

Report on the 2nd Expert Group Meetings
on the Review of the **SNA**

Price and Quantity Comparisons

Luxembourg, November 10-14, 1986

(1) The meeting began on Monday, November 10 in the Eurostat Building. It was opened by *Mr. Ronchiette*, the director-general of Eurostat, who welcomed the participants and stressed the commitment of Eurostat to the process of the **SNA** review.

(2) The meeting **appointed** Andre Vanoli as chairman **and began** with a consideration of the topic of the deflation of commodity flows. Derek Blades introduced three papers, "Some Key Issues in Compiling Price and Quantity Measures" prepared by OECD, "Price and Quantity Indices of Services: Some General Considerations" prepared by **UNSO** and "Difficult Services in Space Comparisons" prepared by Eurostat. In his introduction, Derek stressed that there were five issues for consideration:

- 1) resource cost versus user value;
- 2) how to adjust for quality changes, including the discussion of unique and non-unique products;
- 3) the introduction of new products;
- 4) how to treat the question of different prices being charged for the same item; and
- 5) the question of services generally, especially non-market services.

Resource Cost Versus User Value

(3) In introducing the first issue, Derek suggested the meeting consider how to quantify quality change. If resource cost was the basis for valuation, one then had "value" for production that was not demanded. If one used the user value approach, one had to ask what sort of users, only the well-informed or all users? What about features enforced by government legislation, for example, seatbelts in cars and anti-pollution measures. Were these increases in user value or only in resource cost?

(4) The consideration of resource cost as the appropriate basis for price valuation is relatively recent and originated mainly in work done in the **USA** and, in particular, by Jack Triplet. He had commented on the papers before the meeting and his comments were relayed by Carol Carson. Triplet's view was that the use of input and output prices were pervasive in practice but ignored theoretically. The output of one industry is the input into another and from an accounting point of view, identity between the two should be preserved. Output is a result of the production process and is fundamental to national accounting; it is the numerator of productivity ratios. References to user value seem like a re-introduction of a welfare concept. It is recognized that the present measures of economic activity are not welfare concepts. If one looks therefore at the resource cost/user value discussion as a disguised form of the controversy over production/welfare measurement of national accounts, it was clear that resource costs should be the preferred alternative since there is universal agreement that GDP is not a welfare measure.

(5) In discussion, it became clear that the expression "user value" was

part of the source of the problem since this implied a subjective valuation of the product. There was universal agreement that this was not what was intended; the value of a product to the consumer is the price that the consumer pays and it does not in fact carry a welfare connotation. This clarification then makes it clear that in many cases, resource cost and user value produce exactly the same valuation of a product. This is not to say that the measurement of the product will always be achieved in the same way; for many products, it is only practical to measure the resource inputs rather than the end product. Construction activities, especially of roads, were cited as the most obvious example. Nevertheless this difference in measurement practices should not confuse the principle of measuring the output in terms of the price paid for that output.

Quality Changes

(6) The first item for clarification is distinction of when similar items are exactly the same and when different. Roads built in northern Canada to withstand the heavy weather conditions are obviously different from roads built for light traffic in equable conditions. Identical products sold in different outlets and therefore attracting distribution margins should be regarded as different products since they are each a combination of the distribution and other costs. In all these instances, the identity between user cost and resource value holds. It was recognized that the problem of goods being produced but not sold is normally covered as part of the distribution process. Distribution costs cover the loss incurred by a firm in not selling their complete stock.

(7) Theoretically, if two goods of the same function are on sale at the

same time, the ratio of their prices is a direct quantity ratio, it is not necessary to have a performance measurement per se. This theoretical statement was disputed on a number of practical grounds. Firstly, that the introduction of a new product may be the occasion for taking excess profit for a period of time. Also, that prices may co-exist for different products where the newer is better but also cheaper and this may reflect imperfections in the market. It was recognized that such conditions would give rise to measurement problems in practice.

(8) Two examples were quoted of where it is frequent practice to obtain more product for less cost. These are the provision of electronic goods and airfares. The existence of these phenomenon reveal two possible causes; one is lack of awareness on the part of the purchasers that they could be purchasing more for less. The second is the decision on the part of the sellers to alter their profit margin in the short run because of expected long-term advantage.

(9) There was then discussion of the release of a modified product on the market where the price of the new version seemed disproportionate to the price of the old. It was agreed that the appropriate theoretical approach would be to consider the cost of producing each with the same technology and an appropriate mark-up and find out what price the producer would put the modified product on the market for relative to the old one. If there is a distinction between this price and the price actually being charged, this represents something which might be called super-profit or quasi-rent. It would be assumed that this could only be non-zero for a short period while disequilibrium persists. Once it is eliminated, user value will again equal resource cost. If this element does not decline to zero very quickly, one

must assume that the basic valuation of resource cost has underestimated some of the costs, perhaps those of resource and development.

