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GENERAL-PURPOSE INDEX NUMBERS OF RETAIL PRICES  
 (Memorandum by the Secretary-General)

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GENERAL-PURPOSE INDEX NUMBERS OF RETAIL PRICES

(Memorandum by the Secretary-General)

I. INTRODUCTION

1. The Statistical Commission requested, at the ninth session, a study of concepts and methods for general-purpose price index numbers of sales at retail. This memorandum is devoted to discussion of systems of index numbers which might serve this purpose and of the broad uses, concepts and methods involved in each approach. Concepts and methods for each of the types of index numbers are outlined from the point of view of the field of sales (purchases) to be priced, the way in which the index numbers might be classified, and the sources of information for the prices to be gathered. The International Labour Office has been consulted on this paper.

2. Consideration is given in this paper to three systems of price index numbers - on (i) sales by retail trade and related service establishments, (ii) sales to resident households and (iii) private consumption expenditures in national accounts - which would yield information of general economic value on retail prices. Essentially these three systems differ in the field of transactions for which prices are gathered and the purposes for which these index numbers might be used. The price index numbers of the sales of retail trade and related service establishments relate to all sales of such units, whether to residents and non-residents, private institutions, small producers, etc., but not to sales to households and private institutions made by wholesalers, manufacturers, etc. Such price data are wanted in order to measure the volume of sales for retail trade and related service establishment, and would serve important needs even if restricted to the sales of retail units. In the latter case it would be possible not only to deflate the sales of retail trade for changes in prices but also to follow the differences in prices of commodities between the sales of producers and importers (i.e., the transactions covered in systems of wholesale prices) and the sales of retail trading units.<sup>1/</sup> The price indexes on sales to (purchases of) resident

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<sup>1/</sup> For a brief description of systems of index numbers on wholesale prices see Index Numbers of Wholesale Prices, E/CN.3/204, Statistical Commission, Ninth Session.

households cover, ideally, sales, whether by retailers, wholesalers or manufacturers, etc., of all goods and services for personal use, and consist of an extension of consumer price indexes from particular groups to the population as a whole. These price statistics would provide for the total population, as well as broad segments of it, the same information as the customary consumer price indexes provide for restricted categories of the population. The price data on the sales of goods and services which are correlative with private consumption expenditures in national accounts cover purchases of private institutions in addition to resident households. Moreover, the expenditures of non-profit institutions for wages and salaries are also included. These price indexes may be used to value private consumption expenditures in constant prices.

## II. PRICE INDEX NUMBERS ON SALES OF RETAIL TRADE AND RELATED SERVICE ESTABLISHMENTS

### A. Purposes and Field to be Covered

3. An important gap in the available statistics of a number of countries seems to be data which can be easily utilized to adjust, for changes in prices, the figures on the value of sales by retail trade and related service (i.e., restaurants, hotels, cinemas, barber and beauty shops, laundries, etc.) establishments which, in these countries, are gathered monthly or less often. It should be noted that at the ninth session, the Statistical Commission emphasized to countries the desirability of gathering monthly or quarterly and annual figures on the value of

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sales of such establishments.<sup>2/</sup> The usefulness of these series on value of sales as indicators of economic conditions of the level of activity in the retail distribution sector of the economy and the flow of goods and services to consumers would be increased substantially if the value series were factored into elements of price and volume. With a view to accomplishing this, some countries are considering a system of price index numbers which can be utilized to deflate the value of sales, particularly of retail trade establishments.

