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A Summary Review  
of  
Major International Requirements for Price Statistics  
(Working Paper prepared by the United Nations Statistical Office)

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## INTRODUCTION

1. In this paper a summary review is made of some of the major analytical and policy requirements of the international community for price statistics. These requirements have been identified through discussions with the international agencies concerned and through an examination of studies and reports on their activities. The statistical implications of international programmes in the fields of economic planning and development have also been examined.
2. For the purposes of the discussion, the selected requirements are grouped into three major categories. These are: (i) requirements for general macro-analysis; (ii) requirements for balance-of-payments related studies; and (iii) requirements for development-related work on commodity pricing. The implications of these requirements for the development of an international price statistics programme are examined briefly in each case.

### I. REVIEW OF INTERNATIONAL REQUIREMENTS

#### A. Inflation detection

3. The concept of an "early warning system" for the detection of world inflation has gained increasing attention in recent years. In one form, the concept has been reflected in the widespread compilation of aggregate market price indexes for important commodities traded internationally, such as the "world export price" index published by UNSO in the Monthly Bulletin of Statistics or the "all commodities" index published by IMF in International Statistics.
4. The characteristics of such an index centre around the choice of commodities, the price concept and the weighting pattern. In principle, for the purpose envisaged, the commodities should be: (i) widely used in further processing (ii) traded freely on open markets; (iii) sensitive to changing conditions in these markets; and (iv) sufficiently homogeneous to ensure consistent price measurement. Both spot and futures prices would appear relevant as central price concepts and weighting patterns should reflect relative importance in economic activity generally. In practice, these criteria would have to be evaluated in the light of the results obtained.

5. A spot market price index of this kind would appear to be desirable as part of a more general international inflation forecasting system. It should be available with appropriate breakdowns, component series and weighting patterns so that alternative combinations of the component series can be made to meet specific user interests including the interests of the regional agencies. Empirical research in this area should be examined and encouraged with a view to improving the usefulness of these indexes and ascertaining the potential value of indexes of related futures prices as supplementary indicators.

#### B. Inflation monitoring

6. The monitoring of inflation forms a major objective of most price information systems. In its most general interpretation, it extends to the surveillance of price developments in all parts of the economic system under study. In the more restricted sense used here, it refers to the current measurement of over-all or sector price levels, carried out through the compilation of such indexes as the consumer price index or the composite price index of gross product as a whole.

7. At the national level, the most relevant indexes for general price level measurement would appear to be fixed-weight indexes of final expenditure compiled on a quarterly or annual basis as part of national accounting work. These could be supplemented for current purposes by monthly indexes for selected components such as consumer expenditure. On a world basis, comprehensive quarterly monitoring in terms of final expenditure would appear as a relatively distant goal and reliance for current measurement would initially have to be placed on standard monthly consumer price indexes, as is done at present by IMF and OECD in their publications.

8. Apart from questions of availability and timeliness, the national series referred to frequently have a number of significant conceptual shortcomings as general measures of inflation. In the case of the consumer price indexes, the coverage of national prices may be incomplete, the weighting pattern may not be appropriate for the population as a whole, and there may be important differences in the treatment of specific items of expenditure such as rent. More generally, the treatment of quality change and the pricing of all kinds of services give rise to persistent doubts about the over-all accuracy of these indexes as measures of trends.

9. What these shortcomings imply for an international programme is that there should be a concerted effort with national statistical authorities to improve the consistency and accuracy of current measures of the price level. The problems of quality change and the pricing of services should be studied further and differences in scope, coverage and treatment eliminated as far as possible. The problem of aggregation should also be examined to determine the most useful method of presenting information on over-all price change for the world economy as a whole and for its major regions.

### C. Inflation analysis

10. For the analysis of inflation, it is important to have a detailed and comprehensive statement on price developments throughout the economy concerned. In addition, it requires detailed and comprehensive statements on factor price developments and on other influences directly affecting observed price movements, such as exchange-rate and productivity changes. One of the main aims of such analysis is normally to identify the source of inflation in terms of influences external to the system considered and to establish in this way a basis for the projection of developments within the system itself.

11. From the demand side, it is important to have information on the distribution of price changes by object of final expenditure so that components subject to special influences and not amenable to general demand management can be identified and given further analysis. From the supply side, it is important that activity sector output and input price indexes should be available generally so that the contribution of each activity to the over-all inflation can be measured in terms of changes in productivity, factor prices and intermediate costs. As part of the analysis from the supply side, import price indexes should be available in suitably structured form to identify external cost-push sources of inflation and their impact on the economy.