(10) Resolution of the appropriate treatment for the measurement of product and discussion of the cases where differences between user value and resource cost may occur, at current prices is fundamental to all intertemporal and interspatial comparisons of economic activity. Repeatedly, emphasis was laid on the need to preserve symmetry between differences over time and over space in so far as this was practical. Considerations which had arisen in the ICP work in interspatial comparison could cast light on the procedures that should be adopted theoretically for intertemporal comparisons as had already been made clear in examples cited to support the foregoing discussion. In the light of the clearer enunciation of the concept of user value described above, this was agreed to be the correct basis for valuing output in current, constant and international prices.

Adjusting for Quality Change: Unique Products

(10) It is widely recognized that there are problems in identifying the volume and price element of products such as buildings, construction works, ships, and heavy machinery. In practice, a number of methods have been used to deal with these. These range from very rudimentary input measures, for example, hours worked, number of bricks or steel plates used, etc. to a more detailed method where specifications are established for a complete product whether actual or hypothetical and quotations are derived for this product at various times. It was generally recognized that though difficult in practice to establish, this latter should be preferred as a solution and that very rudimentary input measures should be rejected if at all possible. An

intermediate method which was also thought to be acceptable was to obtain quotations for very well-specified components such as a linear measure of foundations dug or roofing installed, etc.

Non-unique products

(11) These can be divided into two categories: those which can be directly related to goods existing previously in the market and those which are truly new goods. As agreed before, it was recognized that where products serving the same function can be compared, the ratio of the prices indicates the ratio of the quantities and it is not necessary to have a performance measure per se. By definition, therefore, one can restrict the category of new goods to those where comparison with earlier existing products cannot be made. For deriving estimates at constant prices therefore, the question is when and how to introduce new goods into the compilation of price indices.

Introduction of New Goods

(12) It is recognized that new goods are included in current price estimates as soon as they appear on the market place. Even if they are not explicitly considered in deriving price estimates, the value of the new products will be deflated assuming that the prices for the goods that are covered in the deflation process are appropriate for the new goods also. This therefore, argues in favor of incorporating prices for new goods in an index as soon as possible. This represents a change from the existing advice which suggests on the whole that new products should only be introduced at a major rebasing which for many countries takes place approximately every five years. A compromise solution was suggested that parallels the approach

adopted for ICP. This is to suggest that a hierarchy of weights be introduced and at the higher levels these should remain constant from one rebasing to the next but at a lower level, variations could be introduced at any time which would allow for the incorporation of new items. These variations should be allowed in response to conditions and where important new products appear on the market these should be incorporated in the lower level weights as soon as practical.

(13) A particular practical problem was raised that is manifest in many developing countries. Here the problem is not so much introducing new products as the re-introduction of old products which have been unavailable for some time. This may be true for ordinary consumer goods where there are shortages and is particularly acute in the case of investment goods where purchases are very intermittent. In these cases the goods are not "new" from a technological point of view but are new in the sense used in this discussion in that there is no comparable product with which they can be prepared in immediately preceding time periods. It was recognized that this is an acute problem in such countries and special advice should be given on how to treat this problem in the handbook associated with price and quantity comparisons.

Different Prices for the Same Product

(14) On Tuesday, 11 November, discussion reverted to a more detailed discussion of the problems raised by the same good being sold at different prices. Derek Blades reviewed the different conditions under which different prices may prevail. These are the results of:

- 1) bargaining;
- 2) seasonal variations;

- 3) regional variations;
- 4) the existence of parallel markets; and
- 5) different prices being charged to different kinds of customers.

The advice existing in the present SNA is in the case of 1) to take a larger sample and obtain more estimates of prices prevailing. For conditions 2) to 5) the recommendation is to treat different prices as different goods. In the case of the last, this gives anomalous effects when there are movements between the classes of customers.

(15) It was agreed that where prices vary simply because of the different types of outlet, the goods should be treated as different products. This is because the consumer is in fact buying a joint product part of which is a distribution margin and the customer is choosing to buy more or less of this depending on the outlet of choice.

(16) It was also agreed that goods whose prices varied across seasons or across regions should also be treated as different products. It was recognized that such differences were inexact; how many seasons would one normally treat in a year? One could think of a two season choice, that a good was in season or out of season, or one could have variations that vary by the month or even more frequently. In some countries the seasonal variations would not be the same in each region, which would add to the complexity of dealing with regional variations.

