay by the "index family," such as the value of homegrown food or the share of insurance premiums paid by the employer, is not included in the scope of the index.

Coverage has not been restricted to "necessities," although the idea of pricing essentials was a consideration in the selections of items to be priced in the early history of the index.

The sample of items priced for the index has included goods and services whose price changes, appropriately weighted in combination, provide an estimate of the average price movement of all items or groups of items. In the selection of sample items and allocation of weights, since 1935, consideration has been given both to their importance in family spending and to the representativeness of their price trends. In general, in the 1953 revision, expenditure items reported in surveys of consumer expenditures were grouped, within major categories of goods and services, into classes of items which were fairly homogeneous in respect to price movement. These classes were referred to as "price families." The most important item or items within each class were then automatically considered for inclusion, and other items of somewhat less importance were added to the sample if their price movement was unique. The weight assigned to each priced item represented family expenditures for all the items it represented.

A considerable amount of empirical research was carried out as part of the 1953 revision

to measure the variance in price change for a large number of commodities and services in order to classify them into "price families." However, it was never possible, within the resources available, to collect a completely adequate body of price data for this purpose. Item classification was, therefore, based to some degree on the Bureau's price analysts' knowledge about physical characteristics and function of a commodity, marketing and distribution practices, and other factors assumed to be related to price change. The number of items selected for pricing depended on the sample size required to obtain an acceptable estimate of the average price change for each commodity group and on the resources available for conducting price collections.

This method of sample selection was not a systematic sampling method by which items would be chosen at random with chance of selection proportionate to their importance in family spending. In view of the thousands of different items of all qualities, brands, sizes, etc., purchased by workers, a completely random selection from a clearly defined universe of items is not possible. However, limited probability sampling was introduced in the 1964 revision.

Until the 1964 revision the particular quality or qualities of sample items to be priced were determined through examination of prices paid by families, as reported in expenditure surveys. Price ranges within which the frequency of purchases were greatest were selected to identify the appropriate qualities for the index. These qualities were translated into specifications describing this quality or quality range through consultation with retail dealers, manufacturers, trade associations, and other informative sources.

Changes in the sample of items priced for the index over the years reflect availability of resources, changes that have occurred in patterns of family expenditures, or improvements made in the representativeness of the items priced.²⁹ The number of items priced has varied greatly, but exact counts are difficult because of the multiplicity of methods of handling quality variations and special cases over the years. The food price index compiled in 1903 was a modest beginning; prices were obtained for 30 basic

²⁹ BLS Bulletin 699, *op. cit.*, and BLS Bulletin 1256, *op. cit.*, contain detailed lists of items set up for pricing in the 1940 and 1953 revisions.

food items. When pricing was resumed in 1911, back prices were obtained for only 16 foods, but the sample was gradually increased again to 30 items by 1918. In 1919, when the Bureau began to compile indexes for all goods and services, the sample included 42 foods. Most of the expansion was in the fresh fruit and vegetables group which was represented in the earlier indexes only by white potatoes. The inclusion of fruits and vegetables reflected the increasing importance of this group and was the first attempt to include difficult-to-price seasonal items. As many as 84 food items were priced on an experimental basis in 1935–39, but many of these items were dropped in the 1940 revision after studies of comparative price trends were made. Since then, most changes in the food item sample other than the complete resampling of the 1964 revision have been made to introduce new products and specifications and to improve the sample representation for subgroups of foods as they assume increased importance in family spending.

Between 1918 and 1963 the total number of items priced for the total CPI was increased from 166 to 325 and further increased to 400 separate specifications in the 1964 revision. In the early 1940's as many as 300 items were priced, but a substantial cut, mainly in the number of different qualities, was necessitated in fiscal year 1948 by the reduction in resources. The samples of apparel, housefurnishings, and other items show the same process of gradual revision as the food sample to include items which gained in importance, to eliminate those becoming obsolete, and generally to increase their representativeness. Pajamas replaced nightshirts; oxfords were substituted for high shoes; men's separate collars were dropped; drycleaning services were added; and modern synthetic fabrics were introduced. Radios, vacuum cleaners, refrigerators, and other electrical

appliances were added in 1940, as were the automobile, gasoline, and other automotive products. Television sets, toys and modern drugs were introduced in 1950 along with many other important consumer goods. A number of new consumer services were added in the complete resampling of 1964, including some requiring unique procedures for pricing.

Component Indexes

The classification of items into groups and subgroups has been revised several times. Between 1919 and 1935, indexes for only six major categories—food, rent, housefurnishings, fuel and light, apparel, and miscellaneous,—and the “all items” index were published. With the increasing size of the item sample, the Bureau was able to develop more detailed summaries for publication. Indexes for subgroups of foods were added in 1935 and extended back where possible. After 1952, a major change in classification was introduced. The former miscellaneous group was subdivided. Indexes were prepared for eight major categories—food, housing, apparel, transportation, medical care, personal care, reading and recreation, and other goods and services—and 18 subgroups of goods and services extended back at least to 1947. A few years later many special group indexes, including separate indexes for commodities and services, were compiled. Further changes were made in the 1964 revision.

Following World War II, in an effort to provide the maximum amount of information to index users, U.S. indexes were calculated and published at quarterly intervals back to 1935 for most of the individual nonfood items priced for the index. Until 1953, they were based on all 34 cities in the index; from 1953 to 1963, on the 19 cities priced on the March, June, September, December cycle.

Chapter II. Major Features of the Revision Program, 1959–1964

The revision of the Consumer Price Index (CPI), completed in January 1964, was the third comprehensive revision³⁰ since the index was initiated in 1918. The revised index was the culmination of a 5-year program, carried out during the years 1959–63, and estimated to have cost over \$6 million. This chapter briefly summarizes the various aspects of the revision which are discussed in greater detail in subsequent chapters.

Need for Revision

Minor adjustments necessary to insure that the index reflects price changes on current market transactions are made continually in the course of ordinary index maintenance. These include the introduction of revised specifications which describe new varieties of goods and services, and the introduction of revised samples of stores and establishments which report retail prices to the Bureau. Occasionally, adjustments are made in the relative weights assigned to two or more specifications of a single item (for example, full-fashioned and seamless hose) when their relative importance in current sales shifts significantly, but the total weight of the item usually is held constant between major revisions.

Item weights and the sample of items normally have been revised only upon reexamination of the entire structure of the index. Such a major undertaking requires a comprehensive survey of consumer expenditures and surveys of price trends. No time schedule for such major revisions had been established previously, although the Bureau would have preferred, under normal or near-normal conditions, to follow a regular, predetermined schedule. With the 1964 revision, the Bureau announced, and hopes to maintain, a schedule of revision at

approximately 10-year intervals,³¹ unless circumstances indicate a need for an earlier revision.

During the period that followed the 1953 revision, dramatic changes occurred in the composition of the urban population, in the kinds of consumer goods and services available, in net incomes of urban workers, and in methods of distribution and marketing techniques, all of which alter the pattern of consumer expenditures. Although the BLS had not conducted expenditure surveys during this period, information from other sources provided clues to the probable obsolescence of index weights and price patterns early in the 1960's.

The population had mushroomed, but, more importantly, it presented a markedly different composition than in 1950. The proportion of persons at each end of the life cycle had increased. Major changes had occurred in its geographic distribution. About 1 out of every 5 family units was moving each year, many to the South and West, which were becoming more industrialized, from farm to city, from the central city to the suburbs, and to peripheral areas soon to become urbanized. Based upon various projections of the U.S. population, it appears that by 1975, 75 percent of the total population may reside in metropolitan areas. These geographic shifts naturally altered the average distribution of expenditures by the urban families among the different components.

Personal incomes had moved upward since 1950—about 36 percent between 1950 and 1956—and a great part of the rise was reflected in increased real income. Between 1952 and 1956, incomes increased about 22 percent and consumer prices about 2½ percent, indicating a substantial rise in real income of workers' families.

³⁰ The first comprehensive revision was completed in 1940, retroactively to 1935, the second in January 1953, and the third in January 1964. See chapter I for a description of the various comprehensive and partial revisions of the index throughout its history.

³¹ A tentative time schedule calls for the next comprehensive revision by 1975—an 11-year span—permitting more effective use of tabulations from the 1970 Population Census.

Shifts in consumer spending patterns were already apparent by about 1957. Trade sources indicated upgrading in the purchasing of many commodities; for example, new instead of used cars, and more highly processed foods. Relative expenditures for cereals and bakery products appeared to be lower and for meat, poultry, and fish, higher than in 1950; public transportation was less important and private transportation more important. Further extension of credit on easy terms made the consumer less and less willing to defer purchasing a home, major appliances, an automobile, and other large ticket items. Also, the decline of price maintenance laws and rise of the discount house had altered retail distribution patterns. Many new products or qualities had come into being. These ranged from deep freezers to new household items of plastics. Greater use was being made of frozen foods, and there were important changes in housing, including a large number of new units, and a continuing shift from rental to owner occupancy. Particularly significant was the increasing share of consumer services in the economy as a whole.

The Bureau's 1957 proposal for a revision program did not imply that a revision was urgent, i.e., that these economic developments had already seriously affected the representativeness of the samples of cities, outlets, and items in the index or of the index weights. In terms of a 4- or 5-year revision program, the changes did indicate the potential danger of serious effects on the index if the program was not launched immediately. Updating also was urged as part of an orderly program of revisions designed to maintain the quality of the index and public confidence in the index.

Summary of Major Features of Revised Index

The revision as carried out did not change the basic index concepts. The national index still measures average changes over time in prices of goods and services bought by urban wage earners and clerical workers. The same statistical formula is still employed in the index calculations, and the reference base period has not been changed since the shift was made in 1962 to the 1957-59=100 base recommended for all Government series.

The major changes made in the revised index are:

1. More comprehensive coverage in that single workers living alone are included, as well as families of wage earners and clerical workers.
2. A new sample of metropolitan areas and smaller urban places (hereafter referred to as city sample).
3. Extension of pricing to suburban areas.
4. A new market basket.
5. New samples of reporters, including many new types needed for unique items sampled for the revised index.
6. Weighting factors based on 1960-61 expenditure patterns.
7. Increased use of probability sampling.
8. Establishment of a replication design in order to measure sampling error in the index.
9. More flexibility in specification pricing.
10. New policy regarding the publication of city indexes.

Appendix table III compares the important features of the old and new series indexes.

The conceptual considerations leading to the operational decisions made in all aspects of the program will be discussed in detail in subsequent chapters. The scheduling and timing of the major activities are summarized in the following section.

Scheduling and Timing

The major activities of the revision program had to be conducted partly in sequence in order to dovetail the various aspects. The interdependence of the operations presented difficulties in timing, particularly in the final stages. The major activities included:

- Program Planning and Analysis
- Comprehensive Housing Unit Surveys (CHUS)
- Consumer Expenditure Surveys (CES)
- Selection of City, Item, and Outlet Samples
- Initiation of Pricing and Readjustment of Samples as Needed
- Derivation of Weights
- Calculation of Revised Index
- Addition of Six Large Cities to Original Program

The program for the first year encompassed most of the preliminary planning and preparation activities related to basic decisions on concept, coverage, and index methodology, and development of survey procedures and materials, including the selection of the city sample. The first-year program also included the actual conduct of housing and expenditure surveys in Cincinnati, Ohio, which had been selected as a lead or pilot survey city for the revision project

before the index sample of cities was selected. In fiscal 1961 and 1962, housing surveys were conducted in 49 urban places and expenditure surveys in 66 urban places, about one-half of the work being scheduled each year. Also, price surveys were conducted on an experimental basis for analytical use in the selection of items and outlets and for calculation of test indexes.

In the fourth and fifth years, expenditure and price data were tabulated, index weights developed, index procedures formalized, and test indexes calculated. Official calculation and publication of old and new series indexes was carried out concurrently during the first 6 months of the calendar year 1964.

After plans for the CPI revision were underway, the Bureau of the Budget contracted with the National Bureau of Economic Research for a review of Government price statistics by the Price Statistics Review Committee. (See chapter I.) Even though much of the BLS planning work for the CPI revision was well advanced by November 30, 1960, when the committee's final report was submitted, in several respects the committee's recommendations had an important impact on the revision, then in process.

In the last year of the revision program, the BLS was given funds to conduct housing and expenditure surveys and to make plans for initiating indexes for six additional large cities,³² which had not been included in the national sample. This work was continued during 1964 and 1965, after the revision was completed. City indexes were first published during the calendar year 1965 and these cities were added to the national index beginning January 1966.

Program Planning and Analysis

Although general plans for the revision were formulated at the time the project proposal was submitted to the Congress, including the scheduling of surveys and scope of the project, implementation of the general policies, development of new sampling techniques, selection of samples of items and outlets, and determination of the scheme for weight derivation were carried on actively throughout the 5-year project.

³² Cincinnati, Houston, Kansas City, Milwaukee, Minneapolis, and San Diego.

Fundamental questions of concept were discussed continually, practically up to the date when the revision was completed.

Primarily, the program was designed to provide for revision of weights; for new samples of cities, items, and outlets; and for improvement of estimating and data collection procedures and price change measurement. Because of the intensive review of concepts of the index in the 1953 revision program, the Bureau did not anticipate a need for any major definitional changes in basic concepts or coverage. With the concurrence of both the Labor and the Business Research Advisory Committees,³³ it was decided to extend the index coverage to include wage earner and clerical workers living alone and to compute two indexes, one for families and the other for families and single workers combined. (The index for families only was discontinued after November 1964, when it became apparent that both indexes moved alike.) It was expected also that the index would continue to be a measure of price change for a "constant market basket" of purchases made by urban wage earner and clerical workers. This decision prevailed even though the Price Statistics Review Committee had expressed a preference for an index of "constant satisfaction," in which comparisons would be made between different market baskets judged to provide equivalent satisfaction, by some means yet to be determined.

The methodology for developing index weights was considered early in the program, with particular reference to the special procedures adopted in the 1953 revision to adjust observed expenditures for abnormalities of the survey year, so as to approximate more stable expenditure patterns. It was decided that the objective of the weight derivation processes in the current revision would be the best estimate of observed expenditures as of the survey date. Some averaging of cities and other adjustments were anticipated in order to produce better estimates based on the survey results, but no attempt was to be made to estimate stable patterns or project them to expected patterns for ensuing years.

³³ Price Subcommittees of the Business Research Advisory Council and of the Labor Research Advisory Council to the Bureau of Labor Statistics.

Comprehensive Housing Unit Surveys

The Comprehensive Housing Unit Surveys (CHUS) were prerequisites for several major phases of the program. They provided the sampling frame for selecting addresses for subsequent expenditure surveys, samples of tenant-occupied units for measurement of rent change, and samples of owner-occupied units for measurement of property tax; they also, provided other statistical information used in derivation of housing weights. Thus, CHUS were needed early in the program.

Obviously, the selection of the sample of cities had to precede the housing surveys. This was done in the first fiscal year by the Goodman-Kish controlled selection technique. (See chapter VI.)

Development of the survey questionnaire was begun in fiscal 1959 and completed in time for the pilot survey in the fall of 1959 in Cincinnati (which did not fall in the revised city sample, but was 1 of the 6 cities added to the national index in January 1966). Only minor changes were made in the questionnaire for the full-scale surveys, which were conducted in two stages in the fall of 1960 and the fall of 1961. All 12 of the largest cities and 10 other large and medium-size cities were scheduled for surveying in 1960 and the remaining 11 large and medium-size cities and 8 D strata cities in 1961. This schedule was geared to the needs of the expenditure surveys to be carried on in the spring of the following year for each city. Comprehensive housing surveys were not made prior to the CES in the remaining 24 smallest cities, since sample addresses for the CES could be drawn more economically from Bureau of the Census records. However, subsequently, housing surveys were conducted in eight additional D cities for other purposes.

Surveys in the five additional large cities added to the index in January 1966 along with Cincinnati, already surveyed, were conducted in the fall of 1963.

Consumer Expenditure Surveys

The consumer expenditure surveys provided the basic data for the weighting system and the selection of the sample of items to be priced for the index. Since they covered a sample of the

total urban population, they also served important nonindex purposes in the field of marketing and economic analysis of consumer incomes, spending, and saving. Moreover, the surveys for 1961 were conducted simultaneously with surveys for rural farm and rural non-farm areas, in cooperation with the U.S. Department of Agriculture, to make possible national estimates of consumer expenditures. This Bulletin discusses the use of the data for index purposes only and does not attempt to describe the countless analytical and research uses made of the expenditure data.

The surveys, except for Cincinnati and Anchorage, were done in two stages, in the spring of 1961 and 1962, covering the calendar years 1960 or 1961. In the 12 largest cities, half the sample of households was surveyed in each of the 2 years. Each of the other cities was surveyed completely in one or the other year. Surveys in five additional large cities⁸⁴ were carried out in the spring of 1964 covering the year 1963.

Selection of Revised Samples

Two important decisions with regard to sampling for the revised index were made early in the program and before the report of the Price Statistics Review Committee was completed. The first decision was to exert every effort to extend probability sampling on a greater scale than was previously thought feasible. The other decision was to design a system for estimating the sampling error in the index. These two decisions underlay the procedures developed. The strong recommendations in the Review Committee's report gave support to the Bureau's efforts to make these improvements in sampling procedures. Following extensive discussion, and with the continuing advice of members of the Review Committee, a system of replicated samples was devised for the purpose of measuring sampling error.

The revision work included selecting revised samples of cities, items, and reporters. The use of probability methods in selection of the item sample was entirely new. Moreover, it was a key operation, which had to be completed before planning for the outlet samples, developing specifications, designing the scheme for weight

⁸⁴ The sixth city, Cincinnati, had been the pilot city surveyed in 1959. No new survey was undertaken.

derivation, and setting up index worksheets, manuals, and the like. Because of this, it was not possible to wait for the complete tabulation of expenditure data and it was necessary to base the selection of items to be priced on data from nine cities surveyed in 1960. Development of the sampling frame and experimental selection of items by probability methods commenced early in 1961, but the final selection was not made until September 1962.

Consideration of the problem of reporter samples began early in 1961. The general scheme for selection of samples was developed, sample sizes were determined, and basic listings from the Bureau of Old-Age and Survivors Insurance (BOASI) were in usable form by the summer of 1962; actual selection was undertaken after the list of items was finalized. This work continued almost to the end of the program.

Initiation of Pricing and Readjustment of Samples

Initiation of pricing of the revised samples in the field was a laborious operation. It was done very gradually, beginning in July 1962 for rent in 14 cities that were common to old and new indexes, extending to the most important items in a few cities and then to other cities and finally to probability items, as the list was finalized and specifications were developed. Several pricings were necessary to fill in gaps and to replace unproductive outlets. First pricing of the entire list of items was substantially completed by about May 1963. Many changes in the outlet samples which had been selected in Washington were found necessary in the field.

In a number of respects, the pricing procedures for the revised index were different from those used previously. The need for introducing new procedures and also continuing the old index simultaneously by old procedures proved burdensome. The principal changes were the pricing of items deviating from specification where necessary, and pricing in two different subsamples of outlets.

Price data collected for the first few periods were reviewed thoroughly and numerous adjustments of item and of outlet samples and of processing procedures were made as needed.

Derivation of Weights

Except for the original decision that the objective of the weight derivation was the best possible estimate of 1960-61 actual expenditures, little work on weight derivation was possible until the item sample and replication design was formulated and the final tabulations from the CES completed. Most of the work on this phase was concentrated in 6 or 8 months from the end of 1962 to the fall of 1963.

Calculation of Revised Index

Recurring calculation procedures for the revised index are much more complex and time consuming than for the old series because of separate processing of the replicated subsamples, and because of the inclusion of items deviating from specification in the measurement of price change. Very careful review of the tabulating and processing procedures was necessary to uncover unforeseen contingencies, to develop adjusting techniques where necessary, and to routinize editing procedures. Original plans optimistically called for 12 months of indexes during 1963, by which procedures would be tested, but late completion of weight derivation and initiation of pricing in the field forced a rather drastic curtailment in plans. Complete city and U.S. indexes were calculated for several months to make possible complete testing of the new mechanics and to make sure that all necessary instructions for clerical processing of new samples by new procedures had been formulated.

National price changes for major groups were computed for several months in the summer of 1963, as part of the testing; however, because so many estimating expedients were required the results were not considered an adequate test of the possible effect of the revision on price trend data. Beginning in the fall, major emphasis was placed on work necessary to publish the January revised index on schedule. Problems of linking the new samples to the old index at December 1963 were particularly complex and a thorough review of December-January price changes of old and new series was made city by city and group by group before the new January index was released on March 3, 1964. Simultaneous calculation of complete old and new series indexes was carried

on for January and the next 5 months of overlap calculation.

Addition of Six Large Cities

The extension of the Consumer Price Index program to six additional large cities arose out of discussions concerning the calculation and publication of indexes for individual cities. As

a matter of policy, it was decided that indexes would be published for all Standard Metropolitan Statistical Areas having a population of 1 million or more in 1960. Housing and expenditure surveys were conducted, outlet samples selected, pricing initiated, and weights derived by procedures similar to those for cities in the original sample.

Chapter III. Statistical and Conceptual Structure of the Revised Consumer Price Index*

Since the Consumer Price Index (CPI) was established, during World War I, it has undergone three major and several partial revisions, as described in chapter I. The recent revision, effective with publication of the January 1964 index, is the first to be initiated by the Bureau of Labor Statistics on the principle that review and revision should be a regular part of the index program. In contrast, previous major revisions were carried through at long intervals and after drastic changes in the economy raised questions about the validity of the index measurement of price change. The Bureau hopes to review and revise the index at approximately 10-year intervals. Of course, this does not rule out revision at shorter intervals, when economic changes have affected significantly the buying patterns of wage earners.

Despite many changes and improvements in statistical procedures, the revised CPI continues to be what it has always been—a measure of price change, and of price change only, in items purchased by urban wage and clerical workers for their own consumption. Major orientation of the index is toward use in collective bargaining and as a yardstick for measuring changes in real income of workers. The purpose of the CPI is still to measure the shifts in the purchasing power of the consumer's dollar or—in the other way it is often expressed—to measure changes in his cost of living, insofar as living costs are affected by price change.

Workers Covered

Expenditures by a cross section of wage-earner and clerical-worker consumers living in a representative selection of urban places provide the basis both for the selection of items to be priced for the revised CPI and for the

* Most of the material included in this chapter was published in "The Statistical Structure of the Revised CPI," *Monthly Labor Review*, August 1964, pp. 916-924.

weighting structure. Data collected in the 1960-61 Surveys of Consumer Expenditures³⁵ were tabulated for the CPI revision project for the group of families, or consumer units, classified as wage earners and clerical workers.³⁶

A family is considered within the scope of the CPI if 50 percent or more of its total income during the survey year came from wage and clerical occupations and if at least one member of the family unit worked for a minimum of 37 weeks of the year. In the old series, families were defined on the basis of the occupation of the head of the household only. The change was considered necessary because of the increasing importance of families with two or more workers and of family units whose household head was retired, but which had other working members.

In the 1964 revision, the index's population scope was expanded to include single workers living alone as independent consumers. This was done on the advice of labor and business advisory groups in order to make the index more representative of the total wage- and clerical-worker population with which collective bargaining is concerned.³⁷ At first it had been

³⁵ Surveys were conducted in 66 metropolitan areas and urban places located in the United States (including Hawaii and Alaska). The list of cities and the method of selection is described in chapter V.

³⁶ The definition of wage earners and clerical workers is based on the occupational classification used by the Bureau of the Census for the 1960 Census of Population and listed in the *Alphabetical Index of Occupations and Industries*. The group includes craftsmen, foremen, and kindred workers, such as carpenters, bookbinders, etc.; operatives and kindred workers, such as apprentices in the building trades, deliverymen, furnacemen, smelters, and pourers, etc.; clerical and kindred workers; service workers, except private household, such as waitresses, practical nurses, etc.; sales workers; and laborers, except farm and mine. It excludes professional, technical, and kindred workers, such as engineers and teachers; farmers and farm managers; managers, officials and proprietors, except farm; private household workers; and farm laborers and foremen.

³⁷ Urban wage earners and clerical workers and their families comprised 56 percent of the total urban population in 1960. Single workers living alone represented 10 percent of all urban wage- and clerical-worker consumer units to which the "new series" CPI applies. On an expenditure weight basis, however, the importance of single consumer units is only 6 percent of the composite index, because of the lower level of their expenditures.

expected that additional pricing would be inaugurated to give proper representation to items important in the single person budget, such as room rent, room and board, restaurant meals, and different qualities of other items. However, in some of these cases, there appeared to be no major difference between the types and qualities of goods and services bought by single consumers and families. In other cases, excessive costs of price collection precluded separate pricing. Therefore, no special pricing is carried out specifically for such single workers.

However, weights were computed separately for singles. This means that the weighting diagram for the composite index was affected to a small degree by the inclusion of singles. A parallel index, excluding single consumer units and based on weights for families of two or more persons, was calculated for the United States, but not for the individual cities, from January through November 1964. Because it was based on the same prices, and weights were only slightly different, it moved almost the same as the composite index during the 11 months. Therefore, it was discontinued after November because such minor differences did not justify the cost of calculation.

There is no income limitation in the new series CPI, as there had been in the old. Aside from generally higher income levels for occupations within the scope of the index, an income limitation was discarded because of the higher income per family unit resulting from the increased number of families with more than one worker, and greater precision in the occupational classification in the survey.

Geographic Coverage

A consumer unit had to be living within an urban place in order to be included in the urban portion of the Consumer Expenditure Survey for cities surveyed in 1960,³⁸ but the expenditures reported were not limited to that place. The BLS attempted to get a complete record of the family's expenditures during the survey year, regardless of where they were made. Similarly, there is no limitation in the measurement of price changes in the CPI to purchases in the home city. The index is intended to measure the price changes of items bought by urban

wage and clerical workers, regardless of where purchased.

There is, however, an operational limitation on pricing: BLS cannot follow consumers to all the places where they make their expenditures. The collection of price data for the CPI is centered upon 50 (or 56) sampling points—metropolitan areas and small urban places.³⁹ Indexes are published for each of the larger metropolitan areas separately, and with few exceptions, the data which go into these indexes are prices prevailing within the sample areas. For example, restaurant expenses and costs of operating automobiles, although they are often incurred away from home, are priced only in the CPI sample areas—not in resort or vacation areas.

In the new series CPI, several additional items are being priced to represent expenditures generally made away from home. Hotel and motel expenditures are represented by room rates, averaged on a regional basis, in the metropolitan areas of the CPI sample which in 1960 had a population of 250,000 and over. Hotels and motels in resort areas outside the big cities are excluded because of the prohibitive cost of such extended collection. Measurement of price change in college tuition fees is based on data from independent regional samples, since it has been possible to use an annual survey conducted by the Office of Education. As in the case of hotels and motels, the data are averaged over a region in computing city price relatives for this item.

Changes in living expenses or buying patterns of the index population, as a whole, traceable to the movement of population, for example, from suburbs to central cities, from one part of the country to another, etc., are treated as non-price factors in the index.⁴⁰ Such migrations are prevented from affecting the measurement of price change by the assignment of fixed population weights to each area sampling center and by the method of collecting price data.

The Expenditures Scope

Since the CPI measures price changes corresponding to all spending for family living, the weight and price data run the gamut from bread and butter to television and bowling fees, from

³⁸ The 1961 surveys were extended to rural areas.

³⁹ The selection of sampling places is described in chapter V.

⁴⁰ Costs of moving are, in concept, within the scope of the index.

prenatal and obstetrics services to funeral expenditures, from popular paperback books to college textbooks. The CPI is not, and never has been, limited to price changes of so-called necessities. Because it has been related particularly to wage earners and clerical workers, the all-inclusive item coverage was not as evident in its earlier history, but the growing importance in wage-earner budgets of automobiles, amusements, recreational services, and the like has been reflected in the composition of the index since 1940 and particularly in the current index.

Weights computed from Consumer Expenditure data of 1960 and 1961 were introduced in the CPI in January 1964. They are intended to represent average annual expenditures per consumer unit for the urban wage-earner and clerical-worker population.⁴¹ As in the past, they reflect experience of renters and of homeowners; of car owners and of carless families; of families with many children, and of childless couples. For the first time the index weights also reflect expenditure patterns of single consumers living alone.

The scope of the expenditure weights corresponds exactly to the price measurement scope of the CPI. Thus, the expenditure weights include all taxes directly associated with them—for example, sales and excise taxes—and so do the price data collected for the CPI. Similarly, taxes or government fees associated with particular purchases, properties, or services related to family living (for example, transfer taxes, property taxes on owner-occupied dwellings, car registration fees, and water and sewerage fees) are within the scope of the CPI. Income taxes, however, are excluded as not being related to the purchase or continued ownership of consumer goods and services.⁴²

Among the questions to be resolved in considering the scope of the weights is whether an expenditure is for current family living or for investment. In the 1953 revision of the CPI,

⁴¹ The average expenditure weights referred to above are computed on an annual total basis, ignoring the fact that some items have a fluctuating pattern of seasonal consumption—or, in fact, may disappear from the market entirely during certain periods of the year. For a full discussion of this problem, see "Use of Varying Seasonal Weights in Price Index Construction," by Doris P. Rothwell, in the *Journal of the American Statistical Association*, March 1958, pp. 66-77.

⁴² Thus, in effect, the scope of the CPI corresponds to disposable income as used in the national income accounts, except that some additional tax payments to government are netted out in the latter, e.g., motor vehicle license fees.

it was decided to treat home purchases as purchases for consumption rather than as investments and this decision was reaffirmed in the 1964 revision. Thus, the CPI weights and pricing system include the purchase prices of such long-lasting items as houses and cars, even though the consumer will not consume these items completely for many years. This contrasts with the "space rental" approach for measuring the value of owner-occupied housing in the national income accounts and the proposals sometimes made that cars and other durables be priced for the CPI on a "use value" basis.

Since an expenditure is considered consummated when the obligation is incurred, rather than when the payment is made, the total purchase price is included even when houses and durable goods have been bought on mortgage or installment credit. The effect of this treatment is qualified by the fact that weights for the more expensive durable goods such as houses and cars are taken net of trade-in offsets or of sales receipts of corresponding items. Sales are not netted against purchases for the index population as a whole—but only where there is a purchase and a sale by the same consumer unit simultaneously, or almost simultaneously—i.e., during the year for which expenditures were surveyed. Thus, the index weights correspond closely to net outlays or obligations, and price changes in these components affect the index measurement of purchasing power in a realistic manner.

The fact that in both the weight regimen and in measurement of price change a transaction is considered consummated for purposes of the CPI when the obligation is incurred, raises the question of treatment of credit. All costs, including credit, associated with installment purchases are within the scope of the CPI. However, it is difficult to determine exactly how to measure these costs for weight derivation, and how to price them on a current basis. In the CPI, as it has operated over the last decade (and this remains unchanged), mortgage interest has been included in both the weighting structure and in price collection. The total cost of interest contracted for has been included in expenditure weights of other items bought on the installment basis, but the Bureau has not yet introduced techniques for pricing separately the cost of these credit services.

Although there is general agreement that writing of life insurance represents a service to the consumer that is within the scope of the CPI, problems prevent this service from being included in the weights or the pricing plan. The major part of life insurance premiums represents a form of investment that should be excluded. The difficulty is to devise a method for partitioning premiums into a consumption portion (the service or protection part of the plan) which should be within the scope of CPI, and an investment portion which must be ignored, and to be able to repeat this division periodically to measure price change in the consumption portion.

Other forms of insurance (e.g., property, car, and medical) are included in the weights and are priced for the CPI by one technique or another. In these cases, the major difficulty is in establishing prices for policies of constant benefits, as provisions of policies change and as the current dollar value of benefits changes with prices. This is a variant of the more general problem of quality change which pervades the entire price index field.

Since it is related to expenditures, the CPI does not reflect noncash consumption. Food grown at home, fringe benefits received as part of a job, services supplied by government agencies without payment of a special tax or fee, and so on, are not priced. These exclusions can affect the interpretation of the index when the relative importances of these noncash consumption items change over time in relation to cash outlays. Medical care, for which employers in recent years have assumed an increased portion of the expense, is an important example. The accuracy of a fixed-weight price index for medical care, as a measure of cash outlays required for medical care by the index population as a whole, is affected by changes in the employer share of medical costs.

Index Formula

In concept, the CPI is computed by comparing, at different periods, costs of a fixed set of goods representative of all purchases made by urban wage and clerical workers. This is popularly called a "market basket" index; technically, it is a price index with "fixed" or "constant" weights.

The CPI procedure is to measure price change by repricing at regular time intervals and comparing aggregate costs of the goods and services bought by consumers in a selected base period. Mathematically such an index takes the form:

$$I_i = \left[\frac{\sum (p_i q_a)}{\sum (p_o q_a)} \right] \times 100 \quad (1)$$

where i is the current month

- a is the period of the most recent expenditure survey (1960-61) from which current weights were derived
- o is the reference base period of the index (most recently 1957-59)
- q is a derived composite of the annual quantities purchased in a weight base period for a bundle of goods and services to be represented by the specific item priced
- p is the average price of a specific commodity or service selected for pricing

The quantity elements, q_a , of the above aggregative formula are considered to be defined in sufficient detail with respect to quality and variety that explicit prices can be attached to them at both time periods. Thus, the index for period "i" with respect to period "o" taken as 100, I_i represents the ratio (multiplied by 100) of aggregate costs of the same items priced in both periods. A good part of the problem of index numbers is in defining what "same" means, first in theory, and then in practice.

In actual operations, formula (1) is replaced by its algebraic equivalent, the dollar weighted average of price relatives:

$$I_i = \left[\frac{\sum (p_o q_a) (p_i / p_o)}{\sum (p_o q_a)} \right] \times 100 \quad (2)$$

The dollar weights are the expenditures required in prices of the reference period "o" to purchase each component of the weighting pattern relating to period "a". If the weighting pattern is derived from the same period used as the time reference base, formulas (1) and (2) reduce to the Laspeyres, or base weighted, formulas.

An equivalent but more convenient procedure is to average period-to-period price relatives⁴³

⁴³ Price relatives are computed for all individual items, separately by city, and take the form $(P_i/P_o - 1)$. This is the average price for an item from one period divided by the average price from the preceding period.

for individual items of the market basket, according to the formula given in appendix table III. The computation of the index is a chaining procedure in which the index for the previous month is multiplied by the average relative change in price from the previous month to the current month. Computing the price change on a month-to-month basis makes it easier to accommodate changes in the sample of items and specifications priced as market conditions change—a continuing process in the new, as in the old, CPI. Such changes would be unavoidable even if the BLS desired—which it does not—to maintain an inflexible sample of priced items between periodic major revisions of the CPI.

The quantity weights and initially, the expenditure weights, of the revised CPI related to the period represented by the expenditure surveys, 1960 and 1961. However, before introducing the revised expenditure weights into the CPI, the data were revalued at December 1963 prices, when the new series CPI was linked to the former series.⁴⁴ The December 1963 link-in weights for the new series were used with the item price relatives from December 1963 to January 1964, to obtain the average change for all items. The December 1963 old series index multiplied by this average change produced the new January 1964 index.

As the chaining process is repeated each month, the expenditure weights are automatically kept on a current price basis. When translated to percentages, the revalued weights are called “relative importances.” For example, in calculating the June 1964 index, the relative importances (in effect, the weights) for the May to June CPI change were the December 1963 expenditure weights revalued at May 1964 price levels.

As the preceding illustration emphasizes, relative importances for month-to-month comparisons change with prices, but the expenditure weights for comparing a current period with the link-in date do not change.

The CPI chain-computation formula does not result in a true chain index, except in the sense of one with rather long periods between the links, i.e., when the major weight revisions are

⁴⁴ These adjustments were made on the basis of rather broad groups or categories of items. Only in the case of very important individual items were price trends of items used separately.

made. In the CPI chain computation procedure, prices of comparable items are compared from one period to the next. However, when substitutions are made, the substitute price relatives are used with the weights for the items which they replace. In a true chain index, each price comparison would involve a new compilation of weights—and a new sampling of items to be priced to take account of changes in purchasing patterns of the index population.

The CPI is sometimes referred to as a modified Laspeyres index in the sense that the weights refer back to some earlier period. The CPI is not, however, precisely a Laspeyres index, since the Laspeyres approach requires that the quantity weights relate to the period with which price comparisons are being made.⁴⁵

Constant Expenditure Weights

In the recent revision, the BLS modified the ground rules underlying the CPI to take partial advantage of the flexibility of the chain index approach, while retaining the virtues of a fixed-weight index. As the first step in organizing the 1960–61 consumer expenditures data, a classification system was developed to allocate each consumer outlay into 1 of 52 expenditure classes (which later became the strata for selecting the sample of items for pricing).

Until the next major CPI revision—barring some emergency—the BLS expects to maintain constant the base period weight relationships of the expenditure classes. In current dollar terms, the relative importances of the classes will change as prices change.

The BLS may, however, choose a new sample of items within any of the expenditure classes for pricing in the current CPI, whenever there has been a significant shift in the composition of consumer expenditures within the category. This could occur when new products or new services within the group come into the market in significant dollar volume. Thus, if the BLS has access to data which show that patterns of spending within an expenditure class have

⁴⁵ The time reference base for all Government index series is established by the Office of Statistical Standards, Bureau of the Budget. Currently, it is the average of the years 1957 through 1959. The CPI weights relate neither to the 1957–59 period, nor to the December 1963 link-in date; therefore, index comparisons against either of these periods are not true Laspeyres comparisons. While the revised weights refer back to 1960–61, price comparisons against that period are not of the Laspeyres type either, inasmuch as the old series index, which carries through December 1963, is a necessary part of such comparisons.

changed significantly, it will be free to bring new items into the sample of items priced for the CPI when they become significant, or to reweight within an expenditure class the items formerly priced. If this action is warranted, the BLS can select a completely new and independent sample of items to represent the particular class. Changes in the sample or internal weights within an expenditure class would be introduced by a linking process, so that the changes would not affect the index level.

In the former application of the market basket approach, the pattern and level of living of the weight base period was effectively defined as a group of specific items selected for index pricing, and their associated expenditure weights. Since the price index was intended to hold the level and pattern of living constant, this operational definition led to relative inflexibility in the item sample. The new approach outlined above emphasizes that the market basket of items priced for the CPI has significance only as a sample representative of all consumer expenditures; nothing more. When segments of the sample cease to be representative, they may

be changed by a systematic procedure built into the index framework.

In the current index, the level and pattern of living of the base year to be held constant in index comparisons is effectively defined in terms of the weight base period (1960-61) dollars which consumers spent on each expenditure class relative to each other expenditure class. Thus, if the base period dollars are interpreted as quantity units,⁴⁶ it can be said that the quantities in the index system which are being held constant are the base period dollar aggregates spent for each expenditure class. Whether or not there is more than a semantic difference between the new approach and the old will depend upon the availability of reliable data to judge whether the pattern of spending has changed sufficiently for it to be desirable to make broad adjustments of the sample of weights within expenditure classes.⁴⁷

⁴⁶ The current period price corresponding to a base period dollar quantity unit is identical with the price relative, i.e., the ratio of the current price to the base period price.

⁴⁷ The BLS had hoped for a program of annual expenditure surveys which would have served this purpose, but plans for this have not developed. Unless satisfactory data are available from secondary sources, the plan to make periodic adjustments of the item samples cannot be implemented.

Chapter IV. Sampling Aspects of the 1964 Revision*

It is axiomatic that any large complicated index such as the Consumer Price Index (CPI) for the United States must be based on a whole complex of samples. A sample of cities or areas is required, and within each area a sample of urban families or consumer units, from whom consumer expenditures are obtained. These consumption data provide the weights by which price changes in the components of the CPI are combined to higher levels. There must also be a sample of areas in which to collect prices and it is usually convenient, but not essential, that these sampling points be the same as those in which the consumer expenditures surveys are conducted.

Further, since it is impossible to price all the thousands of items which consumers buy, it is necessary to select a sample of items for pricing, to represent price movement of all items. There must also be samples of outlets, in each sampling area, from which price quotations are obtained for the selected items. Finally, pricing in any one store is done on a specific day at monthly or quarterly intervals so there is, in effect, a sampling of time.

Any sampling plan should be related to a particular goal. In the case of the CPI, the primary objective is to produce the most accurate national index possible but, at the same time, the index system is expected to produce accurate indexes for large metropolitan areas and for the major components of expenditures separately. With the experience of many years in this field of work, the BLS knows that in order to satisfy users it must also provide data at the item level—both average prices and indexes of price change. All of this, plus the fact that the price index is based on an aggregation of dissimilar components which do not comprise any previously defined composite of goods and services, leads to a very complex sampling design, or rather a set of sampling designs.

*Most of the material in this chapter was included in an unpublished paper, "Sampling Aspects of the Revised CPI," by Marvin Wilkerson.

Probability Sampling

As mentioned in chapter II, in the 1964 revision the BLS placed emphasis on the extension of probability sampling. However, such methods were by no means new to the CPI. The samples of consumer units in the CES traditionally have been selected by probability methods. So have the samples of rental dwellings used to price rent. From time to time as opportunities presented themselves, probability sampling was adopted in other phases of the CPI: in the selection of samples of doctors, samples of properties for measuring property taxes, samples of lending institutions for use in measuring mortgage interest rates, etc.

In other areas, however (particularly in the sampling of items), no comprehensive attempt to use such methods had been made prior to the 1964 revision. This appears to have been the case in most other countries as well, and there are good reasons for this situation. One of the greatest obstacles in the sampling of items is the difficulty of constructing a meaningful sampling frame. Samples in a price index are not used for a single point in time but must serve for possibly 10 years. Under the circumstances, informed judgments, based on consideration of all the relevant information available, has usually been preferred as a sounder method of selecting a sample than some random method, even though the former cannot conceptually be called an unbiased procedure.

Samples of outlets, except possibly for food, are typically small (4 to 8 stores per city in most cases) and the task of attempting to represent adequately all the possible types of outlets through a probability sample has usually not appeared feasible. This has been expressed by a leading price statistician of India as follows: ". . . it is usually possible to cover only a very small sample of outlets for any one specification. With the smallness of the sample size, a representative probability sample including all types and sizes of outlets often becomes impractical." ⁴⁸

⁴⁸ A. Basu, "Consumer Price Index Numbers—Sampling Problems in Prices," *Indian Labour Journal*, Delhi, June 1960, pp. 582-588.

Despite these well-known difficulties, however, the BLS decided, in the 1964 revision, to attempt extension of probability sampling as far as possible. The degree to which this objective was achieved and the operating methods employed are described in detail in the ensuing subject matter chapters. The major technical considerations are summarized here.

Estimating Sampling Error

Probability sampling is a necessity if estimates of sampling error are to be derived in a conventional manner. However, it is apparent that even if probability sampling could be followed rigorously through all the complicated CPI structure, the mere computational load would be so extensive that it would be impractical to compute measures of error except by some "simple" approach.

Such methods have been used increasingly in other series in recent years under such titles as "interpenetrating samples," "random groups," "replicated samples," "ultimate clusters," etc. While the BLS was still exploring the possibilities of such methods, an outline of a replicated sample design, in a staff paper⁴⁹ prepared for the Price Statistics Review Committee, became available and it was used as the starting point.⁵⁰

The BLS sample design includes two samples of cities (or standard Metropolitan Statistical Areas), two replicated item samples, and two replicated outlet samples. In addition to the minimum program, designed to produce an estimate of the combined sampling error in the index, the structure includes more extended replication in selected cities, aimed at permitting some evaluation of the components of the error—those due to sampling of cities, items, and outlets. (It is hoped that this knowledge of error components will be helpful in future decisions related to utilization of resources.) A more detailed outline of the replication model is given in a separate section at the end of this chapter.

The design of city samples, consumer unit samples, item samples, and outlet samples is discussed in detail in subject matter chapters V, VI, VII, and VIII, respectively. Only brief summaries will be given here.

⁴⁹ See *Government Price Statistics, Sampling Considerations in the Construction of Price Indexes with Particular Reference to the United States Consumer Price Index* by Philip J. McCarthy, pt. 1, Jan. 24, 1961, pp. 197-232.

⁵⁰ Professor McCarthy later served as a consultant to the BLS in expanding and adapting his original outline.

City Sample

The CPI sample is customarily referred to as the "city" sample and the selected localities as "cities," even though the sample consists of the urban portions of Standard Metropolitan Statistical Areas (SMSA's) and urban places outside SMSA's. This is due partly to historical usage dating from earlier periods when CPI price data were collected in large cities only; also, the term "city" tends to emphasize the urban coverage of the index. The term is used in this context throughout this bulletin.

A core sample of 50 cities for the revised index, supplemented by 16 additional small nonmetropolitan urban places for the family expenditure surveys, was determined to be the maximum size consistent with available budget. The primary sampling units (PSU's) were Standard Metropolitan Statistical Areas as defined by the Bureau of the Budget prior to the 1960 Census, except that the Standard Consolidated Areas for New York and Chicago were used, plus individual urban places outside the SMSA's. The measure of size used was estimated urban population as of January 1, 1959. The PSU's were stratified by broad region and by size into 12 regional-size strata. The 12 largest SMSA's were selected with certainty, that is, they represent themselves in the sample design. These areas each had a 1960 population of over 1,400,000. Since both Alaska and Hawaii were covered in the revised CPI, one sample selection was allocated to each of these two States. The remaining 36 selections were allocated to the 12 regional-size strata on the basis of their relative population and the relative costs of pricing cities of different sizes.

The exact method of selection was a matter of considerable study and experimentation. The method finally used was one that is generally known as "controlled selection."⁵¹ The procedure is discussed in chapter V.

After the initial 50-area sample was selected, the Bureau received funds to conduct expenditure surveys and prepare city indexes for six additional large SMS'As (having over 1 million population in 1960). These areas were planned for addition to the national index in January 1966.

⁵¹ Described by Roe Goodman and Leslie Kish in the September 1950 issue of the *Journal of the American Statistical Association*, pp. 350-372.

Samples of Consumer Units

The samples of consumer units used for the Consumer Expenditure Surveys covering the 2 years, 1960 and 1961, were drawn through a two-stage random sampling procedure. Comprehensive Housing Unit Surveys (CHUS) were conducted in each sample area late in the year preceding the actual survey date. The CES samples of addresses were chosen as subsamples of the housing units enumerated in the CHUS. The sampling procedure is described in chapter VI, "Housing and Expenditure Surveys."

Classification System and Item Sample

As the first step in selecting the item sample for the revised index, a classification system was developed to provide a logical publication framework containing the traditional major expenditure groups, subgroups, etc. In a broader sense, one of its basic functions was to divide the thousands of goods and services purchased by consumers into meaningful and manageable components of the universe. It provided the framework for the selection of the item sample and for the derivation of index weights.

Two levels of the classification system were of critical importance. These were: (1) the item level, and (2) the level which defined the finest stratification for the item sampling; that is, the strata to which allocations of items were made and within which probability samples of items were selected. The term "expenditure class" (EC) was given to this level.

