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SURVEY OF NATIONAL ACCOUNTING PRACTICES

(Memorandum by the Secretary-General)

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I. INTRODUCTION

1. At its eleventh session, the Statistical Commission discussed the question of the quality of national accounts statistics. The discussion led to the suggestion that a manual should be prepared, reporting on country practices, examining priorities and making recommendations on methods of estimation that might be adopted. The Secretary-General was requested "to accord high priority to the study of methods for improving the quality of items of national accounts statistics" (E/3375, paragraph 88). The Secretary-General was also requested to report on country practices in compiling national accounts in constant prices.
2. The present document is based on material assembled for the preparation of the forthcoming Supplement to the Yearbook of National Accounts Statistics. It discusses prevailing country practices in respect of concepts of production, sectoring and transactions recorded within accounts, and reviews general statistical methodology and basic statistical sources utilized in constructing current and constant price estimates.
3. It may be useful to enumerate certain problem areas and departures from standard practice, as defined in A System of National Accounts and Supporting Tables (SNA), (Studies in Methods, Series F, No. 2, Rev.1), as follows:

Product Concepts

1. The territorial and domestic concepts of total product require further examination and elucidation.
2. Imputations for income-in-kind from consumption of own produce are difficult to evaluate. Production is understated in many countries.
3. Imputations for banking services, interest on insurance and pension funds and rent on government buildings are frequently omitted.
4. The treatment of private non-profit institutions occasionally differs from that recommended in SNA.
5. Replacement cost depreciation, as recommended in SNA, is estimated by only a few countries.
6. Inventory revaluation is often not possible, except where there is a direct estimate of the value of physical change, as in livestock and grains.

Sectoring

1. A number of countries have problems in providing standard sectoring for persons, governments and rest-of-world, since their internal accounts are quite often more detailed and different in structure and content.
2. Capital as opposed to current transfers are difficult to define and enter. Possibly as a result, no country has separate capital reconciliation accounts as recommended in SNA.

Current Price Estimates

1. Private consumption is frequently estimated as a residual, so that an independent check on product aggregates is lost.
2. Capital formation statistics are most important yet least adequately estimated, in many countries.
3. Certain conceptual and statistical problems of reconciling industry value added and income shares originating by industry have not been solved.
4. Certain of the service industries are not well covered in general.

Constant Price Estimates

1. Real product estimates are available in many countries on both the industry and the expenditure bases of classification, and provide useful cross-checks on each other. Nevertheless, there are numerous details of reconciliation to be considered.
2. Constant productivity assumptions are embedded in estimates for the industries of public administration and defence and many other services.
3. The output of the above industries may be quantified in terms of number of units of service provided or in terms of revalued input costs. Country practices differ on this point.
4. Some convention on the treatment of factor incomes paid to or received from abroad may be required.
5. Balancing systems of accounts in real terms have not, to our knowledge, been published by any country.

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II. MAIN FEATURES OF ACCOUNTS

A. Concepts of Production

4. The basic concept of the production boundary, within which economic activity takes place and is counted once and only once in each sub-heading, has been widely accepted. Even the most rudimentary sets of industrial statistics aim to deduct intermediate purchases in order to arrive at unduplicated value added, and to value the production at cost in the cases of households (e.g. domestics), private non-profit institutions (e.g. hospitals), financial intermediaries (e.g. insurance) and Governments (e.g. civil service wage bill). The standard imputations for income-in-kind from own produce and imputed net rent on owner-occupied dwellings are almost invariably entered.

5. Although the broad general conventions have received wide-spread acceptance, there are a number of departures from the production concepts underlying the standard system. These have to do with territorial, domestic and national concepts, the treatment of banking, financial intermediaries, and government debt interest, the definition of capital formation and selected valuation problems such as that of depreciation. These divergences are listed below.

Territorial, Domestic and National Concepts

6. A number of countries begin with the concept of territorial product, which includes all production occurring within specified geographic boundaries. The territorial concept includes, theoretically, incomes accruing to armed forces and diplomatic and consular personnel of foreign Governments stationed in the given country, and excludes the incomes of the corresponding personnel of the given country stationed abroad. This differs from the SNA concept of domestic product. To go from territorial to domestic product, the above entries must be reversed; i.e. the strictly territorial boundaries should be extended to include the pay and allowances of armed forces, diplomatic and consular personnel stationed abroad, and conversely to exclude foreign armed forces, etc., stationed in the given country. A similar convention is suggested for income from ships and aircraft operating abroad. Countries which begin with territorial rather than with domestic product (as in SNA) may be in a position to make the necessary adjustments in reporting figures for the Yearbook of National Accounts Statistics.

7. The territorial concept is usually accompanied by a different treatment of in-tourists and out-tourists in final expenditures, which does not, however, affect the concept of production. It affects only the relative magnitudes of private consumption expenditures and the net foreign balance. In the territorial systems, in-tourists' spending is included with private consumption and out-tourists' spending is excluded. These two items usually require separate estimates, for which there are counter entries in the balance of payments.^{1/}

8. The adjustments to go from domestic to national product consist of adding factor earnings abroad by residents and deducting non-residents' factor earnings in the given country. The countries which depend mainly on value added statistics, or on a commodity flow estimate related to the product approach, are in a position to aggregate to gross domestic product without the necessity of any adjusting entry. Several of these countries, mainly those with developed balance of payments statistics, then go on to add net factor income from abroad, in order to arrive at gross national product. In others, the item is either small or not available. Both SNA and the IMF Balance of Payments Manual recommend that enterprises' net earnings abroad be brought back into national product in full as they accrue, rather than at the time of remittance, but only one or two countries are able to do this.

9. Factor cost and market price evaluations of domestic and national products are generally in accordance with SNA. Countries using the value added approach to estimate domestic product frequently add indirect taxes less subsidies in order to arrive at a market price total, either by industry or as an over-all adjustment. However, the profits of state monopolies, e.g. in alcohol or tobacco, are not always treated as indirect taxes (as in SNA), and in these instances, where they are treated as profits of government trading enterprises, national income is higher than would otherwise be the case. In some cases, net incomes of government enterprises are mixed with government investment income, and reconciliation with SNA concepts cannot be fully made.

10. Depreciation is not estimated on the replacement cost basis recommended in SNA, except in two or three countries. Certain under-developed areas estimate depreciation as a fixed percentage of the value product originating in each of

^{1/} See IMF Balance of Payments Manual, mimeo, 1960, p. 136, which makes these entries explicit. See also P. Ady and M. Courcier, Systems of National Accounts in Africa, OEEC, Paris, 1960.

several broad industry groups. A majority of countries estimate replacement cost on the housing stock, since their censuses of housing and population provide a count, and this, together with various assumed lengths of life and estimated current building costs, provide the necessary statistical basis. Several Eastern European countries, as well as Finland and Japan, have had a census of the capital stock, in which a new benchmark value of the stock has been obtained, so that they come closer to the replacement basis than would otherwise be the case.

11. As is well known, repairs and maintenance are included in capital formation in Scandinavian countries and written off in full or in part in the year of acquisition. Thus their gross product and capital formation estimates are larger than is normally the case, but so too is their depreciation, while national income is not materially affected.