(17) It was recognized that the implications of both the above decisions (that are in accordance with current practice) lead to rather specialized interpretations of the resulting volume measure and will not necessarily accord with a volume measure derived from purely physical characteristics. As

national accountants, we may be well aware of this distinction but can we present this information in a way that is unambiguous and clear to other users of the data to avoid misconceptions and misinterpretations?

(18) The question was raised but not fully answered as to whether in addition to a regular volume index as presently derived in national accounts this should be decomposed into an index showing physical change separately from the effect of changing market shares.

Black or Parallel Markets

(19) The discussion then turned to a consideration of parallel or black markets. It was pointed out that black markets are usually thought of as a market where the price is significantly higher than in a controlled market but this may not always be so. For example, many examples exist of markets where taxes that should legitimately be paid are being avoided, thus leading to lower prices for the commodities in question. In the situation where government attempts to regulate prices of a commodity, but limited stocks of the commodity are available for sale at the controlled price the consumer is not able to meet his demand at that controlled price. It therefore seems inappropriate to consider this controlled price as the true price of the good. In such a circumstance, it would be appropriate to take into account prices prevailing in the black market since this is in fact the valuation at which most transactions take place. In such a circumstance however, it is not appropriate to treat the goods as being different at the different prices; they should be regarded as the same product although being sold in controlled and black markets simultaneously. The principle of treating products at different prices as different products is because of the element of choice

available to the consumer; in the circumstance where rationing means that the amount of the product on sale at the controlled price is strictly limited, this choice is not then available to the consumer. This Lack of choice dictates that the good should be treated as a single product rather than separate products.

Different Prices for Different Types of Consumers

(20) As an extension, the discussion turned to considering the fifth of the points raised by Derek Blades at the start of the morning, how to treat different prices charged to different kinds of consumers. Many examples are **available**, for example the provision of electricity at one rate to private consumers and another to industrial consumers or the provision of rail fares at reduced rates to elderly people or charging different rates for education for national and foreign students. The present practice in most countries is that if the prices do not change, no overall price change is recorded even if there is a change between the classes of consumers. This implies, for example, that if railway revenue remains the same, the resultant volume measure remains the same even though there may have been a change to people buying the cheaper tickets and therefore more passenger journeys *may* have been undertaken. There was considerable sympathy for the view that this practice should be changed and that changes in the composition of the market should be reflected in a change to the implied price and therefore result in volume changes. Marion Libreros quoted a concrete example where policymakers had already confronted this situation. In Colombia the government legislated to get goods out into the open market with lower margins. If these had been shown as still retaining the higher price and therefore a lower volume, the results would be counter-intuitive and antagonize the government who would

believe that the statistics were not reflecting reality.

(21) Another example from Colombia raised a further consideration. There the government legislates that different prices should be charged for water for different consumers in Bogota although the product and its method of delivery is exactly the same. This could be treated as a series of implicit taxes and subsidies and the question is then raised about whether these should be shown explicitly as such within GDP.

(22) There was extensive discussion on how the treatment proposed above carried over to the external sector. If the export price and domestic price for a commodity were different, should they be treated as the same or different goods? On the whole, the view was that this was a "no choice" case and that there should be no product differentiation. Less unanimous agreement concerned the treatment of imports; should imports from different countries, therefore with different prices, be treated as separate goods or the same goods? There was fairly general concensus that this was not necessary but this conclusion paid considerable attention to the practical difficulties of implementation.

Services

(23) Although most of the discussion described above was couched in terms of goods, it was recognized that the problem of measuring services and decomposing services into prices and quantities was even greater and less tractable. Equally, given the role of services in total GDP, it is clear that problems encountered in this area may be much more significant than some of those treated above in relation to goods. The fact that services cannot be retraded means that there is no limit to the price discrimination that can be

exercised in their sale and the market cannot adjust to an equilibrium price as it can do for example in the case of goods through, if necessary, black market arrangements. Problems of quality change and uniqueness are even more pervasive in the area of services than for goods. Further, there are subjective elements in the quality of a service provided, for example, in the arts, and some services may be to prevent something happening rather than to provide an immediate deliverable (e.g. a fire service). While recognizing these problems, it was felt more appropriate to go on to discuss particular problems associated with non-market services. It was noted, however, that serious problems remain about the decomposition about imputed bank service charges into price and volume components **and** it was stressed that this is a topic for urgent consideration at one of the subsequent expert group meetings either on input-output or on financial flows.

