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## II

### GENERAL PROBLEMS IN THE PRICE INDEX PROGRAM OF THE FEDERAL GOVERNMENT

#### 1. THE INSTITUTIONALIZING OF THE INDICES

Every observer of the price statistics area must be impressed with the extent to which the leading indexes are becoming institutionalized. The CPI is becoming an integral part of the area of collective bargaining, through its extensive use in wage escalation. The WPI is receiving an increasing role in business contracts covering even fairly short periods of time. The Indexes of Prices Paid and Received by Farmers are at the foundation of agricultural price-support policies of the Federal Government.

Such a development is of course inevitable in an inflation-conscious age—after all, price indexes are made to be used. There is, however, a growing threat to the maintenance of the scientific quality of the indexes arising out of their use in private contracts and public policy. The important legal commitments which rest on the indexes normally lead the parties to press for strict comparability in the concepts and procedures employed in compiling the index. This attitude is easily comprehended: if the indexes are revised with the effect of costing one party to a commitment a large sum of money, the index appears to be contributing its own statistical uncertainties rather than removing those in the dollar quantities to which it is applied.

But this demand for strict comparability is shortsighted even from the viewpoint of the parties who use the indexes for legal commitments. It would be unwise to contract for 20 years with a person to be supplied with a 1960 automobile if one wished a given type of transportation: the strict "comparability" of the identical automobile over time would not conceal its increasing decrepitude. Index numbers also deteriorate with age—and often no less rapidly than automobiles. Strict comparability in the items priced and the weights assigned to commodities can be achieved only at the cost of making an index number increasingly obsolete. It would be possible to make up a consumer price index, for example, that priced only goods that were very similar in 1930 and 1960, but it would have to disregard the majority of the goods consumed in either year, and its course over time would be a mere caricature of the movements of a good consumer price index.

The periodic revision of price indexes, and the almost continuous alterations in details of their calculation, are essential if the indexes are to serve their primary function of measuring the average movements of prices. The users of the data—scientific as well as business or governmental—are entitled to responsible behavior on the part of the price collection agencies, and responsible behavior forbids frequent minor changes in methods and concepts. But they are not entitled to a hollow rigidity of form which deprives the indexes of their relevance. Responsible behavior in the calculations of the indexes consists primarily in presenting the indexes which, within the limits of the agency's powers, best measure the changes in the price of whatever the indexes seek to measure.

Certain problems which are posed by wage and contract escalation deserve more detailed notice here; the farm price indexes are discussed in Section VI.

*Wage Escalation.*—The CPI is now used in wage escalation contracts covering more than 4 million employees. "Escalation" contracts usually provide for periodic changes in money wages (usually quarterly) based on changes in the national CPI or, less often, in the CPI for an individual city, by a variety of formulas. There is some tendency for the use of wage escalation clauses to increase in periods of rapid price rise and to decrease in periods of relative price stability.

The desire of the parties to wage agreements for escalator clauses is to a large extent a byproduct of a desire for long-term agreements (agreements of more than a year's duration without provision for renegotiation of wage rates). Such agreements can be advantageous to both parties because they permit long-range planning and may reduce the costs of negotiation and particularly of strikes. The presence of an escalator clause is often a prerequisite to a firm long-term agreement from the point of view of the union, since in its absence price rises could erode real wages during the life of the agreement. The tendency toward long-term agreements seems to be increasing, and this will probably lead to increasing use of wage escalation for any given rate of price rise.

The CPI has had special relevance to wage bargains since its inception—it grew out of attempts to measure the "real" wages of shipyard workers during World War I, and its present coverage (urban wage and lower salary workers) still reflects this relevance. The index has since become important in wage and salary determinations for other classes of employees, however, and it has taken on important general policy and scientific uses which are not restricted to wage and lower salary workers. These widening uses raise a question of the propriety of the present restrictions on the coverage of the CPI, which we discuss in Section IV; here it is sufficient to note the implications of wage escalation contracts for the construction of the CPI.

1. A price index comparable to the present CPI, suitable to the current wage escalation clauses, should be maintained for several years even if an extensive revision of the scope of the index is undertaken by the BLS. With full notice of this policy, wage contracts can be drawn to provide for periodic revisions.

2. The long-term program of consumer price indexes need not and should not be determined exclusively or primarily by the current wage-escalation contracts. The most useful CPI *need not* be restricted to the present index population, since a subcomponent of a more comprehensive index can always be presented which will fully serve the purpose of wage escalation. The most useful CPI *should not* be determined only by wage escalation needs, for there are other policy and scientific needs of great importance.