12. Inventory valuation adjustments, which affect both GNP and national income, have been carried out in less than one half of the countries studied. Of course farm crops and livestock are on an adjusted basis in the first place, as a result of the method of estimation. But business inventories are, except in the most developed systems, on a book basis. The need for inventory revaluation usually occurs at the time of development of detailed expenditures in constant prices, and the adjustment is generally found to have been carried out by countries which have developed such estimates in constant prices.

Imputations

13. Income-in-kind from production and consumption of own produce is included by all reporting countries. There are certain difficulties of valuation found in practice, arising from the lack of nearby market prices with which to value own production. Several countries have been forced to adopt a two price system for farm production in which marketed produce is valued at higher prices than non-marketed output. Other kinds of production, outside of one's own trade, are excluded by convention in the SNA, but this type of activity may be greater in some countries than others and therefore the ruling has an uneven effect. Several countries have recorded subsistence production separately throughout their accounts.

14. The home ownership imputation also is invariably carried through in reporting countries but here again there are often problems of valuation. Some countries record urban dwellings only, since other kinds of habitation present quite different problems of measurement.

15. Imputed interest on bank deposits is confined mainly to countries with developed financial statistics. The Australian treatment of banking services as analogous to government services, is a well-known exception. Similarly, imputed interest receivable from life insurance and other financial intermediaries is confined mainly to the advanced systems and others may regard it as not applicable.

16. Imputed net rent on government buildings has received limited acceptance. Most countries do not include this item because of the statistical and other difficulties inherent in its estimation.

17. Government and consumer debt interest are usually deducted in country tables of distributive shares, in accordance with SNA.

18. A problem having to do with multiple exchange rates exists in some countries, which convert balance of payments figures from foreign to local currencies, for purposes of national income estimation, at an arbitrary fixed rate. An alternative practice is to apply the variable rate at which the actual trading took place, and which is reflected in profits on the income side of the accounts.

19. There were finally a number of borderline cases having to do with the distinctions between direct and indirect taxes as well as the definition of government enterprise profits. For example, some countries treat export duties as a direct levy.

B. Sectoring and Transactions

20. Nearly all countries have statistics of general government revenue and expenditure and of foreign trade. With these data they are in a position to supplement their basic product measurements with some form of sectoring. An important aim is to obtain the saving of each sector and to show how these savings are related to aggregate investment. However, the sector of "households and private non-profit institutions" is missing in a good many cases. The lack of personal income and expenditure data implies that the item of personal saving is missing from the set of accounts.

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21. Approximately one half of the 77 countries studied are able to complete the three main sector accounts of SNA and in fact report on these for the Yearbook of National Accounts Statistics. The separation of a sub-account for capital reconciliation items within each sector has not however been generally possible. The great majority of countries having sector accounts simply transfer the saving from the current account of each sector to a consolidated national saving and investment account. Perhaps one reason is that the capital transfers needed to complete the capital reconciliation account and to arrive at net borrowing or lending of each sector are not generally available.

22. While many countries report on the three main sector accounts listed above, their internal system of accounting may be quite different. Frequently there are several additional sectors. For example, households and private non-profit institutions may be separated, two or more levels of government may be distinguished, and public corporations or financial institutions may be kept separate from the rest of the enterprise sector. In addition, within each sector, various sub-accounts for different types of transactions may be designated. It is quite common to find a production or primary income distribution account and an appropriation or secondary distribution account (including taxes and other current transfers) within each sector. Less frequent elaborations (e.g. the articulation of foreign transactions within domestic sectors) are noted briefly in the attached summary table. Occasionally also, the rural, farm or subsistence sectors are kept separate. The above details are shown in the table.

23. The business operating account, no longer found in international systems, is represented by more or less finely detailed industrial sectoring in several countries, where basic national income statistics are available or estimated on an industry basis. These industry operating accounts need not be elaborated to show the disposition of sales or the origin of purchases, as in input-output analysis, but may simply give the total purchases and sales, out of which primary incomes originate. Additional entries are made for taxes, subsidies, transfers, etc. at the industry level, and for other conventions required by national accounting such as the imputation of a return on home ownership and the costing of production in private non-profit institutions and insurance companies. Finally, the industry operating accounts are frequently used in conjunction with public accounts, trade statistics, and other sources, to derive the various items of final expenditure, especially that of capital formation.

24. In conclusion, the sectoring and detailing of transactions within sectors vary a great deal from country to country. This is a consequence of differences in basic data and the purposes for which the accounts are used in each country. Despite this heterogeneity, the more important conventions of product measurement are adhered to and the sectoring systems are, where available, generally convertible to the three broad sectors plus the consolidated saving and investment account, of the Standard Tables (not the Standard Accounts) of the SNA.

III. METHODS OF ESTIMATION

A. General Approaches

25. The 77 countries for which we have information can be classified according to whether they use predominantly the value added approach, the income approach or the final expenditure approach. While approximately one half of the countries use value added exclusively, the common practice among the remainder is to use some combination of the three approaches. The most common practice in under-developed countries is to use value added estimates, though there are a few which have very elaborate estimates based on all three approaches. In industrial countries, it is more common to find combinations of the income and expenditure approaches, with less reliance on value added. These generalizations are based on the attached table, which shows merely the predominant method used in each country and gives emphasis to what kind of basic data are available.

26. The column headed "basic method of estimation" shows the frequency with which the value added approach (V) forms the main basis of estimating the value of total production. Thirty-two of the 77 countries surveyed rely mainly on this approach.

27. The income approach (I) is seldom used as the sole basis. This approach is most frequently used in conjunction with the final expenditure method. A few countries derive income shares (particularly for wages and other incomes in total), from their basic industry data. These countries generally lack the financial data needed to separate interest and dividends received by persons, which may be small in any case, or to separate profits and unincorporated net incomes.

28. A few countries rely mainly on final expenditure estimates (E). Their statistics of government income and outlay, the balance of payments and capital formation have been developed for this purpose. In many cases capital formation is obtained by direct surveys of expenditure, while in other cases the commodity flow method is used.

29. None of the countries studied makes use of a combination of the income share and value added approaches. This does not mean to say, however, that some income share information is not available as a result of industry studies. A great many countries show wages and salaries, agricultural and other primary incomes, and depreciation and indirect taxes, all of which are debit side items obtainable from the basic industry studies and from central and local government accounts.

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However, these countries do not have an independent source of estimating income shares, particularly of the financial items involved in separating corporate retained earnings and interest, dividends and net rental incomes of persons. As was noted earlier, the countries having highly developed reporting systems for financial and fiscal data are found also to have well-developed final expenditure estimates.

30. The rather high frequency of occurrence of countries marked VE, which represents a combination of value added and final expenditure approaches, is due to the fact that many countries are able to supplement their basic production statistics with additional measures such as those of commodities flowing out of industries to final consumption, capital formation or exports. These countries have also utilized the additional information made available by import statistics, government expenditures on goods and services and household budget surveys.