(24) Recommendations had been made as long ago as 1975 that non-market services should be measured on an output basis and output measures should be used to separate a volume component. Despite this recommendation, little progress has been made since and it is considered important that both the handbook and new SNA manual give adequate guidance on this area.

(25) Notwithstanding the theoretical superiority of output measures, it must be recognized that given the intractability of some service areas, good input measures may be superior to crude output measures. But the pragmatism underlying this must also be made quite clear.

(26) There was extensive discussion of the impact of labor productivity as it affected measurement of service output. For example, different countries have different assumptions about productivity increases in public administration; unless these assumptions are made clear, the published data

are prone to misinterpretation and international comparability is invalidated. Again, specific guidance needs to be given about how and whether increasing **productivity** may be built into the data as compiled. It was argued that blanket measures of medical treatments or pupil hours is as crude a measure of output as number of cars and that not allowing for quality change in services is as indefensible as not allowing for it in goods. The hidden fall in productivity in education was cited as an indictment of both statisticians and politicians. It is recognized that improved measures of service activity is now urgently required, especially by policymakers, but at the same time extra resources are not being provided in order to accomplish this.

(27) A number of suggestions were made for improving measurement of the service areas. One might be to link labor productivity with capital utilization in the services concerned. Distinction should be made between individualized and collective public services and acknowledgement should be paid in the new Blue Book to the role of institutional differences between countries.

(28) The new SNA should allow that some individualized non-market services may in fact be intermediate consumption although most of them will remain final consumption. The present recommendation is that all must be treated as final consumption.

(29) Again, the special case of international trade in non-factor services was mentioned; this is an issue that will be discussed at the next expert group meeting on the external sector.

Hyperinflation

(30) This topic was introduced by Anne Harrison. This is a topic that has not been adequately treated in any of the existing recommendations to national accountants and, in view of its continuing importance in at least some countries, this omission should be rectified in the new Blue Book and associated handbooks. It is typically assumed that in periods of rapid inflation relative prices change much more quickly than they do in periods of more normal inflation; that is to say, hyperinflation is not simply an acceleration of the normal inflation process but has characteristics that are significantly different. It is pointed out however that little evidence is available to either support or contradict this assumption and this is an oversight. Unless the exact conditions of hyperinflation can be identified, it is difficult to make adequate recommendations for measurement of economic behavior in those conditions.

(31) One area where it is clear that special treatment needs to be given in periods of very rapid inflation is in relation to production processes that are extended in time. The classic example is agriculture, but other activities would also fall into the category where the cost of the inputs are incurred at a much lower level of inflation than the ultimate production is sold.

(32) The difficulty of establishing current price data in periods of hyperinflation was recognized. It was felt that it was still necessary to produce what appeared to be normal annual national accounts for use in conjunction with monetary and financial variables, but it was recognized that the interpretation of such current price data in conventional national accounting terms was extremely difficult, if not impossible.

(33) It was also recognized that in contrast to usual recommendations, it

might be appropriate in periods of hyperinflation, to think about compiling national accounts in constant prices first and then inflating to current prices rather than the more normal reverse procedure.

(34) It was noted that the terminology to be used in comparing movements in output and prices from year to year should be improved generally but was particularly acute in periods of hyperinflation. In particular, the distinction between price index and implicit price deflator was important **as** was the distinction between a compilation year and a comparison year for price indices.

(35) The parallel between hyperinflation over a relatively short period of time and more normal inflation over a much longer period of time was noted. It was pointed out that very few countries now (with the possible exception of the USA) compile very long runs of figures on what is truly a single price base; almost all other countries use some form of chain linking though the frequency with which the links are established may alter from country to country. This topic was taken up in greater detail later in the meeting.

Deflation of Non-Commodity Flows

(36) On Wednesday, 12 November, the discussion turned to consideration of deflation of non-commodity flows. There were three papers before the meeting: "Real National and Household Income" prepared by OECD, "Treatment of the Terms of Trade Effect in Measuring Economic Growth" and "Growth Indices Adjusted for Terms of Trade Effect for 79 Countries: 72-79" both of these last prepared by the U.N. Statistics Office. The papers were introduced by Lazlo Drechsler and Brian Newson.

(37) It was generally recognized that there was increasing interest in

having terms of trade effects explicitly calculated and that net factor income from abroad, net current transfers from abroad, and depreciation had also to be deflated either implicitly or explicitly in order to reach a net national disposable income concept. It was also apparent that a household net disposable income figure would be advantageous. In reaching at the household figure, it would also be necessary to deflate components such as compensation of employees, social benefits, and interest. The present SNA avoids these issues; but there has been increasing concern about the desirability of such **data** for policy analysis and it was agreed that the new Blue Book should contain these concepts and recommendations on how to calculate them. While all participants agreed as to the desirability of these concepts, there was a marked division as to how they should be calculated. This division was not resolved in the course of the meeting.