The expenditure class was also conceived of as the level at which base period expenditure weights will be held constant until the next major revision of the CPI. The Bureau reserves the right to resample items within an EC between major revisions if circumstances warrant. This minimizes the importance attached to the sample of items priced for the CPI, and emphasizes that the priced items have significance only as a sample of items selected to represent price movement of all items.

The definition of the items was given a great deal of thought and discussion. The list of line items in the schedule (that is, items for which separate family expenditures were obtained), used in the Consumer Expenditure Surveys in 1960 and 1961, provided a logical starting point. To some extent the existence of this list and the fact that

expenditure data were available from the CES surveys for these line items provided a limit on the detail in which the items could be listed for sampling purposes.

It was realized from the start that the definition of an "item" would have to be fairly broad and that it was not feasible to list the final "specified-in-detail" items for which prices are collected. The following general rules were set up as guidelines: (a) the item should not be so broad as to leave most of the sampling operation in the judgment area of selecting and defining specifications; (b) the item should not be so narrowly defined, however, that its definition unduly restricts the selection and maintenance of specifications for pricing; (c) the items should be as consistent as circumstances permit in the degree of homogeneity of the subitems included; and (d) to be of use for sampling purposes, it should be possible to obtain or derive some measure of the relative importance in total family spending for each item listed.

The item sampling procedure is described in greater detail in chapter VII, "Weighting Structure of the CPI, 1964."

Outlet Sampling

The first big problem encountered in probability sampling of outlets from which prices are obtained was to obtain information about the universe of retail and service establishments in a given area. Ideally, it would have been desirable to have names and addresses of such places, information as to type of store or outlet, some indication of volume of sales, and preferably (although this is usually unavailable without a personal contact) fairly specific information as to types of merchandise carried.

A number of possible sources of comprehensive establishment data were investigated. The only one which proved fruitful was a master list of firms which report to the Bureau of Old-Age and Survivors Insurance (BOASI—Social Security Administration, U.S. Department of Health, Education, and Welfare). The identification codes in the BOASI file did not permit selection by individual city or SMSA, however, and it was necessary to start with data assembled by the BOASI, and by the Bureau of the Census for its publication, *County Business Patterns*.

Using sampling ratios furnished by the BLS, master samples of retail and service outlets were selected within the counties embracing the sample

areas. These selections proved useful but needed considerable supplementation by rosters, grocery route lists, telephone directories, etc.

In the larger SMSA's, a sample of neighborhood and suburban localities and shopping centers were selected in which pricing was to be done, as well as in downtown areas.⁵² These were usually selected with probability proportional to sales volume, using the best available sales data. The listings of outlets were limited to those falling within the sampled areas.

Although the geographic coverage of the CPI, insofar as place of residence is concerned, is limited to urban areas, this limitation does not apply to price collection. It is pertinent to price wherever urban families shop. While practical considerations limit pricing to the vicinity of the 50 (or 56) sample areas (except for a few items like college tuition and hotel and motel rates), important shopping centers are included in some cases even though they are located outside urban boundaries. In a few small cities it is necessary to go to nearby towns to secure price quotations.

All the various sources were used to develop a sampling frame for selecting samples of outlets. The frame was organized by specific type of outlet; for example, department stores, men's clothing stores, family shoe stores, etc. Each priced item, in effect, required a separate sampling operation. It was not feasible, from a cost standpoint, to select each of these samples independently, since this could well have spread the pricing over an excessive number of different outlets with a very few quotations obtained from any one outlet.

Selection with probability proportional to size was not possible in all cases and many replacements of original selections proved necessary. Most replacements were made because the stores did not carry any of the items BLS was attempting to price or because they refused to cooperate in reporting prices. Whenever possible, replacements were selected by the Washington office from the original sampling lists. By the time the final complete outlet samples were established, so many expedients may have been used that no claim can be made for strict probability samples. However, the approach is within a probability framework

⁵² For example, in the Los Angeles-Long Beach SMSA, four "major retail centers" were selected within the city of Los Angeles (in addition to the central business district) from 28 such centers defined for the 1958 Census of Business. These are known as "Hollywood and Vine," "Crenshaw Center," "Miracle Mile," and the "Valley" area. Outside Los Angeles proper, 7 cities out of a total of 70 were selected for pricing: Long Beach, Anaheim, Beverly Hills, Montebello, Pasadena, South Gate, and West Covina.

and it is believed that many of the main benefits of probability sampling have been achieved: Lack of bias, representation of different types of outlets, sections of each SMSA, etc. Procedures used are described in chapter VIII, "Outlet Samples, 1964 Index."

The Replication Design in the CPI

Computing a sampling error by a standard formula requires probability sampling. The computation gives a measure of the dispersion that can be expected among many estimates made by repeatedly sampling the same universe, using the same sample design and estimating procedures, and in which the variation is due only to the chance differences in the particular cities, firms, families, individuals, etc., which happen to fall into the various samples. This error estimate is derived from the basic variances in the universe and the formula appropriate to the sample design, and can normally be computed satisfactorily from the results of a single sample even though it pertains to a whole universe of sample estimates.

The replication approach is an empirical, rather than a theoretical, one. Repeated samples are chosen and the variability among the sample results is observed and a measure of sampling error is derived. The sampler, in effect, generates a distribution of sample results by the repeated application of a sampling and estimating procedure and computes its variance. It is not even necessary that the sampling be done by probability methods as long as all the samples are selected by the same general procedure so that they can realistically be regarded as "replicates."

A limitation of the replication approach for such a complicated operation as the CPI is that the maximum number of replications which is practical is two (that is, two item samples, two outlet samples, and two city samples). A greater number would, of course, give better estimates of sampling error. However, methods of cumulating data across geographic strata and across commodity groups to achieve more stable variance estimates for the all items CPI are described below.

In order that any replicated sample approach may reflect the error contribution from different sources, the variation due to these sources must be built into the model; that is, they must be replicated. The CPI model includes the replication of cities, of item samples, and outlet samples.

Efforts might have been made to include the effects of other sampling operations, for example, selection of specifications and derivation of the index weights from samples of consumers. Replication of index weights did not appear practical; in any event, it is felt that the effect of different index weights is minor compared to the variation introduced by other factors.

Although replication of specifications was not carried systematically throughout the design, a certain amount is included. Where different items appear in sample "1" and sample "2," any comparison of price trends between the two samples necessarily includes both the effect of sampling of items and of specifications. For those items which appear in both samples, a planned system of replicated specifications was used in only a few selected items.⁵³ In most cases the same specification is priced for both item samples. However, there are many alternate specifications, city deviations, outlet deviation, etc., so that it is by no means true that the identical specification is priced in all cities for all items.

As pointed out earlier, the city sample design did not explicitly include any provision for replicated city samples. An ex post facto pairing of CPI sample cities is used to simulate the selection of two cities from each stratum. (This is somewhat analogous to the practice of "collapsing" strata for the purpose of computing variances.)

The pairings were made by associating cities which most logically could be considered to be in adjoining "strata." There is no logical pairing for two areas, Green Bay and Bakersfield, so these are paired with Cedar Rapids and Austin for purposes of variance computation. Following are the pairing of cities for replication computations:

Stratum	Paired SMSA's or cities	
"B"	(1)	(2)
	Hartford, Conn.	[Buffalo, N.Y.] ¹
	*Dayton, Ohio	*Buffalo, N.Y.
	[Dayton, Ohio] ¹	Indianapolis, Ind.
	*Atlanta, Ga.	*Dallas, Tex.
	[Atlanta, Ga.] ¹	Nashville, Tenn.
	*Denver, Colo.	*Wichita, Kans.
	[*Denver, Colo.]	*Seattle, Wash.
	"C"	Portland, Maine
	Lancaster, Pa.	*Cedar Rapids, Iowa
*Champaign-Urbana, Ill.	[Cedar Rapids, Iowa] ¹	
Green Bay, Wis.	*Orlando, Fla.	
*Durham, N.C.	Baton Rouge, La.	
Austin, Tex.	Bakersfield, Calif.	
[Austin, Tex.]		

⁵³ Examples of items for which different specifications are priced in the two item samples are: steak, new automobiles, dentists' fees, sports equipment, and cigarettes.

Stratum	Paired SMSA's or cities	
"D"	Southbridge, Mass.	Kingston, N.Y.
	Findlay, Ohio	Millville, N.J.
	Niles, Mich.	Logansport, Ind.
	Crookston, Minn.	Devils Lake, N. Dak.
	Union, S.C.	Martinsville, Va.
	Florence, Ala.	Vicksburg, Miss.
	Mangum, Okla.	McAllen, Tex.
	Klamath Falls, Oreg.	Orem, Utah

*Cities having the extended replication program.

¹ Half-sample only used for bracketed city (except for the "Food at home" group in the "B" size stratum), since paired city has minimum replication only.

Each city in col. (1) paired with opposite city in col. (2). [] City in brackets is used in special pairing to compute variance estimates for other city in pair.

Minimum Replication Model

		City	
		X	Y
Item Sample	c ₁	\bar{R}_X	
	c ₂		\bar{R}_Y

The two replicated item samples are described in chapter VII. In the minimum replication program, one of these samples, c₁, is priced in one city of a pair and the other sample, c₂, is priced in the second city. (See diagram.) Using these different item samples (and, of course, outlet samples), indexes are computed for some time period, t, for the two cities: call these indexes $\bar{R}_X^{(t)}$ and $\bar{R}_Y^{(t)}$. (For simplicity, the time notation will be omitted hereafter.) An estimate of the within-stratum variance can be made by a comparison of \bar{R}_X and \bar{R}_Y , and this estimate will be influenced by the sampling of items, and the sampling of retail outlets within cities that is, the effects of these sampling operations have been built into the replication procedure. The stratum variance for stratum i based on these observations reduces to

$$\sigma_i^2 = \frac{(\bar{R}_X - \bar{R}_Y)^2}{2} \quad (1)$$

Although strata have been collapsed in order to estimate between-city variances, it is assumed in computing the United States sampling error that one city has been drawn from each stratum and the computed variance is used for both city X and city Y. (Since a sample of one is used for each stratum, the above estimate of the population

between-city variance is the appropriate quantity.)

The 12 largest SMSA's, or "A" cities, selected with certainty represent only themselves; hence their contribution arises entirely from within-city variation. In such "A" stratum city for the minimum program, both item samples must be priced, each in its own outlet sample.

As before, two indexes are computed, one for each item sample. A variance computed from these values will be an estimate of the variance among indexes based on "half-samples." However, the city index is based on an average of two such half-samples, so its variance (in the i -th city) is

		Outlet sample	
		O_A	O_B
Item Sample	c_1	R_A	
	c_2		R_B

$$\sigma_1^2 = \frac{(R_A - R_B)^2}{2} \quad (2)$$

(The standard deviation, σ_1 , for the individual city index becomes simply

$$\sigma_1 = \frac{(R_A - R_B)}{2} \quad (3)$$

Honolulu and Anchorage, the cities representing Hawaii and Alaska respectively, are handled as special cases. Both item samples are priced in Honolulu and the within-city variance computed as in an "A" stratum city. Since the Honolulu SMSA includes about 90 percent of Hawaii's urban population, the between-city variance is ignored. No reasonable pairing is available for Anchorage, and since the December 1963 relative weight for Alaska in the CPI is less than 0.1 percent, Anchorage has been omitted from the error computation.

If w_i where $\sum w_i = 1$ is the weight, or relative importance, of each stratum represented by a

CPI city, then the sampling variance of the U.S. index can be written:

$$\sigma_R^2 = \sum w_i^2 \sigma_i^2 \quad (4)$$

where the stratum variances are computed as outlined above. This formula will apply for the all-items index or for indexes for major groups, subgroups, or for any more detailed components.

The all-items index variance can be computed also by regarding the major groups as strata and appropriately combining the group variances. This procedure is valid if the major group indexes are independent estimates. Since there is little overlap in the outlet samples between food, housing, apparel, etc., the assumption of independence seems reasonable and this approach is used with nine major groups. These are "Food at Home," "Food Away from Home," "Housing," "Apparel," "Transportation," "Medical Care," "Personal Care," "Reading and Recreation," and "Other Goods and Services." ("Food Away from Home" is handled separately from "Food at Home" because the replication patterns are different.)

The assumption of independence cannot be carried indefinitely down to successively more detailed subgroups, EC's, etc. (the first 15 EC's, for example, are largely priced in the same stores), but it may be possible to set up more strata as the computation procedures are tested and refined. For example, although home purchase and rents are individual "items," their price measures are derived from samples which are unique to these items. Since they are quite important in themselves, it may be deemed desirable to consider them as separate strata.

Extended Replication

The above discussion outlines the minimum replication program which produces estimates of the combined error of the U.S. all-items or group indexes. It does not provide estimates of the components of this error, that is, the contribution due to sampling of cities, of items, and outlets. A somewhat more elaborate replication program, which permits estimates of these components through a simple analysis of variance, is used in a portion of the CPI sample cities. The information obtained from these selected cities may be sufficient to allow a rough partitioning of the combined sample variance of the U.S. index into its component parts.

The extended replication of the noncertainty cities is shown in the following diagram:

	City		
	X	Y	
Item Sample	c_1	R_{1A}	R_{1B}
	c_2	R_{2A}	R_{2B}

In this model, both item samples are priced in each city and each item sample is priced in different outlet samples. For each collapsed stratum, four indexes are computed. From these four values, estimates are computed of the variance due to the sampling of cities (σ_c^2), that due to sampling of commodities (σ_e^2), and a residual (σ_s^2) which is a combination of the variance due to sampling of retail outlets and to random error. The variance of the collapsed stratum index, \bar{R} , can be expressed in terms of these three components:

$$\sigma_{\bar{R}}^2 = \frac{\sigma_c^2}{2} + \frac{\sigma_e^2}{2} + \frac{\sigma_s^2}{4} \quad (5)$$

However, since the previously outlined method of combining across strata to the United States level assumes that each city represents a stratum, the variance above (appropriate to a sample of two cities from a collapsed stratum) is only half as large as that needed. The "single stratum" variance can thus be computed by the formula:

$$\sigma_1^2 = \sigma_c^2 + \sigma_e^2 + \frac{\sigma_s^2}{2} \quad (6)$$

The extended replication is used in seven stratum "B" cities for nonfood items and two pairs of stratum "C" cities. No extended replication is done in the "D" stratum.

Choosing pairs of "B" cities for extended replication was complicated by the cycles on which pricing is done. In all "B" cities, pricing is done once each quarter (except for food and a few other items which are priced monthly). The primary criterion in assignment of cities to pricing cycles is attainment of a well distributed sample in each month. It happens that no pair of "B" cities chosen for replication fall into the same pricing cycle.

For the computation of the overall error of the CPI, this is not of major importance. However,

the primary purpose of the extended replication is to obtain information on the components of variance and it becomes more important in this respect to avoid introducing the extraneous factor of different pricing months. This is particularly true in dealing with short-term price change. Instead of arbitrarily switching cities to put paired "B" cities on the same cycle, two auxiliary pairs of "B" cities have been set up for extended replication: Buffalo-Dayton and Wichita-Denver. Although both these pairs cross region lines, they are otherwise quite reasonable pairings.

Furthermore, after this design was established, plans were made for publication of individual city indexes for all cities having a million or more population in 1960. Adequate city indexes require pricing of both item samples. Therefore, pricing in all published "B" cities is at the extended replication level. In order to estimate variances for all seven "B" areas with the more extensive replication, some cities are used in two different pairings; once to estimate variances for themselves and again to estimate for the "orphaned" member of an original pair. For example, the special pairing of Buffalo and Dayton, both having the extended replication, is being used to estimate variances for these two areas. In separate computations a "half sample" (that is, a single item and outlet sample) in Buffalo is used to compute the variance contribution for Hartford, and a half sample in Dayton is used to estimate the variance contribution for Indianapolis.

For food items the extended replication is used in all "B" cities. The reason for this exception is as follows. For nonfood items, where the usual outlet sample size is 4, the extended replication almost requires doubling the amount of pricing since it does not appear feasible to reduce the basic sample size below four quotations. Since the food store samples are larger, each replicated outlet sample, in cities with the extended program, need not be full size. Under the extended replication program, both food item samples would have been priced in selected "B" cities, each in samples of about 15 independent food stores, whereas in the remaining "B" cities having the minimum program a single sample of items would be priced, but in a sample of 30 independent stores. Since the total number of quotations would have been about the same in both cases, the extended replication is used for food in all "B" cities, that is, both item samples are priced but in different samples of outlets.

In the "C" stratum, the more elaborate replication program is applied only in two selected pairs of cities for food as well as other items. In the four selected "C" cities, the two samples of independent food stores in each city have five outlets each. In the six other "C" cities, the single sample per city has 10 outlets.

The extended replication in selected A (certainty) cities is outlined below. Both item samples, c_1 , and c_2 , are priced across both outlets samples, o_A and o_B .

Item Sample	Outlet Sample	
	o_A	o_B
c_1	R_{1A}	R_{1B}
c_2	R_{2A}	R_{2B}

Analysis of variance can be made on the resulting four indexes to produce estimates of variance due to sampling of items (σ_o^2), of outlets (σ_c^2), and random error (σ_e^2).

The formula for the error in the i -th city index is analogous to (5) for the stratum index for paired cities:

$$\sigma_R^2 = \frac{\sigma_o^2}{2} + \frac{\sigma_c^2}{2} + \frac{\sigma_e^2}{4} \quad (7)$$

Since even the minimum program requires two outlet samples in each "A" city, the extended replication means that all items are priced in two outlet samples (rather than just the certainty items as in the minimum replication). The extended replication is set up in three "A" cities for nonfood items, but in all "A" cities for food. The reason for this design for food is similar to that explained above for "B" cities.

The fact that food and nonfood items have different levels of replication in some cities means that in these cities different computational methods are required for the food and nonfood categories. For example, in the nine "A" cities with the minimum "A" replication there are four sets of aggregates for food but only two for the nonfood groups. Consequently, it is necessary to compute a "food" variance by the extended analysis of variance approach and a "nonfood" variance

by the simpler comparison of two index values. An all-items variance can be computed (for the city) only by weighting together the variances for two commodity groups (or more detailed groups). A similar situation exists for pairs of "B" cities which have the minimum replication. However, since the all-items CPI error computation is done through the use of at least nine groups, this offers no particular problem.

Since each of the six additional large SMSA's will be self-representing when added to the CPI sample, the replication diagram and computation procedure will correspond to the minimum replication for "A" cities (although these areas are actually in the "B" stratum).

Since the revised index mechanism is used to measure price change only after the link date, December 1963, the replication design, likewise, can only measure error in the CPI from that date forward. Presentations of estimates made via the replication procedure show index changes from December 1963 (rather than the current index itself) along with the error estimates which correspond to these changes.

In addition to the long term error estimates, for which the replication procedure was primarily devised, error estimates for short term (for example, quarterly) change in the CPI can be produced periodically. (This procedure is not strictly correct, since it ignores the fact that the effective weights for price changes over periods not dating back to the link date are themselves sample variates. The replicated error mechanism treats the overall index change as an arithmetic average of change for different samples of cities, items, and outlets with known weights. However, the weights, or "relative importances," used in averaging current price relatives, change very slowly over time and the continuing estimates of short term error should give satisfactory approximations.)

It should be recognized that estimates of error computed by replicated sample methods include more than pure sampling error. They are influenced by interviewer, supervisory, editing, processing and similar errors to the extent that such errors are random in nature. Of course, sampling error computed by formula can also contain the influence of such factors, but probably not to as great an extent. The replication procedure cannot, however, detect any persistent bias which may be present.

The inclusion of these other types of error is, in many ways, desirable. If estimates are affected by such errors, then it is appropriate that their influence be included in the error measurement, thereby giving a better approximation of the total

error (sampling and nonsampling) to which the estimates are subject. Any publication of error estimates for the CPI will, however, make clear to the user what the estimates cover.

Chapter V. City Sample Selection, 1964 Index*

Selection of a new sample of cities for the revised Consumer Price Index was considered necessary because of shifts in the geographic distribution of the population over the decade. These shifts meant that the average pattern of expenditures would be different from what it had been in 1950, a factor that would directly affect the index weights and indirectly, the trend of prices.

A sample of 50 cities for the index was established as the maximum number that could be priced for the index since the resources for the pricing program were planned to continue near previous levels. The increase from 46 to 50 was quite nominal in view of the additional coverage of Alaska and Hawaii. Two alternate samples were selected for possible future use in expanding the pricing work if later circumstances permitted.

After the revision program was well advanced and consumer expenditure surveys completed in the selected sample of cities, questions were raised concerning the availability of indexes for individual metropolitan areas. Since it was not possible to satisfy demands for local indexes, some general policy was needed to govern the Bureau. It was agreed, in consultation with the Office of Statistical Standards of the Bureau of the Budget, that indexes should be provided for the 22 Standard Metropolitan Statistical Areas having a population of 1 million or more in 1960, and for Honolulu, as well as four Alaska cities published semiannually under provisions of special legislation. Of the 22 largest areas in the country, 6 had not been drawn in the national sample of 50 selected for the index. These six cities are San Diego, Houston, Cincinnati, Kansas City, Minneapolis, and Milwaukee. Funds were provided for conducting expenditure surveys and initiating pricing in these six cities and initiating indexes in 1965,

* Most of the material included in this chapter was published in "The Revised City Sample for the Consumer Price Index," by Marvin Wilkerson, in the *Monthly Labor Review*, October 1960, pp. 1078-1083; available as Reprint No. 2852.

with addition to the national index in 1966. (One of the cities, Cincinnati, the pilot city already surveyed for 1959, was not resurveyed.)

Primary Sampling Unit

The primary sampling unit for the new sample is the Standard Metropolitan Statistical Area (SMSA) in the metropolitan segment of the United States and the individual urban place (over 2,500 population) in nonmetropolitan areas.⁵⁴ The SMSA is usually slightly more extensive than the "urbanized area" unit used in the 1952 revision, encompassing some small noncontiguous urban places that were not included in the urbanized area. Expenditure patterns and price movements in these small places can be expected to resemble those in the metropolitan urban segment more than those in nonmetropolitan urban places.

In planning the design of the city sample, estimates of total and urban population for all counties in the United States as of January 1, 1959, were obtained from *Sales Management, the Magazine of Marketing*, published by Bill Brothers Publications, since data from the 1960 Census of Population were not then available. These estimates are projections of 1950 Census data adjusted to less detailed Bureau of the Census estimates for 1959. Among individual nonmetropolitan urban places, *Sales Management* estimates were available only for cities of about 10,000 or more. For smaller places, the BLS made its own estimates for all places that were urban in 1950 and for some 200 other places that were estimated to have grown into urban status by January 1, 1959.

Stratification

Tests of the effectiveness of some of the more obvious modes of stratification, such as geo-

⁵⁴ The Standard Consolidated Areas for New York and Chicago were used as single primary sampling units rather than being divided into their constituent subareas.

graphic region, size of city, and climate, indicated that no elaborate stratification was justifiable for a sample of only 50 areas. Analysis of variance techniques were applied to price movements for three different time periods for 25 items and groups of items; similar analyses utilized expenditure data from the 1950 Consumer Expenditure Survey. These results were of limited usefulness because of the small number of cities, time periods, and items for which data were tested. The significance of the different classification modes varied from item to item, but in general, classification by region and by size of city seemed to be most effective. Since these are the two most useful modes of stratification from almost any point of view, it was decided to use them. The four Census regions—Northeast, North Central, South, and West—were used as the geographic areas. The size stratification was of particular importance because of differential cost factors. Four population size strata, the same number used in the previous revision, seemed to be about the maximum which the sample size would justify: Less than four would mean excessively wide stratum limits; even with four, the limits are far apart.

A number of possible size groupings were considered. It was decided to retain the 12 largest areas previously included in the CPI sample as certainty selections in the new sample. These 12 areas comprise the A stratum. The other three population strata were set up as nearly as possible in terms of commonly used size groups, in order to facilitate comparison with other economic data. Accordingly, the four strata are defined as follows:

Stratum A—Twelve largest SMSA's.

Stratum B—Other SMSA's with urban population of over 250,000.

Stratum C—SMSA's with urban population of 50,000 to 250,000.

Stratum D—Nonmetropolitan urban places of 2,500 to 50,000 population.

One merit of this classification is that the first three strata correspond closely to the metropolitan segment, and the last to the nonmetropolitan segment of the urban population. In addition to the SMSA's which had already been defined for the 1960 Census, other cities which were estimated to have passed the 50,000 population mark and which were designated as "potential" SMSA's, were classified in the C stratum. Since the few additional SMSA's that

might be established in the 1960 Census count could not have been identified in advance, they were classified in the D stratum.

Alaska and Hawaii posed special problems. Although their urban population did not justify the allocation of a sample city to each, they are so different from the continental (48) States, and from each other, that there appeared to be no alternative to making each a separate stratum with a sample place for each. The urban population of Alaska is concentrated in the areas of Anchorage, Fairbanks, Juneau, and Ketchikan. Anchorage was randomly selected to represent Alaska in the CPI. Since over 86 percent of Hawaii's urban population is concentrated in the Honolulu SMSA, Honolulu was designated as the sample city to represent the total Hawaiian urban population.

Developing the CPI Sample

The certainty selection of the 12 largest cities and the allocation of one sample place each to Alaska and Hawaii left 36 cities to represent the B, C, and D strata urban places in the other 48 States. These 36 were divided among strata on the basis of the relative importance of their urban population and the estimated annual costs of operating a pricing program in cities of different size. The resulting optimum allocation is shown in the following tabulation:

	All three strata	Stratum		
		B	C	D
Total, 48 States.....	36	10	10	16
Northeast.....	7	2	2	3
North Central.....	11	3	3	5
South.....	13	3	4	6
West.....	5	2	1	2

An important objective in selecting the specific cities was to achieve a good geographic dispersion. Thus, minimizing the possibility of an undue concentration of the sample in any State was particularly important because, for many items, price factors are closely related to local conditions. After considerable consultation and experimentation, the BLS decided to utilize the procedure usually referred to as "controlled selection."⁵⁵ A significant advantage of this

⁵⁵ An independent probability selection for each size group was considered and discarded because it was impossible to prevent the selection of sample cities from the several strata in the same State where the size of the State did not warrant such extensive representation. Another method considered was a procedure whereby the sample for all size strata could be selected by one systematic operation from an array of all primary sampling units. This method was discarded because of the distortion of the original probabilities of selection associated with individual cities.

method for the type of sample being selected is the provision for rigorous geographic controls. Other advantages are that it is a probability method in which the assigned probabilities of selection for individual cities are demonstrably maintained, that it is a tested and reputable system which has been in use for a number of years by other organizations, and that it is described in the published literature.⁵⁶

The controlled selection procedure involves the probability selection of a sample "pattern" from a set of patterns which have been purposively established so that, taken as a group, they give to each primary sampling unit its proper chance of appearing in the final sample. Each pattern is set up in accordance with controls, which may be as rigid as desired, to insure that it satisfies selected criteria of proper distribution. In selecting the CPI sample, controls were used only on size of city and geographic location, with the latter control carried to the State (or group of small States) level.

In order to expedite the work, patterns were established for each of the four broad regions of the country separately. (See, for example, table 1.) Time did not permit the more elaborate control that could have been maintained by selecting national patterns.

The first step was to determine the probabilities of selecting a given size city from each stratum within each State or group of States.⁵⁷ These probabilities are based on estimated urban population figures previously described. The sum of the probabilities over all States in the region for any size group is equal to the number of sample places allocated to that stratum. The set of patterns which are derived must exhaust all these selection probabilities exactly. The probabilities also set limits as to the patterns which may be chosen. For example, the following illustrative tabulation for the Northeast shows that no pattern can contain more than one sample place each in five of the States in the region, but the other two (New York and Pennsylvania) can have either one or two selections each.

Probability of selection of cities in—

	B stratum	C stratum	D stratum	B, C, and D strata
Maine-New Hampshire—				
Vermont.....	-----	0.153	0.544	0.697
Massachusetts.....	0.247	.421	.312	.980
Rhode Island.....	.256	-----	.049	.305
Connecticut.....	.364	.285	.263	.942
New England.....	.867	.859	1.198	2.924
New York.....	.888	.225	.757	1.870
Pennsylvania.....	.245	.728	.761	1.734
New Jersey.....	-----	.188	.284	.472
Middle Atlantic.....	1.133	1.141	1.802	4.076
Northeast.....	2.000	2.000	3.000	7.000

In addition, a further control was used to insure representation of the New England States as a group and of the Middle Atlantic States as a group. In most cases, the patterns must contain three selections from New England and four from the Middle Atlantic region, although, at least one pattern must contain two and five, respectively, in order to exhaust the 0.076 probability of having only two selections in New England.

The patterns were set up by State-size groups rather than individual places because the additional work was not feasible. Instead, a second stage of controlled selection was used in States where more than one sample selection fell.

Table 1 presents a simplified diagram of the patterns set up for the Northeast. Many other possible sets would satisfy all the conditions imposed. The probability assigned to each pattern is usually the smallest remaining probability of any category affected by that pattern. Thus, pattern 1 was given the probability of 0.076 to dispose of the previously mentioned probability of having two selections in New England. Together, these patterns do, in fact, exhaust the original probabilities. For example, a B stratum city in Connecticut appears in patterns 2, 5, 7, 9, 11, and 12. The probabilities associated with these patterns add to .364, the selection probability for that category.

Sets of patterns for the North Central region, the South, and the West were established in the same manner. An attempt was made to secure additional geographic dispersion by combining patterns for adjacent regions in such a manner as to prevent an undesirable national pattern. For example, patterns for the North Central region and the West were associated so that there was no chance of a national pattern with no selection in Montana-Idaho-Wyoming which also omitted a selection for North Dakota-South

⁵⁶ The method chosen is described by Roe Goodman and Leslie Kish in "Controlled Selection—A Technique of Probability Sampling," *Journal of the American Statistical Association*, September 1950, pp. 350-372.

⁵⁷ In 5 instances, 2 or more of the less populous States were grouped together and treated as a single State: Maine, New Hampshire, and Vermont; Nebraska, North Dakota, and South Dakota; Colorado and New Mexico; Arizona, Nevada, and Utah; and Idaho, Montana, and Wyoming.

Dakota-Nebraska. After patterns were established, the four regional patterns were chosen in a single operation by a random process. Patterns were similarly selected for the two alternate samples.

At this stage, specific cities were determined only where there was a single city in the selected State-size group (e.g., Denver, the only B city in Colorado-New Mexico). In other cases where only one selection from a State was involved, the sample places were randomly selected from arrays of all primary sampling units in the State-size groups indicated in the selected pattern. In New York, Ohio, and Texas, where there were two or more sample selections and more than one city in each selected group, a second-stage combination was randomly selected which determined the B and/or C stratum selections, and the D places were randomly selected from arrays for the designated zone of the State.

Two alternate samples were selected in a similar fashion and are shown with the basic sample in table 2. Within each stratum, the cities are arranged by geographic region, and the year shown is that in which the Consumer Expenditure Survey in the city was conducted, as indicated later. Two cities, Denver and Seattle, are duplicated in the basic and second alternate samples. Since it was intended that all three samples be equally representative, some such duplication was almost unavoidable.

Consumer Expenditure Survey Sample

Analyses of consumer expenditure data from previous surveys indicated a much higher variability in expenditure patterns among small places than among large cities. Consequently, the resources available to supplement the 50 city CPI sample were allocated to the D stratum, permitting the sample size in this stratum to be doubled (to 32 cities for the expenditure surveys). The 16 additional places were obtained by taking the D cities in the first alternate sample.

Since the Consumer Expenditure Surveys were to be conducted in two "waves" (in 1961, covering 1960 expenditures; in 1962, covering 1961 data), it was necessary to divide the sample into two balanced subsamples, each representative of the U.S. urban population. In the

12 large A cities, surveys were conducted in both years. The B, C, and D places were alternately assigned to the two subsamples, with a random assignment of the first city in each size group, with the places arrayed in their order of selection (as in table 2). The 16 D cities from the first alternate sample were similarly divided, but with the starting assignment reversed from that used in the D cities of the basic sample, in order to balance each region. Because of the special price program in Alaska, the expenditure survey in Anchorage was conducted in May and June 1960 and, with some adjustment, served as the basis for the CPI weights. The Honolulu survey was made in 1962. Thus, it was not possible to have balanced representation of Alaska and Hawaii in the 2 years of the survey period as was the case for the rest of the United States.

Tests of the CPI Sample

In order to test the effectiveness of the new CPI city sample, data for sample places were used to make estimates of several characteristics for which data were available for the total U.S. urban population. Among these were: 1950 urban population, 1950-58 population change, 1958 retail sales, and total 1958 population (including farm) for the A, B, and C strata. The differences between the actual and estimated data are summarized in table 3. The U.S. estimates are quite accurate, although some regional and city-size subtotals vary fairly widely from actual figures.

The city "weights" used in the above tests were derived so as to provide unbiased estimates. This required that the weight for each sample city be the reciprocal of that city's original probability of selection. These weights (and an analogous set for the enlarged expenditure survey sample) were incorporated into the weighting structure for the revised CPI computation procedures and for various estimates of consumer expenditures made from the surveys.

It is not possible to compute an exact sampling error for the design described above. However, approximate methods can be used. For example, it is considered that the controlled selection procedure as used in making the 36 probability selections is roughly equivalent to

establishing 36 strata and selecting one city from each. The replication feature built into the revised index procedures includes an ex post

facto pairing of probability cities, which is equivalent to the common practice of "collapsing" strata in order to compute variances.

TABLE 1. ILLUSTRATIVE SET OF PATTERNS FOR THE NORTHEAST

State group	Size stratum	Basic probability	Pattern number and associated probability															
			1 .076	2 .020	3 .029	4 .029	5 .054	6 .072	7 .061	8 .145	9 .006	10 .082	11 .140	12 .083	13 .030	14 .027	15 .034	16 .112
Maine-New Hampshire-Vermont	C	.153		X														
	D	.544			X	X	X	X	X			X	X	X	X	X	X	X
Massachusetts	B	.247			X			X										X
	C	.421	X				X		X									
	D	.312				X				X		X	X	X	X			X
Rhode Island	B	.256				X												
	D	.049		X	X					X		X						
Connecticut	B	.364		X				X										
	C	.285							X									X
	D	.293	X							X		X	X	X	X	X	X	X
New York	B	.888	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	C	.225	X	X														X
	D	.757	X	X			X			X	X	X	X	X	X	X	X	X
Pennsylvania	B	.245	X															X
	C	.728	X	X	X	X			X	X	X	X	X	X	X	X	X	X
	D	.761	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
New Jersey	B	.188	X		X	X												
	D	.284							X	X	X							

TABLE 2. BASIC AND TWO ALTERNATE CITY SAMPLES FOR THE CONSUMER PRICE INDEX AND CONSUMER EXPENDITURE SURVEYS

[Years shown for certain cities are those in which expenditure surveys will be conducted there]

Basic sample	Alternate 1	Alternate 2
Stratum A—Twelve largest SMSA's		
Boston, Mass.-----1961, 1962 New York, N.Y.-----1961, 1962 Philadelphia, Pa.-----1961, 1962 Pittsburgh, Pa.-----1961, 1962 Cleveland, Ohio-----1961, 1962 Detroit, Mich.-----1961, 1962 Chicago, Ill.-----1961, 1962 St. Louis, Mo.-----1961, 1962 Baltimore, Md.-----1961, 1962 Washington, D.C.-----1961, 1962 San Francisco, Calif.-----1961, 1962 Los Angeles, Calif.-----1961, 1962	No alternates; the 12 cities in the basic sample are the only ones of this size.	
Stratum B—Other SMSA's with urban population of over 250,000		
Hartford, Conn.-----1962 Buffalo, N.Y.-----1961 Dayton, Ohio-----1962 Indianapolis, Ind.-----1961 Wichita, Kans.-----1962 Atlanta, Ga.-----1961 Nashville, Tenn.-----1962 Dallas, Tex.-----1961 Denver, Colo.-----1962 Seattle, Wash.-----1961 Honolulu, Hawaii-----1962	New Haven, Conn. Syracuse, N.Y. Toledo, Ohio. Milwaukee, Wis. Kansas City, Mo. Norfolk-Portsmouth, Va. Louisville, Ky. Houston, Tex. Phoenix, Ariz. San Diego, Calif.	Providence, R.I. Albany-Schenectady-Troy, N.Y. Cincinnati, Ohio. Grand Rapids, Mich. Minneapolis, Minn. Miami, Fla. New Orleans, La. El Paso, Tex. Denver, Colo. Seattle, Wash.
Stratum C—SMSA's with urban population of 50,000 to 25,000		
Portland, Me.-----1961 Lancaster, Pa.-----1962 Champaign-Urbana, Ill.-----1961 Green Bay, Wis.-----1962 Cedar Rapids, Iowa-----1961 Durham, N.C.-----1962 Orlando, Fla.-----1961 Baton Rouge, La.-----1962 Austin, Tex.-----1961 Bakersfield, Calif.-----1962	Utica-Rome, N.Y. Altoona, Pa. Fort Wayne, Ind. Muskegon, Mich. Sioux Falls, S.D. Huntington, W. Va. Charlotte, N.C. Montgomery, Ala. Waco, Tex. Spokane, Wash.	Lawrence, Mass. Scranton, Pa. Evansville, Ind. Madison, Wis. Davenport, Iowa-Rock Island-Moline, Ill. Charleston, W. Va. Winston-Salem, N.C. Mobile, Ala. Corpus Christi, Tex. Fresno, Calif.

TABLE 2. BASIC AND TWO ALTERNATE CITY SAMPLES FOR THE CONSUMER PRICE INDEX AND CONSUMER EXPENDITURE SURVEYS—Continued

Stratum D—Cities of 2,500 to 50,000 ¹				
Southbridge, Mass.....	1962	Burlington, Vt.....	1961	Danbury, Conn.
Kingston, N.Y.....	1961	Athol, Mass.....	1962	Horseheads, N.Y.
Millville, N.J.....	1962	Lewistown, Pa.....	1961	Bridgeton, N.J.
Findlay, Ohio.....	1961	Cambridge, Ohio.....	1962	Crestline, Ohio
Logansport, Ind.....	1962	La Salle, Ill.....	1961	LaPorte, Ind.
Niles, Mich.....	1961	Menasha, Wis.....	1962	Carbondale, Ill.
Crookston, Minn.....	1962	Owatonna, Minn.....	1961	Maryville, Mo.
Devils Lake, N.D.....	1961	Manhattan, Kans.....	1962	Larned, Kans.
Martinsville, Va.....	1962	Griffin, Ga.....	1961	Sanford, N.C.
Union, S.C.....	1961	Sebring, Fla.....	1962	Whitmire, S.C.
Florence, Ala.....	1962	Cleveland, Tenn.....	1961	Albany, Ga.
Vicksburg, Miss.....	1961	Okmulgee, Okla.....	1962	Dyersburg, Tenn.
Mangum, Okla.....	1962	Reserve, La.....	1961	Russellville, Ark.
McAllen, Tex.....	1961	Gainsville, Tex.....	1962	Paris, Tex.
Orem, Utah.....	1962	Gallup, N. Mex.....	1961	Laramie, Wyo.
Klamath Falls, Ore.....	1961	Eureka, Calif.....	1962	Modesto, Calif.
Anchorage, Alaska ²				

¹ Consumer expenditure surveys in the first alternate sample of stratum D cities were used in deriving CPI weights for smaller cities. However, no pricing is done in these supplemental cities.

² Anchorage represents Alaska in the Revised CPI. The consumer expenditure survey was conducted there in May and June 1960 as part of a special Alaskan price program. These surveys were used to derive the index weights for the city.

TABLE 3. PERCENT BY WHICH ESTIMATES OF U.S. ¹ POPULATION AND RETAIL SALES MADE FROM THE NEW CPI CITY SAMPLE DIFFER FROM ACTUAL FIGURES

Region and city-size group	1950 urban population	1950-58 population change	Retail sales, 1958	Total 1958 population (A-B-C cities)
Region				
Northeast.....	-0.9	+8.9	+2.0	+2.3
North Central.....	-2.4	+14.2	+2.4	+2.0
South.....	+1.8	-6.2	-1.1	+7.3
West.....	+6.3	-9.5	-5.7	+0.5
City Size				
Stratum A.....	(²)	(²)	(²)	(²)
Stratum B.....	+0.4	-1.3	+6.3	+1.1
Stratum C.....	-3.2	+12.8	+11.1	+14.1
Stratum D.....	+3.6	-21.2	-13.7	
United States ¹	+0.4	-1.9	(²)	+3.2

¹ 48 States only.
² No difference since all SMSA's in this size group are included in the sample.
³ Less than 0.05 percent.

Chapter VI. Housing and Expenditure Surveys

Surveys of Consumer Expenditures, Income, and Savings (CES) were conducted in 66 cities⁵⁸ for the years 1960–61. The results of the surveys determined the content of the market basket and the quantity weights of the revised index. The CES samples of consumer units were chosen in most cities as subsamples of addresses listed in housing surveys.⁵⁹

Comprehensive Housing Unit Surveys

Comprehensive Housing Unit Surveys (CHUS) preceded the expenditure survey in each of 34 A, B, and C strata areas listed in appendix table IV, and eight of the D cities included in the index and were conducted subsequently in the remaining eight D cities in the CPI. The surveys in these areas were conducted by personal visit to a selected sample of housing units in the year preceding the actual field survey work for the CES. Housing survey objectives included obtaining a sample listing of all living quarters in sample blocks, complete descriptions, income, and race for a sample of housing units within the sample blocks, rental data for tenant-occupied units, and market value and purchase price for owner-occupied units. These surveys provided rental and CES samples and a sample of owner-occupied units for the measurement of property taxes. Information obtained was also used in deriving weights for home purchase.

The CHUS covered the entire urban portion of sample SMSA's including the central city or cities, the urbanized areas surrounding the central cities, and noncontiguous urban places within the SMSA. For non-SMSA's, the survey area was the city proper. The CHUS was de-

signed to cover all noninstitutional living quarters, including nontransient accommodations in hotels and rooming houses.

The final boundaries of the areas had not been established in all cases in time for planning the surveys to be conducted in the latter part of 1960, but maps were obtained from the Bureau of the Census on which preliminary boundaries were indicated. Some changes, usually minor, were made later but the discrepancies between the sampling frame established for the CHUS and final Census urban boundaries were relatively minor. For the CHUS conducted late in 1961, more nearly final Census maps were used.

The size of the CHUS sample was determined primarily by the size of the rental sample desired and the proportion of renters in a given area, as estimated from Census data. The number of addresses enumerated in the CHUS was usually many times larger than the CES sample.⁶⁰ The overall CHUS city sampling ratio was determined by dividing the estimated number of rental units in the city by the size of the rental sample desired. This sampling ratio was applied both to tenant and owner-occupied dwelling units, thus maintaining tenants and homeowners in the proper relationship.

Appendix table IV shows for each city the number of units listed in the CHUS, the total number of units in the CES, the number of usable CES schedules, and the number of wage-earner and clerical-worker consumer unit schedules which were employed in deriving weights for the index.

Slightly different procedures were used to sample (a) the central city or cities of SMSA's, (b) the urban fringe, and (c) outlying urban places within the SMSA but outside the Census "urbanized area." For each of the various sampling areas, the product of all sampling

⁵⁸ One of the 66 cities, Anchorage, had been surveyed for 1959 in connection with a special program in Alaskan cities. Six additional large cities which did not fall in the national sample were added to the national index in January 1966. One of these, Cincinnati, was the pilot city for the revision program, surveyed for 1959. The remaining 5—Houston, Kansas City, Milwaukee, Minneapolis—St. Paul, and San Diego were surveyed in 1963.

⁵⁹ Housing surveys were not conducted in 16 non-CPI cities; procedures for selecting CES samples in these cities are described on p. 43.

⁶⁰ In all, about 130,000 dwellings were enumerated in the CHUS compared with slightly over 10,600 CES assignments (addresses) and an equal number of alternate assignments. (Excluded from both counts are 24 small urban places where the CES samples were selected from Census records.)

ratios used (block and in-block) equaled the overall city sampling ratio.

A two-stage design was used in the central cities; a sample of blocks was chosen and a subsample of addresses selected within blocks. A classification of blocks by size was incorporated in the design with variable block (and in-block) sampling fractions for large and small blocks (based on number of housing units) and for apartment and nonapartment blocks. For all SMSA's surveyed in 1960, except Champaign-Urbana, which was not a Standard Metropolitan Area in 1950, 1950 Census Block Statistics Books provided the basis for selecting a probability sample of blocks within the central cities. For SMSA's surveyed in 1961, preliminary copies of the 1960 Census Block Statistics Books were used.

In all D size cities surveyed in 1961, as well as in Champaign-Urbana, a complete BLS field survey was made first for identification and classification of all blocks within the survey area, using central sources or personal observation of assigned areas, after which a selection of blocks was made.

In the urban fringe, a first-stage selection of Census enumeration districts (ED's) was made with subsequent sampling of blocks (or segments) and of addresses within blocks using the BLS field survey procedure for non-SMSA cities. An apartment block nonapartment block classification was also used here.

Outside the Census urbanized area, a first-stage sample of urban places, with subsequent sampling of blocks and of addresses within blocks, was made according to the following scheme:⁶¹

1. All places of 10,000 or more selected with certainty.
2. All places less than 10,000, sample selected as follows:
 - a. 1-6 places, 1:1 ratio.
 - b. 7-14 places, 1:2 ratio.
 - c. 15-29 places, 1:3 ratio.
 - d. 30 or more places, 1:4 ratio.

⁶¹ For example, there were 20 urban places in the St. Louis SMSA which were outside the St. Louis urbanized areas as defined for the CHUS. Five were over 10,000 population and were selected with certainty to represent themselves: St. Charles, Mo., and Alton, Collinsville, Edwardsville, and Wood River, Ill. A sampling ratio of 1:3 was applied to the 15 places under 10,000 and the following places selected: Ellisville and DeSoto, Mo., Cottage Hills, East Alton, and Mascoutah, Ill. Two additional stages of sampling were then used in these 10 sample places. (The final Census urbanized area for St. Louis included Collinsville, Ill. Had this definition been used in the CHUS, Collinsville would have been sampled as part of the urban fringe, rather than as an outlying urban place. No change in the total coverage was involved.)

However, in three SMSA's, surveyed in 1961, which had 7 to 14 urban places below 10,000 outside the urbanized area, all urban places were selected, as a matter of convenience.

For the entire survey area, sample enumeration districts and blocks were numbered and indicated on the Census maps either in the Washington office or in the field survey. Block boundaries were carefully described on a control form for each block in the sample, together with sampling instructions.

All separate living quarters in sample blocks including private homes, apartment houses, and hotels and rooming houses except low-income public housing, were listed merely by street name and address by observation, for purposes of the CES sample. Hotels and rooming houses were classified as transient or nontransient depending upon whether or not more than half the rooms were rented to transients. Lists of low-income public housing were obtained from central sources.

To the list of addresses excluding transient structures, the appropriate in-block sampling ratio was applied and detailed information obtained for units falling in the sample, by personal interviews with occupants. If a transient unit within a nontransient structure fell on ratio, the next unit was selected. Housing units that fell on ratio were classified by type of housing unit:

Type	Definition
1	With separate entrance and kitchen facilities installed.
2	With separate entrance and kitchen facilities not installed.
3	With separate entrance and no kitchen facilities.
4	Without separate entrance and with kitchen facilities.