31. The symbol IE shows the countries which have developed both income and expenditure approaches, but which do not use industry data except in so far as they provide bench-marks for wage and salary figures, direct reports on capital formation, or commodity information. Eight of the 77 countries use this combination, i.e., Australia, New Zealand, Canada, United States, Ireland, United Kingdom, Japan and Chile. In most of these countries the income estimates rest upon a sound statistical basis and are therefore considered to be controlling; thus personal consumption expenditures may be obtained as a residual by subtracting the other directly estimated items of the expenditure side from the income total. (This latter procedure is followed in Australia, New Zealand, Ireland, South Africa, Burma, Denmark, Philippines, Argentina, Brazil, Cuba and possibly other countries as well.) Most of the countries in which the largest item of final expenditures is obtained residually, also make commodity flow estimates of the important components of consumption and therefore must introduce a small double residual at the end of their direct estimates of consumption in order to complete the total residual estimate derived as above.

32. The symbol VIE refers to countries which utilize all three approaches. The question that arises is: how have they combined the industry approach with the income and expenditure approaches? Further, to what extent are the three approaches independent of one another? These questions will be examined in part B below. They are important questions because we will be looking for methods used

in countries which begin with the value added approach (of which there are a great many, as shown in the "basic method of estimation" column of the table) and which proceed from these basic data to the various elaborations in the forms of income and expenditure, not to mention the important savings and investment accounts. The accounts for British Guiana, Jamaica, Trinidad, Mauritius and Malta were established early in the 1950's by experts who were able to utilize to their fullest extent the varied facets of the available data in these primary exporting countries. The Norwegian and Finnish accounts also may offer some solutions to the basic problems of enterprise and establishment classification, avoidance of inter-industry duplication and the need to subtract all of purchased services in cases where a complete industry estimate is to be integrated with income and expenditure data. A number of other countries have reached various solutions of these problems in constructing input-output tables for a specific year. To what extent the problems can be solved currently and without setting up the entire apparatus of input-output, and simply for purposes of making year-to-year estimates of the national accounts, is a further question.

33. The symbol VIE has been used for the accounts of France which are very elaborate and which represent an integration of financial transactions with national accounts. These accounts also have approximate counterparts in several North African countries, which depend mainly on statistics of an industrial nature, as noted in footnote 4 of the table.

34. Other systems which did not fit any of the above classifications have no symbol and include Belgium and Ceylon. Official Belgian estimates are mainly on an income basis although the Université Libre de Bruxelles makes expenditure estimates, while those of Ceylon are based mainly on export and import data. Government accounts and household budget inquiries are also utilized in the latter country.

B. Industry Estimates

35. There are varying degrees of completeness and accuracy among the many countries which depend primarily on an aggregation by industry of value added in order to estimate gross domestic product. Agriculture and other primary pursuits normally contribute a large fraction to domestic product in these countries and it is in these industries that problems of evaluating subsistence (as opposed to market) production are important. The various methods in use to estimate

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agricultural production are outlined briefly below. A more detailed description is given in Methods of National Income Estimation, (Studies in Methods, Series F, No. 8, p. 43).

36. Agricultural net income is almost invariably estimated by building up a synthetic production account for the industry as a whole. This applies to industrialized as well as to primary producing countries. It also applies to forestry and fishing when these activities are conducted primarily by small unincorporated enterprises. The general procedure is to estimate the value of total production including that part consumed on the farm and to subtract purchases such as feed, seed, fertilizer and non-factor services. Most frequently, total value of production is obtained by multiplying the quantities produced by their respective prices. The quantities produced may in turn be based on acreages and yields per acre. This is an area in which decennial or more frequent farm censuses and current sampling play an important part. A number of well-developed systems have direct marketing data on quantities leaving farms, as well as prices received by farmers, so that the commercial part of production can be exactly estimated.

37. The values of output are seldom obtained by direct questionnaire because of the possibility of under-reporting, for example, to tax authorities. It is usually considered safer to estimate output values as the product of prices and quantities as above. However, in Asian countries, the output data for major crops have been traditionally collected as a part of the tax administration. Also, there are a few cases where net incomes themselves are obtained directly from taxation statistics.

38. In most under-developed areas, the pricing problems inherent in the valuation of crop production and livestock marketings are severe. The general aim is to value that part of total output which is used for own consumption at the price which is closest to the farm gate. Thus, several countries employ a two price system, in which marketed products are valued higher than non-marketed ones. Where grains are retained on the farm and subsequently fed into livestock, they may be counted as inventories for a time and valued at farm prices. But there are many cases where there is no separate record of farm-held crops and production is recorded at the time that it takes place, whether it is sold or not.

39. Livestock sales are frequently obtained from reports on inspected or taxed slaughterings, which of course do not cover those animals which are left on farms or slaughtered for own use. Many countries have a count of the livestock population at varying intervals, and include them at estimated farm prices per animal or per pound, in their production figures. This estimate is usually based on the increase or decrease in numbers times the year-end farm price; that is, it is on a value of physical change basis as required by SNA.

40. Further possibilities of under-valuation of output in the farm sector are as follows: minor crops which are not taxed or not included in censuses or sample surveys may be difficult to estimate; prices at harvest time, when supply is at its best may be the lowest of the year; and non-farm output of farm families may be excluded. Finally, expenses may be overestimated because they may include consumption expenditures of the farm family (e.g. transport used jointly). On this point, most countries subtract various non-factor costs of production in arriving at agricultural value added. There are very few details available in country sources regarding depreciation practices on farm buildings and equipment, simply because it is the gross rather than the net product that they aim to estimate.

41. A good case has been made by several countries, for keeping non-marketed production separate from marketed production. There is general agreement that non-marketed production should be included in the over-all system and the GDP aggregate, but that it should be specified independently throughout, so that allowances for possible under-valuation, or separate treatment of any sort, can be kept in mind by the user.

42. With regard to mining, manufacturing and utilities, nearly all countries in the attached table have had at least one census of industry during the past ten years^{2/} and this has formed the bench-mark from which subsequent annual estimates have been projected. Thus the level of output in the countries which have had censuses may be reliably estimated, although the data on year-to-year changes may be incomplete. These considerations will depend on the coverage (by size of establishment) of the initial survey and on the nature of the

^{2/} See country chapters in Patterns of Industrial Growth, 1938-1958.
Statistical Papers, Series P, No. 1.

subsequent projections. Where small-scale establishments predominate, there are difficulties in measuring own account production in unincorporated enterprises. At the other end of the scale, there are relatively well-developed statistical systems in which the censuses of industry are taken at regular intervals and supplemented with annual inter-censal inquiries on a large-scale sampling basis. In these cases, important items of information such as payrolls, inventories and even capital expenditures may be obtained annually for use in national accounts.