(38) Basically, OECD and Eurostat favor the calculation of net national disposable income using the net domestic expenditure deflator to deflate all terms other than gross domestic product in total. As and when a terms of trade effect figure was necessary, this could be calculated separately using a deflator appropriate to that concept. There was some discussion as to whether this should be an import deflator only or some combination of an import and export deflator. However the main point at issue is that the OECD/Eurostat approach would treat the derivation of terms of trade effect and net national disposable income as two separate calculations and ignore the connection between them.

(39) Other participants felt that this was unacceptable. Even if it were not shown explicitly in tables produced by statistical offices, users would be able to derive an implied deflator for the residual items (net factor income,

net current transfers and depreciation). This residual implied deflator would have no theoretical explanation whatsoever and these participants felt that the **OECD/Eurostat** position that this was an indefensible calculation could not be avoided in practice.

(40) The main difference turned round the desirability of preserving additivity among the conventional national accounting identities at constant prices. It can and has been argued that these identities break down in constant prices because of internal inconsistencies in the deflators appropriate to separate concepts. However, in practice, there was widespread recognition that for the point of view of ease of communication of what the data means to users, preserving the identities is a highly desirable good. The view was put forward forcibly that adopting an unrealistically purist attitude on such issues was likely to bring the practice of national accounting into disrepute rather than to enhance the reputability and integrity of the system to users.

(41) Although there was no overall resolution of the problem, significant progress was made on a number of subsidiary points. It was agreed that domestic expenditure was to be preferred to gross domestic product as a general deflator. It was further recognized that in practice, gross domestic expenditure should probably be used in preference to net domestic expenditure; this is because although net domestic expenditure might be felt to be theoretically superior, the practical problems of estimating capital consumption at both current and constant prices are such that the gross figure is likely to be more reliable (in many cases it may not in fact be different since frequently if capital consumption is deflated at all, it may be deflated by the gross domestic expenditure deflator).

(42) There was some considerable discussion about what implied deflator would be appropriate for calculating the terms of trade effect. The case for using the import deflator only, as practiced in a number of countries, especially developing countries, was based on the belief that exports typically are used to fund imports and that the amount of imports is determined by exports earnings; when export prices move differently from imports, as frequently happens **in** the case of developing countries dependent on primary commodities, this in turn is a major limitation on imports. However, in more recent years, where developing countries have been constrained to spend a very large proportion of their export earnings on debt service, this argument for using the import deflator is less forceful. It was suggested that some research could be carried out exploring the effects of using import deflators, other trade deflators and gross domestic expenditure in order to determine more closely the magnitude of difference involved in applying each of these alternative deflators, all of which could be defended from one or another theoretical point of view.

(43) There was discussion about how far it is desirable and possible to distribute the terms of trade effect across sectors. This would be easier if the domestic expenditure deflator were in general use but this was not felt to be a compelling reason for accepting this deflator by those who were in favor of being able to separate out the various items such as net current transfers involved in moving from GDP to national disposable income.

(44) Considerable disquiet was expressed about the terminology in current use; it was generally agreed that income terms cannot really be said to exist at constant prices." What is frequently referred to as "real domestic income" is properly "domestic product adjusted for the terms of trade

effect." Although no final decision on the ultimate terminology to be used was determined, it was agreed that consideration needs to be given to finding appropriate terminology which will remove as much ambiguity as possible in the concepts being endorsed in the new Blue Book. Along these lines it was also queried whether "terms of trade effect" was the correct expression or whether one should talk about the "terms of external transactions effect."

(45) Deflation of non-commodity flows is a major important area where no final recommendation was endorsed by the whole of the expert group. Opinions remained divided as to what the appropriate treatment should be. The process for reaching agreement remains somewhat unclear but will clearly have to be addressed in at least one subsequent expert group meeting.

