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The Development of an Integrated and Co-ordinated Approach
to
National Price Statistics Work

(Working Paper prepared by the United Nations Statistical Office)

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INTRODUCTION

1. The purpose of this paper is to give a brief outline of the work of the United Nations Statistical Office on the development of an integrated and co-ordinated approach to the compilation of national price statistics. Sections I and II of the paper look broadly at the concept of an integrated and co-ordinated approach and its application to the field of price statistics. Some of the main conceptual issues in this work and the manner in which they have been resolved within the SNA framework are taken up in Section III. The paper concludes with an indication of the further work envisaged by UNSO in promoting the general objective.

I. GENERAL CHARACTER OF AN INTEGRATED AND CO-ORDINATED APPROACH

2. The product of an "integrated and co-ordinated" approach has been defined as a system of "inter-related, accessible statistics which conform to uniform definitions, classifications, time periods and quality standards". In this context, "integration" can be looked upon as the articulation of the substantive content of the component sub-systems through the application of a common conceptual framework; "co-ordination" as the balanced development and management of these sub-systems to meet the over-all objectives of the system as effectively as efficiently as possible.

3. The advantages of an integrated and co-ordinated approach are shared by both users and producers. For users, the explicitly-defined inter-relationships of the data make possible more effective analysis and, in combination with computer technology, enlarge very significantly the scope and diversity of the applications of the data. For producers, in addition to the economies achieved by the elimination of overlapping and inconsistent activities, a new perspective on sub-system development can be attained and new possibilities for productive collaboration revealed.

4. The prerequisite for integration of this kind is the existence of an over-all conceptual framework within which sub-system concepts and classifications can be fitted and inter-related. In practice, the conceptual frameworks found in statistical work are rarely specified in sufficient detail and much of the

integration effort must be devoted to elaborating these frameworks and ensuring that the empirical correlates of the individual sub-systems meet the standards prescribed for the system as a whole.

5. Similarly, an essential requirement for co-ordination is the existence of over-all plans and machinery for the management of the system and for the development and maintenance of methods of data collection, compilation, evaluation and dissemination which contribute to the optimum functioning of the system as a whole. In the preparation and implementation of these plans, care has to be taken to see that the benefits of existing organizational arrangements are identified and, as far as possible, preserved.

II. APPLICATION OF CONCEPT TO PRICE STATISTICS WORK

6. The concept of an integrated and co-ordinated approach is widely applicable to price statistics work. Official work in this field has frequently been pursued in a fragmented and pragmatic manner with different agencies independently active in different areas. Weak substantive relationships have persisted between these activities, particularly between work on consumer prices and wholesale prices and between these areas and other elements of the over-all effort.

7. The idea of establishing a comprehensive and unified programme of work in this field has been slow to develop. Its origin lies largely in the evolving requirements for the deflation of national product and expenditure estimates as national accounting work expanded and interest in the measurement of real flows increased. While these requirements were initially met by the synthesis and adaptation of existing data, however imperfect they were for the purpose, it was inevitable that attention should turn to the possibilities of rationalizing the price statistics effort to meet such demands more adequately and more directly.

8. The elaboration of this link has been accelerated by the introduction of generalized inter-industry accounting. In the earlier national accounting systems, there was normally no explicit provision for the recording and valuation of the complex of inter-industry transactions. In the newer systems, the comprehensive identification of commodity flows within the economy in terms of a sources and uses relationship is an integral part of the reporting framework. As

an important example of such a system, the SNA illustrates the kind of framework that is now applied to the integration of price statistics work. Its special significance for the present purpose lies not only in its status as an international standard for this kind of integration but also in the priorities it indirectly establishes for price data compilation in the national accounting context.

9. While the SNA provides a comprehensive and well-articulated basis for an integrated approach to price statistics work, some important problems of application remain. These include the problems of (i) interpreting the SNA recommendations in more specific contexts and reducing them to manageable proportions and (ii) implementing these recommendations in a balanced manner, taking account of the many special needs for price data which normally exist. The next two sections deal with some aspects of the first problems. The second problem is the subject of a separate paper.