4. Price data relating to the sales of retail establishments should be given priority over price data correlative with the sales of related service establishments for a number of reasons. Current figures on the value of sales for retail trade units are more commonly gathered and are more significant economic indicators than the same type of data for service establishments. Trends in prices in the sales of goods by retailers may also be compared with trends in prices in the sale of these goods by producers and importers in order to assess changes in the gap between prices at the beginning and end of the chain of economic transactions in finished goods for consumption. Finally, comparable price series are more easily gathered on commodities than on services. When price indexes are extended to the sales of service establishments, attention should be given first to the services which are most akin to retail trade, play an important part in consumer expenditures and are most easily priced - for example, restaurants,

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<sup>2/</sup> See Statistical Commission, Report of the Ninth Session, pp. 5-6 and Annex. The kinds of establishments for which the Commission recommended the collection of monthly or quarterly figures on the value of sales are, initially, units included in group 612 (Retail Trade) of the International Standards Industrial Classification of all Economic Activities (ISIC) and, later, the units included in the following groups of this classification which are of particular importance in a country: 826 (Business services except professional consulting, accounting and bookkeeping), 831 (Motion picture production, distribution and projection), 832 (Theatres and related services), 833 (Recreation services, except theatres and motion pictures), 842 (Restaurants, cafes, taverns and other eating and drinking and eating places), 843 (Hotels, rooming houses, camps and other lodging places), 844 (Laundries and laundry services; cleaning and dyeing), 845 (Barber and beauty shops), 846 (Portrait and commercial photographic studios), 849 (Personal service not elsewhere classified. It should be noted that in the proposed revised ISIC (see Draft Revised International Standard Industrial Classification of all Economic Activities, E/CN.3/243), the identifying number for many of these groups is different from the identifying number given above, which is from the present ISIC (see International Standard Industrial Classification of all Economic Activities, Statistical Papers, series M, No. 4).

taverns and other eating and drinking places, cinemas, barber and beauty shops, and laundries and dry cleaners. It does not seem necessary or practicable to develop price indexes which are correlative to the value of sales of some kinds of establishments which the Statistical Commission suggested be covered in current programmes of distribution statistics - namely, business services, motion picture production and distribution, or, perhaps, portrait and commercial photographic studios.

5. Part of the sales of retail trade establishments and of related service units will be to institutions and businesses. This will be the case, for example, for lumber and construction material yards and hay and feed stores, which some countries treat as retail trade, retail coal, fuel, petrol and motor vehicle dealers, furniture, hardware and stationery stores and laundries and dry cleaners.<sup>3/</sup> Therefore, the price indexes relating to the sales of these units will not be entirely restricted to goods and services for personal consumption. Moreover, because some of the goods and services for personal consumption are purchased from manufacturers (e.g., shoe repairing, custom tailoring or upholstering) wholesalers, property owners, institutions or government, the price indexes covering the sales of retail trade and service establishments will omit a significant portion of household expenditures.-

#### B. Classification

6. So that the price index numbers of the sales of retail trade and related services establishments may serve the purposes outlined above, these indexes should be distinguished according to type of economic activity of the establishment to which they relate - i.e., retail trade, restaurants and taverns, barber and beauty shops, etc. These separate indexes should be classified according to the kind of business for each of the types of economic activities - i.e., according to major kind of commodities sold for retail trade establishments or major kind of service rendered for service units. This classification must, of course, reflect the usual combination of commodities sold or services rendered by each kind of business. It is important to note that countries generally classify their monthly

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<sup>3/</sup> It should be noted, however, that in the revised ISIC it is proposed that all lumber and construction material yards and hay, seed and feed stores be classified in wholesale trade.

or less frequent data on value of sales by type of economic activity and kind of business.

7. In many countries, the scheme of classification of retail trade by kind of business corresponds broadly to the system of classification of producers of commodities by kind of economic activity or of household expenditures by type. However, for purposes of comparing price trends for finished goods between the points of production and retail sale, it would probably be necessary to have a more precise classification of price data according to kind of commodity than is feasible for use in deflating the value of sales of retail trade units. In general, manufacturing can be subdivided according to kind of commodities produced more exactly than retail trade according to type of commodities dealt in.<sup>4/</sup> Alternatively, the comparison of prices for finished consumption goods between manufacturers and importers, on the one hand, and retailers, on the other, might be made by use of relatives or averages of prices at these two points for individual commodities. In any case, this price data is needed for other purposes. It should be noted that classification of retail trade and services by kind of business should, in general, yield categories which are commonly used in the classification of household expenditures.