A housing unit is defined as a room or rooms occupied or intended for occupancy as separate living quarters by a family or other group of persons living together or by a person living alone, having a separate entrance and/or separate kitchen (exclusive use by occupant) facilities. Detailed information was obtained on the schedule (BLS 2549 appended as exhibit A) for Type 1 and 2 housing units. A Type 1 housing unit is defined as a room or rooms occupied or intended for occupancy as separate living quarters by a family or other group of persons living together or by a person living alone, having a separate entrance and separate installed

(or provision for) kitchen facilities for the exclusive use of the occupants. The separate entrance need not be directly from the street but may be from a common hall, as in apartments, or even in private homes provided access is not through a room or any other separate living quarters. A Type 2 is the same but without installed kitchen facilities.

Information obtained in the survey included address, type of living quarters, description of structure including type, number of units, year built, condition of the unit and neighborhood characteristics as judged by the BLS agent, occupancy status, tenure, race of occupants, number of persons in housing units, a rough estimate of family income, and detailed descriptions of the facilities in the unit; also for rental units, rent paid as of the date of the survey and information as to the facilities and services included in the rent; and for owner-occupied units, date of purchase, purchase price, and estimated current market value. Only limited information was collected for Type 2 housing units—type of structure, number of units, date structure built, condition of unit, occupancy status, tenure, race, number of persons in the unit and family income class. No information other than address and family income class was obtained for Types 3 and 4.

Field collection was made by a group of agents hired, trained locally, and supervised by a supervisor who had been trained in Washington. Quality control checks were made of each agent's work during the course of the survey and completed collection forms were reviewed in the field for consistency and completeness before transmission to Washington.

Consumer Expenditure Surveys (CES)

The expenditure surveys were generally comparable in scope and in survey methodology to the 1950 expenditure survey.⁶² Although primary emphasis was on collecting data relating to family expenditures for goods and services used in day-to-day living, information was also obtained on family income, change in savings and debts, and on major demographic and eco-

nomic characteristics of the consumer units. The collection schedule used in the 1960-61 surveys was adapted from the 1950 form and was tested in a pilot survey conducted in Cincinnati as well as in two Alaskan cities in the spring of 1960. Only minor changes were made subsequently.

The Consumer Expenditure Surveys covered 2 years, 1960 and 1961. About half the sample was surveyed early in 1961, covering expenditures during 1960. The remaining sample was surveyed early in 1962, covering expenditures during 1961. Spreading the survey over 2 years provided a hedge against the possible abnormality of spending patterns for a single year. Operationally, the 2-year program had several major advantages in terms of efficiency and economy, since it was possible to reduce the size of the staff to be recruited and trained and to use them over a longer period.

In the 12 largest SMSA's (including the New York and Chicago Standard Consolidated Areas) half of the sample was covered in each of the 2 years. In the other size strata, half of the cities were covered in 1 year and half in the other. Since Anchorage (surveyed for 1959 in connection with the special program for Alaska)⁶³ was the city selected to represent Alaska, results from the 1959 survey were utilized for the CPI weights. Honolulu was surveyed for 1961.

No attempt was made to make the CES samples self-weighting, except within each SMSA or urban place. The total urban sample included about 12,000 assignments. Because of the individual city indexes published for the 12 "A" cities and for many of the "B" cities, a minimum sample size in each city (area) was regarded as desirable. The sample in the "A" cities ranged from 375 to 625, the sample in all "B" cities was 250 assignments, "C" city samples 160, and "D" cities 65.

In order to select the CES sample from the larger CHUS sample, the CHUS units were arrayed by type of housing unit and location (central city vs. suburb). Types 1 and 2 housing units were then arrayed by race, income, and size of family—variables known to be important

⁶² For a description, see account by Helen Humes Lamale, *Study of Consumer Expenditures, Income and Savings—Methodology of the Survey of Consumer Expenditures in 1950*, (Philadelphia, Pa., University of Pennsylvania, 1959, pp. 41-81). A brief description of the 1960-61 survey is included in each report in the BLS Report 287 series.

⁶³ Funds were provided BLS under special legislation to compute time-to-time indexes semiannually in four Alaskan cities—Anchorage, Fairbanks, Juneau, and Ketchikan—and place-to-place comparisons with Seattle, Wash. Family expenditure surveys were conducted for 1959 for Anchorage and Fairbanks and for 1960 for Juneau and Ketchikan.

in their influence on consumption patterns. From these arrays, a systematic selection was made by choosing a random starting point and selecting every n -th unit thereafter down the array (n being selected to give the desired sample size). The CES units from the CHUS were supplemented by a sample of units in low-income public housing projects.

For each sample unit selected, a "matched alternate" was also designated. The alternates were as closely matched as possible with the original selection, primarily in terms of size of family and income level. This was done by selecting the next address in the array. Because of the original sequence, by location, in which the enumerated units were numbered the alternates also tend to be in the same part of the area. These alternates were used only under certain specified conditions: If the occupant of the original unit could not be contacted after at least two visits, if he refused to give even a minimum amount of information required to analyze nonresponses, or if the unit was vacant.

For the eight CPI and eight non-CPI "D" cities surveyed for 1960, a somewhat different procedure was used, primarily as an economy measure. (See appendix table IV for list of cities.) Samples of about 500 addresses per city were selected from enumeration schedules used in the 1960 Censuses.⁶⁴ A double sampling procedure was used here also, to make use of Census information on family characteristics, but no information other than the addresses of the selected units could be transcribed from Census records for subsequent use by the BLS. The same procedure was followed for the eight "D" cities surveyed for 1961 which were not in the CPI sample. In the remaining eight CPI "D" places, housing surveys were conducted subsequent to the CES, since they would have soon become necessary in connection with initiation of rent pricing.

All data were collected through the voluntary cooperation of families. Since the Bureau has a strict policy regarding confidentiality of the data, the cooperating family's name never appears on any records.

All of the information for the survey was obtained by personal interview by a BLS agent

⁶⁴ This was made possible by the cooperation of the Bureau of the Census. Procedures were followed which avoided violation of Census confidentiality restrictions.

hired and trained locally by a supervisor who had had an intensive 6-week training course in Washington. Total interview time with a single family normally averaged 7 to 8 hours, spread over several visits with one or more family members, and arranged at the family's convenience. Although all consumer units⁶⁵ were interviewed for the CES, data for wage-earner and clerical-worker units⁶⁶ were tabulated separately for purposes of index weights.

A complete account of receipts and disbursements was collected for the preceding calendar year. The estimated value of goods and services received free (as gifts, public assistance, etc.), the characteristics of housing occupied both by homeowners and renters, and an inventory of major items of housefurnishings owned was requested also.

The survey schedule is a 76-page questionnaire in three parts. The first part is a two-page Household Record Sheet, which lists all family members and their relationship to the head of the household and provides the basis for determining the family's eligibility for the survey. It contained minimum data for analysis of non-response. The second part of the schedule, consisting of 59 pages, contains 23 major sections and a complete annual record of income, expenditures, and changes in savings. The individual sections are sequenced in a logical order designed to establish and maintain rapport between the interviewer and the respondent. The detailed checklists of items printed on the schedule were arranged both to provide for clearly recording the specific information needed and to facilitate recall. All sections are rarely applicable to a single family. Families were encouraged to refer to records whenever possible and were interviewed to clarify ambiguous entries, when necessary. The third part of the schedule (for families who prepared meals at home) covers detailed expenditures, during the 7-day period immediately preceding the date of the interview, for food and beverages, household supplies, and tobacco, which are frequently purchased items. Similar weekly data were subse-

⁶⁵ The family, or consumer unit, refers (1) to a group of people usually living together who pooled their income and drew from a common fund for their major items of expense, or (2) to a person living alone or in a household with others but who was financially independent, i.e., his income and expenditures were not pooled.

⁶⁶ The definition of wage earners and clerical workers is based on the occupational classification used by the Bureau of the Census for the 1960 Census of Population. It is described in chapter III.

quently obtained by mail questionnaire for additional periods during the year in order to obtain an indication of seasonal variation in consumption. These data are discussed in chapter VII.

Results of the survey were edited carefully and processed by machine tabulation. They were presented in a series of reports for each city and region, showing dollar values (income, ex-

penditures, and changes in savings) for each city as averages per consumer unit and cross classifications by various family characteristics. Average annual expenditures for all wage-earner clerical-worker consumer units⁶⁷ became the basis for index weights, as described in chapter VII.

⁶⁷ These data have not been published.

Chapter VII. Weighting Structure of the CPI, 1964

The scope of the revised CPI with respect to the definition of items represented and the population and geographic coverage are discussed in chapter III, "Statistical and Conceptual Structure of the Revised Consumer Price Index." This chapter describes the selection of the sample of items priced and the derivation of weights used beginning January 1964.

The weighting structure is complex. It reflects varying expenditure patterns (item weights) in each city, which are weighted averages of different patterns for families and for single consumer units. In many cities, there are separate weights for the two independent subsamples of outlets set up under the replication design described earlier. Population weights are used in each city for weighting expenditure patterns for families of two persons or more and single consumer units and for combining the individual cities for the U.S. index. In some cases specific internal weights are assigned to different specifications of the same item. Besides the item and population weights, there are internal weights for combining individual quotations for different areas of the city and individual stores in the sample, as described in chapter VIII. In some cases, instead of assigning specific weights, the various samples are made self-weighting, i.e., data were stratified for sample selection, and random selections made and given equal weights.

Down to the expenditure class (EC) level, the basic item weighting structure of the new index remains much the same as it was prior to the recent revision. As a general rule, weights for major groups, subgroups, and expenditure classes are expenditures incurred by index consumer units during 1960-61, as observed in the CES, but adjusted for price change to December 1963, the link month for the revised index. Consumer units having zero expenditures are included in the average along with those incurring expenditures. Weights were derived separately for families and for single persons for

each of the 50 cities and combined with population weights described later. In some cases, because of the small size of CES samples resulting in a large sampling error for the individual items, category totals were distributed to subgroups on the basis of an average of cities of similar size within the same region.

Item Sampling Frame

The item coverage includes all goods and services purchased for family living. For purposes of the CPI, the thousands of goods and services purchased by consumers are organized into a logical system of groups and subgroups which serve as the publication framework and the sampling frame for selection of items and derivation of weights.

The final item sampling frame (appended as Exhibit B) developed from extensive discussions beginning early in the revision program and from experiments with preliminary listings containing more items and more detailed expenditure classes. The development of a classification system and of a listing of items making up the sampling frame proceeded simultaneously and almost inseparably until the final stages.

Because so many items have multiple uses and serve several end purposes, no single technical criterion, such as form or function, provides a satisfactory way of grouping. Therefore a dual classification was used. The basic classification system is governed by that of the usual family budget. Superimposed upon the primary use or consumption base is a subdivision into an economic classification of goods and services, of durable and nondurable goods, etc. The lowest grouping level in the classification scheme is termed the "expenditure class (EC)." This level defines the index market basket to be held constant between major revisions, but within which resampling and adjustment of weights may take place between revisions.

The statistical connotation of "item" in the sampling frame is different from any definition previously used by the Bureau. It was established primarily as the level at which probability sampling would be applied. Almost always it is above that of the priced specification. Generally the term applies to a grouping of goods (or of services) of similar physical characteristics but of different qualities which serve the same end purpose. However, the items are not of equal homogeneity in the different classes. Some of them are groupings of conglomerate items, each member of which is too trivial to be given a separate chance of selection for pricing. Others are specified-in-detail items. In sampling terms, the items as defined are not elementary sampling units but clusters or first-stage sampling units.

One of the earliest phases of research concerned the most efficient methods of item stratification into expenditure classes. For this analysis, a large body of price data was utilized, including not only price data collected for the CPI but other data collected in an experimental pricing program. The research included studies of the variance in price movements, ranking price changes for individual items for various periods and combining these into a composite ranking, and the computation of correlation matrices for groups of items in order to define strata comprising items which are highly correlated in terms of similarity of price movements. Results of this investigation indicated that the amount of possible meaningful stratification beyond that necessary for publication requirements, and beyond what could be effected through judgment or common sense, was quite unimportant. Consequently, the expenditure classes, which define the sampling strata, were determined primarily by grouping items which in a general way serve similar human needs; for example, furniture, fuels and utilities, men's apparel, women's apparel, etc.

Within the EC framework, items were listed in an order which provided some additional implicit stratification by type of item. Items grouped together were as homogeneous as possible with respect to physical characteristics, although not necessarily with respect to price movements. This was in contrast to the system of weighting set up in the 1953 revision, because the attempt made at that time to group items into "price families," based on known or

expected similarity of price movements, had proved unsatisfactory.

There were about 1,800 line items in the CES schedule. The first proposals for the classification system included from 62 to 90 expenditure classes and upward of 1,400 items. The items mostly represented individual CES line entries or combinations of two or more such entries, although in a few cases, important line items were broken down into two or more separate items on the basis of secondary data.

Expenditure data from the 1959 pilot expenditure survey conducted in Cincinnati were used in the experimental work on the item sample design. This experience and analysis of the expenditure data indicated that the first classification systems proposed carried too much detail in some categories. For example, in one system of 75 expenditure classes, 25 had less than 0.5 percent of the total relative importance. Since each EC would require allocation of at least one sample item for pricing in each replicated subsample,⁶⁸ retention of all 75 EC's would have resulted in an inefficient use of resources. Many items also had negligible expenditures. Successive consolidations of EC's and items resulted in the final sampling frame containing 52 EC's and 812 items shown in Exhibit B. The list of EC's and the number of items in each are summarized in appendix table V.

Late in the revision program a change in the method of pricing health insurance resulted in the consolidation of two EC's. The identities of the 52 EC's were retained in the CPI weighting structure, however.

Selection of Items

As in past revisions of the CPI, the samples were selected on a national basis. Selection of independent samples, city-by-city, was not practical from a cost standpoint since it almost certainly would have resulted in a long list of items, each of which would be priced in at least one city, but by no means in all cities.

The samples of items were selected with "probability proportional to size," size being defined as the relative importance of the expenditures for the item to total expenditures for all items within an expenditure class (EC).

⁶⁸ See chapter IV, "Sampling Aspects of the 1964 Revision," for an explanation of the replication design.

Initially, the size of the item sample could not be exactly specified due to uncertainties of available resources, costs of price collection for new items, and cost increases associated with the replicated samples of items and, ultimately, of outlets. Consequently, in the developmental work, a series of "dry run" sample selections were made, involving different sample sizes and procedures of selection.

A roughly optimum allocation of the total number of items to the respective EC's was the first step. Factors considered were: (a) the relative importance of the EC's, as determined from the 1959 Cincinnati pilot survey, and (b) a rough measure of variability of price movement, determined on a judgment basis but utilizing experimental price data previously referred to.

In the final sample, every item in the following 11 EC's were considered as certainty selections. Many of the items would, of course, have been selected with certainty through the mechanics of the selection procedure. Others were items for which price data are secured from public records, publications, or manuals so that collection costs are low.

<i>Expenditure class</i>	<i>Name</i>
15.....	Food away from home.
16.....	Rent.
17.....	Home purchase and finance.
18.....	Taxes and insurance.
21.....	Fuels and utilities.
36.....	Auto purchase.
37.....	Gasoline and motor oil.
40.....	Other automobile expenses.
41.....	Public transportation.
42.....	Drugs and prescriptions.
44.....	Hospital services and health insurance.

These 11 EC's contain 37 items. An additional four items in other EC's were arbitrarily designated as certainty because of their individual importance, the desire to maintain continuity of pricing, or because of the availability of price data. These are butter, margarine, college tuition and fees,⁶⁹ and postal charges.

For the final selection, relative importances (in the family expenditure pattern) for the condensed sampling frame (52 EC's and 812 items) were obtained from CES data for nine cities surveyed for 1960, since data for all 66 cities were not available in time for use. Expenditure data for these nine places were ap-

propriately weighted together to give preliminary estimates of U.S. average expenditures.

Relative importances for each item in the sampling frame to the grand total of all items were cumulated within each EC. A sample selection interval was computed by dividing the total relative importance of the EC by the number of sample items which had been allocated to the EC. Any item whose relative importance exceeded this selection interval was certain to be chosen by the sampling mechanisms. These items were removed from the array, the relative importances of the remaining items were cumulated and divided by the number of sample items remaining, a new selection interval computed, and additional certainty items selected. This was repeated until no items exceeded the selection interval. The probability items were then determined by choosing a random start and selecting items at regular intervals along the array of remaining items (excluding certainty items).

Since two replicated item samples were to be chosen, the probability selection procedure was repeated for the second sample, but one random start determined both samples. The selection points of the second sample were "half way between" those of the first, that is, the successive selections were made at "half intervals" along the array of items, with selections alternating between sample "1" and sample "2." Any item which had a relative importance equal to or greater than the "half interval" was certain to fall in one sample or the other and could fall in both. These were designated as "half certainty." Since each sample was deliberately made as "different" as possible from the other by the choice of random start, this may overestimate the error by the replication approach.

The final operation produced two samples of 206 items each. These included 82 certainty items and 11 probability items which are common to both samples. Hence, there were 319 different items in the combined samples. During the year or more following the sample selection, while pricing was being initiated, a number of adjustments were necessary. Pricing of several certainty selections was discontinued, at least temporarily, because of difficulty in finding effective pricing methods. These included rent of room, board, settlement charges on home purchase, auto financing charges, rent of car, and other financing charges (other than mortgage

⁶⁹ College tuition would have been certain to fall in one of the two subsamples. Since data are obtained from reports to the Office of Education, there was no point in restricting it to one sample.

interest and auto financing). In addition, pricing of cocktails away from home, originally priced as a second specification besides beer away from home, was dropped. The weights of the dropped items are imputed to other items in the same expenditure class except "other financing charges" which is imputed to the all items CPI.

Pricing of four probability items, two in each sample, also was dropped because of methodological problems; the items are the addition of a new room, porch, etc.; completing unfinished room; uniforms and special work clothing; and hats and caps. In these cases the weights carried by the probability items in the affected EC's are redistributed over the remaining probability items.

It was also necessary to make a few substitutions of items. For example, greeting cards was initially drawn in one sample. No way of setting up a specification which would hold "quality" constant over time was found and stationery was selected instead. Usually the item which immediately preceded or followed the dropped item on the original array was substituted. Some additional adjustments may be necessary in the future, but every effort will be made to hold such substitutions to a minimum.

The final samples which are being priced contain 309 different items represented by 396 specifications, as listed in appendix table VI. Each replicated sample contains 198 items of which 87 are common to both samples (76 certainty items and 11 which were drawn in both). This count of "items" is in terms of the 812 items defined for the sampling frame.

Selection of Specifications

The final step in selecting the item sample was the choice of one or more specified-in-detail items to represent the items chosen from the sampling frame. More than one specification was allowed for important items made up of a variety of qualities presumed to have different price movements. The list of items for which more than one specification is priced is as follows:

EC 3	Steak.
EC 5	Fish fillets and steak.
EC 6	Fresh milk.
EC 13	Coffee.

EC 15	Restaurant meals. Between meal snacks.
EC 18	Property insurance.
EC 21	Electricity. Gas.
EC 23	Living room suite.
EC 24	Soft surface rug.
EC 29	Men's suits, year-round weight. Men's trousers. Men's sport shirts.
EC 31	Women's winter coats. Women's street dresses. Women's stockings. Women's skirts. Women's slacks.
EC 33	Men's street shoes. Women's street shoes.
EC 36	New passenger cars. Used passenger cars.
EC 37	Gasoline.
EC 40	Auto insurance. Parking; garage rent; parking meters.
EC 42	Over-the-counter items and medical appliances and supplies. Prescriptions.
EC 43	Family doctors' fees. Dentists' fees.
EC 44	Hospital services.
EC 47	TV sets and TV radio-phonograph combinations. Radio. Nondurable toys. Pet foods. Sports equipment.
EC 48	Indoor movies.
EC 49	Newspapers.
EC 50	Cigarettes.
EC 51	Beer and ale. Whiskies and other alcoholic beverages.

In addition to these items, there are a few for which more than one price is obtained in each outlet for the same specification. Some of these, e.g., appliances, are priced directly in retail stores; others come from secondary sources and utilize internal quality cells or classes in processing.

In many instances, the sampling frame "item" consists of a fairly well-defined single commodity or service which was used in setting up detailed specifications for pricing. In other cases, particularly where the selected item category contains a miscellany of related but distinct subitems, it was possible to make a second-stage probability selection. The procedure was to make a list of more important subitems, not necessarily exhaustive, and where possible obtain data on their relative importance.

Examples of second-stage probability selections are: psychiatrist selected from the category "other medical specialists;" water pump replacement, from "miscellaneous minor auto repairs and services"; nails, from "miscellaneous hardware and supplies"; and electric hand drill, from "power tools, except lawn mower." Having made this second-stage selection wherever it appeared feasible, no attempt was made to carry probability sampling any further.

Setting up detailed specifications for pricing involves research, consultation, experimental testing and informed judgment. The choice of the exact specifications takes into account the importance and representativeness of particular qualities and the feasibility of describing a selected item clearly enough to permit repetitive price collection. A complete listing of the sample of priced specifications is available on request.

While an attempt is made to maximize the use of national specifications, this is not always possible. Climatic conditions or regional preferences necessitate city deviations or, in a few cases, different articles. For example, heavier weight clothing is not worn in Honolulu, and lighter weight specifications are required; also, due to the infrequency of central heating in Honolulu, furnace parts and repairs can not be priced and a water heater replacement is substituted. In Anchorage, on the other hand, heavier clothing is necessary. City deviations which are priced in only one, or a very few, localities are not counted as separate specifications in the total count given above.

Weighting Structure

Within the expenditure classes (EC's), the probability-proportional-to-size method of selecting the item sample necessitated a major difference in the design of index weights as compared with previous procedures. There is no explicit allocation of weights of unpriced to priced items. Each certainty item as defined in the sampling frame carries its own expenditure weight⁷⁰ and no portion of the expenditures for unpriced items of the sampling frame. Probability items within each EC carry equal parts of the remaining (probability) weight (total EC less certainty items). Because of the way

⁷⁰ Including that of the miscellany of related items as combined in the sampling frame.

in which the sample was selected, probability items normally carry less weight than certainty items in the same EC. In cities where both item samples are priced, the expenditure total for each EC is divided equally between the two samples as of December 1963. When more than one specification is priced for a single sampling frame item, the probability weight for the item is divided among the individual specifications—not necessarily equally. The final index relative importances represent relative expenditures of the expenditure classes as of the survey date, but the relative weights of the individual probability items do not relate to actual expenditures.

The starting point for weight derivation was the tabulation by city of annual average expenditure data from the CES for consumer units which meet the definition of the index population. (See footnote 36 chapter III.) For purposes of the CPI, expenditures include (1) all items classified as current consumption expenditures in the CES, excluding money lost or stolen and food and rent received as pay; (2) expenditures for purchase and improvement of the family home and other real estate for family use (which were converted to CPI weights by special procedures described later); and (3) expenditures for gifts of goods and services to persons outside the family. For items bought for cash, the actual cash outlay is the basis for the index weight. For items bought on the installment plan, the weight is based on the total price, not merely the portion paid during the survey year. Index weights reflect average expenditures of all consumer units, obtained by dividing aggregate expenditures by the total number of units, including those who did not make purchases of a particular item, as well as those who did.

The complete tabulation includes average expenditures for the 1,800 individual items on the CES schedule. These are consolidated into the 812 items finally established as the CPI sampling frame. Exhibit B shows the CES schedule line number as well as the sampling frame code for each item.

The allocation of expenditure data to the sampling frame and summation to EC totals were carried out separately for families of two or more persons and for single persons who meet the definition of an index consumer unit. It was done for each of the 66 SMSA's and cities and

for combinations of cities and regions. Combined expenditures for 1960-61 for large cities surveyed in both years were derived as a simple average of average expenditures for the separate 2 years.

Seasonal Adjustment for Food

For most items, annual expenditures were obtained from consumers in the CES. For foods and other items which are purchased frequently, usually in grocery stores, item detail was obtained only for the 7-day period just prior to the date of the interview. From the weekly data it was necessary to estimate annual expenditures for individual items and adjust the total of these separate estimates to the annual totals.

To determine seasonal variation, consumer units surveyed in the spring were subsequently asked to provide information on weekly food purchases during different seasons. Mail questionnaires were sent each month to 12 independent samples of consumer units in 16 cities throughout the United States and similar followup questionnaires were sent in the same cities to a subsample of families who had been interviewed in the CES. All data obtained for a city for a month were pooled and the average weekly expenditure per family in each month was computed for each food item purchased in each of the 16 cities. From these data, monthly indexes of seasonal expenditures were computed in relation to the yearly average, for expenditure class totals, and for certainty items, for each of the 16 cities.

Because of the small size of the samples in the various cities, as well as lack of comparability of families reporting, the consumption patterns shown by these indexes are erratic. In an effort to smooth out some of the fluctuations, the seasonal consumption indexes for individual cities were combined into four regional indexes and the four regional indexes combined to a U.S. index. Many of these were adjusted by commodity analysts on the basis of seasonal production or marketing data from other sources—U.S. Department of Agriculture figures on weekly production of meats, shipments of fruits and vegetables, etc. Monthly indexes of the value of sales by food group and by item in six large cities, based on confidential 1960 sales of a large food chain, were also used to judge the reasonableness of the adjusted seasonal indexes.

For items which have marked seasonal differences in purchases, the weekly expenditures obtained for the CES sample were blown up to annual totals by applying seasonal factors appropriate for the actual period of the original 7-day CES survey in the particular city. The regional seasonal index was used for all cities in a region if it seemed valid; otherwise, the U.S. index was used. For a few items for which no expenditures were reported, because they were out of season during the survey week, annual estimates were made from secondary sources, based on relationships to reported items. For items which showed only minor seasonal changes in consumption, expenditures for the reported week were multiplied by 52 to obtain the annual estimates. The sum of the annual figures derived in this manner were then adjusted to the total average annual expenditures for food as a whole reported in the CES.

Derivation of Item Weights

CES expenditures by city or for combinations of cities were used directly for index weights, except for certain categories for which special estimates were derived. These were home purchase and financing, automobile purchase and financing, and alcoholic beverages. Special weight derivation procedures for these items are discussed in a later section.

The general plan of the weight derivation process, for the majority of items, was to use unadjusted city expenditure data for broad groups of items and for subgroups and individual items for which data appeared reasonable. At successively lower levels of aggregation, where the data appeared erratic as the result of small samples, it was necessary to use an average of several cities as a means of distributing group or category totals to components. This involved an element of subjective decision but at a fairly low level in the index classification scheme, since totals for major categories usually could be used without adjustment.

Because of the very small samples of "index" single persons⁷¹ within a given city, expenditure patterns derived directly from the survey results are erratic and are, therefore, not suitable for index weights by city. The data were

⁷¹ To meet a commitment for a separate index for families of 2 or more, it was necessary to derive weights separately for families and singles. The separate index for families previously described was discontinued after November 1964.

combined to regional and national totals and compared later with like combinations for families of two or more. On the basis of these comparisons, it was decided to derive city weights for single workers by applying to the final index weights for families the national ratios of expenditures of singles to those of families.

For convenience and ease of comparison among cities in making decisions as to whether or not to use unadjusted city data the observed expenditure data for the sampling frame for each city were converted to relative importances at successively lower levels of aggregation, major categories to all items, major groups to categories, subgroups and/or expenditure classes to major groups, and individual items to expenditure classes, for wage-earner clerical-worker families of two or more persons. The major categories used for this purpose are: food at home, food away from home, shelter (less home purchase and financing), fuel and utilities, household furnishings and operation, apparel and upkeep, transportation, and health and recreation (less alcoholic beverages). The items excluded are those for which expenditure weights were derived independently. Although CES data for total transportation were included in the calculation of relative importances, the CES data for automobiles and auto financing charges were subsequently replaced by specially edited data as explained later. The adjustments were not large enough to affect the relative importances for the other categories significantly and had no effect on the dollar expenditures accepted for the weights.

At the highest level of aggregation, major category, the relative importances to all items show remarkable consistency among cities for families of two or more, especially for the large cities. In the largest cities where surveys were conducted in 2 years—1960 and 1961—the data for the separate years are also generally consistent. As a result, category expenditures were accepted without adjustment for each of the larger cities (A, B, and C strata). For the small cities, average expenditures for all D size cities within a region (including the 16 additional nonindex cities surveyed), were adopted for each D city within a region. Regional averages for city-size strata and for all size cities combined were computed by dividing aggregate expenditures by the total number of index families. Therefore, the number of usable schedules

in each city became implicit weights. In addition to the pooled average, D stratum regional averages were computed as simple averages of city averages. These were used in preference to the pooled averages in the weight derivation for D cities in order to give the cities equal weight. For example, each of the 6 southern D size cities in the CPI have identical expenditure weights for food at home, namely, the average of expenditures for families in the 12 southern small cities for which CES data were available. This procedure made maximum use of the data available and tends to minimize the sampling error in this city-size class.

The relative importances for each city were reviewed by region at successively lower levels of aggregation. At each stage of the review, it was decided either:

1. To use the city expenditure data as index weights for families of two or more without adjustment; or
2. To make adjustments for obvious aberrations resulting from the sampling process, usually by applying an average of internal relative importances for several cities to the expenditures already determined for the city at the next highest level of aggregation.

As expected, the data show much more variability at the lower levels. For the large (A and B strata) cities, review of the data indicated that the figures could be accepted as reported for most of the expenditure class (EC) totals. The major exceptions were durable housefurnishings and miscellaneous personal and financial expenses where the relative infrequency of purchase results in erratic results by city even at the expenditure class level. Total expenditures for durable housefurnishings by city were therefore distributed among the four expenditure classes (EC's 23–26) on the basis of the average percentage distribution of expenditures in cities of all sizes within each region. For EC–53, miscellaneous personal and financial expenses, regional relative importances of EC 52 to the total of all other EC's were applied to the city totals for EC 1–51, as derived in the derivation process. In some cases, regional averages of all size cities also were used to distribute the transportation category expenditures among the component expenditure classes. For some EC's, data were accepted without adjustment for C cities also, but in a number of cases the major group totals were distributed to EC's on

the basis of regional relative importances. Generally for the D cities, the average expenditures for all D cities in the region were used at the EC level.

Below the EC level, i.e., the distribution to sub-EC's and to individual certainty items and the probability items combined, the basis for index weights for families of two or more varied. City data were used without adjustment in some of the largest cities, but more generally regional or city-size average relative importances were used to break down EC totals previously determined. Appendix table VII summarizes the weight derivation process for families. Weights for probability items within an EC are divided equally. In those cases where more than one specification has been selected to represent a single sample item, the distribution of the final weight of the item to the priced specifications was made by the commodity specialists according to their knowledge of the industry. In many cases, the priced specifications are given equal weights; in others, weights are assigned according to their estimated relative importances in the market.

Home Purchase

Because of the relative infrequency of home purchase, the small samples in the expenditure survey do not yield reliable averages. It was necessary, therefore, to use a special estimating procedure utilizing data from sources outside the CES. As for all other items in the index, the weight for home purchase represents, in principle, the average obligation incurred by the index population in the survey year. The average is, of course, affected by consumers who rented homes or did not buy homes in the survey year.

The average expenditure for families of two or more was derived as the product of three separate factors:

1. Estimated average price paid (or contracted for) by index consumer units who bought homes during the survey year;

2. Estimated average rate of purchase, i.e., the average percent of homeowners who purchased homes during the survey year; and

3. The level of homeownership among index consumer units, i.e., the percent of consumer units who were homeowners during the survey year.

Some families in the survey bought homes for the first time during the survey year; others sold one house and bought another, usually larger and more expensive. The total index weight was defined as gross expenditures for houses bought by families buying for the first time plus net expenditures by families for replacement homes (gross price of the new house less the price received by the family for the sale of the house which was replaced).

Estimates of purchase price for initial acquisition, and for replacement, were derived arithmetically for each city from an average purchase price for the two types of purchasers combined, derived in turn from the entire Comprehensive Housing Unit Survey sample. Houses purchased during the survey year and the 3 preceding years were included in the average to improve the sample estimate. As changes in prices of houses during this period were relatively small, the reported prices were used without adjustment for price change to the link month. To take account of differences in home prices between index and nonindex-type consumer units, this average was adjusted by the national ratio of average current market value of homes owned by index-type homeowners to the value of homes owned by all homeowners, as reported in the CES.

Using CES data for index consumer units in all cities, a national ratio of prices paid for replacement houses to prices received for houses sold by the same families (initial purchase) was calculated. This ratio was used to derive average prices in each city for the two types of purchase, according to the following equation:

$$P = P_i I + P_r R$$

$$P_r = K P_i$$

$$P = P_i I + K P_i R$$

$$P_i (I + KR) = P$$

$$P_i = \frac{P}{I + KR}$$

where P = the estimated average price paid for all houses bought by index consumer units in a 4-year period, derived from CHUS data for a given city, adjusted to index family basis

P_i = the estimated average price paid for initial purchases of houses by index consumer units in a given city

- P_r = the estimated average price paid for replacement purchases of houses by index consumer units in a given city
- K = the average ratio of replacement purchase prices to sale (initial purchase) prices, as reported by index consumer units in the CES, for all cities combined
- I = the proportion of homeowners among index consumer units who became homeowners during the survey year, derived from CES data for all cities combined
- R = the proportion of homeowners among index consumer units who bought homes for replacement, derived from CES data for all cities combined.

The value of K , the ratio of purchase price to sale price, or replacement to initial purchase price, varies with the level of sale prices. Consequently, it was computed separately for four groups of cities, i.e., those with average sale prices (1) below \$6,000, (2) \$6,000–\$13,999, (3) \$14,000–\$17,999, and (4) \$18,000 and over.

The rate at which families purchased houses during the survey year was derived in two ways—from Census data showing percent of homeowners on April 1, 1960, who moved into their dwelling units during the previous year and from CHUS. Because purchase rates derived in this way from Census data were so inexact and much higher than from other sources, those derived from CHUS data were used in final derivation. CHUS consumer units could not be identified as to their eligibility for the CPI. Therefore, ratios of annual rates of purchase by index consumer units and all consumer units for the most recent 4 years from the CES, calculated on a regional basis, were applied to the city CHUS purchase rates to adjust to purchase rates of index consumer units. These composite purchase rates were separated into rates for initial and replacement purchase on the basis of the national proportions of homeowners reporting each type of purchase in the CES.

The remaining component, level of ownership, needed for deriving weights was obtained directly from the CES, using as a basis the number of months of homeownership reported by index consumer units. This method takes full account of consumer units who changed from renters to owners (or vice versa) during the year.

The weight derivation for home purchase by index families of two or more persons is illustrated in table 4, using hypothetical data from city A in region 1.

Because of the very small sample of index single consumer units in each city, it was not possible to follow similar procedures to derive weights for single workers. The percent of singles making replacement purchases, undoubtedly very small, was set at zero, because in the entire sample of cities not a single case was reported for the survey year. In general, the factors in the general formula for weight derivation for initial purchase were computed by applying the ratio of the average value for singles to the corresponding average for consumer units of two or more, developed for a group of cities, to the city values for families of two or more. Final expenditure weights for single consumer units were derived from the weight derivation formula and combined with those for families, using the relative population weights described in a later section.

Mortgage Interest

The index expenditure weight for mortgage interest is defined as the average amount of interest incurred for the purchase of homes by the index consumer units during the survey year and subsequently paid. From secondary sources, it appears that mortgages are either paid off or refinanced at about half term. Consequently, interest contracted for was computed for half the average term. It was derived from the average amount and term of mortgages, the average interest rate, the average rate of mortgaging among homeowners, and the level of ownership, pooling city data where necessary. As these factors differ for different types of situations, separate calculations were made for families of two or more and for single workers; for new and assumed first and second mortgages; for new homeowners and for those buying replacement houses; for conventional mortgages issued by banks and private individuals, and for mortgages insured by government agencies.

Because the survey showed only the amount of interest actually paid during the survey year, it was necessary to compute total amount of mortgage interest contracted for, using data from the survey supplemented by other sources, including those used for the home purchase

TABLE 4. ILLUSTRATION OF WEIGHT DERIVATION PROCEDURE FOR HOME PURCHASE, INDEX CONSUMER UNITS OF 2 OR MORE PERSONS, CITY A, REGION 1 (HYPOTHETICAL)

Line No.	Item	Type of consumer unit	Area	Source of data	Amount
1	Average price of houses bought in most recent 4 years	All home buyers	City A	CHUS	\$16,300
2	Average market value of owned homes	Index homeowners	City A	CES	\$13,300
3	Average market value of owned homes	All homeowners	City A	CES	\$16,000
4	Ratio: index to all consumer units			2+3	0.831
5	Estimated average purchase price of houses (P)	Index home buyers	City A	1×4	\$13,545
6	Proportion of home purchasers buying houses initially (I)	Index home buyers	U.S.	CES	.683
7	Proportion of home purchasers buying replacement houses (R)	Index home buyers	U.S.	CES	.317
8	Average price of replacement homes bought	Index replacement home buyers	U.S.	CES	\$9,874
9	Average price of homes sold by replacement buyers	Index replacement home buyers	U.S.	CES	\$8,053
10	Ratio: purchase price to sale price (K) ¹			8÷9	1.226
11	I+KR (See equation)			6+(7×10)	1.072
12	Average price paid for initial purchase of houses (P _i) = P ÷ (I+KR)			5÷11	\$12,635
13	Average gross price paid for replacement purchase of houses (P _r)			12×1.321	\$16,691
14	Average net price paid for replacement purchase of houses (P _r -P _i)			13-12	\$4,056
15	Average annual rate of purchase in 4 most recent years	All home buyers	City A	CHUS	7.00
16	Average annual rate of purchase in 4 most recent years	All home buyers	Region I	CES	7.60
17	Average annual rate of purchase in 4 most recent years	Index home buyers	Region I	CES	7.90
18	Ratio: index units to all units			17÷16	1.039
19	Estimated annual rate of purchase:	Index home owners	City A		
20	All purchases			15×18	7.27
21	Initial			19×6	4.97
22	Replacement			19×7	2.80
23	Percent of consumer units owning homes	All index	City A	CES	62.0
24	Estimated annual rate of purchase:	All index	City A		
25	Initial			20×22	3.08
26	Replacement			21×22	1.43
27	Estimated annual average expenditure:	All index	City A		
28	Initial purchase			12×23	\$389
29	Replacement purchase (net)			14×24	\$58
30	Total			25+26	\$447
31	Average expenditure for vacation homes	All index	City A	CES	\$53
32	Total CPI expenditure weight for home purchase in survey year	All index	City A	27+28	\$500

¹ The ratio of purchase price to sale price (replacement to initial purchase) was found to vary depending upon the sale price level. For sales from

\$6,000 to \$13,999, the ratio was 1.321; for \$14,000 to \$17,999, it was 1.144.

weight derivation. Wherever the survey in a given city did not provide a large enough sample to produce reliable averages, the data were combined with those for other cities to provide regional or, in some cases, national averages.

Operationally, the weight was calculated as the product of two factors: (1) the amount of interest contracted per mortgage for half the term, and (2) the percent of consumer units who obtained mortgages. Interest contracted was the product of three factors: (1) average amount of mortgage, (2) interest rate, and (3) term of mortgage. The amount of interest paid over the entire term of a mortgage is determined by the principal, the rate of interest, and the term. The principal amount was derived as a proportion of the purchase price (as computed for the home purchase weight). The ratio of mortgage principal to purchase price was computed by region for initial and replacement purchases from the CES and used for every city in the region. Average interest rates and terms also were available from the CES. Regional averages were used for rates and national data for the term. Standard amortization tables were used to derive monthly payments. An estimate of the amount of interest to be paid for the first half term was derived by subtracting the mortgage principal from the total amount required

to repay the loan if paid off after having run only one-half its stated term, assuming no penalty for early payment. Standard amortization tables were used in this computation.

Table 5 illustrates the weight derivation procedure for a hypothetical city A in region 1, for families of two or more persons who obtained new first mortgages. Similar calculations were made for other types of mortgages and for single consumer units and the resulting amounts were combined into an overall average, using appropriate weights.

Automobile Purchase and Financing Charges

In general, the weights used in the index for both new and used cars represent average net family expenditures for cars purchased (whether or not paid for) during the survey year, based on specially edited CES data. Data were derived separately for new and used cars and for financing charges, for index families of two or more and for single consumer units.

Values represent *net* purchases for consumer units who purchased and sold cars during the survey year. Stated briefly, the values of cars traded in, sold, or repossessed were deducted from purchase prices, to arrive at the net value. The weights included all transactions during

TABLE 5. ILLUSTRATION OF WEIGHT DERIVATION PROCEDURE FOR MORTGAGE INTEREST, INDEX CONSUMER UNITS OF 2 OR MORE PERSONS, CITY A, REGION 1 (HYPOTHETICAL) NEW FIRST MORTGAGES

Line No.	Item	Type of consumer unit	Area	Source of data	Initial purchase	Replacement purchase
1	Percentage of home buyers obtaining mortgages.....	All index units.....	U.S.	CES.....	94.8	94.8
2	Estimated annual rate of purchase.....	Index homeowners.....	City A	A-20&21.....	4.97	2.30
3	Estimated annual rate of mortgaging.....	Index homeowners.....	City A	1X2.....	4.71	2.18
4	Estimated average purchase price of houses.....	Index home buyers.....	City A	A-12&13.....	\$12,635	\$16,691
5	Average ratio of mortgage to purchase price.....	Index mortgagors.....	Region 1	CES.....	.85	.75
6	Estimated average principal amount of mortgage.....	Index mortgagors.....	City A	4X5.....	\$10,740	\$12,518
7	Average rate of interest on mortgages.....	Index mortgagors.....	Region 1	CES.....	5.75	6.00
8	Average term of mortgage in years.....	Index mortgagors.....	U.S.	CES.....	20.25	16.75
9	Average monthly payments.....	Index mortgagors.....	City A	amortization table.....	\$74.91	\$98.87
10	Total payments per year.....	-----	-----	12 X mo. payments.....	\$898.92	\$1,186.44
11	Total payments during half term of mortgage.....	-----	-----	1/2 (8X10).....	\$9,102	\$9,936
12	Balance due on principal at end of half term.....	-----	-----	amortization tables.....	\$6,910	\$7,766
13	Total payments required to discharge loan.....	-----	-----	11+12.....	\$16,012	\$17,702
14	Total amount of interest paid in half term.....	-----	-----	13-5.....	\$5,272	\$5,184
15	Percent of consumer units owning homes.....	All index.....	City A	A-22.....	62.0	62.0
16	Percent of consumer units obtaining mortgages.....	All index.....	City A	15X3.....	2.92	1.35
17	Estimated average amount of mortgage interest.....	All index.....	City A	16X14.....	\$154	\$70

the survey year for consumer units who purchased cars; however, sales of cars by consumer units who did not purchase cars during the survey year were not treated as a deduction for the weights.

Where they occurred, other deductions from purchase price such as the value of a wrecked car also entered into the netting process. Cars used entirely for business were excluded. Values for cars used only partially for business purposes were adjusted on a proportional basis, so that only that portion of expenditures or sales for family or "pleasure" use entered into the weights.

The total CES weights for new and used cars were then distributed to the following priced specifications:

	Sample 1	Sample 2
New cars.....	Chevrolet Impala Ford Galaxie 500 Chevelle Plymouth or Dodge Rambler or Studebaker	Chevrolet Impala Ford Galaxie 500 Ford Falcon Pontiac or Buick Volkswagen or Fiat
	<i>Both samples</i>	
Used cars.....	2 yearold	
(Ford and Chevrolet)	3 yearold	
	4 yearold	
	5 yearold	

The breakdown of weights was made on the basis of industry data on production or sales, maintaining for new cars appropriate weights of standard size versus compact and foreign cars combined in each sample. CES data for auto financing charges were tabulated and edited for consistency with car purchase weights.

Alcoholic Beverages

Previous consumer expenditure surveys have consistently indicated a tendency on the part of

consumers to understate their expenditures for alcoholic beverages. In order to evaluate the degree of underreporting of expenditures reported in 1960 and 1961, the CES data were compared with figures from other sources.

From the national income accounts, estimates of aggregate personal consumption expenditures were available for the three major categories of alcoholic beverages—beer, distilled spirits, and wine. National accounts estimates of average expenditure per household for 1960 and 1961, separately, ranged from 1½ to 2½ times the CES average per consumer unit for the three items. Estimated quarterly consumption data by States from industry sources also indicated a general underreporting in the CES.

Because of differences in the definition of household for consumption expenditures in the national accounts and of consumer units for the CES, the average expenditures per unit were not comparable. Therefore, the relative importance of alcoholic beverages to total food expenditures in the two sets of data was chosen as the basis for adjustment. Food was used in preference to total expenditures because conceptual differences between the national accounts and the CES make total expenditures less comparable than food expenditures. In 1960, expenditures for alcoholic beverages were 14.6 percent of food in the national accounts, twice as high as in the CES all-city average; and in 1961 they were 14.9 percent—almost 2¼ times the CES.

Since it could not be assumed that the national accounts provided the best estimate of expenditures for the population represented by the CPI, it was decided to make only a partial adjust-

ment. Some of the factors considered were as follows:

1. The national accounts data represent the entire U.S. population. Since they are derived from reports of tax revenues, they may not necessarily correspond with actual consumption data, because they are affected by changes in inventories of liquor dealers.

2. The CES expenditures to be used as index weights represent urban wage earners and clerical workers only. They were derived from sample surveys of consumer units in cities of all sizes. Expenditures reported by individual consumers may reflect actual consumption more closely than data on tax revenues.

3. The distribution of total personal consumption expenditures (from the national accounts) for alcoholic beverages among the three major categories—beer, distilled spirits, and wine was approximate. It was derived by deducting rough estimates of expenditures for business use from total expenditures.

4. The “household” used to derive average personal consumption expenditures is not the same as the “consumer unit” used in the CES. However, much of the effect of these differences has been eliminated by the use of the relationship of expenditures for alcoholic beverages to expenditures for food rather than actual expenditures.

5. It was not possible to make separate determinations for alcoholic beverages at home and away from home.

Although there is no exact measure of the effect of these differences between the two sets of data, expenditures for alcoholic beverages were assumed to be about half way between the expenditures reported in the CES and those derived from the national accounts data. Accordingly, after distributing CES expenditures away from home proportionately to beer, distilled spirits, and wine, the dollar expenditures in each city as reported in the CES were adjusted upward by the following overall factors:

	1960	1961
Beer.....	1.48	1.72
Distilled spirits.....	1.57	1.53
Wine.....	1.25	1.46

These factors represent for each category the ratio of the average of the relative importances to total food expenditures in the national accounts and in the CES for all cities combined to the latter.