12. The redevelopment and restructuring of national compilation work which is now taking place along the lines recommended in document M/59 should do much to service these broad analytical needs. Given an improved basis of this kind, international compilation work should be able to move towards a more helpful

E. Price competitiveness in international trade

17. The measurement of price competitiveness in international trade is normally an integral part of balance-of-payments analysis and forecasting. In recent years, the concept has been the subject of increasing attention as one of the main factors governing the balance-of-payments adjustments process. Research on the subject has led to a number of helpful conclusions in defining data requirements for this work.

18. A major conclusion is that, for temporal comparisons of competitiveness, national export and import price indexes have to be supplemented by more specific measures. The weighting patterns of such indexes, it is argued, normally differ from country to country and consequently bias the comparison. In addition, price changes of tradable but untraded goods and services should be represented. Useful results can only be obtained through the use of a common weighting pattern applied to national price changes for all trade or tradable items.<sup>1/</sup>

19. Research on the question of price competitiveness has also led to the result that an index of comparative unit labour costs is in practice one of the best indicators for temporal comparisons of export performance. As with the modified export and import price indexes, the adjustment of the national indexes for exchange rate changes has to be carried out appropriately.

20. This is an area of the work where widespread interest exists and where an international price statistics programme might well play a catalytic role. Successful pursuit of the work in terms of the compilation of indexes of price competitiveness would clearly depend on the increased availability of appropriate export and import price information.

F. Other aspects of balance-of-payments analysis

21. More general balance-of-payments analysis normally involves the factoring of changes in export and import flows into price and quantity movements. The basic information in this case is usually compiled and published as part of the statistics of international trade in the form of quantum and unit value indexes.

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<sup>1/</sup> For spatial comparisons, a similar procedure in terms of relative price levels should be applied.

posture, providing the basic national price data in terms of uniform concepts and classifications and in conjunction with aggregate price data for the world economy and its major regions.

#### D. Inflation forecasting

13. Recent emphasis on the forecasting of inflation has drawn attention to the development of forward-looking indicators of demand pressures and supply constraints. These point to the growth of new international data requirements which might be brought within the framework of a comprehensive price information system.

14. One of the most important of these forward-looking indicators is a measure of the degree of capacity utilization within key activities or within national economies as a whole. The monitoring of capacity utilization is particularly important not only because of the advance warning it gives of general supply constraints but also because of the indication it provides of the need for more detailed scrutiny of price developments. A similar argument can be put forward on behalf of the development of more refined measures of the labour force and its utilization.

15. More direct leading indicators of inflationary developments may be found in the price anticipations of individual businesses and in the level of wage settlements negotiated. The settlements observed for this purpose should be representative of wage settlements generally and should preferably be indicative of rates of labour compensation in all forms rather than in the form of wages alone.

16. These forward-looking indicators can be thought of as part of a more general body of economic statistics bearing on short-term forecasting. They are peripheral to an international price statistics programme and their inclusion in the international price data base might be regarded as hinging on their accessibility on other contexts.

22. While measures of changes in transaction prices should form the basis for the price component in this analysis, more general and more comprehensive measures of price change are required to reflect current developments in export and import prices and to take better account of the situation faced by final buyers and sellers.

23. As part of this array, it would seem advantageous to have export and import price indexes based on quoted prices for current delivery as well as on existing transaction prices and to have these indexes available both by commodity class and by region of destination or origin so that related patterns of price change can be discerned. Parallel information on the main components of transfer margins such as freight and insurance services and export and import duties would clearly be desirable for detailed inquiries.

24. An integral part of the array for balance-of-payments analysis would have to be national series on exchange rate values both in conventional form in terms of dollars or SDRs and as indexes of trade-weighted averages or "effective" rates. These would be required to convert price or value series in national currency terms into series relevant for comparisons in world markets and to measure the over-all impact of exchange-rate changes on the balance of trade. Flexibility of weighting to provide for special analyses would normally be essential.

25. The study of protectionism in international trade is not adequately provided for in current price data compilation. While the comparison of movements of domestic and foreign prices may provide relevant information for such analysis, a direct comparison of absolute prices and of price levels in all categories of traded goods and services would seem necessary for the more detailed inquiries now being made internationally. The general need for comparative information on national price levels is referred to in section I of the present chapter.