43. The construction industry is sometimes included in censuses of industry, but more frequently, estimates of its contribution to aggregate product depend on a synthetic operating statement, built up, like agriculture, from estimates of quantities and prices. If these are not available, labour and material costs may be substituted. Sometimes the output of the construction industry is obtained from direct expenditure data, particularly in the case of public construction and works. Numerous shortcomings are apparent in the subtraction of intermediate inputs. Several countries simply apply a sample ratio of value added to total value of production. This ratio in turn may be obtained from selected company reports and erroneously taken as applicable to the total output of the industry. Most countries separate dwellings from other construction, and proceed to estimate housing construction from building permits, adjusted for time lag, etc. The non-residential construction estimate in countries where there is no direct survey may depend on employment, material flow, or even imported materials. The method of direct survey of the construction industry proper (paralleling the manufacturing census) runs into the difficulty of double counting on account of sub-trades, that is, there is some danger of counting not only the prime contractor's gross product but also that of his sub-trades. If so, it would appear to be better to estimate value added as the sum of factor incomes originating in construction, rather than the ordinary method of estimating output less intermediate input.

44. Countries which do not use value added, but rather income and expenditure approaches, are also in a position to develop synthetic operating statements for the construction industry as an aid to the cross-checking of income and expenditure sides of their estimates. In these cases, the construction industry proper must be delineated so that own account construction already included in other industries is not included twice. An evaluation of the accuracy of value added in construction

cannot be made because we do not have sufficient information regarding practices such as the above. From what information we have, the existing estimates of value added would appear to provide only rough orders of magnitude and trend, yet many countries depend on a value added estimate, rather than on income and expenditure data which would appear to be better suited to this particular industry.

45. Estimates of transportation and communication range all the way from those based on the accounts of large enterprises, whether publicly or privately owned, to the approximations afforded by the number of licenced buses or trishaws multiplied by their owners' net incomes, sometimes based on common observation. In certain countries where final expenditures are based mainly on factory or farm production plus margins for trade and transport, there may be a need to separate personal and government from business purchases of transportation services. Business transportation would then be counted as an intermediate input into manufacturing, etc., and only the personal and government purchases would be counted as final. Further, manufacturing value added is most often reckoned gross of such services, and it would be double counting to include commodity transportation once again.

46. The above point has wider application to other services as well. To the extent that value added in manufacturing is gross of purchased services in general, overestimation will occur if they are brought into a complete industry estimate all over again. This kind of overestimation might go some way toward offsetting the underestimation noted earlier in agriculture, but it would vary according to each country's industrial structure and from year to year as the fortunes of the different industries altered relative to one another.

47. In the more highly developed statistical systems, value added in trade is estimated from company statistics or from operating statements as filed for income tax purposes, either by corporate or unincorporate businesses. In the latter case, there is some possibility of under-reporting net incomes in trade as well as in the service professions and small trades in general. Usually these estimates are based upon numbers engaged times reported net incomes and we are in the area of income as opposed to industry estimation. That is, the two types of estimate tend to converge as we proceed beyond the commodity producing stages and enter services in general. There is a greater possibility of underestimation in

countries where these services are performed by individual enterprises than in developed areas where there is a larger proportion of services performed by companies filing reports. Finally, a great many personal services performed for money in advanced countries and entering their production aggregates, have no counterpart in under-developed areas where they are done within the family or within the village as a form of communal activity. The general area of imputation allowed for in SNA is restricted to items for which there exists a market counterpart. It is not usually extended to cover the above services and therefore there remains a large area of non-comparability between incomes of primary and industrialized areas.

48. With regard to the standard items of imputation (rent, income-in-kind, banking, etc.) there has been very wide-spread acceptance of these conventions, especially with regard to rent on dwellings. Invariably the latter are estimated as total units (or floor space, or rooms), times the rent per unit, and thus owners as well as renters are included. Censuses provide a count of the numbers of dwelling units, while statistics on building permits or completions or local tax records are used to keep the record up to date. Cost-of-living surveys provide average rentals. One problem is that there may be a quality difference between the owned and rented premises, so that the imputation of gross rent on owner-occupied premises should be adjusted correspondingly. The estimates of value added are usually obtained by the device of the synthetic operating statement, in which gross rents as above are shown as income, while expenses in the form of repairs and maintenance and local taxes are deducted. Other countries use simply a gross paid and imputed rent estimate, minus a fixed percentage for the above costs. Still others simply multiply the number of dwellings by a net income estimate.

49. However, no cases were discovered where the house rent imputation was not included. Similarly, the convention on rent of government buildings appeared to be gaining some acceptance among the 77 countries covered. Income-in-kind and perquisites provided by employers were also usually entered, but subject to under-valuation as noted earlier.

50. With regard to value added in "public administration and defence", there was general use of wages and salaries and supplementary labour income as the main item in this part of the total industry estimate. No examination was made with regard to whether educational and certain other services were classified according to the International Standard Industrial Classification (ISIC) or left in with public administration and defence, mainly because the country descriptions were not available in such fine detail.

51. Value added estimates are derived naturally on a domestic basis, without adjustment for net factor income from abroad, so that countries which depend on this approach are in a position to estimate GDP at factor cost directly by industrial components. The final adjustments for indirect taxes less subsidies and net factor income from abroad can be made at the aggregate level if the GNP at market prices is desired. Although industry-by-industry estimates of value added are frequently made net of indirect taxes, the accompanying correction for addition of subsidies is not always made and some underestimation may result. On the other hand, countries which estimate value added gross of indirect taxes also net out subsidies to arrive at the market price concept of product.

52. In recapitulation of major points above, it was noted that under-evaluation of product in primary industries could be offset to some extent by duplication in manufacturing and services. However, countries with low manufacturing ratios would not have much weight attached to this offset and would therefore tend to underestimate GDP. They would also underestimate on account of those household and non-marketed services for which no imputations are recommended in SNA.

C. Expenditure Estimates

53. Although only seven countries depend entirely on statistics of expenditure on final products, many others utilize the approach in conjunction with value added and income data. Fully one half of our sample use the expenditure approach singly or in combination with other approaches. All countries have at least a set of central government accounts and trade statistics and are able to utilize these valuable sources of basic data as an important part of the final expenditure estimate. Of course, government accounts must be analysed carefully in order to abstract current purchases of goods and services and capital formation. The other items of final expenditure present varying degrees of difficulty.

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54. As was noted earlier, private consumption expenditure in total is estimated as a residual in a number of advanced systems which possess accurate income estimates. These countries usually have direct expenditure surveys of capital formation, as reported by the purchasers of this capital and by the holders of changing inventories. On the other hand, a number of countries depend on the commodity flow method, that is, on data on farm and factory shipments, imports and so on, plus trade mark-ups and local transportation margins, for their estimates of the bulk of final expenditures. These countries seldom have inventory estimates, so that the accuracy of year-to-year changes becomes more doubtful than would otherwise be the case. Furthermore, their commodity flow estimates may be approximated as a total for each major commodity, which must then be allocated more or less arbitrarily, according to the alternative destinations of the commodity in terms of intermediate versus final use as consumption, capital formation and exports. In such cases the important analytical advantage of having independent final demand indicators is reduced, if not lost.