The adjusted city data were then subjected to the same type of review as were other items. With few exceptions, adjusted data for the individual items of alcoholic beverages in the larger cities were accepted as index weights. Regional averages were used both at the EC and item levels in the smallest cities. An additional factor in the establishment of weights was the legal status of alcoholic beverages in the various localities. In cities where sales of distilled spirits by the drink are prohibited by law, no weight was established for the index and any expenditure reported for the item was allocated to beer and/or wine in the same city or to other D cities where drinks are sold.

Population Weights

In combining city data to U.S. totals for the index, each of the 50 index cities carries a population weight, derived from Census 1960 urban population for the region-city size strata used in the sample selection described in chapter V. These are expressed as relative population weights adding to 1.000; they are built into the city item expenditure weights, so that weighting to U.S. totals is a simple matter of summation. The product of the expenditure weight and the relative population weight for each item is called a cost-population weight.

The Census data were adjusted to obtain estimated wage-earner clerical-worker population. (See appendix table VIII-A.) Estimates of the number of equivalent persons living in consumer units all year (column 1 of appendix table VIII-A) were derived by regional city-size strata by subtracting institutional population and armed services personnel living on post, and making allowances for births, deaths, migrations, etc., since 1960. The number of consumer units (column 2) was obtained by dividing these estimates by the average size of consumer units by city as shown in the CES.

It was then necessary to estimate the number of “index” (wage-earner clerical-worker) consumer units by applying CES proportions of index to total consumer units by regional city-size strata. The percentage distribution of these estimates shown in column 3 is the basis for the city population weights. Only the 12 certainty A cities carry their own weight. For all others, the region-city size stratum weight is divided

equally among the sample cities in the stratum. Because of this design, smaller cities may carry as much or even more weight than some of the large certainty cities.

Because of the original plan to calculate separate indexes for families and singles combined and for families only, and the way in which the expenditure weights were constructed, it was necessary to partition the city weights between families and singles. This was done using the CES ratios of families and singles in A cities, and region-city size average ratios for other cities. Final weights for the 50 cities, additive to the city totals, are shown in appendix table VIII.

When the six additional B size cities were added to the index in January 1966, population weights were revised and revised cost-population weights were introduced by linking in December 1965, i.e., for the six cities and the other cities affected. Since the six additional cities were selected purposively, they carry only their own population weights. Therefore, the weight of the additional cities within a region was subtracted from the region-stratum weight and the remaining weight divided equally among the probability B cities. Appendix table VIII-B shows the population weights for B

cities before and after the addition of the six cities to the CPI sample.

Price Adjustment

The item weights as derived from the CES relate to the average of the years 1960-61. Technically, it was necessary to adjust them for relative differences in price movement from 1960-61 to December 1963, chosen as the link month for the new index. This could be done only in a very approximate way simply because of lack of prices for the new cities and the new items. For the 14 overlap cities, percent changes from the old series for appropriate commodity groups were used to make the necessary price adjustment in each city. For the new cities, national indexes were used.

Final Relative Importances

The final U.S. relative importances as of the December 1963 link month in comparison with old series weights are given in appendix table IX. In making this table, old series data were regrouped according to the classification of items for the new series. Data are shown separately for the certainty items in the revised index, but not for probability items, since they carry equal weights rather than weights representing the importance of the items themselves.

Chapter VIII. Outlet Samples, 1964 Index*

The general objective and plan for selection of reporter samples for the revised Consumer Price Index were described in chapter IV. This chapter describes detailed operating steps. Although the outlet samples selected by the procedures described in the following pages are, strictly speaking, not probability samples, they have the primary merits which should come from probability principles: Objectivity, lack of bias in the selection procedure, and as adequate a representation as is possible of different types of stores and geographic sections of the SMSA's. Probability sampling techniques are possible to a much greater extent for those few commodities or services (such as food and rent) for which relatively large samples are priced than for other items, most of which are priced in very few outlets. Nevertheless, even for the latter, revised CPI samples were selected within a probability framework. They are designed to be representative of all types of stores serving the index population and can be presumed to be unbiased samples.

The possibility of using probability sampling techniques is greatly limited due to a lack of data for developing listings of universes of stores of different types in which specified goods and services are sold and which are patronized by the wage-earner and clerical-worker index population. To be more specific, detailed information is not available for excluding particular stores which offer goods and services of a quality that is "too high" or "too low" to be representative of that purchased by the index population. Secondly, no data are available to limit universe listings to outlets where continuous pricing of comparable items can be assured.

In addition to the universe data limitations, there is a problem in developing suitable sampling designs for each item priced because of lack of data on volume of sales by type of store. Although each item, theoretically, might have its

own reporter sample, it is not feasible from a cost standpoint to select each of these samples independently. Such a procedure might well spread the pricing over an excessive number of outlets with very few quotations being obtained from any single one. Moreover, only for food are retail sales data generally available by type of store for individual cities.

Size of Sample

The first step in selection of the reporter samples is to determine sample sizes for each expenditure class (EC) of items in each area, taking into account the cost of collection and available information on variances in price movements. The basic sample size for most nonfoods, for which price collection is most costly, was set at four reporters, the same as in the previous index. This means a total sample size of eight for certainty items in replicated cities. In three of the largest SMSA's (Chicago, New York, and Los Angeles) the sample sizes were increased to 5 per sample or a maximum of 10 for the 2 replicated samples.

As indicated in appendix table X, the size of the outlet sample differs considerably from the basic sample size for nonfoods for a few index components. For example, sample sizes for some of the professional medical care services were established slightly above the basic sample size used for the revision, but this represents a reduction in the expanded sample size initiated for medical care in 1958. In the old index, the number of physician reporters (20 large cities) ranged from 12 to 42 in New York for the office and house visits. Similarly for dental and other professional services (obstetrical, surgical, etc.) reporter samples varied from 6 to 30 reporters. For these same services in the "C" and "D" strata cities, the sample consisted of six reporters wherever possible. In the revised index the sample size for medical services ranges from 3 to 24.

* Prepared by Helen M. Miller.

In other instances where either the universe of a specific outlet type is comparatively small (e.g., utility companies), or where prices are obtained by mail questionnaire (e.g., newspapers) it is possible to price the universe of reporters in the city proper and in selected suburban pricing areas.

For new automobiles, the sample of dealers is designed to represent the various manufacturers. Therefore, the total sample for all makes combined is larger than the basic sample size of four, but the sample for individual makes of automobiles is less than four. In some cases, sample sizes are not established on a city basis. A total sample of 200 (or 50 for each of four regions) is used for hotel and motel accommodation rates. This total sample is allocated to the various cities (A, B, and C strata only) based on relative importance of the hotel receipts in an SMSA to the total for the region. Thus, the number priced for this component ranges from 1 in some of the "C" stratum cities to some 35 hotels or motels in New York. ("D" stratum city hotels are excluded due to their small relative importance.) An exception also has been made for college textbooks. In this instance, sampling is established on a regional basis and limited to nine universities, since uniform list prices prevail for this item.

Lastly, for some items no specific sample of outlets is selected. Instead, for these—home purchase, college tuition, used cars, automobile insurance, magazines, etc., data collected by other government agencies or private organizations are used.⁷²

Because of the volatility and variability of prices, sample sizes for food are considerably larger than for nonfood and they vary for different cities, depending upon number of chain organizations priced and other factors. Basic data on retail food store sales were obtained from special tabulations from the 1958 Census of Retail Trade. Number of stores and volume of sales were reported for chains (four or more stores) and independent stores, by type of store, by central city and remainder of SMSA, and for independent stores by seven sales size groups. Determination of the number of food stores to be sampled was based on two factors. (1) Since all chain organizations are to be priced, there is no explicit restriction on the number of chain

outlets. In most CPI cities, one outlet of each food chain is priced and more than one, if necessary, to represent stores having different pricing policies, such as discount division outlets and suburban outlets. In a few cities, some small chains are excluded if the organization represents less than 1 percent of chain grocery sales in the SMSA. For New York and Los Angeles all the largest chains are included, but it is necessary, because of cost, to sample the smaller chains (organizations with less than 10 outlets in the area).

(2) The total cost of collecting food prices for the revised index is planned at about the same level as in the previous index, for which sample sizes were large enough to permit publication of U.S. and city average prices. The maximum sample size for independent food stores is established by the number of outlets required to provide a predetermined number of quotations for meats and fresh produce, the prices of which are usually more volatile than other food items (sometimes referred to as dry groceries). For example, in a particular city the nominal sample size of quotations for meat and produce might be 30, with 20 meat quotations allocated to regular food stores and 10 to meat markets, and with 25 produce quotations allocated to regular food stores and 5 to produce markets. Since meat and produce markets do not ordinarily yield prices for other groceries, this means that the maximum number of quotations for dry groceries is determined by the 25 regular food stores for fresh fruits and vegetables. For most "D" stratum cities, the size of the sample is set at five independent grocery stores, plus chains. The variations in a few D cities reflect the limited number of stores in a city or the importance of chain stores. Independent food outlet sample sizes by city are given in appendix table XI.

Allocation by Type of Store

As indicated earlier, it would be desirable to distribute pricing across the various kinds of stores roughly in proportion to their importance in terms of sales of each specific item. Of course, with a basic sample size of 4 outlets (5 in the three largest SMSA's) for nonfood items, the allocation of quotations by type of store is done only in a very approximate manner, even in the more fully replicated cities where 2 outlet samples are priced (8 or 10 outlets in total). For

⁷² See chapter X for a description of special procedures used.

certainly items priced in two replicated samples, it is considered more desirable to make the best possible allocation for the combined outlet sample and then make an ex post facto division into the two samples. Thus, in some instances, the replicated samples are not "balanced" according to type of store.

For nonfood items, very little factual data are available on which to base outlet type allocations, and data which are available have limitations. With few exceptions, distribution patterns are reported for commodity groupings and not for specific items. Thus, the relative importance of the various outlet types for a grouping can be reflected, but the distribution pattern might vary considerably for the specific items included in the group. Also, distribution patterns change continually and vary from city to city. In many instances up-to-date data and/or city distributions are not available.

For some major commodity groups, such as furniture, household appliances, and apparel, "merchandise line" statistics are available for A and B SMSA's and some C stratum cities individually from the 1948 Census of Retail Trade. These data were utilized in determining both outlet types and the distribution of quotations among these outlet types. In order to approximate a more current distribution, the 1948 product line information (by area) was updated by 1958 Census sales data by type of store. In other words, for each SMSA the 1948 distribution of sales by merchandise line for a given outlet type was applied to the 1958 total sales of that outlet type, to obtain updated merchandise line sales. The 1958 dollar volume sales thus calculated for the various outlet types provide a distribution pattern for selected merchandise lines by type of outlet.

Strict outlet type allocations are impractical for small samples. For example, using available source data, a typical distribution pattern for the major household appliance category might be as follows:

Type of outlet	Percent distribution of sales
Total.....	100.0
Household appliance store.....	55.6
Department store.....	14.3
Radio store.....	11.0
Furniture store.....	6.3
Variety store.....	4.8
Hardware store.....	3.5
Jewelry store.....	1.9

Type of outlet	Percent distribution of sales
Tire, battery, and accessory dealer.....	1.4
Dry goods, general merchandise.....	.4
Gasoline service stations.....	.2
Lumber yards.....	.2
Heating and plumbing equipment dealers.....	.2
Building materials dealer.....	.1
Music stores.....	.1

It is impossible within the limited samples to include all 14 outlet types as strata with at least one quotation allocated to each. Rather than consolidate the miscellaneous outlet types into a combined stratum, cutoff sampling is employed. In the above example, the 10 outlet types which account for less than 5 percent of each of total sales for the merchandise line are eliminated. Sales of the eliminated outlet types (12.8 percent) are prorated over the four most important outlet types. By this procedure, the 10 quotations for major household appliances are allocated among four outlet types as follows:

Type of outlet	Adjusted percent distribution of sales	Distribution of quotations
Total.....	100.0	10
Household appliance stores.....	63.7	6
Department stores.....	16.4	2
Radio stores.....	12.6	1
Furniture stores.....	7.3	1

The above illustration also demonstrates the point, mentioned previously, that outlet types can be reflected properly for a category, but not necessarily for individual items. For example, radio stores naturally are insignificant as an outlet type for sales of washing machines and the allocation for washing machines must eliminate radio stores.

Allocations for these groupings in the C and D cities (where merchandise line data are not available) are based on data obtained from a BLS "where bought survey." This survey was conducted in connection with the Consumer Expenditure Surveys. A copy of the schedule is appended as exhibit C. For other commodity groupings, e.g., drugs, personal care, automotive repairs and tires, etc., distributions based on industry studies such as "Drug Topics," "Food Field Reporter," "1961 Look National Automobile and Tire Survey" were used. These data were current but usually give a U.S. distribution pattern rather than a city or regional pattern. For still other items, no allocations are required since they are predominantly "one outlet type" commodities.

In this category, major items are:

Automobiles	Motion pictures
Gasoline	Shoe repairs
Man's haircut	Self-service laundries
Beauty parlor services	Funeral services

Reporter samples for the various medical services are allocated to the type or types of physicians reported by the local medical or dental associations as being representative of the priced service in their locality. Data from the various medical associations indicate that the relative importance of the specialist and the general practitioners differ greatly among cities depending upon local conditions. No uniform relationship exists. In some samples, therefore, a 50/50, 75/25, or other proportion of general practitioners versus specialists is used, whereas specialists only are included in other SMSA samples. For all reporter samples, selection is limited to physicians or dentists engaged in full-time private practice. For sample selection, the list of practitioners was stratified by age and by geographic location both in the city proper and in the suburban pricing areas.

Allocation as to type of outlet for food has been mentioned previously in reference to size of sample. To be more explicit, the allocation of the number of stores of different types— independent groceries, meat markets, and produce markets—was made to the three major categories, meats, fruits and vegetables, and groceries, based on the approximate distribution of sales as reported by food stores in the previous CPI outlet sample (on BLS 1040 Retail Food Stores Outlet Information). For example, in one city, BLS independent grocery store reporters estimated that meat sales accounted for an average of some 30 percent of sales. Using this percent, an estimated dollar value was computed for meat sales in all independent grocery stores, i.e., 30 percent of total grocery store sales as reported by Census. A comparison of the estimated dollar value of meat sales in grocery stores and meat market sales (Census data) produces an 80/20 ratio between the two outlet types, i.e., 80 percent of estimated total meat sales are made in grocery stores and 20 percent in meat markets. Outlets in the sample for meat are allocated in this proportion. This procedure was used also for the cities not in the previous index by making use of the percentage distributions for cities with similar charac-

teristics; for example, percentage distributions reported for Atlanta (overlap city) were used for Nashville (new city), etc. In a few instances an overall average for all overlap cities was used. The resultant number of meat markets in the sample ranges from none in some of the smaller SMSA's to 30 in New York, the number of produce markets from none in some cities to 14 in New York, and independent grocery stores from 9 in some of the C stratum cities to 37 in Chicago.

One further point should be noted regarding food store allocations. Two substrata of independent food stores ("large" and "small") were set up according to sales volume, i.e., \$300,000 and over for the "large" and \$50,000 to \$299,999 for the "small." Each substratum represented roughly 50 percent of Census independent grocery store sales volume in 1958. The exclusion of stores with less than \$50,000 sales volume is based on practical considerations. Although these stores are numerous, especially in a few cities, overall they account for a very small percent of total independent grocery store business, and pricing in these little stores has always been unsatisfactory—many items are not carried at all, others not consistently.

Allocation by Geographic Location

Not only is the sample allocated by kind of store, but an attempt is made to give proper representation for nonfoods to the downtown areas, to neighborhood areas of the central city, and to the suburban areas, and for food to the city proper and to suburban areas. Again, it is impossible within the small sample sizes to do this in any precise fashion, except for food.

There is a wide variation in the importance of central city and suburban area retail sales in relation to the total retail sales of the metropolitan area. For example, for five of the SMSA's (Indianapolis, Wichita, Austin, Baton Rouge, and Durham) suburban areas account for less than 10 percent of total 1958 retail sales. However, for seven SMSA's (Los Angeles, Boston, Pittsburgh, St. Louis, San Francisco, Hartford, and Lancaster), suburban sales account for over 50 percent of total 1958 retail sales, ranging from 50.9 percent in St. Louis to 65.5 percent in San Francisco.

From an operational standpoint—and this is based mostly but not entirely on cost considerations, it is necessary to restrict pricing in the

suburban area of the SMSA to selected pricing areas. The suburban areas were selected with probability proportional to 1958 total retail sales,⁷³ from a listing of suburban communities (incorporated communities of 2,500 inhabitants or over) and major retail centers arrayed by and within counties by total retail sales. For each of the SMSA's, the number of pricing areas selected for nonfoods equals the maximum number of quotations required outside the central city for any category of outlets. The suburban pricing area selections are considered a master sample of areas with the needed quotations distributed over sampled areas on a random basis.

An exception to the above was made for six SMSA's. For four SMSA's (Austin, Baton Rouge, Durham, and Wichita) no suburban pricing areas were selected, and all pricing is limited to the central city because of the small percentage of sales for the suburban areas. For two other SMSA's (Cedar Rapids and Champaign-Urbana) suburban sales ranged from 10 to 25 percent; however, incorporated suburban communities are practically nonexistent. Therefore, in these areas, individual suburban outlets were selected (where required) from the suburban areas adjacent to the central city.

Within the central city, allocations for nonfoods are made either between the central business district and the neighborhood area or, where data are available, between the central business district and major retail centers located in the neighborhood area. No data are available for the allocation of food outlets within the central city. For New York, the distribution of central city outlet types among the boroughs was based on the percent distribution of 1958 retail sales for the five boroughs.

Allocations between the central city and suburban areas for most of the commodity and service outlets are based on 1958 census data on retail sales by establishment type (2, 3, or 4-digit SIC codes) and on 1958 Census service establishment receipts. Allocations for independent food outlets are based on the special Census tabulations mentioned previously.

For a merchandise line where several outlet types are included, the city-suburb allocation is made separately for each outlet type, rather

than attempting to maintain the proper allocation for the combined group of outlet types. Again, using the major household appliances as an example:

Type	Number of quotations	Sales Distribution		Allocation of quotations	
		Central city (Percent)	Suburban area (Percent)	Central city	Suburban area
Total	10	6.0	4.0	7	3
Household appliance stores..	6	3.5	2.5	4	2
Department stores.....	2	1.3	.7	1	1
Radio stores.....	1	.6	.4	1	0
Furniture stores.....	1	.6	.4	1	0

In allocating the number of quotations between city and suburbs by type of outlet separately for each specified type and then summing, seven quotations are allocated to the central city and three quotations to the suburban area. If first however, the sales data for the types involved had been combined and a city-suburban distribution calculated, six quotations would have been allocated to the city and four to the suburbs. Allocation by the individual outlet types, in some instances, tends to overemphasize the area having the greater volume of sales. However, considering the many data limitations, further refinement does not appear justified.

For other types of reporters where sales volume is not applicable, the basis for area allocations varies, e.g., area representation of hospitals is based on the relative importance of the number of hospital beds in the city and suburban areas to the total hospital beds in the SMSA.

Other Allocation

A final stage of allocation of outlets is made between single and multiunit establishments for some commodity groups. These allocations are based on 1958 retail sales for four major groupings—general merchandise group; apparel, accessory stores; furniture, home furnishings, equipment stores; drug, proprietary stores. In using these data, the assumption is made that the relative importance of single and multiunit establishments is similar for the various types of stores within the groupings. Since no data are available for service establishments or home maintenance contractors, no attempt is made to distribute quotations between single and multiunit establishments for these types of outlets. For food, as previously mentioned, the universe of chain store organizations is included in the store sample in most cities.

⁷³ 1958 *Census of Business Retail Trade* (BC-58-RA Series) and 1958 *Census of Business and Central Business District Series* (BC58-CBD Series).

Selection of Outlets

The master sample of establishments obtained from BOASI, described in chapter IV, was found useful. However, the limitations of the data are numerous and considerable supplementation and improvisation were required. The samples are most satisfactory for those kinds of stores where the typical pattern is one of many small independent establishments and where quality factors of the items priced are of less significance, from an outlet standpoint. Filling stations, barber shops, cleaning and pressing shops, etc., are examples.

For multiunit establishments, one report is usually submitted to BOASI for all stores in a State or region; therefore, the firm would ordinarily be listed only for the city in which the central office of the firm is located or from which the report is submitted. If listed for individual cities, the central office address is given, so no allowance is made for the actual location of the outlet, especially if it is located in the suburban area of the SMSA. Hence, the BOASI listings are especially inadequate as a sampling frame for large grocery chains and such other chains as shoe stores, drug stores, apparel stores, and department stores. For these types of organizations, it is necessary to compile listings from various sources: directories of department, drug, and variety stores; grocery route lists, shipping center guides; and telephone books.

Another problem encountered in using the BOASI listings is that the sampling ratios, used to draw the master establishment samples, failed to furnish the required number of stores from both the outlet type and area standpoints. Area wise, in the larger SMSA's, this was not unexpected since, as indicated previously, pricing is restricted to selected suburban communities and, in some instances, to selected neighborhood areas or major retail centers. Outlet-type difficulties result from the broad classification categories used in BOASI reports, thus limiting the number of acceptable outlet types. For example, the listing for furniture stores include second-hand furniture outlets, custom-made furniture outlets, interior decorators, etc.

In other instances, particularly in small cities, the address given for an establishment often is not that of the outlet itself but of the person or firm who prepared the BOASI report: accounting firms, lawyers, individuals whose home ad-

dress is given or the name of a completely different kind of store—e.g., a service station with a barber shop address, where the barber shop proprietor also owns the service station.

Despite the many problems and limitations, such as those mentioned above, the BOASI listings were useful as the starting point for compilation of sampling lists in general.

For some major commodity and service groupings, no data are available from the BOASI listings. In these instances other source materials were used to develop universe listings. For example, a list of medical service reporters was compiled from special professional directories such as the AMA and ADA directories of doctors and dentists; hospitals from the *Journal of the American Hospital Association*, and newspapers from the *N. W. Ayer and Son's Directory—Newspapers and Periodicals*. For still other items such as automobile dealers, movers, day nurseries, babysitters, etc., telephone directories proved to be the only available source. Automobile dealers fall into this latter group since only certain makes of cars are sampled.

Actual selection of the sample of stores to be priced for each item was made originally in Washington following probability techniques. Different items call for varying numbers of quotations by kind of store. To illustrate, some apparel items require only one quotation from a department store, while others call for two, three, or a maximum of four. A "master sample" was drawn for each type of store and service outlet, the number drawn being the maximum needed for any item to be priced. In the above illustration, four department stores would have been selected. The particular stores within this master sample in which each item was to be priced were assigned by a random method. Similarly for the replicated samples, outlets were assigned at random with any one outlet kept in the same subsample for all items priced.

For some categories (home maintenance, medical care, and restaurants), where past experience has pointed up a high loss rate in establishing outlet samples, an original and a replacement sample were selected.

Replacements

Initiation of pricing of a revised sample of outlets in the field is a time-consuming operation. It requires initial contact to store man-

agers to explain the CPI program and to obtain their cooperation, contacting department managers and selecting volume selling items for each specification, and recording prices. Frequently substitutions are required where investigation shows that the selected outlet does not carry the type of merchandise to be priced, e.g., high priced stores carry only luxury merchandise. There are also some substitutions necessary where the store has gone out of business or cannot be located, reporters refuse to cooperate, etc. An effort was made in the CPI revision to reduce the necessity of replacements by allowing the agents greater latitude in what they could price.⁷⁴ If the original specification was not available in an outlet, the agent was instructed to price whatever was "nearest to specification," unless the quality of the merchandise carried was clearly outside the quality level purchased by index families. The final decision on whether to accept such deviations was made in Washington. In some instances the deviations reported were not acceptable and outlet substitutions were made.

As described earlier, area and outlet-type allocations are approximate ones. Therefore, deviations from original sampling patterns were permitted where it was found that the designated pattern was not typical of specific areas. Not only is there great variation among cities in types of stores available but there have been important changes in retail distribution since the 1958 Census. Consequently deviations from the original allocations were permitted whenever local investigations indicated that the current distribution of sales by types of store or between the central city and the suburbs was out of line with the Washington office allocations for the outlet sample.

Using the original sampling lists, substitute outlets were supplied by the Washington office as long as it was expedient. Eventually, because of time and cost factors, it was necessary to have the agents select replacement outlets, subject to a fairly exact description of the type of outlet wanted, for example, a family clothing store in a suburban locality similar to the outlet being replaced. As pricing has progressed over time, replacement of outlets has been a continuing

procedure to maintain the outlet sample at required levels. Replacements are selected by the agents based on the controls mentioned above regarding type and location of outlet.

Summary

Outlet samples are designed to represent retail stores, establishments and individuals selling goods or services to wage-earner clerical workers and their families throughout each SMSA. Sample selections are made separately in the Washington office for each item priced, using statistical probability methods to the extent possible. Samples are selected to be approximately self-weighting with respect to type of ownership (single or multiunit store), type of outlet (department store, specialty store, grocery store, etc.) and geographical location within the SMSA (downtown business district, neighborhood area, or suburban area). For food stores, sales volume is also taken into account and the sample is divided into three distinct strata: (1) chain grocery; (2) large independent stores and large chain meat or produce markets (over \$300,000 sales in SMSA); and (3) small independent stores and small chain meat or produce markets (under \$300,000 sales in SMSA). For analysis purposes, in some cities one master sample was selected and divided ex post facto into two different (replication) samples.

As stated previously, no claim is made that the outlet sample is, strictly speaking, a probability sample. Instead a more accurate description might be that it is a compromise between a completely purposive sample which might be termed "specification determined," as it was in the previous index, and a probability sample.

It is still too early to evaluate fully all of the innovations and techniques used in contrast to the procedures previously used in establishing outlet samples. Some conclusions, however, can be made:

1. With the inclusion of suburban outlets, price data should be more representative of index workers' purchases.
2. With greater representation of specialty stores, the data are more typical of merchandise distribution patterns.
3. By use of the objective selection procedures, agent bias in selecting outlets is minimized to a great extent.

⁷⁴ One of the recommendations of the Price Statistics Review Committee was for less rigid specification pricing.

4. Some of the more recent merchandising trends have been reflected, i.e., discount operations, bantam grocery, or convenience-type grocery chains, etc.

5. By "nearest to specification" pricing, data for new models, styles, and materials should be reflected in the pricing at an earlier stage than previously.

6. Operationally, it is a far more costly sample both from the standpoint of the number of outlets priced and the area covered.

7. By use of predetermined outlet selections, the overall initial workload was simplified for

the many new agents who participated in the revision program.

8. It is the type of sample that should be constantly reviewed and updated, as more recent data are available, to assure that proportional allocations and distribution patterns are maintained as accurately as possible. For example, a greater shift to shopping centers might be in order; a change in the boundary between the "large" and "small" strata of independent food stores possibly should be made if more current data become available.

Chapter IX. Pricing Procedures*

The pricing and calculation procedures for the Consumer Price Index are designed to carry out, as precisely as resources permit, the general concepts and principles described in chapter III.

The index, though published monthly, does not refer to any definite date within the month. Except for food, for which pricing is done on 3 specific days each month in all cities, and for rents and items collected by mail which relate to the 15th of the month, pricing is conducted throughout a month and prices for each item relate to the day of the agent's visit. In addition, pricing is scheduled on a regular quarterly cycle in 45 of the 50 cities or 51 of the 56 cities. Only the five largest cities are surveyed every month. For the U.S. index, estimates are made each month for all sample cities not priced during a month by holding prices constant or by other means, as explained later.

The index is oriented toward calculation of price changes between adjacent pricing periods, not toward the measurement of representative dollars and cents prices at a point in time. Collection and calculation procedures stress comparability of prices and quality from one date to the next for a given reporter, and not comparability among reporters or among cities at any given time.

Definition of Price

The concept of the Consumer Price Index requires measurement of price change for goods and services of constant or at least equivalent quality, but the price data must be observed in a market in which changes occur frequently in the kinds of goods and services offered, in their qualities, and in their terms of sale. This situation gives rise to persistent and complex problems of adjusting for quality.⁷⁵

* Most of the material in this chapter was included in a preliminary report, *The Consumer Price Index: Pricing and Calculation Procedures*, op. cit.

⁷⁵ Ethel D. Hoover, "The CPI and Problems of Quality Change," *Monthly Labor Review*, November 1961, pp. 1175-1185.

The concept of "price" is theoretically clear but in practice it defies easy and uniform definition. In its most restricted sense, "price" in the CPI refers to the price charged for a particular brand, identifiable by style number, on a single sale in an outlet at specific terms of sale. The concept can be, and is, extended fairly readily to cover different transactions made under stated conditions and at identical prices for each transaction. Extension beyond this leads to the idea of "average price" for similar sales and finally to "realized price" for a broadly defined bundle of goods and services. For a few commodity areas for which there is little standardization of quality, notably home purchase, used cars, and mortgage interest, realized prices on actual transactions are accepted, pending development of improved methods more in line with the index philosophy.

The goal in measurement is "pure price change" between two points in time with quality of goods sold and terms of sale as nearly identical as possible; unavoidably it usually becomes average price on similar transactions. The dilemma for the technician is the definition of similarity, i.e., the limits within which price differences can be tolerated when transactions are not strictly comparable. No hard and fast criteria can be outlined, and decisions once made must be constantly reexamined as market conditions change or new resources are allocated to price collection.

Pervading BLS operations is the constant search for better methods of handling the quality problem. Up to now, quality has been defined by the Bureau in terms of physical characteristics, rather than anticipated durability of performance or other intangible features.

In theory, prices used for the index should include all applicable taxes and credit charges, as explained in chapter III. In practice, prices are cash prices. Although credit charges are included in the weighting structure, they are not priced because of practical difficulties of collect-

ing data and measuring changes for the index in a consistent manner, and not on conceptual grounds. The effect of sales and excise taxes is reflected in the index by a separate operation so that the prices for individual items can be tabulated and processed excluding taxes, to reduce tabulating costs.

Specification Pricing ⁷⁶

Underlying the BLS pricing procedures is "specification pricing," the chief tool since 1934 for defining similarity and insuring constant quality of goods priced. Specification pricing is practiced for the great majority of commodities in the index and also for many of the services. A specification is a detailed description of the physical characteristics of an item which are judged to determine its quality and influence its price. It may include features which aid in identifying an item from one pricing date to the next and from one store to another. For a few items, the brand name or the model number, as for automobiles, also becomes part of the defined quality. The BLS relies on assistance from producers and retailers as well as on its own pricing experience in developing original specifications and in making changes to meet new market situations. A specification does not delineate a precise quality, since to do so would preclude obtaining enough price quotations. Instead, it defines a relatively narrow range of qualities, within which prices are averaged for the index and outside of which they are not. There is considerable variation among different commodity groups as to the precision possible.

Scattered throughout the CPI complex of items are some for which nationally advertised brands command a distinct premium over so-called local brands. To obviate occurrence of spurious price changes by substitution of one type for another, a few of the specifications, such as hosiery, dungarees, men's shirts, and beer, specify national or local brands. The designation of "nationally advertised" brands is prescribed by commodity specialists. That such listings are not made more extensively is due chiefly to the difficulty of keeping brand lists complete and up to date. For most items in the national index, however, it is believed that the effect of

substitutions from national to local brands and vice versa tends to balance out.

BLS specifications involve an elaborate system of regular and alternative specifications, choices of noncomparable features within a general specification, and city and outlet deviations. The system has evolved as a means of coping with the variety of kinds of goods and services and qualities offered in the market place. The particular nomenclature of the system signifies for pricing agents and tabulating clerks the appropriate procedures for making price comparisons from one period to the next.

The Price Statistics Review Committee endorsed specification pricing in principle but recommended adoption of a more flexible system. Partly because of its recommendation, but also because of the fact that independent selection ⁷⁷ of outlets without regard to availability of particular specifications was incompatible with rigid specification pricing, the Bureau revised its procedures for the new index to some extent, while maintaining the fundamental aspects of specification pricing.

Rules for the new index permit pricing of regular and alternate specifications, or choices within specification, and even volume-selling items deviating from specification if necessary. However, in measuring price change for the index, the same quality is compared from period to period within any one outlet. For example, for men's shirts, the agent may choose within any one outlet nationally advertised or not nationally advertised brands, and within each, wash and wear finish with a range of thread count of 136x60-68 or residual shrinkage 1 percent or less with a thread count of either 136x60 or 128x68. However, she prices the same quality at subsequent periods. Although the agent attempts to price to a preferred specification, she is permitted to price an item fitting an alternate specification or deviating from specification in major or minor respects. For example, the specification for upholstered living room furniture calls for inexpensive grade covering and includes a sofa with two cushions. Medium or good grade covering would be judged a major deviation; a sofa with three cushions a minor deviation. The agent records the nature of the

⁷⁶ *Ibid.*, see also *Average Retail Prices: Collection and Calculation Techniques and Problems* (BLS Bulletin 1182, 1955), for a more complete description of specification pricing.

⁷⁷ See chapter VIII, "Outlet Samples, 1964 Index," for a description of sampling techniques.

deviation in detail. In effect, this implies a system of outlet specifications described by the pricing agent.

Items deviating in minor respects are treated as meeting specifications. Price differences arising from alternate specifications or major deviations are not considered legitimate price change for the index. Such prices are introduced by "linking"; in other words, the difference in price level between the specification quality and the deviating quality is not treated as a price change at the time of introduction.

This adaptation of pricing principles has materially reduced the usefulness of the index price data for purposes of intercity and international comparisons, budgets and family allowances studies, and market analyses. Supplementation of prices collected for the index is essential to achieve reliable measures of average prices at a point in time.

Price Collection

The majority of priced items can be grouped into classes—food, rent, commodities other than food, and services. Prices may be obtained by mail, by personal visit, or telephone, or from manuals and other secondary sources. Prices are obtained from the same sample of reporters in successive periods. Any necessary changes in the sample are introduced by linking. In all cases, cooperation of reporters is entirely voluntary.

Pricing by personal visit is governed by general rules but with numerous adaptations and exceptions for particular situations. These are prescribed in detailed specification and collection manuals.⁷⁸ These manuals are looseleaf, and are kept up to date by regular monthly revisions to take care of market changes or to introduce better procedures. At the first pricing of a specification, the agent, by consultation with department managers, determines the volume-selling item within the specification in each outlet, or for a few items, notably appliances and rayon dresses, several volume-selling brands. By this means, a sampling of different brands and styles is accomplished for the outlet sample as a whole. The agent continues to price the identical item in each outlet each pricing period as long as it

⁷⁸ These manuals are available for study by interested persons, on request to the Bureau.

is stocked and sold in reasonable quantities. If the item previously priced is not available in a store, the agent selects a substitute, also conforming to the same specification if possible. Except for those items for which pricing is controlled by brand name, any difference in price between the item originally priced and a new one *meeting specification* is reflected as price change for the index.

Food

Food prices are collected in 1,775 food stores by personal visit by part-time agents during 3 specified consecutive days each month in each of the 56 index cities (50 prior to January 1966). Even though all prices are not identical for all stores of a chain organization, in most cases only one outlet is priced to represent all stores of the chain organization within an SMSA. This appears to be the most efficient allocation of resources among stores. When chains are known to operate stores having different pricing policies, more than one store may be priced. A few major chains require collection of prices from the central office or district warehouse.

The agent relies on a manual of specifications, which are generally less detailed and precise for food than for other commodities and services. The price is observed by inspection of price markings of items on the shelf or, where items are not marked, prices are obtained from the store manager or a designated clerk. In most cases the price is the one prevailing on the day of the agent's visit, including multiple unit prices, sale prices, and specials. For fresh meats, poultry, and fish, which are sold only on weekends in some stores, the agent is permitted to report the price in effect for the previous weekend. Prices are collected on Tuesday, Wednesday, and Thursday of the given week in order to incorporate both first-of-the-week and end-of-the-week prices. A store is usually scheduled for pricing on the same day each month. Stores priced on Thursday represent a little less than half the total weight and about three-fourths of the chain weight.

The agent carries a schedule, containing prices collected for the previous month, together with complete descriptions of the item priced. At subsequent visits, the agent prices the identical items, except that if another meeting specification outsells the one originally selected by

as much as 2 to 1, she substitutes the new item, prices of which are compared directly. The 2 to 1 rule is a rule of thumb, set up to balance the need for maintaining comparability against the requirement for pricing popular items. Substitutions and unusual price changes are carefully explained in agent's narrative reports.

Other Commodities and Services

Pricing of other commodities and services is costly; largely for this reason, the outlet sample size for any one item is considerably less than for food, usually 4 to 6 outlets. However, for nonfood commodities and services as a whole, about 16,000 outlets are contacted by Bureau agents. Pricing is done on the regular monthly or quarterly cycle shown in appendix table XII.

Identification and control of quality is more troublesome for these items than for food, and the specifications and pricing rules are more complex. Field work is carried out by full-time agents who undergo very intensive training and work under the immediate supervision of a more experienced agent before undertaking independent pricing. In addition to the specifications, agents are provided with lists of illustrative brands, swatches, and other guides to quality for purposes of identification. Collection in a single city and its suburbs extends over a period of several weeks to a month and occupies the time of several agents in the largest cities. A few items—fuel, telephone, public transit, etc.—for which identification of quality is fairly simple, are reported monthly by mail questionnaire.

In addition to the rule for initial selection of the largest selling item conforming to specification, the one chosen must be regularly sold up-to-date merchandise in good condition, and it must be available in a reasonable assortment. If nothing to fit specification is available in a store, the agent prices an item "nearest to specification" and describes in detail the features which deviate from the specified quality. She distinguishes carefully between trivial points which really do not affect price or quality and major deviations which do. The agent's notations govern decisions in the Washington office on the proper method of introducing these prices into the index.

Brand name within specification is an additional controlling factor in the pricing of automobiles and heavy appliances. For appliances, a volume-selling brand from each of two manufacturers is selected in each store and price comparisons are restricted to identical brands. Manufacturers' descriptions at each year's model changeover provide information as to which specific model shall be compared with the last year's model. For automobiles, prices for each dealer include customary optional equipment.

Once chosen, the same item is priced as long as it is available in reasonable supply. If it is only temporarily out of stock, the agent asks for the last regular price in effect since the 15th of the previous month. In most cases, she reports the regular price-tag price, apparent from personal inspection of the merchandise. Sale prices are accepted provided the sale lasts at least 1 week and the merchandise is available in good assortment and in good condition. Clearance sales are excluded. These restrictions on use of sale prices insure use of popular, generally available items. Discounts and concessions are deducted from the price recorded if they apply generally to all customers. For automobiles, electrical appliances, TV and radio sets, and tires, for which bargaining between buyer and seller is customary, the agent seeks the reporter's estimate of the average concession (or overallowance on a trade-in). No acceptable procedure has yet been developed for handling "tie-in sales," trading stamps, or special deals which is consistent with the constant-quality-constant-quantity concept of the index.

Services

Pricing procedures are substantially the same for most services as for nonfood commodities. In many service establishments, for example, beauty and barber shops, bowling alleys, movies, laundry and dry cleaning establishments, etc., fees are standard posted prices just as in other retail establishments. There are many service reporters, however, such as doctors, hospitals, repairmen, contractors, lawyers, and funeral directors, for whom prices cannot be observed but must be obtained by interviewing the reporter. For some of these, prices depend upon the nature of a particular job. In such cases the

agent requests the typical or most common rate for a specified service.

Rent

The great variation in characteristics of housing units makes specification pricing of rents, home purchase, and property tax an unsuitable technique. Techniques for dealing with home purchase and property tax are discussed in chapter X. Change in rents is measured from large samples of rental units which include the same units at successive periods. No substitution of nearby units is permitted. Until the 1964 revision, BLS followed a practice of making recurring dwelling unit surveys in each city about every 3 years for the purpose of gradual revision of rent samples. Units from newly developed areas of the city were added systematically; existing areas were relisted and new units substituted. During the 1964 revision, rent samples were completely redrawn and a system similar to the recurring dwelling unit surveys, but less costly, is being planned as a means of replenishing rent samples.

Since new units are customarily linked into the sample the difference in rent level between new units and existing units is not reflected as rent change for the index. This gave rise to the "new bias" in the rent index for which correction was made as part of the interim adjustment in 1950 described in chapter I.

In the same direction as the new unit bias in the rent procedure is the "aging bias" arising from the obvious fact that a rental unit is 1 month older each month and can be presumed to be worth less. It follows that prices for units of identical quality would be higher. No adequate means of adjusting for this have been developed but it is not considered serious for short-run movements.

Monthly rent charge is obtained in each city by part-time agents every 2 months or every 3 months by personal visit or telephone inquiry to tenants of specified units in different samples. In most cities, two subsamples of up to 500 rental units each are drawn, with each sample priced semi-annually in different months. Thus,

information is acquired for 1 of the 2 samples each quarter. In the five largest cities, three subsamples of 500 each are contacted semiannually in different calendar months, providing data for one of the subsamples every 2 months. Whenever a change from the last collection is reported for a particular rental unit, the date of rent change is noted. This method permits calculation of rent change retroactively for any desired period and provides a basis for incorporating an adjustment of earlier "error" in earlier subsamples in the current month's index level. Since back data are not corrected, this procedure results in a less exact measurement of current price change, although it yields a more correct long-term measure.

Rent measurement is complicated by the need for data in each period concerning the particular facilities furnished and included in the rent charge. Inability to obtain such data successfully by mail, as well as a high nonresponse rate, accounts for abandoning the mail questionnaire formerly used. The agent uses a detailed checklist covering fuel, gas and electricity, telephone, garage, furniture, water, maid service, switchboard service, etc. The Bureau either adjusts the monthly rent for the estimated value of any changes in facilities included or links out the effect of the changes. The estimated values are for the specific housing unit when they can be ascertained. Otherwise predetermined factors representing typical or average values derived from other sources apply.

Mail Collection

Price collection by means of a mail shuttle schedule is followed for a few items in the index, including fuel, gas and electricity, public transit, water rates, and newspapers. These are items for which identification of quality is fairly simple. A few other items, notably automobile and property insurance rates, are obtained from published rate manuals.

Prices for a number of items in the index require special techniques or come from secondary sources. Pricing procedures for these will be discussed, along with processing procedures, in the following chapter.

Chapter X. Calculation Procedures*

As explained in chapter III, the index is a base-weighted index of price relatives. In practice it is not calculated directly with reference to the base period but, for convenience, by updating the previous month's index according to the formula:

$$I_i = I_{i-1} \left[\frac{\sum (p_{i-1} q_a) (p_i / p_{i-1})}{\sum (p_{i-1} q_a)} \right]$$

in which:

I_i = the index for the current month (currently with reference to 1957-59 = 100)

i = current month

p = price of an individual sample item

q = physical quantity weight allocated to the sample item

a = period to which index weights relate (currently average of 1960-61.)

This is mathematically equivalent to a quantity weighted index:

$$I_i = \frac{\sum (p_i q_a)}{\sum (p_o q_a)} \times 100$$

It is not exactly equivalent to a true Laspeyres index:

$$I_i = \frac{\sum (p_i q_o)}{\sum (p_o q_o)} \times 100$$

where the weights of the index refer to the mathematical base of the index (o).

Although constant physical quantity weights are implicit in the index, in reality the constant q 's are not calculated separately. Rather, the price relatives p_i/p_{i-1} or p_i/p_{i-3} are applied to the previous month's ($p_{i-1}q_a$) or previous quarter's ($p_{i-3}q_a$) values to derive the current month's values, $p_i q_a$. This practice is used because chaining together monthly or quarterly price changes to construct current pq values provides requisite flexibility for substitutions of items, outlets, and weights.

* Much of the material in this chapter was included in a preliminary report, *The Consumer Price Index: Pricing and Calculation Procedures*, op. cit.

Since the market basket priced for the index is a sample of all items and services purchased by consumers, each " q_a " is in some sense a composite of the bundle of goods and services represented by each priced item. The " p 's" refer to the sample item priced. The " q 's" are not additive, as are the expenditures, from the basic family expenditure survey. Synthetic q 's could be computed, if there were any reason for so doing, by dividing the base price of each sample item into the total expenditures by consumers for the bundle of items represented. But such q 's would not be meaningful in view of probability selection of items and the way in which weights were allocated to the probability items. (See chapter VII for explanation.) These implicit q 's will remain fixed as long as the sample of items and reporters remains unchanged. Since links of one sort or another due to specification revisions, outlet replacements, etc., occur frequently as part of ordinary maintenance, calculation of the index by multiplying prices by quantities is much more difficult than chaining price relatives.

Until January 1966 the indexes were not adjusted for seasonal variation in prices.⁷⁹ Seasonal factors based on the old series were published, permitting users who wished to do so to calculate seasonally adjusted indexes.⁸⁰ With the January 1964 revision, these factors became of questionable value for adjustment of the new series indexes, except for major group totals. With the January 1966 release the Bureau initiated regular publication of seasonally adjusted U.S. indexes for those groups and subgroups having significant seasonal variation. The all

⁷⁹ Victor Zarnowitz, in Staff Paper 5, "Index Numbers and the Seasonality of Quantities and Prices," prepared for the Price Statistics Review Committee of the National Bureau of Economic Research in 1959-60, pointed out that the real problem was how to reflect seasonal variation in prices and consumption, not how to remove the seasonal element. He also maintained that use of annual weights amounted to partial adjustment for seasonal variation, at least for quantity consumption weights.

⁸⁰ See *Seasonal Factors, Consumer Price Index: Selected Series*, June 1953-May 1961 (BLS Bulletin 1866, 1963).

items index was not adjusted because there is so little seasonal variation.

Linking Old and New Series

Although the Consumer Price Index has undergone at least three major weight revisions, three changes in base period, as well as continuing changes in reporter samples, specifications priced, and processing procedures, continuous indexes are shown in historical tables from 1913 to date. This is made possible by "linking" or "splicing." This means double calculation for a single date of old and new samples, with old samples or weights used for comparison with earlier periods and new samples or weights for comparison with later periods. In theory, this presents no problems, but in practice it presents difficult operational problems.

In the comprehensive revision of the index completed in January 1964, indexes for the U.S., both for families and single workers combined and for families only, for all items and for component groups, start at the level of the December 1963 (link month) indexes previously computed. New (1960-61) expenditure weights and average prices, as well as the old series weights and prices, were adjusted to or compiled as of December 1963. New data were substituted for the old December data and assigned the numerical level of the previously published indexes.

Linking may be accomplished either by multiplying the link month (December) index by subsequent price changes or by computing a fictitious reference base period value comparable with revised weights. This reference value is computed by dividing the revised expenditure weight for the link month by the index for the link month previously computed with old weights. Subsequent indexes can be computed with reference to this value. In actual practice,⁸¹ current month's indexes are usually computed by multiplying current index pq values by a base reciprocal obtained by dividing the

⁸¹ To illustrate, assume link month index of 125.0 and revised weights of \$500 and current period weights of \$600, then the current period's index is 150.0, calculated:

$$\begin{aligned} \text{(a)} \quad & 125.0 \times \frac{600}{500} \\ \text{(b)} \quad & \frac{600}{500 \div 125} \text{ or } \frac{600}{4} \\ \text{(c)} \quad & 600 \times \frac{125}{500} \text{ or } 600 \times .25 \end{aligned}$$

link month index by the new expenditure weights.