C. Weighting

8. Weights for the price index numbers under consideration consist of the value of sales during the base year for each of the commodities or services (in practice, classes of them) by retail trade and service establishments. In the case of price

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<sup>4/</sup> In this discussion it is implied that sector (gross or net) index numbers of wholesale prices are being compared to the general-purpose index numbers of retail prices. For a description of these sector indexes and methods of classifying them see, Index Numbers of Wholesale Prices, op. cit. The greater detail of classification that is feasible for manufacturing establishments than for retail trade units may be noted from a comparison of the groups indicated for manufacturing in Draft Revised International Standard Industrial Classification of all Economic Activities, E/CN.3/243, Statistical Commission, Tenth Session, Annex II and the sub-groups suggested for retail trade in Annex III of that paper.

index numbers for each kind of retail trade or service outlet, the weights are the value of sales of each class of commodity or service for each type of establishment. For price index numbers on groups of commodities (e.g., distinguished according to sector of manufacturing in which commonly produced), the weights are the value of commodities sold during the base year irrespective of the kinds of retail outlets in which the sales occurred. These methods of weighting assume the use of price relatives for each class of commodity or service in calculating the indexes, which would, in general, be more practicable than utilizing average absolute prices during the base and current periods in conjunction with quantities sold during the former period. The foregoing weighting diagrams might be derived from inquiries into retail and related service units in which relatively complete data is gathered for each kind of establishment on value of sales classified according to kind of commodity or service. Such information has been collected in a number of censuses of distribution, and the Statistical Commission has recommended that it be gathered in these inquiries, every five or ten years.<sup>5/</sup> It should be noted, however, that because of the difficulties of gathering data on the value of sales by class of commodity, this information has often been sought for larger establishments only and for commodity classes which are too gross for efficient use as the basic components in price indexes. In these instances it may be necessary to estimate needed details for individual, or precise classes of, commodities from censuses or manufacturing and agriculture or household budget inquiries.

D. Pricing

9. To collect the price data required for the index numbers under discussion, countries would find it necessary to extend the price series which they now gather for purposes of consumer price indexes. This would consist of increasing

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<sup>5/</sup> See: Statistical Commission, Report of the Ninth Session, Annex and Report of the Expert Group on Distribution Statistics, E/CN.3/L.36, Statistical Commission, Ninth Session.

the number of price quotations gathered for individual commodities or services so as to obtain an adequate number of price series for each kind of retail and related service establishment, whether or not catering to segments of the population for which consumer price indexes are compiled. The price series need to be compiled on only a selection (e.g., the most important) of the individual commodities sold or services rendered by each kind of establishment from price quotations on key varieties and circumstances of sale for each of these commodities or services.

### III. PRICE INDEX NUMBERS ON HOUSEHOLD EXPENDITURES

#### A. Purpose and Field to Covered

10. Some countries (e.g., Ireland, Sweden and the United Kingdom) have extended the traditional area of coverage of consumer price index numbers beyond the expenditures of urban wage earners and clerical workers in order to increase the usefulness of these data in general economic analysis. Ireland covers the expenditures of all non-agricultural households in her consumer price indexes; the United Kingdom encompasses the expenditures of agricultural households excepting certain high or low classes of income, as well; and Sweden covers the expenditures of the entire population in her system of consumer price index numbers.<sup>6/</sup> It should also be noted that other countries have expanded their consumer price

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<sup>6/</sup> It should be emphasized that persons living in institutions are excluded from the schemes of Ireland and the United Kingdom. In the case of the United Kingdom, additional exclusions consist of households the head of which had a gross income of £20 a week or over in 1953 and households whose chief source of income was a National Insurance retirement or similar pension in that year.



indexes to include, as the Sixth Conference of Labour Statisticians suggested, groups of the population which were not traditionally covered.<sup>7/</sup>