55. In practice, most countries utilize various combinations of the above methods, ranging from direct survey estimates which must be considered to be accurate (for central government outlays, commodity exports and perhaps capital formation) to approximations based on commodity flows. Within the above general framework, there may be particular methods for selected items, for example, the estimation of tobacco and beverage consumption from tax receipts. These are noted in the following review of the main expenditure components.

Private Consumption Expenditures

56. The report, Methods of National Income Estimation,^{3/} describes four principal methods of estimating private expenditure on commodities: (a) commodity flow, (b) retail sales, (c) retail valuation and (d) family budgets.

57. The commodity flow method, described briefly above and in detail in the report cited, is by far the most frequent in occurrence. It is used in conjunction with census of industry bench-marks and the industry approach in general. It employs commodity production data which are obtained on the same basic questionnaire as the principal statistics of each industry, or which are available from other sources (e.g. agricultural sample surveys or crop marketing data). Another basic source is that of import statistics, which are important for

^{3/} Studies in Methods, Series F, No. 8.

the under-developed areas. It will be recalled that adjustments for distributive margins, allocations among final users, and corrections for inventory changes are required in order to make this method provide accurate expenditure totals. Probably the most elaborate calculations on this basis are those for the United States and the United Kingdom. These two countries utilize the method mainly for bench-mark calculations at intervals of a few years, projecting the current annual (and quarterly) data by means of adjusted retail sales statistics. The necessary adjustments for business and government use, second-hand goods, direct deliveries, etc. are mentioned below. Because the method requires detailed and accurate information on all of the above adjustment factors, a number of countries with advanced statistical systems have deemed it advisable to obtain the total residually. Nevertheless, they use the method to obtain analytically useful information about the various durable and non-durable items in the consumption pattern, and how the items themselves change from year to year. The method requires explicit accounting for inventory changes, which is not always apparent. Otherwise the implicit assumption is made that these changes are part of consumption. Even for the most advanced statistical systems, there is usually a dearth of specific information on distributive margins and the situation becomes progressively more difficult as we proceed to less developed systems. Here we find the method being supplemented by other methods outlined below.

58. The retail sales method, as used by Canada, depends on the availability of fairly complete annual surveys of retail sales by store types. Again adjustments are necessary for non-personal use, direct deliveries and second-hand goods. In so far as the total of these adjustments is not as large as that of distributive margins, there is less opportunity for error. The Canadian practice is to make the grand total of adjusted commodity consumption controlling, but to supplement it with a set of commodity estimates, also based mainly on sales by store types. The principal difficulty with the method is that it requires the retail respondents, at least at bench-mark intervals, to report their sales on a commodity basis. Not all retailers are able to do this and therefore the method provides less commodity detail than other methods.

59. The retail valuation method consists of the multiplication of quantities consumed by their retail prices. This method is used for food and other consumption items in a number of countries (including Ceylon, Federation of Malaya, France, Puerto Rico and Sweden). The quantities flowing to consumers are estimated from domestic production and imports, less exports and other final users, as in the commodity flow method. The difference between the two methods is that one is in terms of quantities and the other in terms of values. The use of retail prices in the retail valuation method automatically incorporates the distributive margins which are a difficult part of the commodity flow method. Although the retail valuation method is straightforward, it can only be used for standardized items which have a quantity unit such as pounds, litres, etc. and which are capable of being stated in specific terms. Thus the method is often used for selected items only.

60. The fourth method is the family budget method. It may take the form of quantities multiplied by retail prices, as above, except that the quantities are obtained from household surveys rather than from farm and factory shipments to consumers. Quantities must be blown up to full population coverage. Another version of the method is to survey the expenditure values directly, at repeated intervals, on the basis of household budget-keeping. The method is used in Japan where there is a continuing sample survey of 6,000 rural households and 4,000 urban households. Again, blow-ups to full population coverage are necessary.

61. In summary, our examination of country descriptions showed that various combinations of the four methods are used. Each country appeared to have selected its own best combination, depending on basic data availabilities, and having made this choice, to have proceeded with the elaboration of the chosen method. There are few notes available regarding experimentation with alternative estimates once the basic design of work sheets has been fixed.

62. With regard to consumer services, a variety of statistical sources are employed, ranging from the records of large transportation, telephone and electric power companies, to the fragmentary records of professional, recreational and other services rendered to consumers. Fortunately the latter do not have a large weight in the total estimate. The main problem encountered in most countries is that of the separation of personal from business or government use of many services, and frequently some arbitrarily fixed ratio is used.

General Government Consumption Expenditure

63. Nearly all countries in the sample make an analysis of the central government accounts for purposes of product measurement. Furthermore, nearly all are able to separate the largest component (wages, salaries and supplements paid to civil servants and armed forces). However, the problems encountered in separating expenditures on final consumption of goods and services from the great variety of other payments are severe and are not by any means confined to the less developed statistical systems. The main problems are as follows: local governments may not be covered or may even shade off into communally provided services which are not measured at all; government enterprises may be difficult to define and separate; capital formation may be included with current consumption expenditure in cases where final expenditures on goods and services are obtained as a residual after taking out all outlays on non-goods and services; the fiscal year seldom coincides with the calendar year, and while adjustments are made in countries which have quarterly accounts, only linear interpolations are possible in others; finally, cash accounting is common to most public accounts, creating imbalances in various parts of the national accounts which aim at an accrual basis of accounting. Despite these problems, the advantages of having actual records which may be analysed for purposes of general economic intelligence are widely recognized. Several countries have re-designed their public fiscal accounting to follow national accounting practices, while others have made various compromise solutions. In general, the latter involve the provision of sufficient detail to enable the various economic classifications to be derived from public accounting classifications.

Gross Domestic Fixed Capital Formation

64. It is convenient to discuss this important category under three headings: dwellings, other construction and machinery and equipment. Many countries estimate new investment in dwellings on the basis of the value of building permits, which are frequently adjusted upward to correct for under-reporting or under-coverage. Other countries make the estimate on the basis of floor space or other physical measure of construction multiplied by labour and material costs per unit, while others have price sampling of specified types of houses. The most advanced systems obtain values of residential construction from administrative records

maintained by official agencies in connexion with housing legislation. Investment in works and structures, as well as machinery and equipment, may be obtained by direct expenditure survey. Questionnaires are sent to the purchasers of such structures and equipment, requesting their estimate of the value of new work put in place and capitalized major alterations. This direct expenditure approach is obviously the most accurate of the available procedures. It is occasionally conducted in conjunction with surveys of business forecasts of intended investment in construction and equipment. Where public accounts provide separate estimates of public investment, the above surveys of direct expenditures of private businesses dovetail easily.

65. New investment in machinery and equipment may be obtained on the same questionnaire as that of new construction. In certain technical processes, it may not be possible to separate construction from machinery and equipment and therefore the two kinds of capital are combined. Many countries rely on the commodity flow method, that is, on domestic production plus imports. It appears that procedures are often selected in such a way as to complement each other; for example, if commodity flows are basic to consumption estimates, they are also employed in investment estimates. Similarly, if the construction industry value added is used as a part of the total product estimate, the gross output of this industry becomes a part of the capital formation estimate. Adjustments for own-account construction performed by enterprises with their own labour force may be necessary. Patterns of matching methodology, as above, were apparent in the cataloguing of country procedures. These patterns may have been due to basic statistical availabilities as well as to deliberate choice on the part of the national income estimators.