The average price change for all items from the 1957-59 base to any date after December 1963 is the product of the average change up to December with old weights and after December with new weights. All other links—of stores or specifications—which pervade the index system, are based on the same principle.

Staggered pricing cycles, unavailability of prices for all items in the link month, reclassifications of items, and other difficulties greatly complicate the linking process in its details. Built into the U.S. indexes for December 1963 are estimates for cities last priced in October and November. In the going index, quarterly changes from October or from November are applied directly to the October or November index cost-weights—thus eliminating, from the longrun index movements, errors in December estimates. Across the December 1963 link month, only an imperfect correction is possible, due to differences in the sample of items and the relative weights in the two indexes. Quarterly change for the new samples of items, outlets, and cities straddling the December 1963 U.S. link is conceived of as replacing quarterly change measured by the old samples.

In the linking operation, overlap items and overlap cities presented different problems from new items and new cities. Gasoline, for example, caused serious difficulties in the overlap cities because of its large weight and the prevalence of "price wars." Depending upon the particular date of price collection for old and new limited samples of gasoline stations, reported price changes varied greatly. Special care was necessary to make sure that both the substantial reductions to sale prices and the subsequent returns to regular prices were handled consistently in the old and new series across the link month. For example, a reduction might be reflected in the old index sample but not in the new, if the former sample was priced early in the month and prices returned to regular price before the new sample was priced.

Seasonal items not available in the link month were, in most cases, imputed to the movement of other priced items until prices became available for two pricing periods. Overlap items in overlap cities could be treated consistently for old and new series.

Processing, General

After collection and, in some cases, tabulation of prices, the processing steps for the index include all or some of the following:

1. Editing and adjustment of prices for comparability from one period to the next.
2. Calculation of price relatives p_t/p_{t-1} for each item, based on average prices for the same reporting outlets in two consecutive periods.
3. Calculation of current values ($p_t q_t$)—base quantity at current prices—generally termed index cost weights or expenditure weights.
4. Aggregation of $p_t q_t$ values by city.
5. Estimation of unpriced cities and aggregation of city $p_t q_t$ values to U.S. totals.
6. Calculation of indexes on base period.

If dollars and cents prices are to be published, as for food, additional processes are required.

Editing

The first major step in processing prices is a careful review of each individual quotation and quantitative adjustment of prices, if necessary and possible, for comparability of quality with the last price reported for the same outlet. This is a key operation. The accuracy of the final index depends in large measure upon the composite of all the individual decisions made in this phase. Editing rules are made as objective as possible, but professional judgment also comes into play. When possible, blanket instructions are issued to insure consistent handling of like situations at every occurrence.

If identical items (brand, size, etc.) are priced in an outlet in adjacent periods, any difference in price is true price change and is so reflected. If, however, a new item has been substituted, a decision is made as to whether (1) the prices of the two shall be compared directly, (2) the price difference shall be linked out of the current period's comparison, or (3) preferably, but contingent upon required data, a quantitative adjustment of the reported price for the value of the difference in quality shall be made. Direct comparison of prices of different items may incorporate in the index the effect of quality difference. Linking so as to eliminate the entire price difference may exclude some real price change, since, characteristically, many price adjustments are effected by manufacturers

concurrently with product changes. Use of quantitative adjustments is limited because of the difficulty of obtaining the information for determining appropriate factors for each of the hundreds of substitutions occurring throughout the country.

Changes in quality occur for goods produced at different times which are seemingly identical. In the main, the changes creep in so gradually as to be undetectable. Moreover, the changes normally lie within the range of quality defined in the specification.

In keeping with the theory of specification pricing, prices of substitute items fitting a given specification almost always are compared directly with the previous month's price. Any change in price due to the small spread in quality within specification is accepted for the index. Occasional exceptions are made for items such as furniture, for which identification of quality is especially difficult, when substitutions are made from one end of the range to another. In such cases, the linking procedure described in the following paragraph may be used.

Substitutions outside the quality range of the specification usually are linked, because quantitative evaluation of quality differences is seldom possible. When prices are obtainable concurrently for old and new items, the market price differential can be considered a measure of the value of the difference in quality. More often than not, however, substitutions occur because the previous item has been discontinued. Careful decisions must be made by commodity specialists on the basis of their own knowledge and field agents' notations as to the degree of variation from the quality last priced. Frequently, offsetting quality changes are involved. Minor deviations from specification are disregarded and their price differentials accepted as price change: major deviations are either excluded at the first pricing or adjustments made for the quality difference. In subsequent periods, if prices of the same deviating item are available for two consecutive periods, major deviations are included in the calculation of price relatives along with those conforming to specification. This is done by the ordinary linking procedure, i.e., the average price for the previous period is recomputed to include the price of the deviating item which had been excluded, because of lack of comparable prices for the previous period,

and the recomputed price is compared with the price for the current period which includes the deviating item.

In most instances, it is not possible to obtain precise evaluations of quality changes, even for commodities which have easily identifiable physical characteristics. The refrigerator, which is subject to annual model changes, illustrates a number of the problems encountered. The current CPI specification describes a refrigerator-freezer with two outside doors and a true freezer at the top. The specification permits a size range of 11.5 to 14.5 cubic feet and allows the pricing of both "frost-free" and conventional defrost models. It is obvious that such a specification permits a fairly wide latitude in selecting models for continuous pricing within any one outlet and that all models priced are not comparable. The inclusion of more than one "quality" in the specification is necessary in order to obtain a sufficient number of quotes for all brands carried in reporting outlets. The problems caused by substitution of a model with automatic defrost for one without this feature are taken care of through provision for separate choices, identified in the specification. Substitutions of one for the other are routinely linked into the index, in the same way as alternate specifications. Substitutions of different size refrigerators within the range permitted by the specification are somewhat more difficult to evaluate, since other features may also be added or deleted at the same time the size is changed. Other things being equal, however, a size difference between models of 0.4 cubic feet or less has been considered a minor quality difference and prices are compared directly. Greater differences in size are considered major and prices of the new models are linked into the index, even though they may both meet the specification.

Because of the larger sample of quotations for food than for other commodities and services, as well as greater uniformity in goods produced, editing of food prices has been routinized to a great extent. Prices for foods within an accepted range of weights are mathematically converted to a common weight. Prices for different size cans of processed fruits and vegetables, for example, are adjusted to a common size on the basis of the estimated relative weight of contents. In a few cases, special factors based

on usual market differentials are employed to adjust to a given standard quality.⁸² Prices seriously out of line are excluded from the calculation and followup inquiries are made to the field agent for the next pricing. For nonfood items, the small number of quotations requires careful editing and inclusion of every quotation reported, if at all possible.

Calculation of Price Relatives by City

To avoid the complications of positive and negative changes, the Bureau utilizes price relatives rather than percentage increases and decreases. A price relative is the ratio of price in the current period to that of a previous period times 100, e.g., if a \$10 item advances to \$12, the price relative is 120; if it drops to \$8, the price relative is 80.

Price relatives between two dates for a specification can be computed in at least three different ways: (1) the relative of average prices for identical outlets, (2) the relative of average prices for all reporting outlets, (3) the average of price relatives for reporting outlets. All three methods may be employed with or without internal weights. The three yield different answers. Although instances of each can be found within the CPI labyrinth, the first method (without internal weights) has been the most commonly used.

Method 2, the relative of average prices for all reporting outlets, is generally considered less efficient for measuring price change than method 1, because any difference in average prices due to the difference in the outlet sample is reflected as a price change for the index. For example, if the highest priced outlet drops out of the sample between period 1 and period 2, a price decrease would be reflected in the index, even if no prices changed. Therefore, this method is used only when the universe or at least a large number of reporters is included in the sample, as for foods in large cities. In such cases, no one reporter exerts undue influence on the average.

The choice between the relative of average prices (method 1) and the average of outlet relatives (method 3) rests largely on the range of prices. Method 1 implies equal weights in

⁸² For example, prices of U.S. good grade rump roast or rib roast are adjusted upward by 10 percent to make them equivalent to U.S. choice grade.

terms of quantities of the given specification represented by that outlet. As for any arithmetic average, the relative price levels are implicit weights in the average. Method 3 implies equal weight in terms of dollar sales, rather than quantities for each outlet, and in the first of each of two periods being compared. It is inconsistent with the Laspeyres fixed quantity weighted formula, since the implicit quantity weights (dollar sales divided by price) are not held constant. The relative of average prices will show a greater average change than the average of outlet relatives when the highest priced reporters experience the greatest change, and conversely a smaller change if the lowest priced outlets have the greatest change.

Most often, the average of relatives method yields larger average increases than the relative of average prices. Evidently this is because in actuality, both price increases and decreases tend to be proportionately greater for lower priced than for higher priced goods.

Method 1 compares the sum of prices for matched outlets in two periods, i.e., those for which comparable and usable prices are available both for current and previous periods. Average prices are not needed nor are they ordinarily computed. If items conform to specification in all outlets the spread of prices is small and outlets receive approximately equal weight. If, however, there is a wide disparity among outlets in the level of prices, as when deviations from specifications are encountered, the highest priced outlets have a disproportionate effect on the average change. Relaxation of specification pricing for the revised index has made this a more serious problem. However, in preference to using method 3, averaging price relatives for each outlet, to cope with the problem of wide price ranges, which is not consistent with the fixed quantity weighted formula, quality adjustment factors are being used more extensively to adjust prices to a comparable basis, permitting use of method 1.

Normally sale prices pose no problem. They are treated as legitimate price change. Decreases to sale prices and subsequent returns to regular prices are handled automatically. It may happen though, that the initial price collected for a store is a sale price. An increase from such a "first" at the next pricing period is eliminated from the index on the basis that

the decrease to the sale price had not been reflected previously.

Special Procedures

Collection and calculation procedures for many items in the index do not correspond to the general ones described. Among these are restaurant meals, women's dresses, home purchase, mortgage interest, property tax, property insurance, telephone, used cars, health insurance, college tuition, college textbooks, magazines, paperbacks, transportation rates, and hotels.

Restaurant Meals

For restaurant meals, first priced for the index in 1953, specification pricing and regular procedures apply only for breakfasts. For lunches and dinners, specification pricing is impractical. Instead, a procedure is used which bases price changes on a comparison of a number of identical meals within each restaurant. This is analogous to the procedure followed for rents. A master listing of 46 entrees, classified as beef and veal, pork and lamb, poultry, fish and seafood, meat-food combinations and meat substitutes, hot sandwiches, and cold sandwiches, has been established. Where printed menus are available, the agent usually picks up the menus for each day of a given week. If printed menus are not available, she copies from records the prices of all meals on the master listing which were offered on the day of the visit.

Restaurant meals are treated as a monthly item in all cities. The total sample for each city has been divided into three independent subsamples. Because prices in any one restaurant change infrequently, only 1 of the 3 subsamples is priced each month; prices in the unpriced subsamples are held constant. This procedure enables the Bureau to use a larger sample of outlets than it could handle if all outlets were priced each month.

The tabulating clerk selects a specified number of entrees from the master list for each class, up to a maximum of 11 for lunch and 10 for dinner in each restaurant. The total price of combination meals—entree, one or two vegetables, beverage, and dessert—is built up from combination meal prices plus a la carte prices

of any of the specified components not included. Sandwich meals include sandwiches and beverage only. Prices are compared from one quarterly period to the next for the particular meals available in the two periods in each restaurant. After a lapse in pricing, if a particular meal is again offered and used in the index, the current price is compared with an "implicit" price for the previous period, which is computed by adjusting the last reported price by the price change for the restaurant reflected in the index during the intervening period.

Outlet relatives are computed based on the sum of prices for the particular meals offered in a restaurant in two consecutive pricing periods. Adjustments in the total price of a combination meal are made so that the components of a meal are comparable in the two periods; no attempt is made to adjust for changes in size of portions.

Women's Dresses

Style and workmanship, rather than fabric and other physical characteristics, predominate as price-making factors for women's inexpensive dresses. Consequently, normal specification procedures have proven to be ineffectual. Two broad workmanship standards, with little if any restrictions on fabric, have been established for the pricing of women's inexpensive street dresses, which are made chiefly of manmade fibers. Four volume-selling items are selected separately in each store at each pricing and direct comparisons made between the average prices of all quotations combined in successive periods.

Homes and Used Cars

In sales of homes and used cars, identification of quality is difficult. Specification pricing is not feasible and neither is the system of identical units used for rents. For these items, transactions reported to secondary sources furnish a basis for prices realized on actual sales in the market. Average prices for broad quality classes combined with fixed weights minimize the effect of quality on the realized price. Prices of homes are converted to price per square foot and reflected in the index by 3-month moving averages to eliminate erratic fluctuations in each month's index.

The data for used cars are not available for individual cities. Averages for a single State, or for two States, depending upon the cities' market areas and the number of sales per month, are used. Data are confined to two makes, Ford and Chevrolet, but they are not standardized in terms of equipment and accessories included. The reporting source edits out prices of cars in poor condition. In addition, other extreme values are edited out either by the reporting agency or by BLS. Similarly, average prices of homes are not standardized and prices for larger areas sometimes replace the limited city samples.

For houses, age breaks (based on year built) within two major classes, newly built and previously occupied, are maintained; for used cars, specific price series and body styles are designated for 2-, 3-, 4-, and 5-year old models of standard-size Chevrolet and Ford cars. Once a year a shift is made to homes and used cars 1 year newer. For both, BLS takes account of the gradual aging within a calendar year through a system of averaging prices a year apart in age with gradually shifting weights every month. Looked at another way, the difference in price between houses or cars a year apart in age is considered a measure of the annual decrease in value due to aging. Adjustment for this factor is made in comparing prices for a given age from 1 month to the next.

Mortgage Interest

Mortgage interest for the CPI is considered the price of borrowing money for purchase of a home, or the total interest obligation originally incurred. The index strives to measure the change in the amount of interest required in current markets at current rates to buy houses of the same quality and at the same ratio to purchase price as in the base year. The change incorporated in the index is the product of changes in rates on new loans and in purchase price.

Rates on conventional loans for each SMSA and State totals for non-SMSA's, are obtained from special tabulations from the comprehensive monthly survey of loans on purchases of homes by all types of lending institutions, conducted by the Federal Home Loan Bank Board. Average interest rates on loans in designated

quality cells—specified purchase price classes of newly built and of previously occupied homes—are combined for each CPI city with weights representing the total amount of loans in these classes in a reference period. The two rates for conventional loans are averaged with FHA and VA rates, the weights representing the total amount of interest contracted on the four types of loans in a reference period. These internal weights are revised annually as new data are compiled. The base period amount of the loan is adjusted every month by the CPI change in purchase price of homes. By this means, the amount of money borrowed is kept at the same proportion of the value of a house as in the base period. A further description of BLS procedures appears in "Housing Costs in the Consumer Price Index," *Monthly Labor Review*, February and April of 1956. The procedures described have remained essentially the same.⁸³

Property Tax

Tax assessors or other central sources in each city provide property tax data annually for a predetermined probability sample of addresses selected from the Bureau's comprehensive housing unit surveys. The tax change which is reflected in the index once a year is based on a comparison of the total annual taxes paid in successive years for the fixed sample of addresses. Adjustments eliminate the amount of change in taxes due to special assessments or capital changes in the property.

Property and Automobile Insurance

Property insurance rate manuals on file at BLS for every rate jurisdiction within the 56 urban places in the CPI make possible complete monthly pricing of property insurance rates. Three-year premiums for fire insurance for brick and frame houses of a specified value of house are added to those for extended coverage. The specified house value is median value of owner-occupied homes from the 1960 Census, adjusted regularly by changes in purchase price of homes. Changes in insurance premiums due to changes in house prices as well as rates are reflected as price change for the index. Rates

⁸³ Except that base weight represents interest contracted for half-term. See chapter VII.

for comprehensive homeowners' insurance are treated separately, but in a similar way.

Automobile insurance rates are also obtained from rate manuals. Rates for companies conforming to standard casualty bureau rates and for deviating companies are represented in the sample. Replicated samples of companies and rating territories within each SMSA are drawn and rates are combined with internal weights representing relative volume of business. Rates are obtained for specified models priced as new cars for the index and judged to be comparable from year to year.

Telephone

In cooperation with all the telephone companies operating in index areas, it has been possible to set up complete pricing of all telephone services. A base weight structure, as of June 1963, was developed from complete rate and usage data obtained from telephone company records. The base weight structure was classified in accordance with the appropriate rate groupings applicable in each CPI metropolitan area. Changes in rates for all classifications of services in an area, including intra- and interstate toll calls, are obtained monthly by mail from the reporting telephone company. These changes are applied to the fixed base period values to derive average price change monthly in each city. It is expected that these internal weights will be revised periodically.

Health Insurance ⁸⁴

The weight for health insurance in the CPI, as for all other items, represents direct expenditures by the index population and excludes the portion paid for as fringe benefits by the employer.

Until 1964, premium rates for the most widely held family group hospitalization and surgical insurance plans in each city were reported monthly by the Blue Cross and Blue Shield Organizations. Commercial carriers were not represented. In addition to the rates, local plans furnished an evaluation on a proportionate basis in terms of the three major reasons

⁸⁴ For a more complete explanation, see article by James C. Daugherty, "Health Insurance in the Revised CPI," *Monthly Labor Review*, November 1964, pp. 1299-1300.

for the changes in rates: those attributable to changes in costs of covered services; those associated with changes in utilization, i.e., changes in total claims paid; and changes in benefits. Changes in rates which were associated with differences in benefits were considered quality differences and, as such, were factored out of the index calculation.

In the 1964 revision, following extensive discussions with insurance representatives, the use of premiums was dropped, mainly because of inability to make accurate adjustment for changes in benefits covered, and the difficulty of determining and pricing representative plans offered by private carriers. Instead, health insurance is represented by prices for hospital and professional services and drugs for which insurance benefits are paid, plus an adjustment for the retained earnings or overhead cost (the excess of premium income over claims paid out).

Expenditure weights for the claims portion were assigned to medical services, most of which were already in the sample to represent direct expenditures. The base weight for the overhead portion was divided between Blue Cross and Blue Shield plans and private carriers on the basis of data for 1960. The overhead weights will be escalated for price change from month to month in each city on the basis of the average change in prices of the claims portion.

The annual adjustment of changes in the ratio of retained earnings to income will be based on national financial data for Blue Cross-Blue Shield plans and for the commercial insurance carriers, as reported to the Social Security Administration. For convenience, the calculation is carried out by expressing retention ratios as a proportion of benefits rather than total income, since the cost weights for priced services correspond to benefits. These ratios are termed retention factors. The annual relative of change in the retention factor will be based on weighted averages of the two ratios for each year, using data of the previous year as weights. The relative weights of the two will be adjusted annually by linking, in such a manner that the change in proportions of Blue Cross-Blue Shield and commercial carriers is not reflected directly as a price change.

Transportation Fares

The General Accounting Office furnishes rail, intercity bus, and plane fares for selected specific trips from each CPI city. These fares are converted to rate per mile.

College Tuition and Hotel Rates

College tuition and hotel rates are not priced on a city basis, since expenditures by families for these are customarily made outside of the home city. Regional probability samples of hotels selected from the large CPI cities are priced by BLS agents. Four regional samples of hotels were drawn and allocated to the replicated A and B subsamples. Hotels (and motels) are priced on a regular quarterly pricing cycle for each city; rates are held constant between quarterly pricing periods. All hotels are combined to obtain monthly price change for each regional subsample as a whole. The appropriate regional subsample price changes are weighted differentially for the cities in each region according to the importance of travel from the city to the four regions, according to the Travel Survey of 1957 by the U.S. Bureau of the Census.

The total weight for college tuition was divided into a regional and a local weight for each A and B size city. Because of the absence of more specific data, the local weight represents fees for students who are residents of the *State* rather than the city, as determined from a special study.⁸⁵ The entire weight in C and D size cities was considered regional, that is, the same regional average tuition fee relative was used for all the C and D cities of the region.

Fees for undergraduates are reported annually to the Office of Education by public and private institutions accounting for more than 90 percent of total college enrollment. For the CPI, probability samples of 50 institutions each were selected for each of four regions from an array of "reliable" institutions (those reporting consistently) arranged within region by type of institution, by State, and by the amount of full-time enrollment. Those selected for each region

⁸⁵ *The Home State and Migration of American College Students, Fall 1958*, American Association of Collegiate Registrars and Admissions Officers, Committee on Research and Services, Ohio University, Athens, Ohio, 1959.

were assigned alternatively to A and B subsamples for purposes of replication. These institutions were supplemented by a few additional institutions in the A and B size cities, for use in the State samples only. State samples were not replicated.

Some institutions (mainly public) charge different fees for residents and nonresidents. In such cases, nonresident fees were used in regional samples and resident in State samples. The appropriate regional subsample relatives are used for all cities within a region; the same "local" relative is used for all cities within a State.

Books and Magazines

Pricing of books and magazines by specification is not practical. Prices of college textbooks are obtained annually from a small national sample of nine university and college bookstores, by BLS agents. Prices are obtained, if possible, for the principal textbook for a beginning course in each of 16 subject fields. If no one text can be designated the key text, prices are reported for one or more important textbooks, excluding workbooks and required reading books. When the text changes from 1 year to the next, prices of old and new texts are compared directly, unless one is a paperback and the other a hardback, which are considered noncomparable.

Prices of magazines and paperback books come from secondary sources, (1) the ABC Statement (the semiannual circulation report of the Audit Bureau of Circulations), and (2) monthly listings of paperbacks released, published by *Bestsellers Magazine*.

Because of their specialized character and limited distribution, organizational publications, publications by professional societies and educational institutions, and trade journals were eliminated from consideration for the CPI.

A national sample of 16 magazines of those issued for general circulation was selected by probability proportional to importance, using average circulation in 1960 from *Ayer's Directory of Newspapers and Periodicals* as the measure of importance. Magazines having circulations of 6 million copies or more were considered certainty selections.

Pricing of magazines in conventional retail outlets was ruled out because subscription sales, which are more important than sales of single

copies, are sold primarily through other channels and because single copies are traditionally sold at publishers' preticketed prices. Circulation and price data are available from publishers' statements for 6-month periods ending June 30 and December 31. Price categories include, in addition to single copy prices, two major types of subscriptions—basic price and reduced price.

In the index calculation, the quantities of various types of subscriptions and single copies sold in the base period (June to December 1960) are held constant. The index change is based on a comparison of estimated receipts for these quantities at current and preceding period prices. It is planned to review base quantities about every 3 years and to introduce revised quantities by linking as necessary.

The paperback industry comprises mass-produced titles for general circulation and trade or quality editions for selected uses. The former, comprising about 85 percent of the total business, were selected for the CPI. Only limited consideration was given to establishing specification pricing, since relative prices for paperbacks do not reflect quality differences in a literary or physical sense.

Monthly price change is measured by utilizing a 12-month moving average price of new titles released each month, in order to reflect the price movement of previously issued as well as newly issued mass paperback books. The internal weight pattern represents the 1962 value of sales for five major categories of mass paperback books—novels, factual, mystery-suspense, westerns, and classics. Monthly prices used in the CPI calculations are obtained from the major trade publication, *Bestsellers Magazine*.

Calculation of Current Expenditure Weights

Price relatives are applied to index values for the previous period (P_{1-q}) to derive current period values (P_1q) for each item in each city. Totals of all items are compared for the two pricing periods to determine the average price change for each city. This procedure is mathematically equivalent to a weighted average of price relatives with relative values of the previous period as weights.

If prices are missing for an item, estimates are made either by holding constant or by imputation to the price change for other items in

the same grouping. For seasonal items for which long-term relatives are computed, the current index expenditure weight (P_{1q_0}) is calculated by applying the relative to the pq value at the end of the previous season. By this means the interim estimates are canceled and the current month's value is brought to the correct level.

Aggregation to City and U.S. Totals and Estimation of Unpriced Cities

Item expenditure weights are totaled by subclasses within each city, and city class totals (for prices obtained or estimated) are aggregated to U.S. totals—published groups and subgroups and other unpublished analytical or subsidiary groupings. In this process the individual cities are weighted by population weights based on the 1960 Census of Population. City weights equal the proportion of wage-earner clerical-worker population represented by the sample city. The 18 largest cities carry their own weights; all other cities represent a group of cities. City population weights are shown in appendix tables VIII-A and B. In operation, weighting is done by simple aggregation, since the relative population weights for the U.S. index have been built into the expenditure values for each item in each city. For simplicity, these combined weights have been called "cost-population" weights. The U.S. totals include actual or estimated values for all cities.

Inability to do a complete pricing of every item in all cities each month results in a somewhat imperfect measure of month-to-month change, but no long-term error. Expenditure values for quarterly groups in unpriced cities in interquarterly months are held constant at subclass levels from the latest time priced (except for new cars). This means that quarterly change for about a third of the cities, instead of monthly change for all cities, is reflected in the movement of each month's national index. This method may at times introduce a temporary lag in measuring price movements for these groups but, even if so, it is considered preferable to the alternative technique of estimating price change in some way such as on the basis of the five large cities priced monthly. This alternative (in use for most groups from 1953 to 1962) resulted

in overestimates for some cities, requiring corrections in the opposite direction at the next regular pricing for the city. For new cars, a special procedure utilizes cities priced quarterly, as well as those priced monthly, for estimating unpriced cities. This is particularly necessary at the time of introduction of new models to avoid a lag in reflecting the price change which normally occurs uniformly throughout the country at the time of model changeover.

Calculation of Indexes

Indexes are issued for the all items composite and for commodity groups, for the U.S. average and for individual Standard Metropolitan Statistical Areas having a 1960 population of a million or more. They are computed with reference to an established base—currently 1957–59 = 100. In actuality this is done, for convenience, not by division by comparable base period totals, but by multiplying by an appropriate base period reciprocal.⁸⁶

Aggregation to U.S. item totals is an extra operation not essential in computation of group and all items totals. This operation is carried out regularly for food, which is processed by automatic data-processing equipment, and U.S. indexes based on all cities are published regularly for the individual foods. Monthly U.S. totals based on all cities are not possible for most nonfood items because they are priced on a quarterly cycle, and estimates for unpriced cities are not made at the item level. Until 1964, indexes for individual nonfood items were computed apart from the regular index work and published for the month of March, June, September and December based only on the cities priced in those months. Since not all items are priced in all cities for the revised index, the total population weight priced for the probability items was too small to permit continuance of this system. Consequently, from 1964 forward, these indexes are based on all cities, using the latest available data for each city. Immediately following completion of the revision, indexes were computed only semiannually; in March 1966, publication on the quarterly cycle was resumed.

⁸⁶ $\frac{P_{1q_0}}{P_{0q_0}} = P_{1q_0} \times \frac{1}{P_{0q_0}}$

Chapter XI. Publication of Data

The policy of the Bureau is to make the Consumer Price Index and supporting data available as generally as possible. However, limitations both of the data and of staff resources make it impossible to satisfy all demands for price data. Prices and other data are reported to the BLS in confidence. BLS pledges to its reporters that their data, and particularly their identity, will not be disclosed to anyone outside the Bureau. Consequently, price information is published in the form of averages and not for individual firms. The Bureau's success in obtaining cooperation of reporters is due in large part to this policy.

National Indexes

The National Consumer Price Index is released monthly from the Washington office by means of a regular press release and a formal press conference late in the month following that to which the data refer. The release contains a brief analysis of price movements during the month, as well as the latest available indexes and percent changes over selected periods. A more complete report is issued about 2 weeks later. U.S. average indexes are published monthly for the following list of 28 major groups and subgroups and 20 special groups:

<i>Expenditure class</i>	<i>Major groups and subgroups</i>
EC 1-15	Food
1-14	Food at home
1-2	Cereals and bakery products
3-5	Meats, poultry, and fish
6	Dairy products
7-9	Fruits and vegetables
10-14	Other foods at home
15	Food away from home
16-28	Housing
16-20	Shelter
16	Rent
17-20	Homeownership
21	Fuel and utilities
	Fuel oil and coal
	Gas and electricity
22-28	Household furnishings and operation

<i>Expenditure class</i>	<i>Major groups and subgroups</i>
29-35	Apparel and upkeep
29-30	Men's and boys'
31-32	Women's and girls'
33	Footwear
36-41	Transportation
36-40	Private
41	Public
42-52	Health and recreation
42-44	Medical care
45-46	Personal care
47-49	Reading and recreation
50-52	Other goods and services

Special groups

- All items less shelter
- All items less food
- Commodities
 - Nondurables
 - Durables
- Services
 - Commodities less food
 - Nondurables less food
 - Apparel commodities
 - Apparel less footwear
 - Nondurables less food and apparel
 - New cars
 - Used cars
 - Household durables
 - Housefurnishings
 - Services less rent
 - Household services less rent
 - Transportation services
 - Medical care services
 - Other services

City Indexes

The Bureau cannot satisfy all demands for local data. Since the 1964 revision, the Bureau has adopted a policy of publishing indexes for only those individual SMSA's having 1,000,000 or more population in 1960. To make this possible, full samples of items are priced in all such cities, whereas in most of the smaller cities only one subsample of items is priced. City indexes are published on cycle (quarterly priced cities in appendix table XII) for all items and the 28 major groups and subgroups listed above. Because many users misinterpret the city indexes

as measures of intercity differences in prices, each report cautions the user of these indexes as follows: "Comparisons of indexes for individual SMSA's show only that prices in one location changed more or less than in another. The SMSA indexes cannot be used to measure differences in price levels or in living costs between areas."

Besides publication of city indexes in the national press release, statements for the individual cities are issued from the Bureau's regional offices on the same day as the national release. These contain price indexes and analyses of price movements in individual cities within the region.

Mimeographed tabulations of historical indexes for all available periods for all items and groups are available back to 1913 (or the earliest available date) for the United States and individual cities. Whenever the official base period is changed, the Bureau computes and publishes new historical tables back to the beginning of the series, as rapidly as possible. In addition, conversion factors are published for the convenience of users.

Indexes for Individual Items

Indexes for individual items are published for the United States only, either in the regular CPI report or in subsequent reports. Those for food items are included in the more complete report on the Consumer Price Index issued about 2 weeks subsequent to the press release.

Until 1964, indexes (for individual articles and services other than food and fuel) based on the subsample of cities priced in March, June, September, and December were calculated quarterly and published in a regular report, *Quarterly Price Indexes for Selected Items and Groups*. Beginning in 1964, procedures were adjusted to include estimates for cities not priced in these months and frequency was reduced temporarily to semiannual—in June and December. In March 1966, quarterly publication was resumed. The report is now entitled *Consumer Price Indexes for Selected Items and Groups*. It includes indexes for most of the items priced for the index.

Generally, the actual price data underlying the published indexes are not published. This is because the Bureau's techniques are designed for measurement of price change, rather than for

calculation of representative average prices, and the samples of reporters are too small for calculation of representative averages. Under certain circumstances, however, and with some adaptations, the price data collected for the index are useful for secondary purposes.

This is the case for U.S. and city average prices for individual foods, which have been published by the Bureau since 1890. The January 1964 revision of the Consumer Price Index introduced changes into price collection procedures which complicated the calculation and publication of dollars and cents prices, and required initiation of a system for estimating prices described in chapter X.⁸⁷ Prices for the United States and 12 large SMSA's are released monthly in *Estimated Retail Food Prices by Cities*.

A similar report, *Retail Prices and Indexes of Fuels and Electricity* contains U.S. prices and indexes and city prices for individual items of fuel and utilities.

Except for food and fuel, there is no regular publication of actual average prices. The last publication of prices of nonfood items was in Bulletin No. 1197, *Average Retail Prices, 1955*, published in 1956.

Correction Policy

The Bureau's consumer price indexes are published as "final" when first issued, rather than as preliminary, as is done for many statistical series. This is done not only to avoid complications for users who have based policy decisions or fulfilled contractual arrangements on the basis of published indexes, but also because so little additional data relating to a given month are obtained after publication. Occasionally, however, errors of reporting and computation, serious enough to warrant correction of previously published indexes, occur. These corrections are made when the magnitude of error reaches predetermined levels. These levels have been set forth in an official statement.⁸⁸ When the amount of error is less than the standard warranting correction, the level of the current month's index with respect to the base period is corrected. This method means, of course, that the index does not reflect exactly the correct

⁸⁷ "Calculation of Average Retail Food Prices," by Doris P. Rothwell, in *Monthly Labor Review*, January 1965, pp. 61-66.

⁸⁸ *Consumer Price Index, Procedure for Correction of Consumer Price Indexes and Prices*, Aug. 1, 1958.

change from the previous month's published index, but there is no cumulative error.

Interim Extension of Old Series

Recognizing the problems that revision of the index in 1964 posed for users having escalation contracts based on the index, the Bureau arranged for a 6-month overlap period, January through June 1964, during which both new series and old series indexes were calculated and released. It was hoped that this would provide sufficient time for conversion of contracts to the new series. This did not prove to be the case. Most users continued to use the old series index for existing contracts as long as it was available.

Moreover, the Bureau was asked to extend the old series index after June 1964 (when pricing of old samples was dropped) by estimation. The Bureau agreed to furnish such an estimate by letter on joint request of labor and management as often and as long as needed. The estimate was not published in any Bureau release. In

June 1964, the old series index was 0.2 index points above the new series on a 1957-59 base and 0.3 index points on a 1947-49 base. The estimate was made by projecting the old series forward by movements of the new index. The simple arithmetical basis for this projection was carefully spelled out for all persons requesting this extension. Because of the method of calculation, the differentials over the published new series indexes were expected to remain +0.2 index points on the 1957-59 base and +0.3 index points on the 1947-49 base in the foreseeable future.

Descriptive material

The Bureau publishes official and unofficial statements, *Monthly Labor Review* articles, special reports, bulletins, and papers for technical journals. A bibliography of historical publications dealing with the Consumer Price Index appears on page 114.

APPENDIX TABLE I. CHARACTERISTICS OF WAGE EARNERS AND CLERICAL WORKERS WHOSE EXPENDITURES WERE USED IN THE DERIVATION OF INDEX WEIGHTS

Survey date	Period weights used in index	Average family size	Average family income after taxes	Family composition	Earnings of chief earner
1901	1890-1920 ¹	5.3	\$327	Two or more persons	Salaried worker earning \$1,200 or less during year. No limitation on wage earners.
1917-19	1913-24 1925-29 ²	4.8	\$1,485	Minimum of husband, wife, and one child who was not a boarder or lodger. No boarders nor more than 3 lodgers present.	Salaried worker earning \$2,000 or less. No limitation on wage earners.
1934-36	1925-29 ² 1930-49 1950-52 "old" series	3.6	\$1,524		Two or more persons. Not more than 2 boarders or lodgers, or guests for more than 26 guest weeks.	At least $300. Salaried worker earning less than $2,000 during year or less than $200 during any month. No upper limitation on wage earners.
1947-49 ³	1950-52 "adjusted" series	3.3	\$4,160	Two or more persons	No limitation. (Family income not in excess of \$10,000.)
1950	1953-63	3.3	\$4,160	Families of 2 or more persons and single workers; at least 1 full-time wage earner.	No limitation.
1960-61	1964 forward	3.7	\$6,230		

Survey date	Source and amount of family income	Length of employment	Economic level	Length of residence, nativity and race
1901	No limitation	No limitation	No limitation	No limitation.
1917-19	At least 75 percent from principal earner or others who contributed all earnings to family fund.	No limitation	No slum or charity families	White only; in area entire year and in the U.S. 5 years or more; no non-English-speaking families.
1934-36	At least \$500. Less than one-fourth from interest, dividends, royalties, speculative gains, rents, gifts, or income in kind. No rent in payment of services. Less than 3 months' free rent. No subsidiary clerical worker earning \$2,000 or over.	At least 1,008 hours spread over 36 weeks.	No relief families, either on direct or work relief.	White only, except where Negro population was significant part of total; in area 9 months or more.
1947-49 1950	Family income under \$10,000 after taxes in the survey year. No minimum income limit, except that families with no income from wages or salaries were excluded.	No specific requirement, but major portion of income of family head must be from employment as wage earner or salaried clerical worker.	No exclusion for receipt of relief as such, but only families with wage or salary earnings included.	No limitation.
1960-61	More than half of combined family income from wage-earner or clerical-worker occupation.	A minimum of 37 weeks for at least one family member.	No restriction other than the wage-earner clerical-worker definition.	No limitation.

¹ Food price index only.
² Indexes between 1925 and 1929 recomputed retroactively with group weights based on the average of 1917-19 and 1934-36 survey data.
³ 7 selected cities only.
⁴ Families of 2 or more persons; average income of single workers was \$3,560.

APPENDIX TABLE II. GENERAL DESCRIPTION OF U.S. CONSUMER PRICE INDEX COVERAGE

Year	Frequency of publication*	Census providing population weights	Survey providing expenditure weight		Reference base period	Number of cities included	Number of group and subgroup indexes published
			Group weights	Item weights			
1890-1912 ¹	A	None	None	1901	1890-99	39-171	1
1913-34	A	None	1917-19	1917-19	1913	32	7
1913-17	SA-Q	Av. 1920-30	1917-19				
1918-24	SA	Av. 1920-30	1917-19				
1925-29	SA	1930	Av. 1917-19 and 1934-36				
1930-34	SA		1934-36	² 1934-36	1935-39	³ 34	18
1935-49	Q	1930	1934-36				
1935-39	M	1930					
1940-42	M	1940 ⁴					
1943-49	M	1950	1947-49	⁵ 1934-36	1935-39	³ 34	18
1950-52	M	1950	1950	⁶ 1950	⁷ 1947-49	46	45
1953-63	M	1960	1960-61	1960-61	1957-59	⁸ 50	48
1964 forward	M						

*A = annually; SA = semiannually; Q = quarterly; M = monthly.
¹ Food price index only.
² During World War II, weights were adjusted to account for rationing and shortages.
³ 51-56 cities included in the food index.
⁴ 1940 Census data were supplemented by ration book registration data.
⁵ Item weights were revised for only the 7 cities for which 1947-49 expenditure data were available.
⁶ Data were adjusted to 1952 for weight derivation.
⁷ The base period was changed to 1957-59 in 1962; indexes also calculated on bases of 1947-49 = 100 and 1939 = 100.
⁸ Six additional cities added in 1966.

APPENDIX TABLE III. COMPARISON OF OLD AND NEW SERIES CONSUMER PRICE INDEX

Item	Old series index	New series index
Title.....	Consumer Price Index—U.S. City Average.....	Consumer Price Index—U.S. City Average for Urban Wage Earners and Clerical Workers. Same.
Formula (Simplified expression).....	$I_t = I_{t-1} \left[\frac{\sum (p_{i-1}q_a) (p_i/p_{i-1})}{\sum (p_{i-1}q_a)} \right]$	Same.
Reference base period.....	1957-59 = 100. Series was changed from the 1947-49 base period in January 1962, but continued to be published on this base as well as 1939 = 100.	1957-59 = 100. Series also published on 1947-49 and 1939 bases.
Duration.....	Discontinued after June 1964.	January 1964 forward.
<i>Population coverage:</i> Place of residence.....	Urban places of 2,500 or more in 1950; excluding Alaska and Hawaii.	Urban places of 2,500 or more in 1960; including Alaska and Hawaii.
Family size.....	2 or more persons; single person consumer units excluded.	No restriction; single consumer units included.
Occupation.....	Wage-earner and clerical-worker families. (Head of household must have been employed in wage-earner or clerical-worker occupation.)	Wage-earner and clerical-worker families and single individuals living alone. (More than half of total family income from wage-earner or clerical-worker occupations.)
Length of employment.....	No specific requirement, but major portion of income of family head must have been from employment as wage earner or clerical worker.	At least 1 family member must have been employed for 37 weeks or more during the survey year in wage-earner or clerical-worker occupations.
Income.....	Family income under \$10,000 after taxes in 1950. No lower income limit, except that families without income from wages or salaries were excluded.	No criterion as to family income except the qualification above.
Definition of index expenditure weights.....	Average family expenditures for urban wage earners and clerical workers derived from the 1950 Consumer Expenditure Survey in 91 urban places, adjusted for changes in prices and income between 1950 and 1952.	Average expenditures for urban wage earners and clerical consumers (including single workers) derived from the 1960-61 Consumer Expenditure Survey in 66 urban places, adjusted for price changes between the survey dates and December 1963 except for 6 cities added in 1966.
<i>City coverage:</i> Sample of priced cities.....	46 urbanized areas, selected to represent urban places in the U.S. having populations of 2,500 or more in 1950, excluding Alaska and Hawaii.	50 metropolitan areas and cities selected originally to represent all urban places in the U.S. including Alaska and Hawaii, with populations of 2,500 or more in 1960. Six additional areas added in 1966.
Pricing cycle.....	Prices of foods, fuels and a few other items collected monthly in all cities. Prices of most other commodities and services collected monthly in the 5 largest cities, and quarterly in remaining cities.	Same. Same.
Population weights.....	Based on 1950 Population Census; Alaska and Hawaii excluded. Proportion of population in wage-earner and clerical-worker group covered by index was based upon BLS expenditure surveys.	Based on 1960 Population Census; Alaska and Hawaii included. Proportion of population in wage-earner and clerical-worker group covered by index was based upon BLS expenditure surveys.
Published indexes.....	U.S. and 20 cities, for families only.....	U.S. and 17 large metropolitan areas for families and single consumer units combined. Indexes for 6 more large metropolitan areas available in the latter part of 1965.
<i>Item sample:</i> Commodity coverage.....	Goods and services purchased for family living, including necessities and luxuries; excluding personal insurance, income and personal property taxes, but including real estate taxes and sales and excise taxes.	Same.
Number of items priced.....	About 326, priced in all cities.....	About 400 represented in U.S. index and in published city indexes. Certainty items priced in all unpublished cities; other items in 1 or 2 subsamples of other unpublished cities.
Basis of item sample selection.....	Most important items in family spending.....	Probability proportionate to importance in family spending.
Basis for allocation to priced items.....	Direct allocation of unpriced to priced items based on expected similarity of price movements.	Expenditures classified into 52 expenditure classes. Certainty items assigned their own importance; remainder of expenditures assigned equally to probability selections within expenditure classes.
<i>Reporter samples:</i> Location.....	Within boundaries of central cities of 46 urban areas.....	In central cities and selected suburbs of 56 metropolitan areas (50 areas in 1964 and 1965).
Number of reporters.....	About 1,500 food stores..... 30,000 tenants.....	About 1,775 food stores (1,525 for 50 areas). 40,000 tenants (34,000 for 50 areas).
Number of quotations obtained.....	5,500 other reporters of all kinds..... About 1 million food prices per year..... About 60,000 rent charges per year..... About 230,000 quotations per year for items other than food and rent.	16,000 other reporters of all kinds (15,000 for 50 areas). Over 1 million food prices per year. About 80,000 rent charges per year (68,000 for 50 areas). About 375,000 quotations per year for items other than food and rent (350,000 for 50 areas).
Pricing techniques.....	Personal visit of BLS agent except for a few items collected by mail or from secondary sources. Specification pricing; same quality priced in all stores in a city.	Same. Specification pricing but agent is permitted to price deviations from specification under prescribed conditions.

APPENDIX TABLE IV. SUMMARY OF SAMPLES FROM COMPREHENSIVE URBAN HOUSING UNIT SURVEY AND URBAN SURVEY OF CONSUMER EXPENDITURES, 1960-61

Standard Metropolitan Statistical Areas (SMSA) or cities	CHUS year	CES year	Number of separate living quarters (CHUS) ¹	Number of consumer units (CES)		Number of wage-earner clerical-worker consumer units
				Assignment addresses	Usable schedules	
U.S. urban total.....			² 137,198	12,205	9,476	4,860
Areas Having CHUS Prior to CES.....			131,917	10,645	8,246	4,220
Stratum A-SMSA 1,400,000 & over.....	1960	1960-61				
Baltimore, Md.....			6,127	375	313	192
Boston, Mass.....			3,459	375	288	132
Chicago-Northwestern Indiana ³			4,087	500	371	219
Cleveland, Ohio.....			4,554	375	294	166
Detroit, Mich.....			8,078	375	290	161
Los Angeles-Long Beach, Calif.....			5,041	500	388	182
(New York, N.Y. ⁴			3,786	625	448	242
(Northeastern, N.J. ⁴			1,256	500	356	189
Philadelphia, Pa.....			7,039	375	313	144
Pittsburgh, Pa.....			5,031	375	323	165
St. Louis, Mo.....			4,445	375	319	171
San Francisco-Oakland, Calif.....			4,280	375	302	152
Washington, D.C.....			3,627	375	323	142
Stratum B-SMSA 250,000-1,399,999.....	1960	1960				
Atlanta, Ga.....			4,043	250	198	104
Buffalo, N.Y.....	do	do	4,091	250	199	123
Dallas, Tex.....	do	do	3,437	250	178	97
Indianapolis, Ind.....	do	do	4,406	250	173	94
Seattle, Wash.....	do	do	5,231	250	209	93
Dayton, Ohio.....	1961	1961	4,453	250	180	91
Denver, Colo.....	do	do	3,481	250	204	98
Hartford, Conn.....	do	do	3,060	250	175	90
Honolulu, Hawaii.....	do	do	3,698	250	215	117
Nashville, Tenn.....	do	do	4,079	250	201	107
Wichita, Kansas.....	do	do	3,522	250	189	79
Stratum C-SMSA 50,000-249,999.....	1960	1960				
Austin, Tex.....			1,510	160	110	49
Cedar Rapids, Iowa.....	do	do	2,557	160	125	58
Champaign-Urbana, Ill.....	do	do	1,253	160	126	47
Orlando, Fla.....	do	do	3,472	160	106	44
Portland, Maine.....	do	do	1,567	160	135	81
Bakersfield, Calif.....	1961	1961	2,459	160	120	51
Baton Rouge, La.....	do	do	1,659	160	112	49
Durham, N.C.....	do	do	1,245	160	135	71
Green Bay, Wis.....	do	do	1,843	160	130	77
Lancaster, Pa.....	do	do	2,063	160	151	85
Stratum D-Urban Places 2,500-49,999.....	1961	1961				
Crookston, Minn.....			646	65	61	23
Florence, Ala.....	do	do	782	65	54	24
Logansport, Ind.....	do	do	769	65	50	28
Mangum, Okla.....	do	do	780	65	50	12
Martinsville, Va.....	do	do	419	65	55	29
Millville, N.J.....	do	do	951	65	56	29
Orem, Utah.....	do	do	1,545	65	54	26
Southbridge, Mass.....	do	do	342	65	53	30
Anchorage, Alaska.....	1959	1959	1,744	275	134	67
D Stratum Cities Having CHUS Subsequent to CES (CES Sample from Census).....	1961	1960	5,281	⁴ 1,560	1,230	640
Devils Lake, N.Dak.....			557	65	49	23
Findlay, Ohio.....	do	do	685	65	55	36
Kingston, N.Y.....	do	do	646	65	47	24
Klamath Falls, Oreg.....	do	do	713	65	44	29
McAllen, Tex.....	do	do	711	65	38	20
Niles, Mich.....	do	do	734	65	61	33
Union, S.C.....	do	do	648	65	50	29
Vicksburg, Miss.....	do	do	587	65	55	21
D Stratum Cities Not Having CHUS (Not in CPI but Used for CPI Weights) (CES Sample from Census).....	(5)	1960	(5)			
Burlington, Vt.....	(5)	do	(5)	65	52	25
Cleveland, Tenn.....	(5)	do	(5)	65	43	20
Gallup, N.Mex.....	(5)	do	(5)	65	58	28
Griffin, Ga.....	(5)	do	(5)	65	61	41
LaSalle, Ill.....	(5)	do	(5)	65	55	32
Lewistown, Pa.....	(5)	do	(5)	65	41	25
Owatonna, Minn.....	(5)	do	(5)	65	48	25
Reserve, La.....	(5)	do	(5)	65	64	41
Athol, Mass.....	(5)	1961	(5)	65	60	37
Cambridge, Ohio.....	(5)	do	(5)	65	43	17
Eureka, Calif.....	(5)	do	(5)	65	42	17
Gainsville, Tex.....	(5)	do	(5)	65	56	26
Manhattan, Kans.....	(5)	do	(5)	65	45	20
Menasha, Wis.....	(5)	do	(5)	65	58	40
Okmulgee, Okla.....	(5)	do	(5)	65	48	18
Sebring, Fla.....	(5)	do	(5)	65	57	13

¹ Including low income public housing obtained from central sources.
² Including 5,281 addresses in CHUS in 8 D stratum cities surveyed in 1961 and excluding 16 D stratum cities not having CHUS, for all of which CES samples were selected from Census records.