11. In order to assess the general significance and level of personal expenditures, it seems desirable to cover all resident households, urban and rural, in general-purpose consumer price indexes.<sup>8/</sup> The field encompassed in these price indexes would then be almost identical with the field covered in data on personal incomes, and approximate the scope of data on private consumption expenditures on non-durable accounts and on sales by retail and related service establishments. Consumer price index numbers for all resident households are, for example, valuable in adjusting the expenditure of these units for price changes and in assessing the impact of this source of demand on the volume of production. Such overall consumer price indexes also furnish useful indicators of extended inflationary or deflationary movements and the contribution of households to these fluctuations. However, it may not be feasible, at first, to assemble the data for weighting or to gather the price series which are required for indexes covering all resident households. The way in which the traditional consumer price indexes might be extended would then depend on the data that is readily available or collectible. For example, if, as in Ireland, weighting diagrams were available immediately for non-agricultural households, it would be convenient to cover, at first, all urban households and, later, to add all rural households. Or, it may be advantageous to develop, firstly, consumer price indexes for all urban and rural households in the lower and middle incomes. In any case, it may be necessary, as the United Kingdom did, to omit a small number of households at the upper end of the income distribution because of the excessive difficulty of gathering usable data on weights for them and on prices for some of their important items of consumption.

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<sup>7/</sup> For a description of the scope of traditional consumer price index numbers and the recommendations of the Sixth Conference of Labour Statisticians for extension of them see: Cost-of-Living Statistics, particularly pp. 14-17 and The Sixth International Conference of Labour Statisticians, particularly pp. 28-34 and 60-62, Studies and Reports, New Series, No. 7 (Parts 2 and 4 respectively), International Labour Office.

<sup>8/</sup> On the same points, see: Cost-of-Living Statistics, op cit., pp. 17-18

12. General consumer price index numbers should, in principle, cover the expenditures of resident households for all kinds of goods and services. As was noted earlier, included are goods and services ordinarily purchased from units classified in the division of the ISIC for manufacturing (e.g., shoe repairs, custom-made clothing) and wholesaling as well as from retail trade and related service establishments. In addition, payments for house rent, transportation, medical services, insurance fees, club fees, and the like are covered. It may not be practicable, however, to cover immediately expenditures for medical services, insurance and the like because of the difficulties of defining or gathering prices for these services. This was found to be the case, for example, in Ireland and the United Kingdom.

#### B. Classification

13. To serve the purposes outlined above, general consumer price indexes need to be classified according to both the character of the goods and services (e.g., food, furniture and house furnishings, house rent, recreation) on which household expenditures are made and the socio-economic characteristics (e.g., urban, rural and classes of income) of the households making these expenditures. The former scheme of classification of these index numbers will assist in linking over-all consumer price indexes with data on the production and distribution of goods and services and on private consumption expenditures which, to a considerable extent, are usually classified according to the nature of the involved goods and services.<sup>9/</sup> Ireland, Sweden and the United Kingdom all classify their over-all consumer price index numbers according to the character of the goods and services purchased, and the traditional price indexes for particular socio-economic groups are usually divided in the same fashion. The classification of general consumer price indexes according to socio-economic classes will help link these indexes with statistics of personal income<sup>10/</sup> and

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<sup>9/</sup> See: A System of National Accounts and Supporting Tables, Studies in Methods, Series F, No. 2, United Nations, pp. 41-43 for a suggested classification of private consumption expenditures and Draft Revised International Standard Industrial Classification of all Economic Activities, E/CN.3/243, op. cit. for the usual classification of data on production and consumption.

<sup>10/</sup> See: Statistics of Distribution of Personal Income, E/CN.3/L.42, Statistical Commission, Tenth Session, for classifications of data on personal income.

the traditional type of consumer price indexes and make them most useful in assessing changes in the level of consumption of these socio-economic groups. However, in deciding on the detail with which the general consumer price indexes should be classified, it is important to weigh the costs and dangers of issuing multiple indexes against the volume of the additional information that would be provided.