Inflation Accounting

(46) On Thursday, the 13th of November, the discussion turned to inflation accounting. Brian Newson introduced a number of papers, one entitled "Inflation Accounting" prepared by Eurostat, one from OECD, "A Report on the Meeting of National Accounts Experts in May 1984 on Inflation Accounting" and another OECD paper on a special meeting of national accountants concerned with profits and inflation accounting dated April 1981. In his introduction, Brian suggested that the introduction of holding gains and losses on incomes and savings would be a major innovation in the new SNA. Their introduction would also have an effect on enterprise accounting and the assessment of government deficits. In Europe in the 1970's, household savings ratios were counter-intuitive until adjustments were made for holding gains and losses. In order to undertake these calculations, it is necessary to have balance sheet information which may not always exist. Inflation accounting may be an extra

layer of analysis and make the presentation of the accounts more remote from the observed transactions; this raises the question then of whether it should be done at all. A compromise solution would be to leave the existing income and savings aggregates as they are but ensure that subsidiary information was included in reconciliation accounts so that interested users could make the alternative calculations if they wished. -There were therefore a number of questions that needed to be answered:

- 1) Should the new Blue Book state what income concept is adopted and how this relates to Hicksian income?
- 2) Should inflation adjusted measures of income and savings for domestic sectors be included in the main income and outlay accounts of the revised **SNA** or in supplementary tables?
- 3) Should holding gains and losses on foreign debt be included in real national income?
- 4) Would recording real interest in the income and outlay account be a useful and sufficient step towards removing biases?
- 5) If not in the main accounts, should the revised SNA merely provide for enough data in the reconciliation account to allow knowledgeable analysts to produce their own adjusted measures or should the SNA make a choice between alternatives?
- 6) Wherever holding gains and losses are shown, what numeraire should be used?
- 7) On which group of assets should holding gains and losses be shown?
- 8) What advice can be offered to countries which have a high rate of inflation but no balance sheet and reconciliation accounts statistics?

(47) The discussion first turned to the consideration of the Hicksian definition of income. Although it was very popular to refer to this and contrast it with the lack of a specific definition of income in the SNA, it was felt on the whole that this comparison was not very helpful. In the words of Peter Hill: "What you want, you can't measure, and what you can measure is not what you want." It was also pointed out that whereas capital transfers are not regarded as income in the **SNA**, realized holding gains would constitute part of Hicksian income. However, measurement of the holding gains presupposes that all the theoretical problems of definition and measurement had been resolved. It was agreed that despite the intellectual attraction of the Hicksian income concept, the present **SNA** definitions of income and savings were operational, transaction-based concepts that in practice worked well within the constraints of practical measurement.

(48) That said, there was still considerable interest in the concept of inflation accounting and establishing of holding gains and losses. It was the firm opinion of the expert group that these should be described in the new SNA and countries should be encouraged to establish balance sheets in order to derive these concepts. It was pointed out that whereas initially the interest in inflation accounting had been assumed to affect the allocation of savings between households and businesses, it was also a matter of considerable importance for government and the external account. This is particularly acute in developing countries which may not only have rapid rates of inflation eroding their reserves position but also marked changes in exchange rates.

(49) Given the practical difficulties in establishing balance sheets across the whole of the economy, it was agreed that it would be desirable to

expect calculations connected with inflation accounting to be kept separate from the conventional accounting concepts, as in the present **SNA**. But there is a need to have a much clearer exposition of what balance sheets are and why they are important than is the case in the present Blue Book.

Real Interest

(50) The discussion then turned to a consideration of the concept of real interest. Again, this was a concept that had much popular appeal but there were great difficulties in establishing what this meant in quantified terms. The conference held at Bergamo unanimously opposed the introduction of this concept for a number of reasons. Partly, because of the non-intuitive applications; for example, real interest applies also to non-interest bearing assets. Further, the calculations can only be calculated ex post, though the economists who express such interest in real interest are in practice looking for an ex ante "expected" real interest rate. The problems in Latin America were referred to where there is confusion between nominal interest rates and apparent real interest rates. This is a particular problem where indexation is prevalent; it also leads to problems of interpretation of income and outlay accounts where dividends and rents are shown in "real" terms but interest is only shown in nominal terms. If it were possible to separate interest into a real and non-real component, this would lead to much more consistent presentation.

(51) Because of all the recognized problems in actually quantifying real interest, it was recommended that as much information as possible should be provided but calculations of real interest should be shown as memorandum items only and not an integral part of the accounts. It was recognized that

although real interest is not the difference between holding gains and nominal interest, this may in many cases be a good proxy.

(52) While balance sheets are necessary for the calculation of holding gains and losses, they are not necessarily sufficient. One should be dealing with gross rather than net flows and this distinction can be very important in periods of high inflation. Further, guidance needs to be given on what nominal interest is. In some countries, there are adjustment factors which have other names but still represent interest in economic terms.

Numeraires

(53) There was less unanimity on the question of what deflators should be used in order to calculate holding gains and losses. The alternative is basically between general and specific deflators. Many participants thought that the deflators should be chosen appropriate to the analysis being undertaken. For each asset and liability, one could apply either a general price indicator or a specific price indicator; for example, for debt, one could use export prices, for housing, one could take a housing price. One could also argue that the general indicator may not be universal; for example, a general indicator for housing might be the consumers' expenditure deflator.