66. A few countries have had censuses of capital stocks in existence. Such censuses provide a valuable bench-mark check on the accuracy of intercensal projections. Also, these countries asked for current replacement values in taking such censuses. This would constitute a more direct approach than the customary deflation, write-off and revaluation procedure which is used in going from gross to net capital formation.

Value of Physical Change in Inventories

67. Although book values of raw materials, goods-in-process and finished goods may be obtained at bench-mark intervals in conjunction with censuses of industry, the

general stage of development of this item in year-to-year estimates is far from adequate for purposes of current analysis. A number of the countries studied do not estimate business inventories. A few record them as a residual between aggregate income and expenditure or obtain returns on stocks of major export commodities only. A few countries implicitly include stock changes in other final expenditure categories which are estimated by the commodity flow method. Most countries record farm crops and livestock on a value of physical change basis, since the basic data are received in terms of quantity change and price. The advanced countries survey the book values of inventory changes frequently, by direct questionnaire. They deflate the book values in order to isolate the quantity change, and subsequently revalue this change at average annual or quarterly prices. But there are many complexities in this procedure. For example, the turnover period of stocks and the method of accounting should be known, as well as the commodity content. A more direct procedure is to ask for changes in quantities and to revalue these at average prices of the period.

Net Exports of Goods and Services

68. Commodity trade statistics are frequently used not only for final expenditure but also as an aid to the estimation of other items in the national accounts. Imports are used particularly for commodity flow estimates of consumer durables and investment. In primary exporting countries, exports are occasionally used as a substitute for direct information on industry outputs. The invisible items in the balance of payments are most frequently estimated by central banks and very little information was recorded in country publications or correspondence. The adjustments for net foreign factor payments, public and private remittances and tourism appeared to be readily available to many countries. A few countries had direct information from the largest companies engaged in foreign trade.

D. Income Estimates

69. The income approach is rarely conducted as the sole method of product measurement. The approach is found most frequently in developed statistical systems which also have expenditure estimates, and occasionally also in both primary and developed areas which make use of all three general approaches. Three main reasons for this are (a) the financial items surrounding interest and

dividends are difficult to estimate and personal receipts are mainly a residual in even the most advanced countries, (b) in other countries, statistics may be available for estimating the wage bill and farm and other net incomes, but they may not be available for corporate earnings or other income items, and (c) where countries depend on industry value added, they may see no reason to proceed further with the breakdown of these figures into income shares. However, these shortcomings may be reflected in countries' inability to complete fully a national saving and investment account.

70. Compensation of employees is most frequently estimated on an industry by industry basis, beginning with census of industry bench-marks or other basic sources and projected by various means, the most common being to multiply numbers in employment and average earnings per employee. Current earnings are also obtained from social security data (USA, Brazil), from payroll tax receipts (France) or personal income tax receipts (Federation of Rhodesia and Nyasaland, Honduras). Government payrolls, including military pay, are obtained directly from public accounts. Sample surveys of households take various forms, including current labour force and current labour income estimates as well as the more widely known household income and expenditure surveys (Japan, India). In general, direct reports from employers on current payrolls would appear to be the most accurate source, while some of the less direct methods might be subject to under-reporting. Supplementary labour income such as employees' contributions to pension funds is included, as well as income-in-kind received by employees for free board and lodging.

71. Income from unincorporated enterprises was discussed above in connexion with the industry value added approach, particularly in agriculture, retail trade and ownerships of dwellings. Professional incomes are frequently estimated on the basis of numbers times average net incomes, the latter derived from surveys or tax records.

72. Corporate savings are estimated from two main sources, the taxation reports to central governments and the profit and loss statements made available by the corporations themselves. Tax reports are the most frequent basis of estimation and they may require various adjustments including adjustment to a calendar year. Company statistics are the main source of the adjusting entry for net factor income from abroad. The above items are almost certain to be on an enterprise basis,

resulting in varying degrees of non-comparability with the industrial classification of establishments and their payrolls.

73. Income from property includes net rental incomes of persons, discussed above, and interest and dividends received by households and private non-profit institutions. Interest and dividend receipts are estimated by a variety of methods, frequently involving residuals of considerable magnitude. For example, total bonds and mortgages outstanding may be known, from which government and business holdings may be deducted in order to arrive at the personal holdings. A description of procedures is given in Methods of National Income Estimation.

74. Indirect taxes less subsidies are obtained from public accounts at all levels of government. There are a number of country differences in definition and treatment of selected items.

75. Depreciation, if separated from gross earnings, is mainly estimated from statistics of corporate and unincorporated businesses, or, in several cases, obtained directly from company reports. A few countries make rough estimates by applying fixed percentages to estimates of the capital stock. Thus, their national income estimate may be much less accurate than the gross product estimate. In advanced systems, book depreciation as allowed for in tax regulations is the general rule, and only two or three countries have attempted to estimate in detail replacement cost depreciation as recommended in SNA.

IV. CONSTANT PRICE ESTIMATES

76. The attached summary table shows that the majority of countries have been able to provide constant price estimates, either by industry or by expenditure. The year 1954 is the most frequent base, although other years from 1948 to 1960 have been used. In the majority of cases, the time and weight bases coincide. The year 1958 is currently recommended as the base for international comparisons. The 1963 World Programme of Basic Industrial Statistics (Statistical Papers, Series M, No. 17, Rev.1, Add.1) looks forward to a new 1963 time and weight base. Since conversion to new bases in individual countries is usually a large undertaking, some savings can be achieved if advance planning is undertaken.

77. The choice of index number formulae is made in such a manner that the price and quantity indexes will complement each other in the sense that quantity indexes are base-weighted while price indexes are currently weighted. These results are obtained if revaluation is carried out at an exceedingly fine level of detail. Since value detail is not usually available in as fine a breakdown as price detail, only approximations to the theoretical ideal are possible. However, they appear to be workable approximations.

78. The majority of industry estimates are at factor cost, while expenditures are at market prices. Apart from this small difference in weighting (represented by the value of indirect taxes less subsidies in the base period), the two sets of results provide two measures of total real product. In addition, there may be a difference between the two measures on account of net factor payments from abroad, representing the difference between national and domestic bases of product estimation. Despite these differences, a comparison of the behaviour, of the two real product measures, over time, provides an indication of the probable accuracy of the total trend in real product.

79. Both industry real product estimates and deflated final expenditures are available for nearly one half of the countries surveyed. Whether the two sets of estimates are independent of each other appears to depend on the basic statistical information available. For instance, countries which derive a large part of their expenditure estimate from commodity flow data are forced to use the same information twice, once in the real product flows on an industry basis and again in the quantity series shown for each class of final expenditures in constant prices. Thus the two

estimates may not provide fully independent measures of the trend in total real output. The most highly developed estimates are mainly independent of one another, and an examination of the two results provides a good indication of probable error in trend. (The same opportunity to compare results is provided also by current price estimates, to the extent that statistical discrepancies are not concealed and to the extent that large items are not obtained as a residual by subtracting known items from some other total which is considered to be more reliable.)