³ Standard Consolidated Area.
⁴ CES samples in the 8 CPI D cities surveyed in 1960 were selected from Census records rather than from CHUS.
⁵ Not available.

APPENDIX TABLE V. NUMBER OF ITEMS IN SAMPLING FRAME AND NUMBER OF ITEMS PRICED BY EXPENDITURE CLASS

Expenditure class number	Class	Number of items	Number of items sampled	Number of specifications priced
	All items.....	812	309	396
	Food.....	267	93	105
	Food at home:			
	Cereals and bakery products:			
EC 1	Cereals and grain products.....	19	4	4
EC 2	Bakery products.....	16	5	5
	Meats, poultry, and fish:			
EC 3	Meats:			
	Beef and veal.....	12	7	9
	Pork.....	12	6	6
	Other meats.....	14	6	6
EC 4	Poultry.....	4	3	3
EC 5	Fish.....	6	4	5
	Dairy products:			
EC 6	Dairy products.....	19	6	7
	Fruits and vegetables:			
EC 7	Fresh fruits.....	15	8	8
EC 8	Fresh vegetables.....	20	11	11
EC 9	Processed fruits and vegetables.....	48	10	10
	Other food at home:			
EC 10	Eggs.....	1	1	1
EC 11	Fats and oils.....	8	3	3
EC 12	Sugar and sweets.....	12	4	4
EC 13	Nonalcoholic beverages.....	8	5	6
EC 14	Prepared and partially prepared foods.....	50	8	8
EC 15	Food away from home.....	3	2	9
	Housing.....	212	73	81
	Shelter:			
EC 16	Rent.....	4	2	2
	Homeownership:			
EC 17	Purchase and financing.....	3	2	2
EC 18	Taxes and insurance.....	2	2	3
	Maintenance and repairs:			
EC 19	Commodities.....	14	6	6
EC 20	Services.....	30	5	5
EC 21	Fuel and utilities.....	6	6	10
	Household furnishings and operation:			
EC 22	Housefurnishings:			
	Textile housefurnishings.....	20	6	6
EC 23	Furniture and floor coverings:			
EC 24	Furniture.....	31	10	11
EC 25	Floor coverings.....	7	3	4
EC 26	Appliances.....	21	8	8
	Other housefurnishings.....	32	8	8
EC 27	Household operation:			
EC 28	Housekeeping supplies.....	28	8	8
	Housekeeping services.....	14	7	8
	Apparel and upkeep.....	184	64	77
	Men's and boys' apparel:			
EC 29	Men's apparel.....	30	12	15
EC 30	Boys' apparel.....	23	4	4
	Women's and girls' apparel:			
EC 31	Women's apparel.....	39	19	26
EC 32	Girls' apparel.....	31	8	9
EC 33	Footwear.....	21	9	11
	Other apparel:			
EC 34	Commodities.....	26	6	6
EC 35	Services.....	14	6	6
	Transportation.....	34	21	34
	Private:			
EC 36	Autos and related goods:			
EC 37	Auto purchase.....	2	2	12
EC 38	Gasoline and motor oil.....	2	2	8
	Auto parts, etc.....	6	2	2
EC 39	Automobile services:			
EC 40	Auto repairs and maintenance.....	13	6	6
EC 41	Other automobile expenses.....	5	4	6
	Public.....	6	5	5
	Health and recreation.....	115	58	99
	Medical care:			
EC 42	Drugs and prescriptions.....	2	2	20
EC 43	Professional services.....	11	9	12
EC 44	Hospital services and health insurance.....	2	2	6
	Personal care:			
EC 45	Toilet goods.....	28	8	8
EC 46	Services.....	9	4	4
	Reading and recreation:			
EC 47	Recreation:			
EC 48	Recreational goods.....	29	13	20
EC 49	Recreational services.....	13	6	7
	Reading and education.....	11	6	7
	Other goods and services:			
EC 50	Tobacco products.....	3	2	5
EC 51	Alcoholic beverages.....	3	3	7
EC 52	Financial and miscellaneous personal expenses.....	4	3	3

APPENDIX TABLE VI. LIST OF ITEMS PRICED FOR THE REVISED CONSUMER PRICE INDEX AS OF DECEMBER 1963

EC No.	Groups, subgroups, expenditure classes	Priced items	
		Sample A	Sample B
EC-1	Food Food at home Cereals and bakery products Cereals and grain products	Corn flakes..... Rice, long and short grain.....	Flour, white, all-purpose. Cracker meal.
EC-2	Bakery products	White bread..... Whole wheat bread..... Layer cake, plain.....	White bread. Cookies, cream filled. Cinnamon rolls, frosted.
EC-3	Meats, poultry, and fish		
3A	Meats Beef and veal	Hamburger, preground..... Steaks, round, bone-in..... Steaks, porterhouse, bone-in..... Rump roasts, standing..... Chuck roasts, bone-in..... Veal outlets, bone-in.....	Hamburger, preground. Steaks, round, bone-in. Steaks, sirloin, bone-in. Rump roasts, standing. Rib roasts, bone-in. Beef liver, sliced.
3B	Pork	Pork chops, center cut..... Bacon, sliced..... Pork roasts, loin halves..... Picanies, smoked.....	Pork chops, center cut. Bacon, sliced. Pork sausage. Ham, whole.
3C	Other meats	Lamb chops, loin..... Salami sausage, sliced..... Frankfurters, skinless.....	Bologna sausage, sliced. Liverwurst sausage, sliced or whole. Ham, canned, domestic or imported.
EC-4	Poultry	Frying chickens, ready-to-cook..... Chicken breasts, fresh.....	Frying chickens, ready-to-cook. Turkey, fresh or frozen.
EC-5	Fish	Fillets or steaks, fresh or frozen ¹ Tuna fish, chunk style.....	Shrimp, raw, frozen. Sardines, Maine.
EC-6	Dairy products	Milk, fresh, grocery..... Milk, fresh, delivered..... Milk, fresh, skim..... Ice cream, prepackaged..... Butter, salted.....	Milk, fresh, grocery. Milk, fresh, delivered. Milk, evaporated, canned. Cheese, American process. Butter, salted.
EC-7	Fruits and vegetables Fresh fruits	Apples, all purpose..... Bananas, yellow variety..... Oranges, except Temple or King..... Grapes, Thompson seedless..... Grapefruit, fresh, pink or white..... Orange juice, fresh.....	Apples, all purpose. Bananas, yellow variety. Oranges, except Temple or King. Grapes, Thompson seedless. Strawberries, fresh. Watermelons, whole or sliced.
EC-8	Fresh vegetables	Head lettuce..... Potatoes, white..... Tomatoes..... Asparagus, green..... Carrots, topped, prepackaged..... Cucumbers..... Spinach, prepackaged.....	Head lettuce. Potatoes, white. Tomatoes. Cabbage, all varieties except red. Celery, Pascal, stalk. Onions, yellow. Peppers, sweet green.
EC-9	Processed fruits and vegetables	Pears, Bartlett, can or jar..... Lemonade, concentrate, frozen..... Beets, sliced, can or jar..... Tomatoes, can or jar..... Dried beans, Navy or Great Northern.....	Fruit cocktail, canned. Pineapple-Grapefruit juice drink, canned. Orange juice concentrate, frozen. Peas, green, can or jar. Broccoli spears, frozen.
EC-10	Other food at home Eggs	Eggs, fresh, large, Grade A.....	Eggs, fresh, large, Grade A.
EC-11	Fats and oils	Margarine, colored..... Salad dressing, Italian.....	Margarine, colored. Salad or cooking oil, vegetable.
EC-12	Sugar and sweets	Sugar, white, granulated..... Chocolate bar, plain milk.....	Grape jelly, pure. Chocolate flavored syrup.
EC-13	Nonalcoholic beverages	Coffee, can or bag..... Carbonated drinks, fruit-flavored..... Tea bags, orange pekoe and pekoe tea.....	Coffee, can or bag. Coffee, instant. Cola drink, carbonated.
EC-14	Prepared and partially prepared foods	Bean soup, canned, condensed..... Spaghetti, in tomato sauce, canned..... Mashed potatoes, instant..... Potatoes, French fried, frozen.....	Chicken soup, canned, condensed. Baby foods, strained. Sweet pickle relish. Pretzels, hard, salted.

See footnotes at end of table.

APPENDIX TABLE VI. LIST OF ITEMS PRICED FOR THE REVISED CONSUMER PRICE INDEX AS OF DECEMBER 1963—Continued

EC No.	Groups, subgroups, expenditure classes	Priced items	
		Sample A	Sample B
EC-15	Food away from home	Restaurant meals..... Lunch..... Breakfast..... Between meal snacks..... Coffee, cup..... Carbonated beverages, cup..... Frankfurter on roll..... Ice cream, dish.....	Restaurant meals..... Lunch..... Dinner..... Between meal snacks..... Coffee, cup..... Carbonated beverages, cup..... Pie, slice..... Candy bar.....
EC-16	Housing Shelter Rent	Rent of house or apartment..... Hotel, motel room rates.....	Rent of house or apartment..... Hotel, motel room rates.....
EC-17	Homeownership Home purchase and financing	Home purchase..... Mortgage interest rates.....	Home purchase..... Mortgage interest rates.....
EC-18	Taxes and insurance	Property taxes, residential..... Property insurance rates..... Fire and extended coverage..... Comprehensive homeownership policy.....	Property taxes, residential..... Property insurance rates..... Fire and extended coverage..... Comprehensive homeownership policy.....
EC-19	Maintenance and repairs Commodities	Exterior house paint..... Furnace air filters..... Packaged dry cement mix.....	Interior house paint..... Shelving, Ponderosa pine..... Shrubbery, evergreen.....
EC-20	Services	Residing houses..... Reshingling roofs..... Replacing sinks.....	Residing houses..... Repainting living and dining rooms..... Repairing furnaces.....
EC-21	Fuel and utilities	Fuel oil and coal: Fuel oil, #2..... Coal, anthracite or bituminous..... Gas and electricity: Gas, 3 bills per city..... Electricity, 3 bills per city..... Other utilities: Residential telephone services..... Residential water and sewerage services.....	Fuel oil, #2..... Coal, anthracite or bituminous..... Gas, 3 bills per city..... Electricity, 3 bills per city..... Residential telephone services..... Residential water and sewerage services.....
EC-22	Household furnishings and operation Textile housefurnishings	Pillows, bed, polyester or acrylic filling..... Curtains, tailored, polyester marquisette..... Drapery fabric, cotton or rayon/acetate.....	Sheets, percale or muslin..... Bedspreads, chiefly cotton, tufted..... Slipcovers, ready made, chiefly cotton.....
EC-23	Furniture	Bedroom suites, good or inexpensive quality..... Living room suites, good and inexpensive quality..... Lounge chairs, upholstered..... Sofas, dual purpose..... Sleep sets, Hollywood bed type..... Aluminum folding chairs.....	Bedroom suites, good or inexpensive quality..... Living room suites, good and inexpensive quality..... Dining room suites..... Sofas, standard, upholstered..... Box springs..... Cribs.....
EC-24	Floor coverings	Rugs, soft surface..... Broadloom, wool..... Broadloom, nylon..... Rugs, hard surface.....	Rugs, soft surface..... Broadloom, wool..... Broadloom, nylon..... Tile, vinyl.....
EC-25	Appliances	Refrigerators or refrigerator-freezers, electric..... Washing machines, electric, automatic..... Ranges, free standing, gas or electric..... Clothes dryers, electric, automatic..... Room heaters, electric, portable.....	Refrigerators or refrigerator-freezers, electric..... Washing machines, electric, automatic..... Vacuum cleaners, canister type..... Air conditioners, demountable..... Garbage disposal units.....
EC-26	Other housefurnishings	Dinnerware, earthenware..... Carpet sweepers, manually operated..... Venetian blinds, white, steel or aluminum slats..... Electric drills, hand held.....	Flatware, stainless steel..... Table lamps, with shade..... Lawn mowers, power, rotary type..... Nails, 8d (penny) common.....
EC-27	Housekeeping supplies	Detergent, liquid, laundry..... Laundry soap for fine fabrics..... Scouring pads, steel wool..... Toilet tissue.....	Detergent, granules or powder..... Air deodorizers, spray type..... Paper napkins, embossed..... Stationery, envelopes.....
EC-28	Housekeeping services	Domestic service, general housework..... Baby sitter service..... Postal services..... Laundry flatwork, finished service..... Licensed day care service, pre-school child..... Washing machine repairs.....	Domestic service, general housework..... Babysitter service..... Postal services..... Laundry flatwork, finished service..... Reupholstering furniture..... Moving expenses.....

See footnotes at end of table.

APPENDIX TABLE VI. LIST OF ITEMS PRICED FOR THE REVISED CONSUMER PRICE INDEX AS OF DECEMBER 1963—Continued

EC No.	Groups, subgroups, expenditure classes	Priced items	
		Sample A	Sample B
EC-29	Apparel and upkeep Men's and boys' apparel Men's apparel	Suits, year round weight, 2 qualities..... Topcoats, wool..... Suits, tropical weight..... Slacks, wool or wool blend..... Shirts, work, cotton..... Shirts, sport, cotton, short sleeves..... Shirts, sport, cotton, long sleeves..... T-shirt	Suits, year round weight, 2 qualities. Jackets, lightweight. Trousers, work, cotton. Slacks, cotton or manmade blend. Shirts, business, cotton. Socks, cotton. Handkerchiefs, cotton.
EC-30	Boys' apparel	Coats, all purpose, cotton or cotton blend.... Dungarees, cotton or cotton blend.....	Sport coats, wool or wool blend. Undershorts, cotton.
EC-31	Women's and girls' apparel Women's apparel	Coats, heavyweight, wool or wool blend, 2 qualities. Carcoats, heavyweight, cotton..... Skirts, wool or wool blend..... Skirts, cotton or cotton blend..... Dresses, street, chiefly manmade fiber, 2 qualities. Dresses, street, wool or wool blend..... Dresses, street, cotton..... Housedresses, cotton..... Slacks, lightweight, cotton and corded cotton. Slips, nylon..... Brassieres, cotton..... Hose, nylon, full fashioned and seamless, 2 styles. Anklets, cotton..... Handbags, rayon faille or plastic.	Coats, heavyweight, wool or wool blend, 2 qualities. Coats, lightweight, topper. Sweaters, wool or acrylic. Dresses, cocktail, street length. Dresses, street, chiefly manmade fiber, 2 qualities. Dresses, street, wool or wool blend. Dresses, street, cotton. Blouses, cotton. Bathing suits, 1 piece. Girdles, manmade blend. Panties, acetate. Hose, nylon, full-fashioned and seamless, 2 styles. Gloves, fabric, nylon or cotton.
EC-32	Girls' apparel	Raincoats, vinyl plastic or chiefly cotton.... Skirts, wool or wool blend..... Slips, cotton blend..... Handbags, plastic.....	Coats, lightweight, topper. Slacks, cotton. Shorts, cotton. Dresses, cotton. Robes, duster style, quilted tricot, or percale.
EC-33	Footwear	Men's: Shoes, street, oxford, 2 qualities..... Women's: Shoes, street, pump, 2 styles..... Shoes, evening, pump..... Shoes, casual, pump..... House slippers, scuff. Children's: Sneakers, boys', oxford type.....	Shoes, street oxford, 2 qualities. Shoes, work, high. Shoes, street, pump, 2 styles. Shoes, evening, pump. Shoes, oxford. Dress shoes, girls', strap.
EC-34	Other apparel Commodities	Diapers, cotton gauze..... Yard goods, cotton..... Earrings, Pearl, simulated or imitation.....	Wrist watches, men's, imported movement. Wrist watches, women's, imported movement. Zipper, skirt or neck placket.
EC-35	Services	Dry cleaning, men's suits and women's dresses. Shoe repairs, women's heel lift..... Laundry, men's shirts.....	Dry cleaning, men's suits and women's dresses. Automatic laundry service. Tailoring charges, hem adjustment.
EC-36	Transportation Private Auto purchase	New cars: Chevrolet, Impala, 2-door, hardtop..... Chevrolet, Chevelle, 2-door hardtop..... Ford, Galaxie 500, 2-door hardtop..... Plymouth, Fury III, 4-door sedan..... Rambler, Classic 660, 4-door sedan..... Used cars: 2-years old, Chevrolet and Ford 3 years old, do..... 4 years old, do..... 5 years old, do.....	Chevrolet, Impala, 2-door hardtop. Ford, Falcon, Futura, 4-door sedan. Ford, Galaxie 500, 2-door hardtop. Pontiac, Catalina, 4-door sedan. Volkswagen, Deluxe, 2-door hardtop. 2-years old, Chevrolet and Ford. 3 years old, Do. 4 years old, Do. 5 years old, Do.
EC-37	Gasoline and motor oil	Gasoline, regular and premium..... Motor oil, premium.....	Gasoline, regular and premium. Motor oil, premium.
EC-38	Auto parts	Tires, tubeless, retread.....	Tires, tubeless, new.
EC-39	Automobile services Auto repairs and maintenance	Chassis lubrication, complete..... Motor-tune-up..... Automatic transmission repair.....	Water pump replacement. Replacing muffler. Front end alignment.
EC-40	Other automobile expenses	Auto insurance rates, liability and physical damage. Auto financing charges. ¹ Auto registration and inspection fees..... Driver's license fees..... Parking fees, private and municipal.....	Auto insurance rates, liability and physical damage. Auto financing charges. ¹ Auto registration and inspection fees. Driver's license fees. Parking fees, private and municipal.

See footnotes at end of table.

APPENDIX TABLE VI. LIST OF ITEMS PRICED FOR THE REVISED CONSUMER PRICE INDEX AS OF DECEMBER 1963—Continued

EC No.	Groups, subgroups, expenditure classes	Priced items	
		Sample A	Sample B
EC-41	Public transportation	Local transit fares..... Taxicab fares..... Railroad fares, coach..... Airplane fares, chiefly coach..... Bus fares, intercity.....	Local transit fares. Taxicab fares. Railroad fares, coach. Airplane fares, chiefly coach. Bus fares, intercity.
EC-42	Health and recreation Medical care Drugs and prescriptions	Over-the-counter items: Multiple vitamin concentrates..... Liquid tonics..... Cold tablets or capsules..... Prescriptions: Anti-infectives: Penicillin G buffered tablets..... Sulfisoxazole tablets. Sedatives and hypnotics: Phenobarbital tablets..... Ataractics: Chlordiazepoxide-hydrochloride capsules.. Antispasmodics: Proprantheline Bromide tablets..... Cardiovasculars and antihypertensives: Reserpine tablets..... Antiarthritics: Cough preparations: Elixir terpin hydrate with codeine	Aspirin compounds. Cough syrups. Adhesive bandages, package. Tetracycline capsules. Secobarbital sodium capsules. Meprobamate tablets. Phenobarbital and belladonna extract. Crystalline digitoxin tablets. Chlorothiazide tablets. Prednisone, tablets.
EC-43	Professional services	Family doctor, office visits..... Family doctor, house visits..... Pediatric care, office visits..... Psychiatrists, office visits..... Routine laboratory tests..... Examination, prescriptions and dispensing of eyeglasses. Fillings, adult, amalgam, one surface..... Dentures, full upper.....	Family doctor, office visits. Family doctor, house visits. Obstetrical cases. Chiropractors and podiatrists, office visits. Herniorrhaphy, adult. Examination, prescriptions and dispensing of eyeglasses. Fillings, adult, amalgam, one surface. Extractions, adult.
EC-44	Hospital services and health insurance Hospital services Health insurance *	Daily service charges: Semiprivate rooms..... Private room..... Hospital services: Daily service charges, semiprivate room. Daily service charges, private room..... Operating room..... Nonhospital services: Family doctor, office visit..... Surgeon's fees, tonsillectomy/ adenoidec- tomy. Prescriptions and drugs..... Retained earnings (overhead).....	Daily service charges: Semiprivate rooms. Private room. Hospital services: Daily service charges, semiprivate room. Daily service charges, private room. X-ray diagnostic series, upper G.I. Nonhospital services: Family doctor, office visit. Surgeon's fees, herniorrhaphy, adult. Obstetrical cases. Prescriptions and drugs. Retained earnings (overhead).
EC-45	Personal care Toilet goods	Toothpaste, standard dentifrice..... Hand lotions, liquid..... Face powder, pressed..... Cleansing tissues.....	Toilet soap, hand milled. Shaving cream, aerosol. Deodorants, cream or roll-on. Home permanent refills.
EC-46	Personal care services	Men's haircuts..... Shampoo and wave sets, plain..... Women's haircuts.....	Men's haircuts. Shampoo and wave sets, plain. Permanent waves, cold.
EC-47	Reading and recreation Recreation Recreational goods	TV sets, portable and console..... Radios, portable and table models, AM band only. TV replacement tubes..... Sports equipment: Golf balls, liquid center..... Basketballs, rubber or vinyl cover..... Outboard motors..... Tricycles..... Dolls..... Stuffed animal..... Dog food, canned and boxed.	TV sets, portable and console. Radios, portable and table models, AM band only. Tape recorders, portable. Sports equipment: Fishing rods, fresh water spincast. Bowling balls. Phonograph records, stereophonic. Bicycles, boys', 23". Movie cameras, 8-mm, fully automatic lens. Film, 35-mm, color.
EC-48	Recreational services	Indoor movie admissions: Adult..... Children's..... TV repairs, picture tube replacement..... Bowling fees, evening..... Golf green fees.....	Indoor movie admission: Adult. Children's. Drive-in movie admissions, adult. Bowling fees, evening. Film developing, black and white.

* See footnotes at end of table.

APPENDIX TABLE VI. LIST OF ITEMS PRICED FOR THE REVISED CONSUMER PRICE INDEX AS OF DECEMBER 1963—Continued

EC No.	Groups, subgroups, expenditure classes	Priced items	
		Sample A	Sample B
EC-49	Reading and education	Newspapers, street sale and delivery..... College tuition and fees, undergraduate..... Magazines, single copy and subscription..... College textbooks, undergraduate.....	Newspapers, street sale and delivery. College tuition and fees, undergraduate. Paperback books, not school or technical. Piano lessons, beginner.
EC-50	Other goods and services Tobacco products	Cigarettes, nonfilter tip, regular size, pack..... Cigarettes, filter tip, king size, carton..... Cigars, domestic, regular size.....	Cigarettes, nonfilter tip, regular size, carton. Cigarettes, filter tip, king size, pack. Cigars, domestic, regular size.
EC-51	Alcoholic beverages	Beer, at home, local and national brands..... Whiskey, spirit blended and straight bourbon. Wine, dessert and table..... Beer, away from home.....	Beer, at home, local and national brands. Whiskey, spirit blended and straight bourbon. Wine, dessert and table. Beer, away from home.
EC-52	Financial and miscellaneous personal expenses	Funeral services, adult..... Bank service charges, checking account.....	Funeral services, adult. Legal services, short form will.

¹ Two of the largest volume sellers among the following types of fish are priced within each city, since within any given city, all varieties of fish are not available: Frozen ocean perch and haddock; fresh cod, catfish, king salmon, halibut, sole, and haddock.

² Not actually priced; imputed from priced items.
³ Four items are priced only for health insurance: Operating room, X-ray, tonsillectomy, and retained earnings; prices for the remaining items are also included as directly priced professional and hospital services.

APPENDIX TABLE VII. REVISED CPI WEIGHT DERIVATION PROCEDURES FOR MAJOR EXPENDITURE CATEGORIES, INDIVIDUAL EXPENDITURE CLASS TOTALS, CERTAINTY ITEMS, AND PROBABILITY ITEM TOTALS¹ WITHIN EXPENDITURE CLASSES, BY REGION² AND CITY-SIZE STRATUM, FAMILIES OF TWO OR MORE PERSONS, 1960-61 CES

EC No.	Item No.	Description	Expenditure data code, by region-city size stratum												Anchor-age	Hono-lulu				
			West				Northeast				South						North Central			
			A	B	C	D	A	B	C	D	A	B	C	D			A	B	C	D
1-14		Food at home.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	1	1
1		Cereal and grain products.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	1	1
2		Bakery products.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	1	1
3	03	White bread.....	1	1	3	3	1	1	1	2	1	1	1	2	1	1	1	2	4	1
3a		Meats:																		
	01	Beef and veal.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	1	1
	03	Steak.....	1	1	3	3	3	3	3	3	1	3	3	3	3	3	3	3	4	1
		Ground beef.....	1	1	3	3	3	3	3	3	1	3	3	3	3	3	3	3	4	1
3b		Pork.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	1	1
	13	Pork chops.....	1	3	3	3	1	3	3	3	3	3	3	3	3	3	3	3	4	1
	18	Bacon.....	1	3	3	3	1	3	3	3	3	3	3	3	3	3	3	3	4	1
3c		Other meats.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	1	1
4		Poultry.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	1	1
	01	Frying chickens.....	1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	3
5		Fish.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	1	1
6		Dairy products.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	1	1
	01	Fresh milk.....	1	1	3	3	1	1	1	2	1	1	1	2	1	1	1	2	4	1
	19	Butter.....	1	1	3	3	1	1	1	2	1	1	1	2	1	1	1	2	4	1
		Fresh fruits.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	1	1
7	01	Apples.....	1	3	3	3	1	3	3	3	2	3	3	3	2	3	3	3	4	1
	02	Bananas.....	1	3	3	3	1	3	3	3	2	3	3	3	2	3	3	3	4	1
	07	Oranges.....	1	3	3	3	1	3	3	3	2	3	3	3	2	3	3	3	4	1
8		Fresh vegetables.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	1	1
	09	Lettuce and greens.....	1	3	3	3	1	1	1	3	1	3	3	3	3	3	3	3	4	1
	11	Potatoes, white.....	1	3	3	3	1	1	1	3	1	3	3	3	3	3	3	3	4	1
	14	Tomatoes.....	1	3	3	3	1	1	1	3	1	3	3	3	3	3	3	3	4	1
9		Processed fruits and vegetables.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	1	1
10	01	Eggs.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	1	1
11		Fats and oils.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	1	1
	02	Margarine.....	1	1	3	3	1	1	3	3	1	1	1	2	1	1	1	2	4	1
12		Sugar and sweets.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	1	1
13		Nonalcoholic beverages.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	1	1
	02	Coffee.....	1	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3	4	1
14		Prepared and partially prepared foods.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	1	1
15		Food away from home.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	1	1
	01	Board ¹	1	2	2	2	1	1	3	3	2	2	2	2	1	1	1	3	4	1
	02	Restaurant meals.....	1	2	2	2	1	1	3	3	2	2	2	2	1	1	1	3	4	1
	03	Snacks.....	1	2	2	2	1	1	3	3	2	2	2	2	1	1	1	3	4	1
16, 18-20		Shelter (less home purchase and financing).....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	1	1
16		Rent.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	1	1
	01	Rent of house or apartment.....	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	1
	02	Rent of rooms ²	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	1
	03	Hotel, motel rentals.....	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	1
17		Home purchase and financing ⁴	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	4	1
	01	Purchase.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	4	1
	02	Settlement charges ³	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	4	1
	03	Mortgage interest.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	4	1
18		Taxes and insurance.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	1	1
	01	Property tax, special assessments.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	1	1
	02	Homeowners insurance.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	1	1
19-20		Maintenance and repairs.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	1	1
19		Commodities.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	1	1

See footnotes at end of table.

APPENDIX TABLE VII. REVISED CPI WEIGHT DERIVATION PROCEDURES FOR MAJOR EXPENDITURE CATEGORIES, INDIVIDUAL EXPENDITURE CLASS TOTALS, CERTAINITY ITEMS, AND PROBABILITY ITEM TOTALS¹ WITHIN EXPENDITURE CLASSES, BY REGION² AND CITY-SIZE STRATUM, FAMILIES OF TWO OR MORE PERSONS, 1950-61 CES—Continued

EC No.	Item No.	Description	Expenditure data code, by region-city size stratum																Anchorage	Honolulu
			West				Northeast				South				North Central					
			A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D		
20		Services.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2		
21		Fuels and utilities.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2		
	01	Coal, coke.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
	02	Fuel oils.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
	03	Gas.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
	04	Electricity.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
	05	Telephone.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2		
	06	Water and sewerage.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2		
22-28		Household furnishings and operation.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2		
22		Textile housefurnishings.....	1	1	3	3	1	1	1	2	1	1	1	2	1	1	1	2		
23-28		Durable housefurnishings.....	1	1	3	3	1	1	1	2	1	1	1	2	1	1	1	2		
	01	Furniture.....	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	1
	14	Living room suite.....	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	1
		Bedroom suite.....	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	1
24		Floor coverings.....	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	1
	01	Rug, soft surface.....	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	1
25		Appliances.....	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	1
	01	Refrigerator.....	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	1
26		Other housefurnishings.....	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	1
27		Housekeeping supplies.....	1	1	3	3	1	1	1	2	1	1	1	2	1	1	1	2	1	1
28		Housekeeping services.....	1	1	3	3	1	1	1	2	1	1	1	2	1	1	1	2	1	1
	05	Domestic help.....	1	1	3	3	1	1	3	3	1	1	3	3	1	1	3	3	4	1
	13	Postal charges.....	1	1	3	3	1	1	3	3	1	1	3	3	1	1	3	3	4	1
29-35		Apparel and upkeep.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2		
29		Men's apparel.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2		
	07	Suits, winter.....	1	1	3	3	1	1	1	3	1	1	1	2	1	1	1	2	4	1
30		Boys' apparel.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	4	1
31		Women's apparel.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	4	1
	01	Coats, winter.....	1	1	3	3	1	1	3	3	1	1	1	2	1	1	1	2	4	1
	11	Dresses, street.....	1	1	3	3	1	1	3	3	1	1	1	2	1	1	3	2	4	1
	32	Stockings.....	1	1	3	3	1	1	3	3	1	1	1	2	1	1	3	2	4	1
32		Girls' apparel.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	4	1
33		Footwear.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	1	1
	01	Street shoes, men's.....	1	1	3	3	1	1	3	3	1	1	1	2	1	1	1	2	4	1
	05	Street shoes, women's.....	1	1	3	3	1	1	3	3	1	1	1	2	1	1	1	2	4	1
		Other apparel:																		
34		Commodities.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	4	1
35		Services.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	4	1
	04	Dry cleaning, men's.....	1	1	3	3	1	3	3	3	1	3	3	3	1	3	3	3	4	1
	05	Dry cleaning, women's.....	1	1	3	3	1	3	3	3	1	3	3	3	1	3	3	3	4	1
36-41		Transportation ³	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2		
36-40		Private.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2		
	01	Auto purchase.....	1	3	3	3	1	1	3	3	1	1	1	2	1	1	1	2	1	1
	02	New cars.....	1	3	3	3	1	1	3	3	1	1	1	2	1	1	1	2	4	1
		Used cars.....	1	3	3	3	1	1	3	3	1	1	1	2	1	1	1	2	4	1
37		Gasoline and motor oil.....	1	3	3	3	1	1	3	3	1	1	1	2	1	1	1	2	1	1
	01	Gasoline.....	1	3	3	3	1	1	3	3	1	1	1	2	1	1	1	2	1	1
	02	Motor oil.....	1	3	3	3	1	1	3	3	1	1	1	2	1	1	1	2	1	1
38		Auto parts.....	1	3	3	3	1	1	3	3	1	1	1	2	1	1	1	2	1	1
39		Auto repairs and maintenance.....	1	3	3	3	1	1	3	3	1	1	1	2	1	1	1	2	1	1
40		Other auto expenses.....	1	3	3	3	1	1	3	3	1	1	1	2	1	1	1	2	1	1
	01	Auto insurance.....	1	3	3	3	1	1	3	3	1	1	3	3	1	1	3	3	4	1
	02	Auto financing charges ⁴	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	1
	03	Registration, inspection.....	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	1
	04	Driver's license fees.....	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	1
	05	Parking, garage rent.....	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	1
41		Public.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2		
	01	Local transit.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	1	1
	02	Taxicabs.....	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	1
	03	Rent of car ⁵	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	1
	04	Train fares.....	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	1
	05	Airplane, steamship fares.....	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	1
	06	Bus, intercity fares.....	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	1
42-50		Health and recreation (excluding EC 51-52).....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2		
42-44		Medical care.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2		
42		Drugs and prescriptions.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	1	1
	01	Over-the-counter items.....	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	1
	02	Prescriptions.....	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	1
43-44		Medical care services.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2		
43		Professional services.....	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	1
	01	Family doctor.....	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	1
	02	Dentists' fees.....	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	1
	07	Eye care.....	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	1
44a		Hospital services.....	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	1
44b		Health insurance.....	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	1
45-46		Personal care.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2		
45		Toilet goods.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	1	1
46		Personal care services.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	1	1
	01	Men's haircuts and shaves.....	1	1	1	3	1	1	3	2	1	1	1	2	1	1	1	2	4	1
47-49		Reading and recreation.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2		
47		Recreational goods.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	1	1
	01	TV sets and combinations.....	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	1
48		Recreational services.....	1	1	1	2	1	1	1	2	1	1	1	2	1	1	1	2	1	1
	04	Indoor movies.....	1	1	1	3	1	3	3	2	1									

APPENDIX TABLE VII. REVISED CPI WEIGHT DERIVATION PROCEDURES FOR MAJOR EXPENDITURE CATEGORIES, INDIVIDUAL EXPENDITURE CLASS TOTALS, CERTAINTY ITEMS, AND PROBABILITY ITEM TOTALS¹ WITHIN EXPENDITURE CLASSES, BY REGION² AND CITY-SIZE STRATUM, FAMILIES OF TWO OR MORE PERSONS, 1960-61 CES—Continued

EC No.	Item No.	Description	Expenditure data code, by region-city size stratum																	
			West				Northeast				South				North Central				Anchorage	Honolulu
			A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D		
51	01	Cigarettes.....	1	1	1	2	1	1	1	2	1	3	3	3	3	3	3	3	4	1
	01	Alcoholic beverages ⁶	1	1	1	3	1	1	1	2	1	1	1	3	1	1	1	2		
	02	Beer and ale.....	1	1	1	3	1	1	3	3	2	1	1	3	1	1	3	3		
	03	Whiskey.....	1	1	1	3	1	1	3	3	2	1	1	3	1	1	3	3		
52	01	Away from home.....	1	1	1	3	1	1	3	3	2	1	1	3	1	1	3	3	4	3
	01	Financial and miscellaneous personal expenses ⁷	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
	03	Financing charges ⁸	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
	03	Funeral services.....	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		

¹ Weights for probability item totals within EC's having both certainty and probability items are derived by same procedures as certainty items; for these EC's, probability totals are not separately shown.

² SMSA's and cities included in each region are as follows:

A	<i>Northeast</i> Boston New York-Northeast Philadelphia Pittsburgh	<i>North Central</i> Chicago Cleveland Detroit St. Louis	<i>South</i> Baltimore Washington	<i>West</i> Los Angeles San Francisco
B	Buffalo Hartford	Dayton Indianapolis Wichita	Atlanta Dallas Nashville	Denver Seattle
C	Lancaster Portland	Cedar Rapids Champaign-Urbana Green Bay	Austin Baton Rouge Durham Orlando	Bakersfield
D	Kingston Millville Southbridge	Crookston Devils Lake Findlay Logansport Niles	Florence McAllen Mangum Martinsville Union Vicksburg	Klamath Falls Orem
Nonindex:	Athol Burlington Lewistown	Cambridge LaSalle Manhattan Menasha Owatonna	Cleveland Gainesville Griffin Okmulgee Reserve Sebring	Eureka Gallup

³ These items were in the original CPI pricing list but were subsequently dropped; weights have been allocated as follows:
 EC 15-01, Board, to items of EC 15-03, Restaurant meals
 EC 16-02, Room rent, to EC 16-01, Rent of house or apartment
 EC 17-02, Settlement charges, to EC 17-01, Home purchase
 EC 40-02, Auto financing charges, moved by EC 36-1, New cars
 EC 41-03, Rent of car, to EC 41-02, Taxi fares
 EC 52-01, Other financing charges, imputed to All items, EC 1-52
⁴ Weight derivation procedures for home purchase and financing refer to CES and CHUS data after special editing.
⁵ Subsequently adjusted by substitution of specially edited data for purchase of new and used cars and auto financing charges.
⁶ Weight derivation procedures for alcoholic beverages refer to expenditures after adjustment for underreporting.
⁷ The relative importance of EC 52 to the total of EC 1-51 by region was applied to the city data for EC 1-51.

Explanation of Codes

The code numbers appearing in the table indicate the scope of the data used in the weight derivation. Most of the average expenditures used were calculated as pooled averages, i.e., aggregate expenditures reported by all index families in the specified area divided by the total number of families in the sample. A slight variation of this procedure was used for the D-stratum cities. Individual city averages, calculated as indicated above, were combined as simple averages, i.e., the unweighted sum of the city averages divided by the number of cities in the specified area. The revised weights were derived from CES and CHUS data (as reported or as

adjusted after special editing procedures) for the following combinations of city data:

- Code 1. Average expenditures for index families in individual cities
- Code 2. Average expenditures for index families in all cities within a region-size class—pooled averages for A, B, C, stratum and averages of city averages in D stratum
- Code 3. Average expenditures for index families in all cities within a region
- Code 4. Average expenditures for index families in all Alaskan cities. For example, in the South the total expenditures for fresh fruits (EC 7) in the largest cities (stratum A) were used in each city without adjustment, but the distribution of this total was based on the average distribution in all A-stratum cities in the South; in all other southern cities the distribution of EC 7 was based on the average distribution in all southern cities regardless of size.

Exceptions in Weight Derivation, Specific Expenditure Classes and Items

EC No.	Item No.	Region	Description
2		NE South NC	Average of A cities in Northeast for Pittsburgh Average of C cities in South for Baton Rouge Average of all cities in North Central region for Wichita
6		South	Average of all cities in South for Baltimore and Durham
15		NC	Only 1961 city data used in Detroit for board. D-city average recalculated excluding Cambridge.
18		South	Average of C cities in South for Baton Rouge
21		All	City data for specific fuels priced and allocated unpriced fuels to priced fuels
29		NC	Average of all cities in North Central region for Wichita
31		South NC	Average of C cities in South for Baton Rouge Average of all cities in North Central region for Wichita
36-40		NC	Average of A cities in North Central region for St. Louis
41	01	All	D-cities: zero weight for cities without public transit systems; for other D cities, D-city average for cities having public transportation, including any reported expenditures for cities without public transit.
51		NC	Average of C cities in North Central region for Champaign-Urbana
		South	Average of Dallas and Nashville for Atlanta. Average of C cities in South for Baton Rouge.
		S & W	D-cities: where alcoholic beverages are not sold by the drink, weights for drinks away from home were set at zero; for other D cities, average of D-cities where drinks are available, including any reported expenditures in cities where sale is prohibited by law.
52		Honolulu	Total obtained by applying the Western region average ratio (including Honolulu) of EC 52 to EC 1-51, to the total of EC 1-51 in Honolulu. Items within distributed by the Western regional average relative importance (including Honolulu).

APPENDIX TABLE VIII-A. DERIVATION OF POPULATION WEIGHTS FOR REVISED CPI

Stratum and SMSA or city	(Percentage distribution)			CPI weights		
	1960 Census urban population	All consumer units	Index consumer units	Total	Families (percent)	Singles
A SMSA's	38,918	39,106	40,021	40,021		
New York	11,415	11,944	12,577	12,577	11.290	1.287
Chicago	5,133	4,803	5,552	5,552	4.969	.583
Los Angeles	5,305	5,462	5,017	5,017	4.052	.965
Philadelphia	3,110	3,000	2,703	2,703	2,590	.113
Detroit	2,845	2,663	2,895	2,895	2,679	.216
San Francisco	2,105	2,406	2,372	2,372	1,919	.453
Boston	1,942	2,001	1,930	1,930	1,681	.249
Pittsburgh	1,572	1,565	1,565	1,565	1,432	.133
St. Louis	1,452	1,360	1,428	1,428	1,310	.109
Cleveland	1,405	1,276	1,325	1,325	1,283	.042
Washington	1,463	1,459	1,255	1,255	999	.256
Baltimore	1,171	1,167	1,402	1,402	1,285	.117
B SMSA's	25,479	25,325	25,471	25,471		
Northeast	4,454	4,235	4,695			
Hartford				2,348	2,081	.267
Buffalo				2,347	2,080	.267
North Central	7,088	6,923	6,629			
Dayton				2,210	2,017	.193
Indianapolis				2,209	2,016	.193
Wichita				2,210	2,017	.193
South	9,200	9,369	9,800			
Atlanta				3,267	2,978	.289
Nashville				3,266	2,977	.289
Dallas				3,267	2,978	.289
West	4,737	4,798	4,347			
Denver				2,174	1,875	.299
Seattle				2,173	1,874	.299
C SMSA's	14,651	14,486	13,781	13,781		
Northeast	3,024	3,166	3,606			
Portland, Maine				1,803	1,563	.240
Lancaster, Pa				1,803	1,563	.240
North Central	4,183	4,130	3,852			
Champaign-Urbana, Ill.				1,284	1,122	.162
Green Bay, Wis				1,284	1,122	.162
Cedar Rapids, Iowa				1,284	1,122	.162
South	5,745	5,600	5,000			
Durham, N.C				1,250	1,156	.094
Orlando, Fla				1,250	1,156	.094
Baton Rouge, La				1,250	1,156	.094
Austin, Tex				1,250	1,156	.094
West	1,699	1,590	1,323			
Bakersfield, Calif				1,323	1,193	.130
D cities	20,952	21,083	20,727	20,727		
Northeast	3,069	3,259	3,512			
Southbridge, Mass				1,170	1,041	.129
Kingston, N.Y				1,171	1,042	.129
Millville, N.J				1,171	1,042	.129
North Central	6,288	6,595	6,759			
Findlay, Ohio				1,352	1,186	.166
Logansport, Ind				1,352	1,186	.166
Niles, Mich				1,351	1,185	.166
Crookston, Minn				1,352	1,186	.166
Devils Lake, N. Dak				1,352	1,186	.166
South	8,048	8,134	7,360			
Martinsville, Va				1,227	1,155	.072
Union, S.C				1,227	1,155	.072
Florence, Ala				1,227	1,155	.072
Vicksburg, Miss				1,226	1,154	.072
Mangum, Okla				1,226	1,154	.072
McAllen, Tex				1,227	1,155	.072
West	3,093	2,693	2,677			
Orem, Utah				1,339	1,197	.142
Klamath Falls, Oreg				1,338	1,196	.142
Alaska (Anchorage)	.068	.066	.065	.065	.052	.013
Hawaii (Honolulu)	.386	.332	.354	.354	.305	.049
Total	100,000	100,000	100,000	100,000	89,432	10,568

APPENDIX TABLE VIII-B. POPULATION WEIGHTS FOR B CITIES BEFORE AND AFTER ADDITION OF 6 CITIES

	Index consumer units	CPI weights	
		Original	After addition of 6 Cities
Percent			
B SMSA's.....	25.471		
Northeast.....	4.695		
Hartford.....		2.348	2.348
Buffalo.....		2.347	2.347
North Central.....	6.629		
Dayton.....		2.210	1.096
Indianapolis.....		2.209	1.096
Wichita.....		2.210	1.096
Cincinnati.....			.740
Milwaukee.....			.850
Minneapolis-St. Paul.....			1.042
Kansas City.....			.710
South.....	9.800		
Atlanta.....		3.267	2.934
Nashville.....		3.266	2.933
Dallas.....		3.267	2.934
Houston.....			.999
West.....	4.347		
Denver.....		2.174	1.838
Seattle.....		2.173	1.837
San Diego.....			.672

APPENDIX TABLE IX. CONSUMER PRICE INDEX (NEW SERIES) RELATIVE IMPORTANCE OF MAJOR GROUPS, SUBGROUPS AND SELECTED INDIVIDUAL ITEMS, DECEMBER 1963, AND COMPARISON WITH OLD SERIES ¹

Groups, subgroups, expenditure classes, and priced items ¹	New series index	Old series index	Groups, subgroups, expenditure classes, and priced items ¹	New series index	Old series index
	Percent of all items Dec. 1963	Percent of all items Dec. 1963		Percent of all items Dec. 1963	Percent of all items Dec. 1963
All items	100.00	100.00	Household furnishings and operation		
Food	22.43	28.18	—continued		
Food at home	17.89	23.11	Furniture—continued		
Cereals and bakery products	2.45	3.27	Floor coverings	0.48	0.50
Cereals	.80	.98	Rugs, soft surface	.34	.38
Bakery products	1.65	2.29	Other priced items	.14	.12
White bread	.60	1.68	Appliances	1.36	1.71
Other priced items	1.05	.61	Refrigerator	.28	.53
Meats, poultry, and fish	5.63	6.43	Other priced items	1.08	1.18
Meats	4.45	5.21	Other housefurnishings	.83	.55
Beef and veal	2.21	2.07	Housekeeping supplies	1.55	.97
Hamburger	.57	.49	Housekeeping services	1.55	1.51
Steak	.80	.77	Domestic service	.26	.68
Other priced items	.84	.81	Babysitter	.29	
Pork	1.30	2.09	Postage	.23	.35
Pork chops	.36	.51	Other priced items	.77	1.48
Bacon	.30	.76	Apparel and upkeep	10.63	10.58
Other priced items	.64	.82	Men's and boys' apparel	2.86	2.79
Other meats	.94	1.05	Men's apparel	2.21	2.37
Poultry	.73	.66	Suits, year round	.36	.48
Frying chickens	.51	.66	Other priced items	1.85	1.89
Other priced items	.22		Boys' apparel	.65	.42
Fish	.45	.56	Women's and girls' apparel	4.08	3.67
Dairy products	2.80	3.81	Women's apparel	3.23	3.02
Milk, fresh (grocery)	.85	1.19	Winter coat	.28	.63
Milk, fresh (delivered)	.68	1.20	Street dresses	.50	.71
Butter	.25	.40	Hose, nylon	.39	.33
Other priced items	1.02	1.02	Other priced items	2.06	1.35
Fruits and vegetables	3.02	4.46	Girls' apparel	.85	.65
Fresh fruits	.76	1.53	Footwear	1.51	1.41
Apples	.17	.31	Street shoes, men's	.26	.33
Bananas	.15	.19	Street shoes, women's	.26	.41
Oranges	.20	.52	Other priced items	.99	.67
Other priced items	.24	.51	Other apparel	2.18	2.71
Fresh vegetables	.94	1.38	Commodities	.71	.72
Lettuce	.16	.19	Services	1.47	1.99
Potatoes	.24	.39	Dry cleaning	.79	1.34
Tomatoes	.14	.26	Men's suit	.44	
Other priced items	.40	.54	Women's dress	.35	
Processed fruits and vegetables	1.32	1.55	Other priced items	.68	1.65
Other food at home	3.99	5.14	Transportation	13.88	11.65
Eggs	.64	1.01	Private transportation	12.64	9.98
Fats and oils	.55	.80	Autos and related goods	9.02	7.38
Margarine	.15	.20	Auto purchase	5.02	4.57
Other priced items	.40	.60	New cars	2.55	2.73
Sugar and sweets	.64	1.00	Used cars	2.47	1.84
Nonalcoholic beverages	1.01	1.30	Gasoline and motor oil	3.28	2.51
Coffee, can and bag	.40	.50	Gasoline	3.05	2.27
Other priced items	.61	.80	Motor oil	.23	.24
Prepared and partially prepared food	1.15	1.03	Auto parts	.72	.30
Food away from home	4.54	5.07	Automobile services	3.62	2.60
Restaurant meals	3.75	5.07	Auto repairs and maintenance	.98	1.22
Between meal snacks	.79		Other automobile expense	2.64	1.38
Housing	33.23	30.71	Auto insurance	1.42	1.09
Shelter	20.15	18.34	Registration fees	.37	.29
Rent	5.50	6.16	Drivers' license	.04	
Hotels and motels	.38		Parking fees	.18	
Homeownership	14.27	12.18	Auto financing charges ⁴	.63	
Purchase and financing	9.11	7.51	Public transportation	1.24	1.67
Home purchase	6.28	5.76	Local transit	.78	1.39
Mortgage interest	2.83	1.75	Taxicabs	.14	
Taxes and insurance	2.13	1.61	Train fares	.07	.28
Real estate taxes	1.72	1.37	Airplane fares	.20	
Property insurance	.41	.24	Intercity bus fares	.05	
Maintenance and repairs	3.03	3.06	Health and recreation	19.45	18.03
Commodities	.98	.96	Medical care	5.70	5.88
Services	2.06	2.10	Drugs and pharmaceuticals	1.14	.73
Fuel and utilities	5.26	4.91	Over-the-counter items	.50	.41
Fuel oil and coal	.73	1.21	Prescriptions	.64	.32
Fuel oil	.67	.55	Professional services	2.59	3.27
Coal	.06	.66	Family doctor, house visit	.12	.84
Gas and electricity	2.71	2.11	Family doctor, office visit	.77	.79
Gas	1.30	1.18	Optometric examination and eyeglasses	.29	.28
Electricity	1.41	.93	Dentists' fees	.86	.89
Other utilities	1.82	1.59	Other priced items	.55	.47
Telephone	1.38	1.10	Hospital services	.36	.32
Water and sewerage	.44	.49	Health insurance ⁵	1.61	1.56
Household furnishings and operation	7.82	7.46	Hospital services	.66	
Textile housefurnishings	.61	.67	Nonhospital services	.71	
Furniture	1.44	1.55	Overhead	.24	
Bedroom suite	.28	.41	Personal care	2.75	2.27
Living room suite	.28	.47	Toilet goods	1.52	1.17
Other priced items	.88	.67	Services	1.23	1.10
			Men's haircut	.51	.77
			Other priced items	.72	.33

See footnotes at end of table.