#### G. Commodity price stabilization

26. One of the main objectives of the international development effort in recent years has been to create conditions for the stabilization of the prices

of primary commodities. This objective is reflected in general terms in the Programme of Action of the Establishment of a New International Economic Order and more specifically, in the Integrated Programme for Commodities of UNCTAD. It implies a special analytical effort to determine the factors influencing demand and supply in each case and to develop reliable econometric models of price formation for forecasting purposes.

27. While the basic aim of the effort appears to be the stabilization of producer prices, it is clear that the stabilization of world market prices, as defined by the price of exports from producing countries, is a relevant goal. In this context, the price data requirements for effective analysis would extend to transaction prices of exports of the commodities concerned, to spot market prices for individual representative commodities and perhaps also to related futures prices.

#### H. Stabilization of export earnings

28. An associated objective of the current international development effort is the stabilization in real terms of the export earnings of the poorer countries. More strictly defined, the objective seems to be to stabilize the purchasing power of export earnings at a specified historic level by maintaining constant terms of trade vis-à-vis imports from the developed countries. This objective is reflected in the NIEO action programme mentioned above and has become the subject of joint statistical work by UNCTAD and UNSO in recent years.

29. Broadly, price data requirements in this context would appear to be satisfied by reliable export and import price indexes for trade between the developing and the developed countries. Specifically, these indexes should be based on f.o.b. and c.i.f. values respectively at the points of export and import and should be in terms of transaction rather than quoted prices. For the successful application of policy, it would seem important to rely on true specification pricing rather than on unit value measures, particularly in the case of imports. These general principles for defining data requirements would remain valid in a more detailed application of stabilization policy based on

terms of trade between individual primary commodities and manufactures in general. In practice, as in the UNSO/UNCTAD work, significant compromises might be temporarily imposed by data limitations.

#### I. Analysis of price levels

30. A widespread requirement exists within the international community for comparative information on national prices in absolute terms. This information is needed, inter alia, to supplement temporal comparisons of price change, to establish purchasing power parities independently of exchange rates and to provide for the development of estimates of product and expenditure in terms of comparable values. It has been reflected in the work of ECIEL and ECLA, where the emphasis has been on price levels and patterns in Latin America, and in the work of EEC and ICP, where the emphasis has been largely on the development of comparative estimates of real product and expenditure.

31. The dimensions of this international requirement have not been fully defined and would seem to call for more intensive study. In ICP terms, the requirement for price data currently extends to all sectors of final expenditure and on that basis alone implies the creation and maintenance of large arrays of individual prices. The extension of such comparisons to product by sector of activity would increase the size of the data base very significantly. Current ICP requirements and approaches to data collection are outlined in a separate paper before the meeting.

32. A related administrative requirement of the international agencies which may have potential as a source of data for analysis and policy-making is the requirement for national (capital city) consumer price data for use in determining appropriate levels for the salaries and allowances of agency officials. At present this work is largely undertaken independently of the substantive activities in statistics of the agencies concerned.

## II. INTERNATIONAL ACTION TO MEET REQUIREMENTS

33. Taking account of the various requirements for price data of the kinds described above, an international price statistics programme has been drafted by the United Nations Statistical Office for consideration by the agencies forming part of the international statistical system. The programme is defined in terms of a hierarchy of activities grouped into eight sub-programme structures within a national accounting framework. The elementary activity recognized is the development and maintenance of individual data files and these are grouped for organizational purposes to form sub-programme sector elements and sub-programme sectors.

34. The basic sub-programmes relate to commodities, activities and objects of final expenditure, respectively, following the concepts and classifications of the SNA. These are supplemented by a sub-programme on productivity and unit costs, straddling two adjacent areas of economic statistics, and by an ancillary sub-programme relating to exchange rates, purchasing power parities and relative price levels. The complete sub-programme structure is as follows:

- A. Spot market prices of basic commodities in international trade
- B. Export and import prices (transactions basis)
- C. Commodity prices (domestic supply)
- D. Output and input price indexes (activity basis)
- E. Primary input prices (activity basis)
- F. Productivity and unit costs (activity basis)
- G. Final expenditure on gross domestic product (by object)
- H. Exchange rates, purchasing power parities and relative price levels

35. Proposals for the organization and development of this programme have now been approved by the ACC Sub-Committee on Statistical Activities, the co-ordinating body for international statistical work. The implementation of the programme in a co-ordinated manner will be the general responsibility of the United Nations Statistical Office and will be undertaken as resources for the work become available throughout the international statistical system.