(consumers') prices are not equalled in quality, integrity or accuracy by any other indexes known to me. Statisticians come from almost every country to study the technique of index construction developed and executed by the Bureau's Price Division, so that they may go back to their own countries and try to develop price indexes modeled after ours.

Purpose of index numbers [1]

Price indexes are designed to do only one thing. They measure the *change* in prices over time for the universe of commodities which the index is meant to represent. The index number does not, for instance, show the effect on the housewife's market basket when she substitutes cake mixes for the crude ingredients or frozen packaged vegetables for a sack of potatoes. It does not tell us whether we are using more expensive or less expensive commodities than we used in the past. It *does* tell us whether, once introduced into the index, they and the other components of the market basket have risen or fallen in price from one period to the next.

HOW INDEXES ARE CONSTRUCTED

While technical descriptions are sometimes boring it is necessary to understand how indexes are put together and how they may be properly used if one is to appreciate the true significance of the changes reflected by them.

Price data

Index numbers are designed to show us the amount and direction of price movement in the aggregate for it is impossible to discuss the net effect of the many and diffuse price movements of all items. The total number of price quotations is almost infinite. Furthermore, there is a wide range of commodities, styles and sizes. Therefore, it becomes a practical necessity to select a representative sample of the many variables involved. These variables include, among others: (a) the commodity composition of the category being studied (for instance, if we are considering groceries, what items should go into the market basket); (b) the grades, sizes, and specifications of the commodities chosen; (c) the classes of buyers and sellers to be selected and their terms of trade; and (d) the geographic areas to be covered.

Once the market in which prices are to be measured has been defined, a sample must be taken of the commodities and of the specifications to be priced. For prescription pharmaceuticals for example, a selection must be made of package size, dosage form and strength, of transaction size, of terms of sale and of points in time and place at which these prices are to be taken.

Often these decisions are limited by the availability of data, such as when, how often, where and for which of the items prices are published. Obviously, prices for the most important products, at the most usual terms of sale are likely to be readily available on a continuing basis. But even for these commodities it is important to set rigid specifications so that variations due to changing transaction terms or grades of commodities do not affect the price comparisons.

Weighing

In constructing a price index, logical weights (measures of the importance of the products selected for the index) must be employed. These weights should, as truly as possible, reflect the relative importance of the commodities in the index. Changes in the prices of the most widely and frequently used commodities should have greater influence on the index than changes of price in less important or infrequently used products.

This information for weighting is usually harder to come by than price data and is frequently unavailable except through specially designed surveys. It is relatively easy to ascertain the going price of an item at any time. It is much harder to find out for any time period how much of the product was produced, sold, or consumed, particularly when there are an unknown number of producers or distributers of the item. Too often this information is considered confidential by the seller or not tabulated in a way that is useful to a price statistician.

[1] For a fuller discussion of index numbers, their purposes and uses as well as methods of construction see, Mitchell, W. C., "The Making and Using of Index Numbers", Bull. #284, U.S. Bureau of Labor Statistics; Fisher, Irving, "The Making of Index Numbers"; King, W. I., "Index Numbers Elucidated"; Mills, F. C., "The Behavior of Prices"; Mudgett, R. D., "Index Numbers"; Persons, W. M., "The Construction of Index Numbers"; The National Bureau of Economic Research, "The Price Statistics of the Federal Government".