80. The development of constant price estimates is comparatively new, and methodology has not been described in all country sources, or in international publications. The following notes on country practices are based on less than complete information.

A. By Industry

81. A bench-mark census of industry, together with a current index of industrial production, is available for nearly all of the countries listed in the attached table. These basic statistical sources constitute the central core of the industry real product estimates of the various countries and the methodology and practices have been described elsewhere.^{4/} Branching out from this relatively solid core, there are on the one hand the primary industries of agriculture, forestry, fishing and mining, and on the other, the construction industry (if not already included in the industrial census), the distributive trades and transportation, communication and storage, and finally the various service categories which present so many problems of measurement in the domestic real product aggregate. Methods of estimation in current prices have a direct bearing on constant price estimates. Thus, countries which have statistics of agricultural acreages, yields per acre, marketings, and prices per unit of quantity produced, consumed and sold, are able to derive the quantum of gross output in real terms as readily as in value terms. It was noted earlier that intermediate inputs into agriculture are correctly subtracted in many cases, and these too are mainly quantifiable, so that a real

^{4/} Index Numbers of Industrial Production, Studies in Methods, Series F, No. 1;
Industrial Censuses and Related Enquiries, Studies in Methods, Series F,
No. 4.

value added figure is as readily obtainable as the current value added estimate for this industry. The same applies to forestry, fishing and mining, although the exact boundaries of these industries are sometimes difficult to establish.

82. Real product in the construction industry proper (apart from own-account construction covered in manufacturing and other industrial establishments) is frequently estimated in conjunction with deflated fixed capital expenditures on construction. The various methods of estimating gross fixed capital formation have been described elsewhere.^{5/} The problem here is to segregate the output of the construction industry proper and to subtract inputs (mainly materials) in order to arrive at value added, in both current and constant prices. In practice, this complete calculation is seldom practicable, and a variety of shortcuts may be used. One of the most common is to multiply the gross quantity projector from the expenditure side by the base value added weight of the construction industry. Another method, in countries which do not have direct expenditure estimates (deflated) but which do have production and imports of building materials (and perhaps also employment in the construction trades), is to use these input quantities as an indicator of real value added and to multiply them by the base value added weight. (If the results are to be used for productivity analysis, care must be taken to ensure the independence of the output measurement. As we proceed into government and financial services, where employment is the main measure of output, productivity usage becomes impossible in the present stage of development.)

83. Retail trade volume is obtained by dividing the commodity prices of the cost-of-living index into the related kinds of retail sales. Also, if commodity flow estimates of private consumption are used, the values of retail margins embodied therein may be deflated on an item by item basis. If the retail valuation method is used, which consists of multiplying quantities flowing through retail channels by retail prices, the quantity indicator is already available as a part of the value estimate. In most of the above methods, no allowance is made for changing retail margins. Theoretically, the correct method would be to deflate wholesale sales going into retailing and to subtract this result from deflated

^{5/} Methods of National Income Estimation, Studies in Methods, Series F, No. 8;
Concepts and Definitions of Capital Formation, Studies in Methods, Series F,
No. 3.

gross sales, but no estimates of this sort were noted in country sources.

Wholesale trade output also is frequently obtained by deflating sales by relevant wholesale prices, with no attention to double deflation and subtraction of real inputs from real outputs.

84. Electricity, gas, water and sanitary services are most often projected by the use of statistics of electric power generated (kilowatt-hours), million cubic feet of gas, and related quantity indicators.

85. Transportation volume is commonly estimated on the basis of statistics of passenger miles carried by the various forms of transportation, ton-miles of revenue freight and so on, while communication is given by the number of the various kinds of messages carried.

86. The remaining service industries in the ISIC present various degrees of difficulty. The simplest estimate is that for "ownership of dwellings", which may consist of the number of dwellings or floor space multiplied by base period net paid and imputed rents. A number of personal services such as haircuts, theatre admission, hotel accommodation, restaurant meals, laundry services and even specified items of medical and dental care are matched by prices of similar items in the cost-of-living index, and if gross value estimates are available, they may be deflated by these prices. Otherwise, it is frequently necessary to project them, in quantity terms, by the number of items of output. If output quantities are not available, the number of people engaged in providing such output may be used. In the latter case, constant productivity assumptions creep into these service estimates as well.

87. The above difficulty applies to banking, insurance and real estate and public administration and defence. Numbers engaged in these industries are the most frequently used indicator of output, implying constant productivity assumptions. A few countries have sought measures of output which are independent of input, such as pupils taught, patient-days provided in hospitals, number of forms processed, and so on. One difficulty in such cases is that the conventional measures in current prices are related to input costs, e.g. government salaries and wages, wages and other costs in private non-profit institutions and financial intermediaries in general. Thus, there occurs a conceptual discrepancy between current value estimates at cost and constant price estimates in terms of output quantities such as those described above. This problem has not been widely

discussed, and in the present state of knowledge, a good deal of flexibility to develop varying solutions might be the best course. An interim solution might be suggested, namely to match the quantity concept to the current value concept as defined in the international and country literature on national accounting.

B. By Final Expenditures

88. According to the "constant price estimates: by expenditure" column of the attached table, approximately one half of the countries studied have revalued their expenditure estimates in terms of prices of some base year in order to arrive at a measure of total real product. These estimates are all done on the market price basis, which is appropriate to both the values and the prices that are used to deflate them, since indirect taxes less subsidies become embodied in the values as they accumulate through the various stages of production. (In one case, indirect taxes on expenditure less subsidies are valued at 1954 rates and subtracted in total from 1954 market price estimates of total real product, in order to arrive at 1954 factor cost estimates of that product.)

89. The procedures of revaluing expenditures at base period market prices depend on the methodology of the current value estimates themselves. Countries which have current sales data on commodities of private consumption, for instance, divide these values by their related consumer or retail prices. Similarly, commodity export values are divided by export prices, and so on. In cases where commodity flow or retail valuation methods are used, as is often found for items of capital formation, a quantity series is usually available directly as a basic part of the value estimate. Even in the category of exports, some countries make the quantity estimate first, and derive implicit price indices only as a by-product, by dividing the basic quantity estimate into the value series. However, if the price component can be estimated separately, it tends to provide an independent basis of estimation in its own right. Moreover, the problems of measuring quality changes are reduced to some extent when specified price quotations can be obtained.

90. One fairly widespread shortcoming of real expenditure estimates is that stock changes in constant prices may not be available. Even the most advanced systems have not solved all of the problems involved in this part of the estimation. The commodity content of stocks may be known only for some bench-mark year, but not currently. Also, the average number of months' stock on hand of each commodity

should be known, as well as the accounting method, in order to determine the proper period over which to average the price deflators. In view of these difficulties, it is not surprising that only rough approximations of the real changes in business held stocks are available. On the other hand, a simple and direct method is used for livestock and grains, in which the numbers or other quantity units are differenced from year to year and the resulting change valued at base period prices.