(54) There was general agreement that the best single general deflator would be the domestic expenditure deflator as agreed earlier in the discussion of the calculation of national income. However, it was pointed out that for national income calculations, the appropriate index should be a period average, whereas for inflation accounting, one needed to take the difference in the deflator between the beginning and end of a period. In general, most participants felt that it was desirable to retain the possibility of using

asset-specific or sector-specific deflators as **appropriate** for particular analyses.

Asset Coverage

(55) Another area where guidance was needed concerns which assets should have holding gains and losses calculated for them. Should this include just fixed monetary assets, all tangible assets, bills and bonds at both face and current market value, and index linked securities? It was generally agreed that it would be helpful to distinguish holding gains and losses from monetary assets from non-monetary assets. The view was expressed that to calculate these gains and losses for monetary assets only could be more distorting than making no adjustment at all. However, on the other hand, it was felt that it would be helpful to encourage the calculation of holding gains and losses wherever this was appropriate and this would clearly be easier in the case of monetary assets than not since financial information is more readily available than the balance sheet information that would be necessary for non-monetary asset calculations. The question was raised about how assets denominated in foreign currency should be treated since these were not fixed in local currency monetary terms. This raised again the need for more theoretical consideration to the implications for inflation accounting on the external account.

Index Numbers

(56) The meeting then turned their attention to the question of index numbers and a paper number entitled "Index Number Theory: Chain Indices and National Accounts" prepared by OECD was introduced by Peter Hill. Index number theory always assumes that prices and quantities are greater than

zero. It ignores the phenomenon of new products and quality changes when either the products or the quantity may be zero or negative. But these are practical problems that national accountants have to contend with. The use of chain indices has grown but there are a number of problems associated with them. Peter quoted a paper by Bohdan Szulc where he showed that counter-intuitive results are obtained if one goes from A to B through C which is less like A than B. There is also the problem that chain-linked indices no longer preserve additive consistency and the question therefore is is the growing use of chain indices appropriate for national accountants?

(57) The trade-off between fixed weights and chaining has all the hallmarks of a classical dilemma. It can be characterized as saying the national accountants want fixed weights and the price statisticians want chaining. Another participant drew an analogy with map-making where one could either have the distance or the area proportionate to actual measurements--but not both.

(58) There are two influences that have brought about the increased use of chaining. The first is the need to produce long runs of series where there are discontinuities in the type of products available at the beginning and end of the long time period. This problem is analogous to the problems encountered into the interspatial comparisons of the ICP and, in both, the temptation has been to go for chaining as a solution to the problem. From discussion among the experts it was clear that most countries do indeed adopt some sort of chaining to produce long runs of data. The exception is the United States where the national accounts have just been rebased using a 1982 price base for series going back to 1929 without any chain linking.

(59) If it is accepted that chaining is inevitable the question then

arises how often this should be done. Many countries chain at five yearly intervals though some of the reasons for this are pragmatic. For many countries in OECD, it is felt that the relative price differences change so slowly that five yearly chaining is sufficient. Equally, it is felt that in order to undertake chaining annually, it would be desirable to have annual input-output tables and relatively few countries produce these.

(60) A number of countries have **adopted** a rather purist approach to the problem. One example is to undertake annual chaining and simply show index numbers with one year changes; another is to allow chaining less frequently and accept the lack of **additivity** for earlier years. However, it was pointed out that while such solutions may be perfectly acceptable to statisticians, they are usually seen as being unsatisfactory to analysts and economists. In such cases, the users artificially construct long runs of series which are additive. There was a general feeling among the participants that the national accountants were in a better position to make this approximation than users who were unaware of the assumptions built into the basic data. The practice to be recommended in the new Blue Book must therefore contain a considerable pragmatic element.

(61) Marion Libreros reported on the practice adopted in Colombia in periods of high inflation. The basic calculations are performed on an annual chain but they are not published as such but rather are converted to a fixed base. Approximately 500 products are taken and they are balanced with a minimum disturbance by first chaining and then allocating the differences among the components. The move to adopt chaining absolutely was rejected because there are no international recommendations that endorse this and because the econometricians interested in model building required a fixed

base. Bohdan Szulc reported on results obtained in Canada. He compared a run of data for 20 years using 760 items; the difference between annual linking and fixed weights was 10% over the whole period. The difference between using fixed weights and five yearly chaining was 4%. A previous calculation which had only disaggregated a hundred items showed differences only of the order of 2-3%, thus highlighting the importance not only of the period over which chaining took place but the number of items that were dealt with. Andre Vanoli described the practice in France which has also been adopted in a number of Latin American countries. There, data is published in current prices, in constant base year prices using fixed weights, and in prices of the preceding year. In the case of Ecuador, for example, data for 1972 showed a 14.4% increase over the previous year in 1975 prices but only 7.5% increase at 1971 prices. For 1973, the increase over the preceding year was 25.3% in 1975 prices and 14.5% at 1972 prices.