APPENDIX TABLE IX. CONSUMER PRICE INDEX (NEW SERIES) RELATIVE IMPORTANCE OF MAJOR GROUPS, SUBGROUPS AND SELECTED INDIVIDUAL ITEMS, DECEMBER 1963, AND COMPARISON WITH OLD SERIES ¹—Continued

Groups, subgroups, expenditure classes, and priced items ¹	New series index	Old series index	Groups, subgroups, expenditure classes, and priced items ¹	New series index	Old series index
	Percent of all items Dec. 1963	Percent of all items Dec. 1963		Percent of all items Dec. 1963	Percent of all items Dec. 1963
Health and recreation—continued			Other goods and services—continued		
Reading and recreation.....	5.94	5.57	Alcoholic beverages.....	2.64	2.25
Recreation.....	4.36	4.39	Beer.....	1.06	1.36
Recreational goods.....	2.78	2.31	Whiskey and wine.....	.78	.89
TV sets.....	.63	.70	Beer, cocktails away from home.....	.80	.....
Other priced items.....	2.15	1.61	Personal expenses.....	.53	.....
Recreational services.....	1.58	2.08	Funeral services.....	.28	.....
Movies (indoor).....	.38	2.04	Bank service charges.....	.12	.....
Bowling fees.....	.36	.....	Legal services.....	.13	.....
Other priced items.....	.84	.04	Miscellaneous ²	4.38	4.85
Reading and education.....	1.58	1.18	Special groups.....	.....	.....
Newspapers.....	.50	1.18	Commodities.....	65.97	67.73
College tuition.....	.23	.....	Durable.....	18.78	17.53
Other priced items.....	.85	.....	Nondurable.....	47.19	50.20
Other goods and services.....	5.06	4.31	Services.....	34.03	32.27
Tobacco products.....	1.89	2.06			
Cigarettes.....	1.74	1.94			
Cigars.....	.15	.12			

¹ For this comparison, the items priced have been grouped for both indexes according to the classification of the new series. The basis of selection of items to be priced and the allocation of weights to the priced items are not the same for the two indexes. In the old series, important items were selected and unpriced items having similar price movements were allocated directly to priced items. For the new series, the most important items were selected with certainty, and carry their own importance. Weights are shown separately only for these items. Some of them are represented by more than one specification but the weights for the individual specifications are not shown. The remaining weight of each expenditure class is shared equally by the probability items.

² Fifty percent of old series weight for laundry; remaining 50 percent included in apparel services.

³ Includes 50 percent of old series weight for laundry; formerly included in Household operation.

⁴ Not actually priced; imputed from priced items.

⁵ Represented by directly priced services in new series; by premium rates in old series.

⁶ Personal financing charges other than mortgage interest and auto financing.

APPENDIX TABLE X. REQUIRED NUMBER OF REPORTERS PER REPLICATED SUBSAMPLE BY COMMODITY GROUP (EXCLUDING FOOD AT HOME AND ITEMS OBTAINED FROM SECONDARY SOURCES) ¹

Item	Chicago, Los Angeles, New York	Other A strata cities	B strata cities ²	C & D strata cities	All 56 cities, 2 samples combined
Food away from home:					
Restaurant meals ³	15	12	12	12	.....
Between meal snacks.....	5	4	4	4	.....
Housing (shelter):					
Rent ⁴	750-1,100	500-750	200-500	150-450	⁵ 200
Hotel, motel rentals.....	.....	.....	.....	.....	.....
Property tax.....	200	200	150-300	75-176	.....
Maintenance and repairs.....	5	4	4	4	.....
Housing (fuel and utilities):					
*Coal and fuel oil.....	5	4	4	4	.....
*Gas.....	.....	.....	.....	.....	⁶ 119
*Telephone.....	.....	.....	.....	.....	⁶ 78
*Water and sewerage rates.....	.....	.....	.....	.....	⁷ 247
Housing (other):					
House furnishings.....	5	4	4	4	.....
Housekeeping supplies.....	5	4	4	4	.....
Housekeeping services.....	5	4	4	4	.....
Apparel and upkeep:					
Men's, women's, and children's.....	5	4	4	4	.....
Footwear.....	5	4	4	4	.....
Apparel services.....	5	4	4	4	.....
Transportation (private):					
Auto purchase (new cars).....	3	2	2	1	.....
Gasoline and motor oil.....	6	4	4	4	.....
Automobile services.....	5	4	4	4	.....
Other automobile expenses.....	5	4	4	4	.....
Transportation (public):					
Local transit.....	.....	.....	.....	.....	⁶ 60
Taxicabs.....	.....	.....	.....	.....	⁷ 76
Medical care:					
Drugs and prescriptions.....	5	4	4	4	.....
Physician's services.....	5-12	4-9	4-9	3	.....
Dental services.....	8-10	6	6	3	.....
Eye care.....	5	5	5	5	.....
Hospital services.....	5	4	4	4	.....
Lab tests.....	5	4	4	3	.....
Personal care:					
Toilet goods.....	5	4	4	4	.....
Personal care services.....	5	4	4	4	.....

See footnotes at end of table.

APPENDIX TABLE X. REQUIRED NUMBER OF REPORTERS PER REPLICATED SUBSAMPLE BY COMMODITY GROUP (EXCLUDING FOOD AT HOME AND ITEMS OBTAINED FROM SECONDARY SOURCES) ¹—Continued

Item	Chicago, Los Angeles, New York	Other A strata cities	B strata cities ²	C & D strata cities	All 56 cities, 2 samples combined
Reading and recreation:					
Recreational goods and services.....	5	4	4	4	
Newspapers.....					⁶ 171
College textbooks.....					⁷ 9
Music lessons.....	5	4	4	4	
Other goods and services:					
Tobacco products.....	5	4	4	4	
Alcoholic beverages.....	5	4	4	4	
Financial and miscellaneous personal expenses.....	5	4	4	4	

*Mail questionnaire.

¹ Required number not always available due to limited universe in smaller (strata C & D) cities; cities in which 2 subsamples are priced are indicated in appendix table XI.

² Honolulu—3 outlets per subsample instead of 4 used for other B stratum cities.

³ One-third of each subsample of restaurants is priced in most cities on different quarterly cycles.

⁴ One-third of each sample in the 5 largest cities and one-half of each sample in all other cities is priced on different semiannual cycles; total sample in non-replicated and replicated cities is the same.

⁵ Fifty outlets per region—city size based on the relative importance of SMSA receipts to total receipts (1958 Census data) for hotels and motels in the region.

⁶ Sample in each city represents universe of specified outlets located in the city and selected pricing areas—no fixed sample size.

⁷ Sample size limited.

APPENDIX TABLE XI. SIZE OF INDEPENDENT FOOD STORE SAMPLE BY TYPE OF OUTLET BY SMSA OR CITY ¹

SMSA/city	Total	Number of Independent Stores		
		Grocery stores	Meat markets ²	Produce markets ³
Chicago.....	54	37	13	4
Detroit.....	50	36	11	3
Los Angeles.....	44	33	7	4
New York.....	79	35	30	14
Philadelphia.....	55	29	18	8
Baltimore.....	31	18	6	7
Boston.....	32	20	9	3
Cleveland.....	34	19	10	5
Pittsburgh.....	33	17	10	6
St. Louis.....	27	20	4	3
San Francisco.....	31	22	8	1
Washington.....	26	21	4	1
Atlanta.....	23	20	2	1
Buffalo.....	33	17	10	6
Cincinnati.....	32	18	8	6
Dallas.....	24	21	2	1
Dayton.....	26	21	3	2
Denver.....	29	20	6	3
Hartford.....	28	22	5	1
Honolulu.....	28	22	3	3
Houston.....	26	22	3	1
Indianapolis.....	28	20	3	5
Kansas City.....	27	23	3	1
Milwaukee.....	30	16	7	7
Minneapolis-St. Paul.....	31	21	7	3
Nashville.....	24	22	2	-
San Diego.....	30	22	6	2
Seattle.....	29	23	5	1
Wichita.....	24	23	1	-
Austin.....	12	10	2	-
Bakersfield.....	10	10	-	-
Baton Rouge.....	13	10	3	-
Cedar Rapids.....	14	10	4	-
Champaign-Urbana.....	10	9	1	-
Durham.....	13	9	1	3
Green Bay.....	11	10	1	-
Lancaster.....	14	10	3	1
Orlando.....	11	9	-	2
Portland, Maine.....	13	10	3	-
Anchorage.....	8	8	-	-
Crookston.....	5	5	-	-
Devils Lake.....	5	5	-	-
Findlay.....	6	5	1	-
Florence.....	8	8	-	-
Kingston.....	8	8	-	-
Klamath Falls.....	5	5	-	-
Logansport.....	6	5	1	-
Mangum.....	3	3	-	-
Martinsville.....	5	5	-	-
McAllen.....	5	5	-	-
Millville.....	3	3	-	-
Niles.....	5	5	-	-
Orem.....	5	5	-	-
Southbridge.....	5	5	-	-
Union.....	5	5	-	-
Vicksburg.....	8	8	-	-

¹ Two subsamples combined in replicated cities.

² Including a few chain outlets.

APPENDIX TABLE XII. CITIES AND PRICING SCHEDULE FOR THE REVISED CONSUMER PRICE INDEX

City ¹ and size stratum	Pricing schedule ²				
	Food ³	Other items			
		Samples	Schedule ³		
	M		1	2	3
A. Standard Metropolitan Statistical Areas of 1,400,000 or more in 1960:					
*Baltimore, Md.	1A,1B,2A,2B	1A,2B			x
*Boston, Mass.		1A,2B		x	
*Chicago-Northwestern Indiana ⁴		1A,1B,2A,2B	x		
*Cleveland, Ohio		1A,2B		x	
*Detroit, Mich.		1A,2B	x		
*Los Angeles-Long Beach, Calif.		1A,2B	x		
*New York-Northeastern New Jersey ⁴		1A,2B	x		
*Philadelphia, Pa.		1A,2B	x		
*Pittsburgh, Pa.		1A,2B		x	
*St. Louis, Mo.		1A,2B			x
*San Francisco-Oakland, Calif.	1A,1B,2A,2B			x	
*Washington, D.C.	1A,1B,2A,2B		x		
B. Standard Metropolitan Statistical Areas of 250,000 to 1,399,999 in 1960:					
*Atlanta, Ga.	1A,2B	1A,2B			x
*Buffalo, N.Y.		1A,2B		x	
*Cincinnati, Ohio		1A,2B			x
*Dallas, Tex.		1A,2B		x	
Dayton, Ohio		1A,2B		x	
Denver, Colo.		1A,2B		x	
Hartford, Conn.		1			x
*Honolulu, Hawaii		1A,2B			x
*Houston, Tex.		1A,2B		x	
Indianapolis, Ind.		2			x
*Kansas City, Mo.	1A,2B	1A,2B			x
*Milwaukee, Wis.		1A,2B		x	
*Minneapolis-St. Paul, Minn.		1A,2B		x	
Nashville, Tenn.		2		x	
*San Diego, Calif.		1A,2B		x	
Seattle, Wash.		1A,2B		x	
Wichita, Kans.	1A,2B		x		
C. Standard Metropolitan Statistical Areas of 50,000 to 249,999 in 1960:					
Austin, Tex.	1		x		
Bakersfield, Calif.	2			x	
Baton Rouge, La.	2			x	
Cedar Rapids, Iowa	1A,2B		x		
Champaign-Urbana, Ill.	1A,2B		x		
Durham, N.C.	1A,2B			x	
Green Bay, Wis.	1			x	
Lancaster, Pa.	1		x		
Orlando, Fla.	1A,2B			x	
Portland, Maine	2			x	
D. Urban Places of 2,500 to 49,999 in 1960:					
Anchorage, Alaska	1,2		x		
Crookston, Minn.	1			x	
Devils Lake, N.D.	2			x	
Findlay, Ohio	1			x	
Florence, Ala.	1		x		
Kingston, N.Y.	2			x	
Klamath Falls, Oreg.	1			x	
Logansport, Ind.	2		x		
Mangum, Okla.	1			x	
Martinsville, Va.	2			x	
McAllen, Tex.	2			x	
Millville, N.J.	2			x	
Niles, Mich.	1		x		
Orem, Utah	2		x		
Southbridge, Mass.	1			x	
Union, S.C.	1			x	
Vicksburg, Miss.	2		x		

¹Indicates areas for which separate indexes are published.

²The 18 largest Standard Metropolitan Statistical Areas as defined for the 1960 Census of Population were selected on a certainty basis and represent themselves only in the population weight patterns. The other sample selections carry not only their own population weights but also prorata shares of the population weights of all cities in their region in the same population class.

³Item samples are identified as samples "1" and "2." Outlet samples are identified as samples "A" and "B." The determination as to the extent of sampling within an area depended on plans for publishing separate area indexes and on plans for developing estimates of sampling error and its components.

⁴Foods, fuels, and several other items are priced every month in all cities. Prices of a few items are collected semiannually or annually in all cities. Prices of other goods and services are obtained on the schedule indicated:

M = Every month.

1 = January, April, July, and October.

2 = February, May, August, and November.

3 = March, June, September, and December.

⁴Standard Consolidated Areas.

EXHIBIT A

BLS 2549
Rev 5-1-60

REPORTS WILL BE
HELD IN CONFIDENCE

U.S. DEPARTMENT OF LABOR
Bureau of Labor Statistics
Washington 25, D.C.

Budget Bureau No. 44-R1081.2

BLOCK BOUNDARIES:

North _____

East _____

South _____

West _____

In-Block Ratio 1: _____

Block No. _____ Page _____ of _____ Pages

COMPREHENSIVE HOUSING UNIT SURVEY Listing Form

(City and State)

(Suburban Area)

Not for field use	City		Area		Block					Page No.	

IDENTIFICATION				ALL LIVING QUARTERS	ALL HOUSING UNITS (Col. 5, code 1 or 2)				ALL VACANT HOUSING UNITS	ALL OCCUPIED HOUSING UNITS (Col. 5, code 1 or 2 and no entry in Col. 10)			
STREET NAME	STREET NO.	APT. NO. OR LOC.*	LINE NO.	TYPE OF HOUSING UNIT**	TYPE	NUMBER OF UNITS	YEAR BUILT	CONDITION	1. For rent 2. Rented-not occupied 3. For sale 4. Sold-not occupied 5. Held for occasional use 6. Under construction 7. Other or unknown	TENURE	RACE	NUMBER OF PERSONS IN UNIT	TELEPHONE NUMBER
				With separate entrance 1. Kitchen facilities installed 2. Kitchen facilities not installed 3. No kitchen facilities Without separate entrance 4. Kitchen facilities	1. Single, detached 2. Single, semi-detached 3. Single, attached 4. Multi-unit 5. Other (Specify)	10. Before 1920 20. 1920-1929 30. 1930-1939 40. 1940-1949 After 1949 enter last 2 digits of year.	1. Sound 2. Deteriorating 3. Dilapidated	1. Tenant 2. Owner 3. Concession 4. Rent free	1. White 2. Negro 3. Other	Enter "1" if no phone available in unit. Enter "2" if phone number is refused.			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
			1										
			2										
			3										
			4										
			5										
			6										
			7										
			8										
			9										
			10										
			11										
			12										
			13										
			14										
			15										

*Code

Floor Number-1st Fl., 2d Fl., etc.

B-Basement

F-Front

L-Left

Rt., Right

R-Right

**If column 5, code 1, complete reverse side.

Interviewer _____ Date _____

EXPLANATIONS

LINE NO.	COLUMN NO.	COMMENT

LINE NO.	ALL OCCUPIED HOUSING UNITS WITH INSTALLED KITCHEN FACILITIES (Col. 5, code 1 and Col. 11, code 1 to 4)											OWNER OCCUPIED UNITS (Col. 11, code 2)			
	NUMBER OF ROOMS IN UNIT	HEATING WATER IN UNIT 1. None 2. Cold only HOT AND COLD Heated by: 3. Gas 4. Electricity 5. Coal 6. Oil 7. Other	Bathroom Facilities		REFRIG-ERATION	COOLING FUEL	HEATING EQUIPMENT	HEATING FUEL	AIR CONDI-TION-ING	LAUNDRY EQUIPMENT	GARAGE	CENTRAL SERVICES AVAILABLE	DATE OF PURCHASE (Enter last 2 digits of year.)	PURCHASE PRICE (Complete if 1957 or later in Col. 28.) (To nearest \$100)	ESTIMATED CURRENT MARKET VALUE (To nearest \$100)
		COMPLETE BATHROOM	OTHER BATHROOM FACILITIES PRIVATE ONLY	1. None 2. Gas 3. Electric-ity 4. Ice or other	1. None 2. Gas 3. Elec-tricity 4. Coal 5. Oil 6. Other	1. None 2. Control 3. Other, in-stalled 4. Other, not in-stalled	1. None 2. Gas 3. Elec-tricity 4. Coal 5. Oil 6. Other	1. None 2. Control system 3. Room unit(s)	1. No washer or dryer 2. Washer but no dryer 3. Dryer—gas 4. Dryer—elec. 5. Coin operated equipment only	1. None 2. 1 car 3. 2 cars or more 4. Car-pert	1. Elevator 2. Switch-board 3. Elev. & S.S. 4. Other (Specify in foot-note.) 5. None				
15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															

EXHIBIT B

SAMPLING FRAME FOR SELECTION OF THE CPI ITEM SAMPLE

Item No.	CES schedule No. ¹	FOOD (267 items) Food at home (264 items)	Item No.	CES schedule No. ¹	FOOD (267 items) Food at home (264 items)
		Cereals and bakery products (35 items) EC-1 Cereals and grain products (19 items)			EC-4 Poultry (4 items)
1.	16-C	White flour, all purpose	1.	85-C	Chicken fryers, broilers, etc., fresh
2.	17-C (pt)	Whole wheat flour, soybean and other flour		87-C	
3.	18-C	Biscuit or roll mix	2.	86-C	
4.	19-C	Cake mix and cake flour	3.	88-89-C	
5.	20-C	Muffin, gingerbread, etc., mix	4.	90-91-C	Chicken parts, fresh
6.	21-C	Pancake and waffle mix			Chicken, parts or whole, frozen
7.	22-C	Pie mix			Turkey, fresh or frozen
8.	24-C	Corn cereals, ready-to-eat			EC-5 Fish (6 items)
9.	25-C	Wheat cereals, ready-to-eat			
10.	26-C (pt)	Rice cereals, ready-to-eat	1.	93-C	Fish, whole, fresh or frozen
11.	26-C (pt)	Bran cereals, ready-to-eat	2.	94-C	Fish fillets and steak
12.	27-C	Bread crumbs, cracker meal, prepared stuffing	3.	95-C	Shell fish, fresh or frozen
13.	28-C	Cornmeal	4.	96-C	Canned tuna fish
14.	29-C	Cornstarch, rice flour, and other thickening	5.	97-C	Canned salmon
15.	30-C	Grits and hominy	6.	98-C	Other canned fish
16.	31-C	Macaroni, spaghetti, noodles, etc.			Dairy products
17.	32-C	Rice			EC-6 Dairy products (19 items)
18.	33-C	Rolled oats			
19.	34-C	Wheat cereals, cooked			
		EC-2 Bakery products (16 items)	1.		Fresh milk
1.	36-C (pt)	Plain rolls, biscuits, or muffins, baked		2-C	a. bought in stores
2.	36-C (pt)	Rolls, biscuits, or muffins, partially baked	2.	3-C	b. delivered
3.	39-C	White bread	3.	4-C (pt)	Skim milk
4.	40-C	Whole and cracked wheat bread	4.	4-C (pt)	Buttermilk
5.	41-C (pt)	Eye bread	5.	4-C (pt)	Half and half milk
6.	41-C (pt)	French bread	6.	8-C (pt)	Chocolate milk
7.	41-C (pt)	Other bread, other than white, whole wheat, rye, and French	7.	8-C (pt)	Coffee cream
8.	37-C	Soda crackers including saltines	8.	8-C (pt)	Whipping cream
9.	38-C	Crackers other than soda crackers and saltines	9.	1-C	Ready whipped cream
10.	43-C	Cookies	10.	5-C	Evaporated and condensed milk
11.	42-C (pt)	Cake	11.	6-7-C	Malted milk and other prepared milk powders
12.	42-C (pt)	Pie	12.	9-C	Powdered milk and powdered cream
13.	42-C (pt)	Pastry			Ice cream, sherbets, and other frozen milk products
14.	44-C	Doughnuts	13.	11-C (pt)	American cheese
15.	45-C (pt)	Sweet rolls	14.	11-C (pt)	Processed American cheese
16.	45-C (pt)	Coffee cake	15.	11-C (pt)	Solid cheese other than American
		Meats, poultry, and fish (48 items) EC-3 Meats (38 items)	16.	12-C	Cheese spreads
1.	48-50-C	Beef and veal (12 items)	17.	13-C (pt)	Cottage cheese
2.	51-C	Steak	18.	13-C (pt)	Cream cheese
3.	52-C	Beef liver	19.	214-C	Butter
4.	53-C	Ground beef			Fruits and vegetables (83 items) EC-7 Fresh fruits (16 items)
5.	54-C	Chuck roast	1.	102-C	Apples
6.	54-C	Rib roast	2.	103-C	Bananas
7.	55-C	Bump roast, brisket, etc.	3.	104-C (pt)	Strawberries
8.	56-C (pt)	Dried beef	4.	104-C (pt)	Other berries
9.	56-C (pt)	Corned beef	5.	105-C	Grapefruit
10.	58-C	Veal cutlet, steak	6.	107-C	Lemons and limes
11.	58-C	Veal stew meat and other veal	7.	109-C	Oranges
12.	59-C	Calves' liver	8.	108-C (pt)	Watermelons
		Pork (12 items)	9.	108-C (pt)	Cantaloupes
13.	61-62-C	Pork chops, center cut and end cut	10.	124-125-C	Fruit juice, fresh
14.	63-C	Fresh ham, whole and half	11.	111-C	Pears
15.	64-C	Pork sausage, fresh	12.	110-C	Peaches
16.	65-C	Pork loin roast	13.	108-C	Grapes
17.	66-C (pt)	Other fresh pork	14.	112-C (pt)	Tangerines
18.	67-C	Bacon	15.	113-C (pt)	Plums and prunes
19.	68-C	Ham slices, smoked			EC-8 Fresh vegetables (20 items)
20.	69-C	Ham, whole and half, smoked	1.	141-C	Asparagus
21.	70-C	Picnics (shoulder)	2.	143-C (pt)	Broccoli
22.	71-C	Salt pork, bellies, fatback, etc.	3.	144-C	Cabbage
23.	72-C (pt)	Canadian bacon	4.	145-C	Carrots
24.	72-C (pt)	Butts	5.	146-C	Cauliflower
		Other meats (14 items)	6.	147-C	Celery
25.	75-C	Leg of lamb	7.	148-C	Corn, sweet
26.	78-74-C	Lamb chops, loin and rib	8.	149-C	Cucumbers
27.	76-C (pt)	Shoulder lamb	9.	150-C	Lettuce and salad greens
28.	77-C (pt)	Bologna	10.	152-C	Onions
29.	77-C (pt)	Boiled ham	11.	154-C	Potatoes, white
30.	77-C (pt)	Salami	12.	155-C	Snap beans, green or wax
31.	77-C (pt)	Meat loaf	13.	156-C	Spinach, kale, or other cooking greens
32.	77-C (pt)	Other cold cuts	14.	158-C	Tomatoes
33.	78-C	Frankfurters	15.	159-C	Turnips and rutabagas
34.	79-C	Smoked sausage	16.	142-C (pt)	Other fresh vegetables
35.	82-C	Canned ham	17.	157-C	Sweet potatoes, yams
36.	83-C	Pressed ham			
37.	84-C	Other canned meat			
38.	80-C	Tongue, heart, kidney, etc.			

See footnotes at end of table.

SAMPLING FRAME FOR SELECTION OF THE CPI ITEM SAMPLE—Continued

Item No.	CES schedule No. ¹	FOOD (267 items) Food at home (264 items)	Item No.	CES schedule No. ¹	FOOD (267 items) Food at home (264 items)	
		EC-8 Fresh vegetables (20 items)—Con.			EC-12 Sugar and sweets (12 items)	
18.	151-C	Lima or kidney beans	1.	J-30-b	Candy	
19.	143-C (pt)	Brussels sprouts	2.	233-C		
20.	153-C	Peas	3.	224-C		
		EC-9 Processed fruits and vegetables (48 items)	4.	225-C		
		Processed fruits:	5.	226-C (pt)		
1.	118-C (pt)	Apples, can or jar	6.	226-C (pt)		
2.	118-C (pt)	Apple sauce, can or jar	7.	228-C (pt)		
3.	119-C (pt)	Fruit cocktail, can or jar	8.	229-C		
4.	119-C (pt)	Citrus segments, can or jar	9.	230-C		
5.	120-C	Peaches, can or jar	10.	231-C		
6.	121-C	Pears, can or jar	11.	227-C		
7.	122-C	Pineapple, can or jar	12.	232-C		
8.	123-C (pt)	Other canned fruits			EC-13 Beverages, nonalcoholic (8 items)	
9.	132-C	Apple juice, can or jar	1.	234-C	Cocoa	
10.	133-C	Grape juice, can or jar	2.	235-236-C	Coffee in bags or cans	
11.	134-C	Mixed fruit juices, can or jar	3.	237-238-C	Instant coffee and coffee substitutes	
12.	135-C	Orange juice, can or jar	4.	239-240-C	Tea, bags, leaves, tea concentrates	
13.	137-C (pt)	Grapefruit juice, can or jar	5.	241-C	Cola drinks	
14.	136-C	Pineapple juice, can or jar	6.	242-C	Ginger ale and soda	
15.	137-C (pt)	Prune juice, can or jar	7.	243-C (pt)		Other carbonated drinks
16.	114-C	Strawberries, frozen	8.	244-245-C			Noncarbonated drinks, liquid or concentrate
17.	115-117-C	Other frozen fruits and berries except strawberries			EC-14 Prepared and partially prepared foods (50 items)	
18.	126-C	Other frozen juice	1.	187-C	Chicken soup, canned	
	130-C		2.	188-C	Tomato soup, canned	
	131-C (pt)		3.	189-C	Vegetable soup, canned	
19.	127-C	Lemonade, frozen	4.	190-C (pt)	Bean soup, canned	
20.	128-C	Mixed fruit juice, frozen	5.	191-C (pt)	Other soup, frozen and canned, (except chicken, tomato, vegetable and bean)	
21.	129-C	Orange juice, frozen	6.	192-C	Dried soups	
22.	182-C	Prunes	7.	246-C	Baby food, cereal	
23.	183-C	Raisins	8.	247-C	Baby food, puddings	
24.	184-C	Other dried fruits	9.	248-C	Baby food, soup	
		Processed Vegetables:	10.	249-C	Baby food, strained and chopped fruit	
25.	172-C	Asparagus, can or jar	11.	250-C	Baby food, strained and chopped meat	
26.	173-C	Beets, can or jar	12.	251-C	Baby food, strained and chopped mixtures	
27.	174-C	Corn, cream style or whole kernel, can or jar	13.	252-C	Baby food, strained and chopped vegetables	
28.	175-C	Lima and kidney beans, can or jar	14.	253-C (pt)	Baby food, powdered formulas	
29.	176-C	Peas, green, can or jar	15.	253-C (pt)	Baby food, junior cookies and teething biscuits	
30.	177-C (pt)	Potatoes, white, can or jar	16.	193-C	Baked beans	
31.	177-C (pt)	Potatoes, sweet, can or jar	17.	200-C	Sauerkraut, canned	
32.	178-C	Snap beans, green or wax, can or jar	18.	201-C	Spaghetti with sauce or meat balls	
33.	179-C	Tomatoes, can or jar	19.	194-C	Chicken with noodles, chicken a' la king, etc.	
34.	180-C	Other canned vegetables	20.	195-C	Chili con carne	
35.	139-C	Tomato juice, can or jar	21.	196-C	Chow mein, chop suey	
36.	138-C	Mixed and other vegetable juice, except tomato	22.	199-C	Enchiladas, tamales, etc.	
37.	162-C	Asparagus, frozen	23.	198-C	Corn beef hash	
38.	163-C	Broccoli, frozen	24.	259-C (pt)	Tomato catsup and chili paste	
39.	164-C	Brussels sprouts, frozen	25.	254-C	Baking powder, soda, yeast	
40.	165-C	Corn, cut, frozen	26.	255-C	Oilves	
41.	166-C	Green beans, frozen	27.	257-C (pt)	Relishes	
42.	167-C	Lima beans, frozen	28.	257-C (pt)	Pickles	
43.	168-C (pt)	Peas and carrots, frozen	29.	258-C	Salt, spices, seasoning	
44.	168-C (pt)	Mixed veg. except peas and carrots and succotash, frozen	30.	260-261-C	Nuts	
45.	169-C	Peas, frozen	31.	202-C (pt)	Instant potatoes preparation	
46.	170-C	Spinach, frozen	32.	202-C (pt)	Spanish rice and other rice preparations	
47.	171-C (pt)	Other frozen vegetables	33.	202-C (pt)	Macaroni and cheese	
48.	181-C	Beans, peas, lentils, etc., dried	34.	255-C	Extracts, flavors	
	185-C		35.	203-C	Potato chips	
			36.	204-C	Corn chips, popcorn and other snacks	
		Other food at home (79 items)	37.	206-C	Fish sticks, frozen	
		EC-10 Eggs (1 item)	38.	207-C (pt)	Meat pies, frozen	
1.	15-C	Eggs	39.	207-C (pt)	Poultry pies, frozen	
		EC-11 Fats and oils (8 items)	40.	208-C (pt)	Turkey dinner, frozen	
		Lard	41.	208-C (pt)	Beef dinner, frozen	
1.	215-C	Margarine	42.	208-C (pt)	Fish dinner, frozen	
2.	216-C	Shortening except lard, butter, margarine	43.	208-C (pt)	Dinners, frozen except turkey, beef, fish	
3.	217-C	Shortening except lard, butter, margarine	44.	209-210-C	Frozen desserts	
4.	218-C (pt)	French dressing	45.	212-C	French fried potatoes, frozen	
5.	218-C (pt)	Salad dressing except French	46.	211-C	Macaroni and cheese, and other frozen prepared dishes	
6.	219-C	Mayonnaise and other cooked dressing	47.	213-C	Prepared salads	
7.	220-C	Peanut butter	48.	(3)	Dietary formula products	
8.	221-C	Salad and cooking oil	49.	202-C (pt)	Prepared dishes except Spanish rice, macaroni and cheese, and instant mashed potatoes	
			50.	259-C (pt)	Sauces and gravies except catsup and chili paste	

See footnotes at end of table.

SAMPLING FRAME FOR SELECTION OF THE CPI ITEM SAMPLE—Continued

Item No.	CES schedule No. ¹	FOOD (267 items) Food at home (264 items)	Item No.	CES schedule No. ¹	HOUSING (212 items)
		EC-15 Food away from home (3 items)			EC-20 Maintenance and repairs, services (30 items)—Con.
1.	J-24	Board	17.	E-I-10 (pt)	Window panes, replacement Addition of new room, porch, etc.
2.	Q-13 (pt)		18.	E-II-2 (pt)	
2.	J-25 (pt)		19.	E-II-2 (pt)	
3.	J-21	Restaurant meals	20.	E-II-3 (pt)	Garage construction General remodeling, siding, structural change Fence or retaining walls, installation or replacement
3.	J-26	Between meals snacks	21.	E-II-6 (pt)	
	Q-16			22.	E-II-6 (pt)	New walks, patio, installation
		HOUSING (212 items)			Awnings, installation
		Shelter (53 items)			Central air conditioning
		EC-16 Rent (4 items)			Completing unfinished room
1.	C-1 (pt)	Rent of house or apartment	26.	E-II-1 (pt)	New bathroom construction
	C-3			27.	E-II-1 (pt)	Recreation room construction
2.	SQ-I-2a (pt) ⁴	Rent of rooms	28.	E-I-11 (pt)	Termite protection
	C-1 (pt)			29.	E-II-5 (pt)	New lawn development
3.	Q-13 (pt)	Hotel, motel rentals	30.	E-II-5 (pt)	Landscaping, planting of trees or shrubs
	SQ-I-2a (pt)				
3.	C-1 (pt)	Ground rent ⁵			EC-21 Fuels and utilities (6 items)
	Q-12				
4.	D-I-9		1.	G-7	Solid Fuel:
		Homeownership (5 items)		G-8 (pt)	Coal, coke
		EC-17 Purchase and financing (3 items)	2.	G-8 (pt)	
1.	D-I-13	Purchase		G-9	Fuel oils
2.	D-I-15, 16		Settlement charges			G-10
3.	D-II-4	Mortgage interest contracted and other costs	3.	G-4	Utilities: Gas Electricity Telephone
	D-II-5		4.	G-5	
	D-II-6		5.	G-1-3	
	D-II-13		6.	G-13	Water and sewerage charges
	D-II-15			G-18	
	D-II-22				G-15 (pt)
			EC-18 Taxes and insurance (2 items)			Housefurnishings (111 items) EC-22 Textile housefurnishings (20 items)
1.	D-I-3	Property tax, and special assessments	1.	I-52	Sheets
	D-I-8			2.		I-70
2.	D-I-10 (pt)	Homeowners insurance	3.	I-53	Pillow cases
	D-I-7			3.	I-54	Pillows
	D-I-10 (pt)		4.	I-71	Blankets
		Maintenance and repairs (44 items)		I-56-1	
		EC-19 Maintenance and repairs, commodities (14 items)		I-56-2	
1.	E-I-1 (pt)	Outside paint, etc. Roofing materials Inside paint, varnish, etc. Wallpaper Plumbing materials Water heater and parts Furnace parts Glass, screening, etc. Lumber Tile Other building materials Plants, shrubs, garden supplies, etc. Fence, slats, etc. Electrical materials	5.	I-56-3	Blankets, electric Bedspreads, couch covers Curtains, all fibers Ready-made draperies, all fibers Custom-made draperies, all fibers Slipcovers, ready-made Slipcovers, custom-made
2.	E-I-2 (pt)		6.	I-57	
3.	E-I-4 (pt)		7.	I-58	Bath towels and hand towels
4.	E-I-4 (pt)-5 (pt)		8.	I-59 (pt)	
5.	E-I-7 (pt)		9.	I-59 (pt)	Bath mats and bath sets Material for curtains, draperies, etc. Materials for handwork (crochet thread, yarn for needlepoint, etc.)
6.	E-I-9 (pt)		10.	I-62 (pt)	
7.	E-I-8 (pt)		11.	I-62 (pt)	Tablecloth and table mats, plastic
8.	E-I-10 (pt)		12.	I-63-1	
9.	E-II-1-3 (pt)		13.	I-63-3	
10.	E-II-1-3 (pt)		14.	I-67	
11.	E-II-1-3 (pt)		15.	I-69	
12.	E-II-5 (pt)		16.	I-60	Table linens Shower curtains Kitchen towels Comforters and quilts
13.	H-17		17.	I-64	
14.	E-II-6 (pt)		18.	I-63-2	Furniture and floor coverings EC-23 Furniture (31 items)
14.	E-I-6 (pt)	19.	I-55		
		EC-20 Maintenance and repairs, services (30 items)	20.	I-61	
1.	E-I-1 (pt)	Outside painting Roof replacement Roof and gutter repairs Fence repair Outside repairs, except fence Redecorating Floor refinishing Electrical repair Sink replacement or installation Other plumbing repairs Furnace or other heating equipment cleaning Heating equipment replacement or installation Heating equipment repairs Water heater repair or replacement Storm doors and windows, installation Screens, installation	1.	I-1-1	Living room suite Chair, fully upholstered Cocktail or coffee table
2.	E-I-2 (pt)		2.	I-1-2	
3.	E-I-2 (pt)		3.	I-1-3 (pt)	Living room table except cocktail or coffee Sofa, standard Sofa, sectional Sofa, dual purpose Desk Occasional chair
4.	E-I-3 (pt)		4.	I-1-3 (pt)	
5.	E-I-3 (pt)		5.	I-1-4 (pt)	Dining room suite Dinette set, wood or metal
6.	E-I-4 (pt)		6.	I-1-4 (pt)	
7.	E-I-4 (pt)		7.	I-1-4 (pt)	Dining room table, wood or metal Dining room chair, wood or metal
8.	E-I-6 (pt)		8.	I-1-5 (pt)	
9.	E-I-6 (pt)		9.	I-1-5 (pt)	
10.	E-I-7 (pt)		10.	I-2-1	
11.	E-I-8 (pt)		11.	I-2-5 (pt)	
12.	E-I-8 (pt)		12.	I-2-5	
13.	E-I-8 (pt)		13.	I-2-5 (pt)	
14.	E-I-9 (pt)			I-2-5 (pt)	
15.	E-I-10 (pt)			I-2-4	
16.	E-I-10 (pt)			I-2-5 (pt)	

See footnotes at end of table.

SAMPLING FRAME FOR SELECTION OF THE CPI ITEM SAMPLE—Continued

Item No.	CES schedule No. ¹	HOUSING (212 items)	Item No.	CES schedule No. ¹	HOUSING (212 items)
		Furniture and floor coverings EC-23 Furniture (31 items)—Con.			EC-26 Other housefurnishings (32 items) —Con.
14.	I-3-1	Bedroom suite	19.	I-93 (pt)	Scales
15.	I-3-2	Bed	20.	I-93 (pt)	Thermos bottles
16.	I-3-3 (pt)	Mattress, except nursery	21.	I-93 (pt)	Lunch kits, etc.
17.	I-3-3 (pt)	Spring	22.	I-94 (pt)	Venetian blinds
18.	I-3-4	Dresser, chest, or vanity	23.	I-94 (pt)	Window shades
19.	I-4	Porch and beach furniture	24.	I-94 (pt)	Rods, etc.
	I-5 (pt)		25.	I-86	Typewriters
20.	I-5 (pt)	Unpainted furniture, except kitchen	26.	I-89	Hand luggage, trunks, lockers
21.	I-5 (pt)	Card table	27.	H-18	Lawn mowers
22.	I-5 (pt)	Folding chairs	28.	H-19 (pt)	Hand tools
23.	I-42-4	Kitchen cabinet	29.	H-19 (pt)	Power tools except lawn mower
	I-42-5 (pt)	Kitchen furniture	30.	H-19 (pt)	Other garden equipment
24.	I-42-1-3		31.	H-20	Miscellaneous hardware and supplies
	I-42-5 (pt)	32.	H-16	Fresh flowers and plants for the house	
25.	I-1-5 (pt)	Side chair			Household operation (42 items) EC-27 Housekeeping supplies (28 items)
26.	I-1-5 (pt)	Bookcase			
27.	I-3-5	Cots			
28.	I-75	Crib, nursery bed			
29.	I-74	Mattress, nursery			
30.	I-77	Chest, nursery			
31.	I-73	Nursery chairs, play and feed tables, toilet seats, play pens, bathinettes, bassinets, nursery basket, baby carriages	1.	26-C	Liquid household detergents other than laundry
	I-76				
	I-78				
	I-78				
	I-79				
		EC-24 Floor coverings (7 items)			
1.	I-6-7	Rug, soft surface	2.	14-C	Liquid detergent, laundry
2.	I-8	Scatter rug, soft surface, all fibers	3.	16-C	Detergent, solid form
3.	I-9	Stairs and hall rug, soft surface, all fibers	4.	15-C (pt)	Soap, bars
	I-14 (pt)		5.	15-C (pt)	Soap, flakes or chips, granules or powder
4.	I-10-11	Rug, hard surface	6.	17-C	Water softeners and conditioners
5.	I-12	Scatter rug, hard surface	7.	G-17	Ice
6.	I-13	Tile	8.	18-20-C	Laundry supplies except soaps and detergents
7.	I-14 (pt)	Rug pads	9.	22-C	Air fresheners, air deodorizers
	I-15		10.	24-C	Floor wax
		EC-25 Appliances (21 items)			
1.	I-32	Refrigerator	11.	25-C	Insect sprays, powders, etc.
2.	I-33	Home freezer	12.	29-C	Sponges
3.	I-35 (pt)	Cooking stove, free standing	13.	27-C (pt)	Furniture polish
4.	I-35 (pt)	Cooking stove, ovens built-in	14.	27-C (pt)	Metal polish
5.	I-43	Vacuum cleaner	15.	28-C	Scouring powder
6.	I-44	Waxer, electric	16.	30-C	Steel wool and other scouring pads
7.	I-46	Washing machine	17.	I-87	Electric light bulbs
8.	I-47	Automatic clothes dryer	18.	H-15 (pt)	Candles and matches, etc.
9.	I-48	Washer-dryer combination	19.	32-C	Aluminum foil
10.	I-84	Air conditioner, demountable	20.	34-C	Paper napkins
11.	I-85 (pt)	Sewing machine, cabinet	21.	35-C	Paper towels
12.	I-85 (pt)	Sewing machine, portable	22.	36-C	Paper plates, etc.
13.	I-82	Room heaters	23.	37-C	Shelf paper
14.	I-38	Electric toaster	24.	38-C	Toilet tissue
15.	I-50	Electric iron	25.	39-C	Wax paper
16.	I-37	Electric coffee makers, frying pans, mixers, hot plate and other electrical kitchen equipment	26.	H-13 (pt)	Stationery
	I-39		27.	H-13 (pt)	Greeting cards
	I-49		28.	H-13 (pt)	Pens and pencils and miscellaneous writing supplies
17.	I-88 (pt)	Electrical fan, portable			EC-28 Housekeeping services (14 items)
18.	I-88 (pt)	Electrical fan, built-in	1.	H-1 (pt)	Cleaning sent out, rugs
19.	I-34	Dishwasher	2.	H-1 (pt)	Cleaning sent out, draperies, slipcovers
20.	I-36	Garbage disposal unit	3.	H-1 (pt)	Cleaning sent out, blankets
21.	I-83	Dehumidifier	4.	H-2 (pt)	Laundry sent out, flat work
		EC-26 Other housefurnishings (32 items)	5.	H-5a	Domestic household help and babysitters
1.	I-27	Glasses	6.	H-5b	
2.	I-28	Dish sets	7.	H-5d	Handyman, gardeners and grass cutters
3.	I-29	Dishes (separate pieces)	8.	H-6	Day nurseries, child care center service
4.	I-30	Serving pieces	9.	H-7 (pt)	Reupholstering
5.	I-31-1	Knives, forks, spoons, etc., sterling silver	10.	H-7 (pt)	Furniture repair
6.	I-31-2		11.	H-8	Equipment repair and service charges
7.	I-31-3-4	Knives, forks, spoons, etc., stainless steel and other	12.	H-9-10	Moving expense, other freight and express charges
8.	I-40	Cooking utensils	13.	H-11	Storage charges (except furs and apparel)
9.	I-41	Kitchen knives, forks, spoons, implements, crockery and glassware	14.	H-12	Postal charges
10.	I-45-1	Brooms			Garbage and trash collection
11.	I-45-2	Cleaning equipment other than brooms			
12.	I-51	Laundry boards, tubs, baskets, clothesline, etc.			Apparel and upkeep (184 items)
13.	I-80	Bottles, nipples, sterilizers, bottle warmers			Men's and boys' apparel (53 items) EC-29 Men's apparel (30 items)
14.	I-90 (pt)	Floor lamp	1.	K-II-1	Overcoats, heavy
15.	I-90 (pt)	Table lamp	2.		Topcoats, lightweight
16.	I-91	Fireplace screen and equipment	3.		Jackets, heavy, all fibers
17.	I-92	Clocks	4.		Jackets, lightweight, all fibers
18.	I-93 (pt)	Scissors	5.		Sweaters, all fibers

See footnotes at end of table.