#### C. Weighting

14. The weighting diagrams for a system of general consumer price index numbers may be determined from inquiries into household expenditures. Alternatively, the weights may be derived from estimates of the flow of goods and services to households. The flow of goods and services might be estimated from data on (i) the volume of production and external trade, in conjunction with consumer prices, for the goods and services purchased by households or (ii) the value of sales of these goods and services to households. The former method of estimating the flow - i.e., from the available supply of particular kinds of goods and services - is likely to cover the goods and, perhaps, services purchased by institutions as well as households. Ireland and the United Kingdom depended on household budget inquiries for weights for their over-all consumer price indexes. Sweden utilized for this purpose estimates of national private consumption, perhaps derived from estimates of the flow of goods and services to households, supplemented by information from household budget inquiries of restricted scope. Expenditure inquiries covering all resident households will yield weighting data for the classification of consumer price indexes according to either kind of goods and services purchased or socio-economic class of household. It should be noted that weights for over-all consumer price indexes classified by kind of goods and services only can be derived from estimates of the flow of goods and services to households.

#### D. Pricing

15. For purposes of the general consumer price index, the price quotations gathered for traditional consumer price indexes would need to be extended to the important purchases of goods and services by households which are not covered in

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the traditional indexes. This may involve additions not only to the types of goods and services for which price series are gathered but also to the locations and circumstances of sale for which price quotations are sought. For example, it may be necessary to add price quotations for kinds of goods purchased for consumption primarily by higher income groups or farmers and the places at which and conditions under which they buy.<sup>11/</sup> The collection of these additional price series will raise difficult technical problems, such as the sparsity of the market and excessive changes in quality for goods purchased by higher income groups and the mixture of wholesale and retail terms of sale for goods purchased by farmers.

#### IV. PRICE INDEX NUMBERS ON PRIVATE CONSUMPTION EXPENDITURES IN NATIONAL ACCOUNTS

16. In addition to the purchases at home of resident households, price index numbers correlative with private consumption expenditures in national accounts should relate, ideally, to the purchases of goods and services by these households abroad, the purchases of private institutions and other kinds of current expenditures of non-profit organizations, such as for wages and salaries.<sup>12/</sup> It does not seem feasible to consider such a system of price index numbers. Over-all consumer price index numbers, especially if weighted by the value of the available supply of the goods and services ordinarily purchased by households, provide sufficiently close and practicable price correlatives to private consumption expenditures. Moreover, in view of the methods employed to estimate private consumption expenditures, price relatives on individual commodities and services are probably more useful than comprehensive indexes in deflating these expenditures.<sup>13/</sup>

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<sup>11/</sup> For discussion of criteria of selection of items and outlets for gathering price quotations for consumer price indexes see: Cost-of-Living Statistics, op. cit., pp. 19-29 and 33-34.

<sup>12/</sup> For a full definition of private consumption expenditures see: A System of National Accounts and Supporting Tables, Studies in Methods, Series F, No. 2, United Nations, pp. 26-27.

<sup>13/</sup> For a description of methods utilized by countries see: A System of Price and Quantity Indexes for National Accounts, E/CN.3/L.46, Statistical Commission, Tenth Session, pp. 104-108.

## V. CONCLUSION

17. The foregoing outline of three systems of general-purpose index numbers of retail prices suggests that it would be useful to consider, in detail, the concepts and methods involved in index numbers on the sales of retail trade and related establishments and the expenditures of all resident households. Each of these two systems of index numbers have important uses and seem feasible of development in a number of countries. It might be noted in this regard that although the data required for compiling general consumer price indexes may be more readily available than the data needed for preparing price indexes on the sales of retail trade and related service outlets, the need for the latter index numbers may be greater than for the former index numbers. Many countries have consumer price indexes for substantial portions of their population but do not have price indexes for deflating figures on the value of sales of retail distribution establishments. Moreover, price indexes relating to the sales of retail trade establishments would complement the wholesale price indexes compiled by these countries.

18. The Statistical Commission may wish to indicate the direction in which further work on general-purpose index numbers of retail prices should proceed. Does the Commission wish to develop detailed suggestions for purposes of technical guidance with regard to concepts, classifications and methods for either or both systems of general-purpose index numbers of retail prices? On which aspects of these index number systems should research and consultations with Governments and the International Labour Office be conducted?

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