We shall argue later for a CPI appropriate to the entire urban population that will probably serve equally well for wage contracts, because the consumption patterns and prices of the urban workers' families—over one-half of the urban population—are similar to those of the entire urban population. Since no index provided by the Federal Government will ever be exactly appropriate to the employees covered by any one wage contract, wage escalation does not prescribe

a unique index. But even if this position is disputed, and a special wage earners' index is deemed a permanent need, its provision would be an economical byproduct of a more comprehensive index.

*Contract Escalation.*—The escalation of contracts for goods to be delivered at a considerable distance in the future is analogous in many respects to wage escalation. The main difference is that the global WPI is seldom used (and for reasons we discuss later should not be), and either individual prices or components of the index are employed. As a result much less pressure exists for formal continuity in the composition or coverage of the comprehensive index, and in fact the only important implication of contract escalation for the WPI is that individual prices and group indexes should be continued for several years after notice of a change of scope or structure is given.

## 2. THE PUBLICATION OF METHODS

The periodical publication of the full description of the methods by which each of the major price indexes is constructed is a basic recommendation of our committee. The reasons for the recommendation are surely self-evident:

1. Unless the concepts and procedures are fully described, the users of the indexes will not know precisely what they are using.

2. Only if comprehensive descriptions are available will the professional economists and statisticians be able to judge the quality of the indexes, and to contribute to their improvement.

The BLS and the AMS publish a great deal of information on their concepts and procedures, but they fall considerably short of the status we believe essential. The descriptions are fragmentary and often lag changes in practice by many years, so there exists no unified and comprehensive description of any of the major indexes as of a given time. Portions of information vital to the assessment of the indexes and to many of their uses, such as the numbers of independent price quotations by commodity or industry and location, are not publicly available.

We realize that "full description" is not literally attainable: literally millions of numbers go into the construction of a major index within a few years, and innumerable events such as the burning down of a grocery store or the loss of a letter compel at least variation in practices. Indeed description itself is a high art, requiring a sense of salience and precision warmed by understanding—and an informed reader. But granted that fulfillment of our recommendation requires much difficult and discriminating effort by the price collecting agencies, we are convinced that no other single recommendation in our report is more important to the continual improvement of the indexes or to their proper use. Our price statistics program will be seriously deficient until full monographs, equal in scope to that describing the national income accounts, are published after every significant revision of methods or results.

## 3. RESEARCH WITHIN THE PRICE COLLECTING AGENCIES

The resources which have been made available to the price collecting agencies for research on the improvement of the indexes have been niggardly. A staff preoccupied with the very large task of speedily processing the indexes has not had the time or the detached position

to review a program in its entirety, to reexamine basic conceptual problems, or to experiment with new methods of collecting and analyzing data. The indexes have improved over time, and the marvel is that they have improved as much as they have, not that they have not improved more. Yet data collection and data processing methods have been undergoing a major revolution within the last two decades, and almost every concept and process in compiling index numbers needs frequent review. We strongly recommend that research units be created within each agency, independent of but working in close cooperation with the operating units. Relatively small investments in such research units will yield large returns, whether measured narrowly by the development of more efficient methods or broadly by improvements in the quality of the price indexes.

#### 4. EXTENSION TO NEW AREAS

There are areas of great economic importance in which at present price statistics programs are either wholly absent or so incomplete as to call for a major reorganization and expansion of work. Five general price index areas, of which the first three seem especially urgent, are discussed briefly here and (for three areas) more extensively in Appendices A to C.

Before we turn to these five "index" fields, we wish to emphasize as strongly as possible the need for also collecting price data which are not closely geared to existing or proposed official index numbers. The strategy of price collection is now dominated by the official indexes, and only adventitiously will it yield other price data designed to serve the broader needs of econometric and historical research. For example, something as fundamental as the process by which new products gain acceptance and are diffused throughout the economy, and the role of price changes in this process, is little understood; and there is no provision in the current price collection programs for data which will illuminate it.

No price collection agency will have the resources to engage in exploratory work on a scale sufficient to fill the important gaps in our basic knowledge posed by evolving economic research, but even a modest amount of such work (perhaps designed with the aid of specialists in price research) would be a major contribution to our general scientific welfare.

##### i. EXPORT AND IMPORT PRICE INDEXES

With the rise in the importance of international economic relations in the American political and economic scene and more recently with the change in our balance of payments position, it has become even more essential to understand the factors that influence the ebb and flow of American foreign trade. Changes in prices in the United States relative to those of other countries and more particularly changes in the prices of goods that enter international trade are among the key elements in explaining variations in our trade position. Much of the current discussion on the American balance of payments deficit turns upon relative price changes at home and abroad.