SAMPLING FRAME FOR SELECTION OF THE CPI ITEM SAMPLE—Continued

Item No.	CES schedule No. ¹	APPAREL AND UPKEEP (184 items)	Item No.	CES schedule No. ¹	APPAREL AND UPKEEP (184 items)
Men's and boys' apparel (53 items) EC-29 Men's apparel (30 items)—Con.			Women's and girls' apparel (70 items) EC-31 Women's apparel (39 items)—Con.		
6.	K-II-6	Raincoats, all fibers	8.	K-I-8	Sweaters, all fibers
7.	8-13	2-pc. or 3-pc. suits, winter and year round weight, all fibers	9.	9-1	Suits, heavyweight
8.	14	Suits, tropical weight, all fibers	10.	9-2-7	Suits, lightweight
9.	15	Sport coats, separate jackets, all fibers	11.	11	Street dresses, all fibers
10.	16	Trousers, slacks, (except work), all fibers	12.	12	Housedresses, all fibers
11.	19	Trousers, work	13.	13	Dresses for formal or semiformal wear
12.	20	Overalls, coveralls	14.	14	Skirts, jumpers, culottes
13.	21	Dungarees	15.	25 (pt)	Blouses, shirts, all fibers
14.	28	Shirts, work	16.	25 (pt)	Aprons, smocks, brunch coats, dusters
15.	27	Shirts, dress, all fibers	17.	17-1	Slacks, heavyweight
16.	31 (pt)	Shirts, sport, woven and knit, all fibers	18.	17-2-7	Slacks, lightweight
17.	29		19.	18	Dungarees, blue jeans
18.	30		20.	19-20	Shorts, pedal pushers
19.	23 (pt)		21.	21	Bathing suits
20.	34 (pt)	Uniforms and special work clothing	22.	23-24	Uniforms and special work clothing
21.	35 (pt)	Shorts, walking, Bermuda, etc.	23.	26 (pt)	Slips
22.	33		24.	26 (pt)	Petticoats
23.	32	Undershorts, briefs	25.	27	Garter belts
24.	34 (pt)		26.	28	Girdles, corsets
25.	35 (pt)		27.	29	Brassieres, all fibers
26.	33	Undershirts	28.	30-31	Panties, briefs, union suits, other underwear
27.	34 (pt)		29.	32	Nightgowns
28.	35 (pt)		30.	35 (pt)	Pajamas
29.	36	Pajamas, nightshirt	31.	33	Robes, housecoats, and negligees
30.	38 (pt)	Bathing trunks	32.	35 (pt)	
31.	23 (pt)	Bathrobes, lounging robes, all fibers	33.	36	Stockings
32.	37	Socks including slipper socks, other hosiery	34.	39 (pt)	Anklets, socks, slipper socks
33.	38 (pt)		35.	37	
34.	39-41	Hats and caps	36.	38	Hats
35.	49-51	Ties	37.	39 (pt)	
36.	54 (pt)	Wallets, belts, etc.	38.	46	Gloves
37.	54 (pt)	Gloves, work	39.	47	Handbags, purse
38.	53	Gloves, dress, all fibers	40.	48	Umbrellas
39.	52	Handkerchiefs	41.	49	Handkerchiefs and scarfs
40.	54 (pt)		42.	50 (pt)	Other accessories
41.			43.	50 (pt)	
EC-30 Boys' apparel (23 items)			EC-32 Girls' apparel (31 items)		
1.	K-IV-1	Overcoats, coat sets	1.	K-III-1-2	Heavy winter coats, coat sets
2.	2		2.	3	Lightweight coats, toppers
3.	9 (pt)	Jackets, heavy, all fibers	3.	4-5	Snowsuits, ski suits, leggings, ski pants
4.	3		4.	8	Jackets, lightweight, all fibers
5.	9 (pt)	Jackets, lightweight, all fibers	5.	7	Jackets, heavy, all fibers
6.	4		6.	9	Sweaters, all fibers
7.	5	Sweaters, all fibers	7.	10-1-7	Suits, lightweight and heavyweight
8.	10		8.	6	Raincoats, all fibers
9.	11 (pt)	Suits, heavyweight	9.	9	School and similar dresses
10.	11 (pt)		10.	13	Party dresses, all fibers
11.	12 (pt)	Suits, lightweight	11.	14-15	Skirts and jumpers, all fibers, pinafores, smocks
12.	13	Sport coats	12.	16	Blouses, all fibers
13.	13	Trousers, slacks, dress, all fibers	13.	26 (pt)	Tee shirts, polo shirts
14.	14	Trousers, (except dress), all fibers	14.	18	Slacks
15.	17-18	Dungarees, overalls	15.	19	Overalls, dungarees, blue jeans
16.	19	Shorts	16.	20	Shorts
17.	20-23	Bathing trunks, play clothing, etc.	17.	21-22	Play suits, sun suits, special playclothes
18.	26	Shirts, dress, all fibers	18.	23	Bathing suits
19.	29 (pt)		19.	24-25	Uniforms and special clothes, except play
20.	27	Shirts, sports, woven and knit, all fibers	20.	27 (pt)	Slips
21.	28		21.	27 (pt)	Petticoats
22.	29	Undershorts	22.	28-29	Garter belts, brassieres
23.	30		23.	30	Panties, briefs
24.	35 (pt)	Undershirts	24.	32 (pt)	Undershirts
25.	31		25.	31	Nightgowns, pajamas
26.	32	Pajamas and bathrobes	26.	33	Bathrobes, housecoats
27.	35 (pt)		27.	34	
28.	36-38	Socks, slipper socks, other hosiery	28.	35 (pt)	
29.	45		29.	36-39	Hosiery
30.	7-8	Hats, caps and helmets	30.	46	Hats
31.	46	Snowsuits, ski suits, ski pants, leggings	31.	47	Gloves
32.	47	Gloves	32.	48	Purses
33.	6	Accessories	33.	49	Accessories
34.	9 (pt)	Raincoats, all fibers			
Women's and girls' apparel (70 items) EC-31 Women's apparel (39 items)			EC-33 Footwear (21 items)		
1.	K-I-1-2	Heavy winter coats	1.	K-II-42	Street shoes, men's
2.	3	Lightweight coats, topper	2.	43	Work shoes, safety shoes, men's
3.	4	Fur coats, full or ¾ length, fur jackets	3.	44	Sneakers, loafers, other casual shoes, all fibers, men's
4.	5	Fur scarfs, stoles, muffs			
5.	6	Raincoats, all fibers			
6.	7-1	Jackets, heavyweight			
7.	7-2-7	Jackets, lightweight			

See footnotes at end of table.

SAMPLING FRAME FOR SELECTION OF THE CPI ITEM SAMPLE—Continued

Item No.	CES schedule No. ¹	APPAREL AND UPKEEP (184 items)	Item No.	CES schedule No. ¹	APPAREL AND UPKEEP (184 items)
		EC-33 Footwear (21 items)—Con.			EC-35 Apparel services (14 items)—Con.
4.	45	Athletic and special sport shoes, men's	11.	L 27	Dressmaker or tailor at home or outside Alterations, weaving, dyeing and repair
5.	K-I 40 (pt)	Shoes, street, dress, women's	12.	28	
6.	40 (pt)	Shoes, evening, women's	13.	29	
7.	41-42	Casual shoes, sneakers, athletic and special sport shoes, all fibers, women's	14.	30	
8.	K-IV 39	Shoes, leather upper including cowboy boots, boys'			Upkeep and storage of fur Watch repair, jewelry repair
9.	40	Sneakers, loafers, other casual shoes, boys'			
10.	41	Athletic and special sport shoes, boys'			TRANSPORTATION (34 items)
11.	K-III 40	Street and dress shoes, girls'			Private transportation (28 items) Automobile and related goods (10 items) EC-36 Auto purchase (2 items)
12.	41-42	Sneakers, other casual shoes, loafers, athletic and special sport shoes, all fibers, girls'			Passenger cars, new Passenger cars, used
13.	K-II 46	Houseslippers, men's	1.	P-I-16 (pt)	
14.	K-I 43	Houseslippers, women's		17c (pt)	
15.	K-IV 42	Houseslippers, boys'		18 (pt)	
16.	K-III 43	Houseslippers, girls'		SQ-IV-2a (pt)	
17.	K-II 47	Rubbers, galoshes, boots, men's	2.	P-I-16 (pt)	
18.	K-I 44 (pt)	Galoshes, boots, rubbers, women's		17c (pt)	
19.	K-I 44 (pt)	Galoshes, boots, plastic, women's		18 (pt)	
20.	K-IV 43	Galoshes, boots, rubbers, boys'		SQ-IV-2a (pt)	
21.	K-III 44	Galoshes, boots, rubbers, girls'			
		Other apparel (40 items) EC-34 Other apparel commodities (26 items)	1.	P-I-27	EC-37 Gasoline and motor oil (2 items)
1.	K V 1-5	Infants' outerwear	2.	28	Gasoline Motor oil
2.	6	Tee shirts, polo shirts, etc., infants'			
3.	8	Dresses, infants'			EC-38 Auto parts, etc. (6 items)
4.	9-11	Rompers, suits, playsuits, sunsuits, overalls, infants'	1.	P-I-29	Antifreeze New tires and tubes Used and recapped tires Batteries Spark plugs Other equipment and supplies
5.	12-14	Slips, undershirts, vests, underpants, infants'	2.	32	
6.	15	Waterproof pants, etc., infants'	3.	33 (pt)	
7.	16-17	Diapers	4.	34	
8.	18-19	Sleeping garments, robes, wrappers, infants'	5.	35	
9.	20	Receiving blankets and layettes	6.	36	
10.	25	Stockings, socks, infants'			Automobile services (18 items) EC-39 Auto repairs and maintenance (13 items)
11.	21	Booties, shoes, infants'			Lubrication Washing Changing oil filter Miscellaneous minor repairs and services Motor tune-up Carburetor overhaul Replacing spark plugs, points and condenser Replacing muffler Clutch and transmission work Brake adjustment, repair and services Front end alignment; steering adjustment; wheel balancing Body work and frame repairs Miscellaneous tire expense
12.	K V 7	Caps, hoods, bonnets, bibs, mittens, jewelry, etc., infants'	1.	P-I-30	
13.	K II 55 (pt)	Jewelry, men's	2.	31 (pt)	
14.	55 (pt)	Watches, men's	3.	31 (pt)	
15.	K IV 48	Jewelry and watches, boys'	4.	31 (pt)	
16.	K I 51 (pt)	Jewelry, women's	5.	38 (pt)	
17.	51 (pt)	Watches, women's	6.	43 (pt)	
18.	K III 50	Jewelry and watches, girls'	7.	38 (pt)	
19.	L 1	Yard goods, 100% wool and wool blends	8.	43 (pt)	
20.	6 (pt)	Yard goods, cotton and cotton blends	9.	39	
21.	2	Yard goods, man-made fibers	10.	43 (pt)	
22.	6 (pt)	Yarn	11.	40	
23.	9	Thread	12.	43 (pt)	
24.	10	Patterns	13.	43 (pt)	
25.	11	Miscellaneous sewing materials			EC-40 Other automobile expenses (5 items)
26.	12	Other notions			Auto insurance premiums Auto financing charges Registration and inspection fees Drivers' license fees
		EC-35 Apparel services (14 items)			
1.	L- 23a	Shoe repairs, men's and boys'	1.	P-I-17b	
2.	25 (pt)	Shoe repairs, women's and girls'		P-III-2 (pt)	
3.	23b	Shoe shines and cleaning		P-I-44 (a-d)	
4.	24	Drycleaning, men's and boys' clothing	2.	U-9a	
5.	25 (pt)			P-I-17c	
6.	17	Drycleaning, women's and girls' clothing		47 (pt)	
7.	18			49 (pt)	
8.	21 (pt)			P-III-2 (pt)	
9.	22 (pt)	Laundrettes Laundry, men's shirts Laundry, except men's shirts and flatwork Diaper service Hat cleaning, blocking and repair	3.	P-I-17a	
10.	19			47 (pt)	
	20			49 (pt)	
	21 (pt)			45a	
	22 (pt)		45b		
8.	H-4		4.	P-III-2 (pt)	
7.	2 (pt)			P-I-46	
8.	2 (pt)			47 (pt)	
9.	3			49 (pt)	
10.	L- 26			P-III-1 (pt)	

See footnotes at end of table.

SAMPLING FRAME FOR SELECTION OF THE CPI ITEM SAMPLE—Continued

Item No.	CES schedule No. ¹	TRANSPORTATION (34 items)	Item No.	CES schedule No. ¹	HEALTH AND RECREATION (115 items)
		EC-40 Other automobile expenses (5 items) —Con.			EC-45 Toilet goods (28 items)—Con.
5.	P-I-48 47 (pt) 49 (pt) P-III-2 (pt)	Parking; garage rent; parking meters	3.	3-C	Mouthwash and gargles
		EC-41 Public transportation (6 items)	4.	5-C (pt)	Shaving preparations
1.	P-II-1 3 Q-11 (pt) SQ-IV-2d (pt)	Local transit	5.	5-C (pt)	Men's toiletries
2.	P-II-2 Q-11 (pt) SQ-IV-2d (pt)	Taxis	6.	6-C	Face powder
3.	P-III-3 Q-8 Q-10 (pt) SQ-IV-2e (pt)	Rent of car	7.	7-C (pt)	Skin creams
4.	Q-5 10 (pt) SQ-IV-2e (pt)	Train fares (intercity)	8.	7-C (pt)	Lotions, facial and hand
5.	Q-6 9 10 (pt) SQ-IV-2e (pt)	Airplane and steamship fares	9.	8-C (pt)	Shampoos
6.	Q-7 10 (pt) SQ-IV-2e (pt)	Bus, intercity fares	10.	8-C (pt)	Men's hair tonics
		Health and Recreation (115 items)	11.	8-C (pt)	Women's hairdressing, coloring or conditioners
		Medical care (15 items) EC-42 Drugs and prescriptions (2 items)	12.	8-C (pt)	Spray hair fixatives
1.	M-II-43 45 46 47 48 (pt)	Over the counter items and medical appliances and supplies	13.	12-C (pt)	Deodorants
2.	44 48 (pt)	Prescriptions	14.	12-C (pt)	Toilet water and cologne, bath salts
		EC-43 Professional services (11 items)	15.	12-C (pt)	Talcum and body powder
1.	M-II-16 32-37 8	Family doctor, office and home visits Dentists' fees Physicians' fees for childbirth	16.	13-C (pt)	Lipstick, rouge
2.	10 (pt) 11 17 18	Pediatrician, office and home visits	17.	13-C (pt)	Compacts
3.	9	Surgical fees	18.	13-C (pt)	Nail polish, enamel, remover
4.	10 (pt) 20 21	Medical specialist other than pediatricians, home and office visits	19.	13-C (pt)	Manicure implements
5.	39-41	Examination for eyeglasses and other eye care, and eyeglasses	20.	4-C (pt)	Razor blades
6.	23 28	Chiropractors and other practitioners' fees	21.	4-C (pt)	Razors
7.	4 24	Nursing care	22.	J-16 d	Electric shavers and shaver repair
8.	26 27	Laboratory tests, outside hospital X-rays (excluding dental and eye) outside hospital	23.	9-C	Home permanent kits
9.		EC-44 Hospital services and health insurance (2 items)	24.	10-C (pt)	Hairbrushes, combs
1.	M-II-1 2 3 6 25	Hospital services	25.	10-C (pt)	Bobby pins, nets, etc.
2.	M-I-2-b 3-b 7-b	Health insurance	26.	2-C (pt)	Toothbrush
		Personal care (37 items) EC-45 Toilet goods (28 items)	27.	33-C	Cleansing tissue
1.	1-C	Toilet soap	28.	11-C	Sanitary supplies
2.	2-C (pt)	Toothpaste and powder			EC-46 Personal care services (9 items)
			1.	N-1a	Men's haircut and shaves
			2.	5	Haircut, boys'
			3.	1b	Haircut, women's
			4.	1c	Haircut, girls'
			5.	1d	Press and curl
			6.	2 (pt)	Permanent waves
			7.	2 (pt)	Shampoo and wave set
			8.	3	Hair coloring
			9.	4	Manicure
					Reading and recreation (53 items) Recreation (42 items) EC-47 Recreational goods (29 items)
					Durable:
			1.	I-16	TV sets and TV radio-phonograph combinations
			2.	I-17	Radio
			3.	I-18 (pt)	Phonographs
			4.	I-18 (pt)	Tape recorders
			5.	I-19	Piano, organ
			6.	I-20 (pt)	TV repair parts
			7.	I-21 (pt)	Radio, phonograph repair parts
			8.	I-22	Hi-Fi components, kits, and parts
			9.	I-23-1 (pt)	Phonograph records
			10.	I-24	Musical instruments
			11.	I-23-2 (pt)	Sheet music, music stands, cases, recording tapes and rolls
			12.	I-25	Tricycles
			13.	O-21	Wagons, skates, sleds and other play equipment
			14.	O-22 (pt)	Bicycles
			15.	P-III-8 (pt)	Mechanical toys
			16.	O-23	Children's playground goods and equipment
			17.	O-8 (pt)	Sports equipment
			18.	O-9	Motorcycle or scooter
			19.	P-III 4 (pt)	Boats, boat trailers
			20.	5 (pt)	Outboard motor
			21.	5 (pt)	Cameras, still
			22.	O-12 (pt)	Cameras, movie
			23.	O-12 (pt)	Projectors
			24.	O-13 (pt)	Photographic equipment except cameras, projectors, film
			25.	O-13 (pt)	Nondurable:
			26.	O-19	Nondurable toys
			27.	O-20	Operating expenses of boats, motorcycle or scooter
			28.	O-24	Film
			29.	P-III 4 (pt)	Pets and supplies except food, purchase
				5 (pt)	Pet foods
				O-13 (pt)	
				O-17	
				45-46-C	

See footnotes at end of table.

SAMPLING FRAME FOR SELECTION OF THE CPI ITEM SAMPLE—Continued

Item No.	CES schedule No. ¹	HEALTH AND RECREATION (115 items)	Item No.	CES schedule No. ¹	HEALTH AND RECREATION (115 items)		
		EC-48 Recreational services (13 items)			EC-49 Reading and education (11 items) —Con.		
1.	I-20 (pt)-----	} TV repair	10.	O-44-----	} Music lessons, dancing lessons, etc. Book rentals, library fees		
2.	I-26a-----			11.		O-35-----	
3.	I-26 (pt)-----		Rental or repair of musical instruments				
4.	P-III-4-6 (pt)-----		Rental of motorcycle or scooter, boats, boat trailers, outboard motors, bicycles			Other goods and services (10 items) EC-50 tobacco products (3 items)	
5.	O-1-----		} Indoor movies	1.	41-C-----	} Cigarettes	
6.	Q-d-18 (pt)-----				2.		J 30 (pt)-----
7.	O-2-----		} Drive-in movies	3.	42-C-----		} Cigars
8.	Q-d-18 (pt)-----				4.			J 30 (pt)-----
9.	O-3-----		} Spectator sport		43-C-----	} Tobacco and other smoking supplies	
10.	Q-d-1 (pt)-----						44-C-----
11.	O-4-----		} Concerts, plays, and other admissions		J 30 (pt)-----		
12.	Q-d-1 (pt)-----						
13.	O-6-----		} Fees for indoor sports				
14.	O-7 (pt)-----						
15.	O-7 (pt)-----	} Fees, outdoor except golf					
16.	O-8 (pt)-----						
17.	O-13 (pt)-----	} Hunting or fishing license					
18.	O-13 (pt)-----						
19.	I-21 (pt)-----	} Film developing					
20.	I-21 (pt)-----						
21.	I-21 (pt)-----	} Radio, phonograph, etc., repair					
22.	I-21 (pt)-----						
		EC-49 Reading and education (11 items)			EC-51 Alcoholic beverages (3 items)		
1.	O-30-----	} Newspapers	1.	265-C-----	} Beer and ale		
2.	O-31-----			J-30 (pt)-----			
3.	O-34-----		} Magazines	2.	266-270-C-----	} Whiskies and other alcoholic beverages	
4.	O-32-----			J-30 (pt)-----			
5.	O-33-----	} Hard bound books not school or technical	3.	J-25d-----	} Beer, cocktails, etc. away from home		
6.	O-38-----		} Pocket editions and other paper books, not school or technical			Q-17-----	
7.	Q-d-21 (pt)-----	} Comic books					
8.	O-39-----		} Tuition and fees, college and professional				
9.	O-43 (pt)-----						
10.	Q-d-21 (pt)-----	} Tuition and fees, other school levels	1.	R-1-----	} Financing charges (excluding mortgage interest and auto financing)		
11.	Q-d-24 (pt)-----			2.		R-2-----	
12.	O-40-----	} College and professional books	3.	R-3-----	} Bank service charges		
13.	O-42 (pt)-----			4.		SQ-IV-2g (pt)-----	
14.	Q-d-22 (pt)-----	} School books other than college and professional		R-6-----	} Funeral service		
15.	O-41-----			4.		R-7-----	
16.	O-43 (pt)-----			SQ-IV-2g (pt)-----	} Legal expenses		
17.	Q-d-22 (pt)-----						
18.	Q-d-24 (pt)-----						

¹ Unless otherwise indicated, numbers indicate Section and line number of Schedule B Survey of Consumer Expenditures. (pt) = part.
² C following line number denotes Schedule C, the record of expenditures for the 7 days preceding the date of the interview.

³ No CES number assigned, was included as a supplemental item between items 13 and 14 in EC-14.
⁴ SQ refers to Standard Question.
⁵ To be priced only in cities where applicable.

EXHIBIT C

BLS 2742

THIS REPORT
WILL BE HELD
IN CONFIDENCE

U.S. DEPARTMENT OF LABOR
Bureau of Labor Statistics
Washington 25, D.C.
SURVEY OF WHERE GOODS ARE BOUGHT

City _____
Block No. _____
From BLS 2549: _____
Page _____ Line _____

Budget Bureau No. 44-6112
Approval expires: 6-30-62

Please answer the questionnaire in the following way for each item listed:
If you did not buy the item in the past 12 months—Check No in column (A).
If you bought the item entirely from a mail order catalog—Check Yes in column (A); check All in column (B).
If you made any purchases of the item from stores other than from a mail order catalog—Check Yes in column (A); check the answer which applies in column (B); write in the names of the stores in column (C) and the names of the cities in column (D). (If you bought in several stores and spent about the same amount in each, give the names and locations of up to three stores for each item.)

(A)	(B)	(C)	(D)
In the past 12 months did you buy . . ?	What part of the amount you spent in the past 12 months for these items was ordered from a mail order catalog? (Check one)	In what store or stores, other than from a mail order catalog, did you usually buy these items in the past 12 months?	In what city or town is this store located?
MEN'S (16 years and older): Suits and coats Yes <input type="checkbox"/> No <input type="checkbox"/> 0	All <input type="checkbox"/> 1 More than 1/2 <input type="checkbox"/> 2 Between 1/4 and 1/2 <input type="checkbox"/> 3 Less than 1/4 <input type="checkbox"/> 4 None <input type="checkbox"/> 5		
Shirts, socks, underwear, hats, and other furnishings Yes <input type="checkbox"/> No <input type="checkbox"/> 0	All <input type="checkbox"/> 1 More than 1/2 <input type="checkbox"/> 2 Between 1/4 and 1/2 <input type="checkbox"/> 3 Less than 1/4 <input type="checkbox"/> 4 None <input type="checkbox"/> 5		
Work clothes Yes <input type="checkbox"/> No <input type="checkbox"/> 0	All <input type="checkbox"/> 1 More than 1/2 <input type="checkbox"/> 2 Between 1/4 and 1/2 <input type="checkbox"/> 3 Less than 1/4 <input type="checkbox"/> 4 None <input type="checkbox"/> 5		
Shoes Yes <input type="checkbox"/> No <input type="checkbox"/> 0	All <input type="checkbox"/> 1 More than 1/2 <input type="checkbox"/> 2 Between 1/4 and 1/2 <input type="checkbox"/> 3 Less than 1/4 <input type="checkbox"/> 4 None <input type="checkbox"/> 5		
WOMEN'S (16 years and older): Suits and coats Yes <input type="checkbox"/> No <input type="checkbox"/> 0	All <input type="checkbox"/> 1 More than 1/2 <input type="checkbox"/> 2 Between 1/4 and 1/2 <input type="checkbox"/> 3 Less than 1/4 <input type="checkbox"/> 4 None <input type="checkbox"/> 5		
Dresses Yes <input type="checkbox"/> No <input type="checkbox"/> 0	All <input type="checkbox"/> 1 More than 1/2 <input type="checkbox"/> 2 Between 1/4 and 1/2 <input type="checkbox"/> 3 Less than 1/4 <input type="checkbox"/> 4 None <input type="checkbox"/> 5		
Skirts and blouses Yes <input type="checkbox"/> No <input type="checkbox"/> 0	All <input type="checkbox"/> 1 More than 1/2 <input type="checkbox"/> 2 Between 1/4 and 1/2 <input type="checkbox"/> 3 Less than 1/4 <input type="checkbox"/> 4 None <input type="checkbox"/> 5		
Hats, gloves and accessories Yes <input type="checkbox"/> No <input type="checkbox"/> 0	All <input type="checkbox"/> 1 More than 1/2 <input type="checkbox"/> 2 Between 1/4 and 1/2 <input type="checkbox"/> 3 Less than 1/4 <input type="checkbox"/> 4 None <input type="checkbox"/> 5		
Underwear and nightwear Yes <input type="checkbox"/> No <input type="checkbox"/> 0	All <input type="checkbox"/> 1 More than 1/2 <input type="checkbox"/> 2 Between 1/4 and 1/2 <input type="checkbox"/> 3 Less than 1/4 <input type="checkbox"/> 4 None <input type="checkbox"/> 5		
Stockings Yes <input type="checkbox"/> No <input type="checkbox"/> 0	All <input type="checkbox"/> 1 More than 1/2 <input type="checkbox"/> 2 Between 1/4 and 1/2 <input type="checkbox"/> 3 Less than 1/4 <input type="checkbox"/> 4 None <input type="checkbox"/> 5		
Shoes Yes <input type="checkbox"/> No <input type="checkbox"/> 0	All <input type="checkbox"/> 1 More than 1/2 <input type="checkbox"/> 2 Between 1/4 and 1/2 <input type="checkbox"/> 3 Less than 1/4 <input type="checkbox"/> 4 None <input type="checkbox"/> 5		
CHILDREN'S: Clothing (except shoes) for boys 2 to 16 years old Yes <input type="checkbox"/> No <input type="checkbox"/> 0	All <input type="checkbox"/> 1 More than 1/2 <input type="checkbox"/> 2 Between 1/4 and 1/2 <input type="checkbox"/> 3 Less than 1/4 <input type="checkbox"/> 4 None <input type="checkbox"/> 5		
Clothing (except shoes) for girls 2 to 16 years old Yes <input type="checkbox"/> No <input type="checkbox"/> 0	All <input type="checkbox"/> 1 More than 1/2 <input type="checkbox"/> 2 Between 1/4 and 1/2 <input type="checkbox"/> 3 Less than 1/4 <input type="checkbox"/> 4 None <input type="checkbox"/> 5		

Please complete other side

(A) In the past 12 months did you buy . . . ?	(B) What part of the amount you spent in the past 12 months for these items was ordered from a mail order catalog? (Check one)	(C) In what store or stores, other than from a mail order catalog, did you usually buy these items in the past 12 months?	(D) In what city or town is this store located?
Boys' and girls' shoes Yes <input type="checkbox"/> 0 33 No <input type="checkbox"/>	All <input type="checkbox"/> 1 More than 1/2 <input type="checkbox"/> 2 Between 1/4 and 1/2 <input type="checkbox"/> 3 Less than 1/4 <input type="checkbox"/> 4 None <input type="checkbox"/> 5		
Clothing for infants less than 2 years old Yes <input type="checkbox"/> 0 34 No <input type="checkbox"/>	All <input type="checkbox"/> 1 More than 1/2 <input type="checkbox"/> 2 Between 1/4 and 1/2 <input type="checkbox"/> 3 Less than 1/4 <input type="checkbox"/> 4 None <input type="checkbox"/> 5		
HOUSEFURNISHINGS:			
Yard goods for clothing, slipcovers, draperies, etc. Yes <input type="checkbox"/> 0 41 No <input type="checkbox"/>	All <input type="checkbox"/> 1 More than 1/2 <input type="checkbox"/> 2 Between 1/4 and 1/2 <input type="checkbox"/> 3 Less than 1/4 <input type="checkbox"/> 4 None <input type="checkbox"/> 5		
Sheets, towels, curtains and other household textiles Yes <input type="checkbox"/> 0 42 No <input type="checkbox"/>	All <input type="checkbox"/> 1 More than 1/2 <input type="checkbox"/> 2 Between 1/4 and 1/2 <input type="checkbox"/> 3 Less than 1/4 <input type="checkbox"/> 4 None <input type="checkbox"/> 5		
Rugs and carpets Yes <input type="checkbox"/> 0 43 No <input type="checkbox"/>	All <input type="checkbox"/> 1 More than 1/2 <input type="checkbox"/> 2 Between 1/4 and 1/2 <input type="checkbox"/> 3 Less than 1/4 <input type="checkbox"/> 4 None <input type="checkbox"/> 5		
Furniture Yes <input type="checkbox"/> 0 44 No <input type="checkbox"/>	All <input type="checkbox"/> 1 More than 1/2 <input type="checkbox"/> 2 Between 1/4 and 1/2 <input type="checkbox"/> 3 Less than 1/4 <input type="checkbox"/> 4 None <input type="checkbox"/> 5		
Television and radio Yes <input type="checkbox"/> 0 45 No <input type="checkbox"/>	All <input type="checkbox"/> 1 More than 1/2 <input type="checkbox"/> 2 Between 1/4 and 1/2 <input type="checkbox"/> 3 Less than 1/4 <input type="checkbox"/> 4 None <input type="checkbox"/> 5		
Major appliances (such as washer, refrigerator or stove) Yes <input type="checkbox"/> 0 46 No <input type="checkbox"/>	All <input type="checkbox"/> 1 More than 1/2 <input type="checkbox"/> 2 Between 1/4 and 1/2 <input type="checkbox"/> 3 Less than 1/4 <input type="checkbox"/> 4 None <input type="checkbox"/> 5		
OTHER ITEMS AND SERVICES:			
Toys and sports equipment Yes <input type="checkbox"/> 0 51 No <input type="checkbox"/>	All <input type="checkbox"/> 1 More than 1/2 <input type="checkbox"/> 2 Between 1/4 and 1/2 <input type="checkbox"/> 3 Less than 1/4 <input type="checkbox"/> 4 None <input type="checkbox"/> 5		
Automobile tires Yes <input type="checkbox"/> 0 52 No <input type="checkbox"/>	All <input type="checkbox"/> 1 More than 1/2 <input type="checkbox"/> 2 Between 1/4 and 1/2 <input type="checkbox"/> 3 Less than 1/4 <input type="checkbox"/> 4 None <input type="checkbox"/> 5		
Auto parts and accessories Yes <input type="checkbox"/> 0 53 No <input type="checkbox"/>	All <input type="checkbox"/> 1 More than 1/2 <input type="checkbox"/> 2 Between 1/4 and 1/2 <input type="checkbox"/> 3 Less than 1/4 <input type="checkbox"/> 4 None <input type="checkbox"/> 5		
Auto repairs Yes <input type="checkbox"/> 5 54 No <input type="checkbox"/> 0		XXXXXXXXXXXXXXXXXX	
New automobile Yes <input type="checkbox"/> 5 55 No <input type="checkbox"/> 0		XXXXXXXXXXXXXXXXXX	
Laundry service Yes <input type="checkbox"/> 5 56 No <input type="checkbox"/> 0		XXXXXXXXXXXXXXXXXX	
Dry cleaning Yes <input type="checkbox"/> 5 57 No <input type="checkbox"/> 0		XXXXXXXXXXXXXXXXXX	
Do you have ?			
Automobile insurance Yes <input type="checkbox"/> 5 61 No <input type="checkbox"/> 0	What is the name of the <i>insurance company</i> , NOT the agency from which you bought the policy?		
Health insurance Yes <input type="checkbox"/> 5 62 No <input type="checkbox"/> 0			

Bibliography

Description of Consumer Price Index—General

- The Consumer Price Index (Revised January 1964): A Short Description.* U.S. Department of Labor, Bureau of Labor Statistics, September 1964. 12 pp.
- “Consumer Prices.” Reprint of Chapter 10, *BLS Bulletin 1458, BLS Handbook of Methods for Surveys and Studies*, U.S. Department of Labor, Bureau of Labor Statistics, 1965. (In revision of BLS Bulletin 1168, 1955.)
- The Consumer Price Index: Pricing and Calculation Procedures*, unpublished paper by Doris P. Rothwell, U.S. Department of Labor, Bureau of Labor Statistics, March 1964. 22 pp.
- “The Statistical Structure of the Revised CPI,” by Sidney A. Jaffe, *Monthly Labor Review*, August 1964, pp. 916–924.
- Computation of Cost-of-Living Indexes in Developing Countries.* U.S. Department of Labor, Bureau of Labor Statistics. (BLS Report No. 283, 1964.)
- Sampling Aspects of the Revised CPI*, unpublished paper by Marvin Wilkerson, U.S. Department of Labor, Bureau of Labor Statistics, October 1964. 33 pp.
- Measurement of Sampling Error in the Consumer Price Index: First Results*, unpublished paper by Marvin Wilkerson, U.S. Department of Labor, Bureau of Labor Statistics, December 1964. 16 pp.
- “The Revised City Sample for the Consumer Price Index,” by Marvin Wilkerson, *Monthly Labor Review*, October 1960, pp. 1078–1083. Reprint No. 2352.
- Interim Adjustment of Consumers' Price Index: Correction of New Unit Bias in Rent Component of Consumers' Price Index and Relative Importance of Items.* (Bulletin 1039, 1952.)
- Study of Consumer Expenditures, Incomes and Savings—Methodology of the Survey of Consumer Expenditures in 1950*, by Helen Humes Lamale, Wharton School of Finance, University of Pennsylvania, Philadelphia, Pa., 1959.
- Cost of Living and Retail Prices in the United States (1890–1903).* U.S. Bureau of Labor. (Bulletin 54, 1904.)
- Cost of Living and Retail Prices of Food*, in 18th Annual Report of the Commissioner of Labor, 1903.
- Retail Prices of Food, 1890 to 1904.* U.S. Bureau of Labor. (Bulletin 59, 1905.)
- “Labor and the War,” *Monthly Review of the U.S. Bureau of Labor Statistics*, March 1918, pp. 67–76.
- “Cost of Living in the District of Columbia,” *Monthly Labor Review*, June 1919, p. 117.
- Cost of Living in the United States.* U.S. Department of Labor, Bureau of Labor Statistics. (Bulletin 357, 1924.)
- “Changes in Cost of Living from September 15 to November 15, 1940,” *Monthly Labor Review*, January 1941, pp. 146–149.
- “Revision of Index of Cost of Goods Purchased by Wage Earners and Lower Salaried Workers,” by Faith M. Williams, Margaret H. Hogg, and Ewan Clague, *Monthly Labor Review*, September 1935, pp. 819–837.

Retail Prices of Food, 1923-36. U.S. Department of Labor, Bureau of Labor Statistics. (Bulletin 635, 1938.)

"Bureau of Labor Statistics, Cost-of-Living Index in Wartime," *Monthly Labor Review*, July 1943, pp. 82-95. Reprint No. 1545.

"Revision of the Consumers' Price Index," *Monthly Labor Review*, July 1950, pp. 129-132. Reprint No. 2003.

"Selection of Cities for Consumer Expenditures Survey, 1950," by Marvin Kogan, *Monthly Labor Review*, April 1951, pp. 430-436. Reprint No. 2060.

Consumer Price Index Numbers—Sampling Problems in Prices, by A. Basu, Indian Labour Journal, Delhi, June 1960, pp. 582-588.

"Sampling Considerations in the Construction of Price Indexes with Particular Reference to the United States Consumer Price Index," by Philip J. McCarthy, in *Government Price Statistics-Hearings*, Subcommittee on Economic Statistics of the Joint Economic Committee, 87th Cong., 1st sess., Part 1, January 24, 1961, pp. 197-232.

"Controlled Selection—A Technique of Probability Sampling," by Roe Goodman and Leslie Kish, *Journal of the American Statistical Association*, September 1950, pp. 350-372.

Relative Importance of Components

"Relative Importance of CPI Items," by Gloria P. Green, *Monthly Labor Review*, November 1965, pp. 1346-1349.

Consumer Price Index (New Series), Relative Importance of Major Groups, Subgroups and Individual Items, December 1963 and Comparison with Old Series. Mimeographed report. U.S. Department of Labor, Bureau of Labor Statistics, 1964. 16 pp.

Relative Importance of Consumer Price Index Components, December 1962 and 1957-59 Average, and Selected Prior Periods for Major Groups. U.S. Department of Labor, Bureau of Labor Statistics, 1963. 4 pp.

"Relative Importance of CPI Components," by Chester V. McKenzie, *Monthly Labor Review*, November 1961, pp. 1233-1236. Reprint No. 2377.

"Relative Importance of Items in the CPI," by Marsha Froeder and Carlyle P. Stallings, *Monthly Labor Review*, August 1954, pp. 891-896. Reprint No. 2146.

Use of CPI in Wage Adjustments

"The Use of Price Indexes in Escalator Contracts," by Francis S. Cunningham, *Monthly Labor Review*, August 1963, pp. 948-952. Reprint No. 2424.

Escalator Clauses from Selected Collective Bargaining Agreements. U.S. Department of Labor, Bureau of Labor Statistics, October 1962. 14 pp.

"The Growth, Status, and Implications of Wage Escalation," by H. M. Douty, *Monthly Labor Review*, February 1953, pp. 126-129. Reprint No. 2095.

"Wage Escalators and the Adjusted CPI," by Lucy M. Kramer and James Nix, *Monthly Labor Review*, May 1951, pp. 509-513. Reprint No. 2034.

"Deferred Increases Due in 1965 and Wage Escalation," by George Ruben, *Monthly Labor Review*, December 1964, pp. 1381-1384.

Deferred Wage Increases and Escalator Clauses, 1952-63. U.S. Department of Labor, Bureau of Labor Statistics, February 1963. (BLS Report No. 235, 1963.)

Cost of Living Wage Adjustments in Collective Bargaining. Mimeographed report. U.S. Department of Labor, Bureau of Labor Statistics, September 1951 (Revised). 21 pp.

The Use of Cost-of-Living Figures in Wage Adjustment. U.S. Department of Labor, Bureau of Labor Statistics. (Bulletin 369, 1925.)

Consumer Price Index—Specific Components

- “The Calculation of Average Retail Food Prices,” by Doris P. Rothwell, *Monthly Labor Review*, January 1965, pp. 61–66.
- “Rent Component of the Consumers’ Price Index, Part I—Concept and Measurement, Part II—Methodology of Measurement,” by Helen Humes and Bruno Schiro, *Monthly Labor Review*, December 1948, pp. 631–637, and January 1949, pp. 60–68. Reprint No. 1947.
- “Housing Costs in the Consumer Price Index, Part I—Concept and the Expenditure Basis, Part II—Pricing Procedures,” by Helen Humes Lamale, *Monthly Labor Review*, February 1956, pp. 189–196 and April 1956, pp. 442–446. Reprint No. 2188.
- “Estimate of New Unit Bias in CPI Rent Index,” by Ethel D. Hoover and Bruno Schiro, *Monthly Labor Review*, July 1949, pp. 44–49.
- “Correction of New Unit Bias in the Rent Component of CPI,” by George Johnson and Bruno Schiro, *Monthly Labor Review*, April 1951, pp. 437–444.
- The Home State and Migration of American College Students, Fall 1958.* American Association of Collegiate Registrars and Admissions Officers, Committee on Research and Services, Ohio University, Athens, Ohio, 1959.
- “Introductory Prices of 1966 Automobile Models,” by Margaret S. Stotz, *Monthly Labor Review*, February 1966.
- “Compact Cars in the Consumer Price Index,” by Olga A. Larsgaard and Louise J. Mack, *Monthly Labor Review*, May 1961, pp. 519–523. Reprint No. 2368.
- “Automobile Prices in the Consumer Price Index,” by Louise J. Mack, *Monthly Labor Review*, November 1955, pp. 1269–1273. Reprint No. 2179.
- “Health Insurance in the Revised CPI, by James C. Daugherty, *Monthly Labor Review*, November 1964, pp. 1299–1300.

Factors Affecting the CPI

- “Use of Varying Seasonal Weights in Price Index Construction,” by Doris P. Rothwell, *Journal of the American Statistical Association*, March 1958, pp. 66–77.
- Seasonal Factors, Consumer Price Index: Selected Series, June 1953–May 1961.* U.S. Department of Labor, Bureau of Labor Statistics. (Bulletin 1366, 1963.)
- “The CPI and Problems of Quality Change,” by Ethel D. Hoover, *Monthly Labor Review*, November 1961, pp. 1175–1185. Reprint No. 2378.
- “Taxes and the Consumers’ Price Index,” *Monthly Labor Review*, January 1953, pp. 53–57. Reprint No. 2090.

Inquiries into CPI

- Price Statistics of the Federal Government, Review, Appraisal, and Recommendations,* National Bureau of Economic Research, Report No. 73, General Series, New York, 1961.
- Government Price Statistics—Hearings,* Subcommittee on Economic Statistics of the Joint Economic Committee, 87th Cong., 1st sess., Part I, Washington, January 24, 1961, Part II, May 1, 2, 3, 4, and 5, 1961.
- Consumers’ Price Index.* Report of a Special Subcommittee of the Committee on Education and Labor, House of Representatives, 82d. Cong., 1st. sess., Report No. 2, Washington, 1951.

The Consumers' Price Index—Report of the Joint Committee on the Economic Report on the Consumers' Price Index of the United States Bureau of Labor Statistics, 80th Cong., 2d sess., 1949.

Report of the President's Committee on the Cost of Living. Office of Economic Stabilization, 1945.

"An Appraisal of the U.S. Bureau of Labor Statistics Cost-of-Living Index," by a Special Committee of the American Statistical Association, *Journal of the American Statistical Association*, December 1943, pp. 387-405.

Staff Report on Employment, Growth and Price Levels—Prepared for Consideration by the Joint Economic Committee, 86th Cong., 1st sess., 1959.

Consumer Price Movements

Prices, 1964. U.S. Department of Labor, Bureau of Labor Statistics, (BLS Report No. 291, 1965.)

Prices: A Chartbook, 1953-62. U.S. Department of Labor, Bureau of Labor Statistics, (Bulletin 1351, 1963). Supplement, September 1963. (Bulletin 1351-1.)

Consumer Prices in the United States, 1953-58: Price Trends and Indexes. U.S. Department of Labor, Bureau of Labor Statistics. (Bulletin 1256, 1959.)

Consumer Prices in the United States, 1949-52. U.S. Department of Labor, Bureau of Labor Statistics. (Bulletin 1165, 1954.)

Consumers' Prices in the United States, 1942-48. U.S. Department of Labor, Bureau of Labor Statistics. (Bulletin 966, 1949.)

Changes in Cost of Living in Large Cities in the United States, 1913-41. U.S. Department of Labor, Bureau of Labor Statistics. (Bulletin 699, 1941.)

Historical Statistics of the United States, Colonial Times to 1957. A Statistical Abstract Supplement. U.S. Department of Commerce, Bureau of the Census, 1960. *Continuation to 1962 and Revision*. 1963.

Historical Statistics of the United States, 1789-1945. U.S. Department of Commerce, Bureau of the Census, 1949. *Continuation to 1952 of Historical Statistics of the United States*. 1954.

Average Retail Prices, 1955. U.S. Department of Labor, Bureau of Labor Statistics. (Bulletin 1197, 1956.)

Average Retail Prices: Collection and Calculation Techniques and Problems. U.S. Department of Labor, Bureau of Labor Statistics. (Bulletin 1182, 1955.)

Index Series

Consumer Price Index. Historical Series (1957-59 = 100) for U.S. and 23 Large Cities. Series A, All items; Series B, Food; Series B-1, Food at home; Series B-2, Cereals and bakery products; Series B-3, Meats, poultry, and fish; Series B-4, Dairy products; Series B-5, Fruits and vegetables; Series B-6, Other foods at home; Series B-7, Food away from home; Series C, Housing; Series C-1, Rent; Series C-2, Gas and electricity; Series C-3, Fuel oil and coal; Series C-4, Housefurnishings; Series C-6, Shelter; Series C-7, Homeownership; Series C-8, Fuel and utilities; Series C-9, Household furnishings and operation; Series D-5, Apparel and upkeep; Series D-1, Men's and boys' clothing; Series D-2, Women's and girls' apparel; Series D-3, Footwear; Series E, Transportation; Series E-1, Private transportation; Series E-2, Public transportation; Series F, Medical care; Series G, Personal care; Series H, Reading and recreation; Series I, Other goods and services; Series J, Health and recreation. U.S. Department of Labor, Bureau of Labor Statistics.

Consumer Price Index. Historical Series, Special Groups (1957-59 = 100), U.S. average only. Series A-2, All items less food; Series A-3, All items less shelter; Series K, All commodities; Series K-1, All Commodities less food; Series K-2, Durable commodities; Series K-3, New cars; Series K-4, Used cars; Series K-5, Household durables; Series L, Nondurable commodities; Series L-1, Nondurable commodities less food; Series L-2, Apparel commodities; Series L-3, Nondurables less food and apparel; Series L-4, Apparel commodities less footwear; Series M, All services; Series M-1, All services less rent; Series M-2, Household services less rent; Series M-3, Transportation services; Series M-4, Medical care services; Series M-5, Other services. U.S. Department of Labor, Bureau of Labor Statistics.

Consumer Price Index. Monthly release and detailed report. U.S. Department of Labor, Bureau of Labor Statistics.

Retail Prices and Indexes of Fuels and Electricity. Monthly report. U.S. Department of Labor, Bureau of Labor Statistics.

Consumer Price Indexes for Selected Items and Groups. Quarterly report. U.S. Department of Labor, Bureau of Statistics.

Consumer Price Index. Price Indexes for Selected Items and Groups. Annual averages, 1935-61, quarterly indexes, March 1947-June 1964. (Discontinued June 1964.) U.S. Department of Labor, Bureau of Labor Statistics.

Estimated Retail Food Prices by Cities. Monthly report. U.S. Department of Labor, Bureau of Labor Statistics.

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