91. The revaluation of services in private and public consumption expenditures, and in some of the non-commodity items of the balance of payments, presents the same set of problems as discussed earlier in connexion with the output of the service industries in general. To recapitulate, the services of domestic and civil servants are valued in terms of their wages, for which the corresponding deflator is a wage rate index and the resulting quantity series is equivalent to a man-hour series. No productivity results are obtainable unless some other measure of output can be found. Similarly, where costs of operating private non-profit institutions and financial intermediaries are included (in terms of wages, fuel, purchased materials, services and depreciation), the matching deflation procedure would require the use of wage rates, fuel prices, material and services prices and if possible the price component in depreciation. However as noted above, several countries have aimed at alternative indicators of output such as patient-days provided, bank clearings, claims paid, and so on.

92. With regard to net factor income from abroad, some countries have revalued the gross outflows (payments) in terms of general import prices, and the inflows (receipts) in terms of general export prices. One country has reversed this procedure in order to assess these flows in terms of what they would buy if exchanged for exports or imports, respectively. Several other countries have simply revalued the net inflow (when positive) in terms of what it will purchase in the way of general imports. Thus there is considerable variety of treatment on this item. One possible solution, which amounts to no more than avoidance of the difficulty, would be to refrain from revaluation of national product, but confine the revaluation to domestic product, as in the case of the industry revaluation. In this connexion, it may be noted that only expenditure on domestic product at constant prices is called for in the annual United Nations questionnaire.

SUMMARY TABLE OF COUNTRY PRACTICES

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REGION AND COUNTRY	BASIC CONCEPTS AND SECTORING PRACTICES					Notes	BASIC METHOD OF ESTIMATION ^{2/}	CONSTANT PRICE ESTIMATES			Notes
	Main product concept ^{1/}	Imputations for own produce and home ownership	Other imputations as in SNA	Sectoring as in SNA ^{2/}				Base Year	By industry	By expenditure	
AFRICA											
Algeria	Territorial	yes	no	no	Similar to French a/cs	V ^{4/}	1957	mp	mp	Services combined; stocks & fixed capital combined.	
Congo (Leopoldville)	Territorial	no	no	no	Similar to French a/cs	V	1950	fc	mp	Mainly based on quant. indic. Ind. class. not standard.	
Ghana	National	yes	no	yes	--	E	--	--	--	--	
Kenya	National	yes	no	no	--	V	--	--	--	Production index and other components available.	
Libya	--	--	--	--	--	V	--	--	--	--	
Mali	Territorial	yes	no	no	Similar to French a/cs	V ^{4/}	--	--	--	--	
Mauritius	National	yes	yes	yes	--	VIE	--	--	--	--	
Morocco	--	--	--	--	--	V ^{4/}	--	--	--	Production index available.	
Nigeria	Territorial	yes	no	yes	--	VE	--	--	--	Industry estimates available.	
Rhodesia & Nyasaland (Fed)	Territorial	yes	no	no	Monetary and non-monetary sector	I ^{5/}	1954	--	mp	No stock valuation adj.; terms of trade adj.	
Somaliland (Fr.)	--	--	--	--	--	V	--	--	--	--	
South Africa	Geographic ^{6/}	yes	no	no	Saving & investment a/cs	V	1953	--	--	Deflated private consumption available.	
Sudan	Domestic	urban only	no	no	--	V	--	--	--	--	
Tanganyika	Domestic	yes	no	no	--	V	--	--	--	--	
Tunisia	Domestic	yes	no	no	--	--	1957	fc	--	--	
Uganda	Geographic	yes	no	no	Monetary and non-monetary sector	V	--	--	--	Production index available.	
U.A.R.	--	--	--	--	--	V	--	--	--	Production index available.	
ASIA											
Burma	National	yes	no	yes	Gov't. ent. may be in gov't sector	V	1958	mp	--	Industrial breakdown, manuf. not separate.	
Cambodia	Domestic	--	--	no	--	V ^{7/}	1956	fc	--	No current price estimate.	
Ceylon	National	yes	no	no	--	8/	1948	--	mp	Commodity flow estimates in quantity terms.	
China (Taiwan)	National	in part	no	yes	Appropriation a/cs and farm sector	VE	1952	--	mp	--	
Fed. of Malaya	National	yes	no	no	--	E	--	--	--	--	
India	Domestic	yes	no	no	--	V	1948	fc	--	Broad industry groups only.	
Indonesia	National	yes	no	no	--	V	1955	fc	--	Very broad groups only.	
Iraq	Domestic	yes	no	no	--	V	--	--	--	--	
Israel	Domestic	yes	no	no	--	VE	1958	--	mp	--	
Japan	National	yes	yes	yes	--	IE	1955	--	mp	No stock appreciation; deflation in broad groups.	
Jordan	National	yes	no	yes	Appropriation & capital a/cs	V	--	--	--	--	
Korea (Rep.)	National	yes	ex. gov't. bldgs.	yes	--	V ^{9/}	1955	fc	mp	--	
Pakistan	Domestic	yes	no	no	Partial coverage	V ^{7/}	1949-52	fc	--	No current value estimate; limited industrial coverage.	
Philippines	National	yes	in part	yes	Gov't. ent. not separate	V	1955	fc	mp	--	
Thailand	Domestic	yes	no	no	--	IE	--	--	--	--	
Turkey	Domestic	yes	no	no	Constant prices only	V	1948	fc	--	No current value; considerable quantity detail.	
LATIN AMERICA											
Argentina	Domestic	yes	in part	no	--	VE	1950	fc	mp	Net foreign balance deflated; services combined.	
Brazil	National	yes	in part	yes	--	I ^{10/}	1949	fc	--	Financial services not separate.	
British Guiana	National	yes	no	no	13 sectors; subsistence separate	VIE	--	--	--	--	
Chile	Domestic	yes	in part	yes	Private corp. & households mixed	IE	1960	fc	mp	Expend. detail limited to main commod. flows.	
Colombia	--	--	--	--	--	V	1958	fc	mp	All government services combined.	
Cuba	--	--	--	--	--	V	--	--	--	--	
Costa Rica	National	in part	in part	yes	Public corporations separate	V	--	--	--	--	
Dominican Republic	National	yes	no	no	--	E	--	--	--	Cost-of-living deflator, in total only.	
Ecuador	National	yes	no	yes	--	--	1950	fc	mp	Both sets deflated by general cost-of-living index.	
El Salvador	Domestic	yes	no	no	--	--	--	--	--	--	
Guatemala	National	yes	no	no	--	E	1950	--	mp	Fixed capital and stocks combined.	
Jamaica	National	yes	no	yes	Subsistence a/c separate	VIE	1956	fc	--	Expenditure deflation related to commod. flows.	
Honduras	National	yes	no	no	--	E ^{11/}	--	--	--	--	
Mexico	National	yes	no	no	--	VE ^{12/}	1950	--	--	Basic data consist of quantity indexes X 1950 values.	
"	National	yes	in part	yes	Six accounts	VE ^{12/}	--	--	--	--	

mp = market price; fc = factor cost