The problem of constructing suitable import and export price indexes is discussed in some detail in Appendix A. Our recommendations can be summarized:

1. The export and import unit-value indexes should be brought into closer conformity with price indexes by increased utilization of price information from sources external to foreign trade statistics, particularly by use of BLS wholesale prices and the collection of some prices by specification from the field.

2. As soon as the basic price data have been improved, subindexes conforming to the Standard International Trade Classification should be developed. This does not mean that there must necessarily be a separate index for each SITC category, but indexes should be prepared for categories or combinations of categories that are important in United States trade. The indexes for total exports and imports for our trade with Latin America should be supplemented by similar indexes for other major regions.

3. Assuming that satisfactory price and quantity data are available, the present methods of the Bureau of Foreign Commerce, while obviously not the only acceptable solutions, represent defensible choices. The methods are well adapted to the special problems encountered in this area and to the uses to be made of the indexes.

4. The export-import price index work is now conducted with wholly inadequate resources. It may be necessary or expedient to transfer responsibility from an operating to a statistical agency to obtain the attention and resources for these indexes that we believe are essential.

#### ii. CONSTRUCTION PRICE INDEXES

New public and private construction has comprised almost one-eighth of the total value of the gross national product in recent years. Satisfactory price data in the construction area are thus of great importance for deflation of the national product as well as for the many important specific uses for which construction price (or "cost") indexes are needed. The behavior of construction prices is of extraordinary interest to the Federal Government itself because it is a large buyer of construction, heavily supports by grants-in-aid the purchase of construction by state and local governments, and has a primary interest in private construction through various direct loan and loan insurance and guarantee programs. The Committee believes that this is a price area of great importance, and one which cries for improvement.

The Committee's views on this area are detailed in Appendix B. We recommend a radical expansion and reorientation of the work in this neglected and difficult area. The Committee believes that the first step in obtaining a construction price index is the development of a detailed program to provide such an index. This program should be based on the assumption that a reasonable amount of funds will be made available to collect and process data to implement the program once it is drawn up. Under present arrangements the responsibility for developing such a program evidently lies with the Bureau of the Census in consultation with other interested agencies. The approaches described in Appendix B are intended to indicate the Committee's view that great improvements in present procedures are possible, not to limit in any way the development of an adequate program.

## iii. DEFLATION OF THE NATIONAL INCOME ACCOUNTS

The national income accounts have become within a generation among the most basic and widely used economic data, for both policy and scientific purposes. The recalculation ("deflation") of these income and expenditure data in stable prices is essential to their uses, and as the accounts become steadily more detailed, their deflation makes for ever larger demands for price data. A highly classified set of accounts provides, indeed, a tolerably complete inventory of all possible prices (other than of assets) in the economy.

The "implicit" price deflators constructed by the National Income Unit are a set of price indexes which are being used increasingly more widely, and this trend will continue. They are, in principle, based upon given year weights (Paasche indexes), unlike most other price indexes, and therefore cannot be produced so currently as the conventional fixed weight indexes. We believe that these indexes are so important that their data requirements deserve explicit recognition and cooperation by the price collection agencies, and at several points in this report we give important instances of the need for enlarged price collection programs for this purpose.

## iv. ASSET PRICES

Construction price indexes refer to *new* assets, and immediately suggest the question of the price indexes for other tangible assets, including real estate, vehicles, producer durable goods, and land. Prices of durable assets are essential in the derivation of estimates of national wealth and national balance sheets, and they are needed for deflation purposes in the increasingly important area of flow-of-funds analysis. Many policy and scientific problems (examples are studies of the process of inflation and of productivity and economic progress) to which national income accounts and balance sheets and flow-of-funds analyses make large contributions thus ultimately require asset price indexes. We discuss the scope and some lines of attack on this area in Appendix C.

## v. TRANSPORTATION RATES

An index of freight rates of railroads has been published by the Interstate Commerce Commission since 1948; this is the only general freight rate index presently compiled. There are persuasive reasons for expanding this sector of price indexes. The transportation industries are sufficiently important in terms of both economic size and public policy decisions to justify a much more detailed knowledge of the changing structure of freight rates by commodity, area, and distance, and by type of carrier. The progressive refinement of the national income accounts will sooner or later lead to estimates of income originating in well-defined industry sectors, and freight rates will become necessary to relate selling prices of suppliers to buying prices of purchasers.

The extension of freight indexes to common carriers other than railroads should be a relatively simple and economical step: the extension to the motor trucking industry is illustrated in Staff Paper No. 1. The private carriers, and other carriers not subject to public regulation, pose immensely greater problems of data collection as well as serious problems of concept and procedure, but we believe that the importance of these sectors justifies extensive exploratory work.