(62) It was observed that the attitude to chaining has changed dramatically since the previous revision of the SNA when all the advice was firmly in favor of fixed weights. It was also felt that particular advice had to be given about the choice of a base year. International comparability has led in recent years to recommending years ending in zero and five but instances can be found when this results in a particularly inappropriate year which will lead to distortions when the change is made to that year and then to a succeeding year. Particular advice should be given on this in the handbook. Some further recommendations were made for incorporation in the handbook. It was particularly mentioned that attention should be paid to the benefit of having a mid-year as the base year for a long run of constant price data rather than a year at one end of the series. Further, it was felt

appropriate to separate the distinction between a base and reference year and to stress the coordination that was necessary with other international organizations, in particular the ILO recommendations on CPI rebasing. In response to questions, it was indicated that the first version of the handbook should be available in early 1988.

International Comparisons

(63) On Friday, 14 November, the discussion turned to a consideration of international comparisons. A number of papers were presented: "The International Price Comparison Project and the National Accounting System" prepared by UNSO, "Estimation Procedures for Purchasing Power Parities" prepared by Eurostat and "Relationship Between Interspatial and Intertemporal Index Numbers" prepared by the Statistical Division of ECE. It was felt that the whole evolution of price and quantity comparisons had been enhanced by the attention given in recent years to the ICP project and it was recommended that the new Blue Book should include references to the parallelism between intertemporal and interspatial comparison of prices and volumes.

(64) This was another area where full unanimity of views could not be obtained on all aspects of the problem. It was generally agreed that the lack of consistency between SNA and ICP should be reduced as far as possible. It was recognized that initiatives introduced by ICP, for example, in the reallocation of headings between household and government consumption was a reflection of institutional differences between countries which impaired the comparability of SNA data. It was generally agreed that the new SNA recommendations should aim to incorporate sufficient flexibility that it would no longer be necessary to have one definition of GDP used by national

accountants and one as the basis of the ICP work. At a lower level of detail, it was reported that OECD has a consultant working on the classification of household goods and services with the intention to produce a classification that could be used equally by ICP and SNA.

(65) It was also pointed out that the number of basic headings in ICP is usually much more detailed than that required for SNA work. This was largely in order that classifications could be made to agree at some intermediate level of the hierarchy and not all countries were expected to supply all the detail appearing in the ICP worksheets.

(66) There was a marked difference of view as to how beneficial the ICP project had been to the development of statistics in developing countries. Some participants reported the withdrawal of countries from later stages of ICP because they believed there were no local benefits derived from participating in the project. Others argued that given the priorities in the country and very limited resources, one could well imagine circumstances where other issues should take priority. For example, a case was quoted of a country where even the population census is based on a 20% sample; there are no wholesale price indices and no industrial census. In such a circumstance, it was difficult to see that ICP should take priority in statistical compilation. Some of the countries that reported favorably on the impact of ICP benefited generally from the level of technical assistance that accompanied the involvement of the international organizations and this was felt to be beneficial to those countries concerned. Because of this interaction, it was argued that the ICP should be seen as complementary to and not competitive with regular national accounts.

(67) It was recommended that the new Blue Book should include a section on

interspatial measurement. It was suggested that the term ICP should be dropped and it should be made clear that converting GDP with exchange rates does not give a volume measure. The Blue Book should explain the uses of intertemporal and interspatial comparison; the former uses only information of most concern to particular country while the latter takes account of the overlap. How important is it to compare one country with another? It could be argued that the time series for an individual country is of limited usefulness without price and quantity information that is comparable on an international basis.

(68) At the same time, the Blue Book should not go into the methodology and algebra involved in ICP and questions were asked about how it was intended the handbook should cover the ICP. In response, Lazlo Drechsler from UNSO said that one handbook cannot cover both and that two will be provided. The handbook on price and quantity comparison on an intertemporal basis should be produced by late 1988 the ICP handbook is scheduled for 1990 but there will be many cross-references between the two documents.

(69) In conclusion, it was recommended that particular problems of harmonizing classifications used in SNA and ICP should be taken up at the appropriate further expert group meetings.