III. THE SNA AS AN INTEGRATING FRAMEWORK

10. The use of commodity balances as the elementary accounts of the SNA strengthens the claim of generalized commodity pricing to be the focus of a comprehensive price reporting system in the market economies. Appropriate aggregations lead to the pricing of sector output, input and value added and also to the pricing of final expenditure flows by object or purpose of expenditure. Distinctions can be made as necessary between sources and uses showing divergent price behaviour and exports and imports can be brought within the general context. A flexible basis is provided for accommodating the scope of the pricing work to the resources available.

11. The selection of the price concept is an important problem in establishing this part of an integrated system. In principle, an attempt might be made to price commodity flows systematically in terms of the options recognized and defined in the SNA. In practice, this would normally be too costly and primary emphasis in the compilation of the commodity balances of the SNA is given to a valuation in terms of "producers' values". At the same time, provision is made for the transformation of this valuation as necessary through the recording of

net commodity taxes and trade and transport margins at appropriate levels of aggregation. A hierarchical approach of this kind can be readily applied to the compilation of the price indexes of an integrated system.

12. The aggregation of the elementary commodity price series gives rise to some problems which are not explicitly dealt within the SNA. At the more detailed levels occurring in practice, the weighting of individual price relatives by the value of gross output represented will give satisfactory results for most purposes. At higher levels of aggregation, however, the significance of such indexes is affected by the implicit duplication incidental to the use of such weights. At these levels, a non-duplicative index can be formed by weighting the price relatives by the value of output transferred to other sectors, that is, the value of the "net sector output" of the commodities represented.

13. This type of problem can also be resolved by combining the price relatives on an activity rather than a commodity basis. In contrast with the previous approach, the indexes in this case cover price changes in the secondary products of the activity represented while excluding price changes in characteristic products of the activity produced elsewhere in the economy. Higher level aggregates would again be weighted in terms of the "net sector output" concept, derived in this case on a straightforward activity basis.

14. A major contribution to the concept and application of an integrated approach to price statistics work is made by the harmonization of classifications emphasized in national accounting. In the SNA, the basic classification of real flows is an activity-related classification of commodities and all other classifications of the commodity flows of the system can in principle be transformed into this standard. The principle extends both to the structuring of exports and imports and to the various categorizations proposed for final expenditure. The application of these inter-relationships, once they have been fully articulated for working purposes, will present clear advantages for the organization of the basic price data as well as for the analytical and other uses made of the derived indexes.

IV. NATURE OF FURTHER WORK ENVISAGED

15. The further development and promotion by UNSO of the concept of an integrated and co-ordinated approach to national price statistics work is taking place on the basis of the SNA framework and the guidelines in M/59. It currently includes the preparation of manuals on the practical aspects of work on (i) producer prices, (ii) export and import prices, and (iii) consumer prices. It will later extend to the preparation of similar manuals on other important areas of price statistics. An indirect contribution to the general objective is being made through the development of an inter-agency programme of work covering all aspects of the compilation and dissemination of international price statistics.
16. Requirements for productivity measurement and analysis constitute an important part of price statistics work and need further elaboration within the present framework. An essential condition for progress in this area, however, is the establishment of an SNA-linked methodology which will resolve major issues in the measurement of factor inputs and production for this purpose. Such a methodology can be expected to give rise to needs for price data going beyond those considered in the guidelines of M/59.
17. A second area requiring further development is that of spot market prices of commodities. Particularly in the case of raw materials and semi-manufactures, these spot prices supplement the transaction prices recorded within the national accounting framework as major parameters of economic decision-making and as sensitive measures of demand pressures and supply constraints. While they can be linked nominally into the general framework, they give rise to special conceptual problems, especially in connexion with their aggregation.
18. As indicated earlier, an effort has been made to apply the concept of an integrated and co-ordinated approach to the compilation and dissemination of international price data by the international statistical agencies. This effort, which has been promoted and encouraged by the ACC Sub-Committee on Statistical Activities as part of its work on inter-agency co-ordination, is broader in scope than the programme for national work outlined in M/59 and covers the two peripheral areas mentioned above. Some of the major objectives are discussed in document SPS/79/C before the meeting.