Purchasing Power of Currencies

Comparing National Incomes Using ICP Data

Extracts

Technical Note and Sample Tables with *STARS* Diskettes

International Economics Department

THE WORLD BANK 1993

Purchasing Power of Currencies

Comparing National Incomes Using ICP Data

A compilation of data from the United Nations International Comparison Programme (ICP): 1975, 1980, 1985, and 1990

with

Bank staff estimates of GDP expenditure details in national currencies

Extracts

Technical Note and Sample Tables
With *STARS* Diskettes

Prepared by
Socio-Economic Data Division
International Economics Department

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Foreword

The United Nations International Comparison Programme (ICP), which has been in existence for about 25 years, has become the largest single source of detailed price and expenditure data for computing purchasing power of currencies and per capita income estimates based on them. However, access to the detailed data has been very limited as published reports have only presented results at summary levels, making it difficult to carry out more focused analysis of components of GDP. In addition, these reports have been scattered in various publications put out by different regional organizations making access, even to the summary level data, quite arduous.

In an effort to remedy the situation, the International Economics Department of the World Bank presents this publication prepared by its Socio-Economic Data Division. The publication brings together all the dispersed reports into one volume, and presents the detailed level data from the 1975, 1980, 1985 and 1990 ICP phases in a uniform format. This was made possible with the cooperation and permission of the United Nations Statistical Division (UNSTAT) as well as the Economic and Social Commission for Asia and the Pacific (ESCAP), the Statistical Office of the European Communities (EUROSTAT), the Organisation for Economic Co-operation and Development (OECD) and the Austria Central Statistical Office. The publication has also benefitted from the comments of Professor Alan Heston of the University of Pennsylvania. In addition to the observed ICP data, the publication includes Bank staff estimates of GDP expenditure details for countries that are yet to participate in the exercise.

I hope this publication will be of value to researchers and policymakers alike.

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1. Introduction

1. This report[1] presents, in a uniform format, data on Gross Domestic Product (GDP) expenditure details in national and international currency terms, and purchasing power of currency rates generated under the auspices of the United Nations (UN) International Comparison Programme (ICP) for 87 countries. It also presents World Bank staff estimates of expenditure details in national currencies for 55 countries for which ICP data are not available. The data are being published also in diskettes using the World Bank's ***STARS*** software which permits users to extract data by selected regions, countries, indicators and years, and to view the data on the screen or convert them into suitable spreadsheets. Detailed instructions on how to use the *STARS* software are included with the diskettes. The data set contains published and unpublished information and are being distributed for the benefit of users.

2. ICP compares national accounts of countries by converting them to common currency terms based on purchasing powers of currency (PPC) rates rather than exchange rates. This comparison can be done not only at the total GDP level but also at about 150 to over 250 components of GDP and their various sub-aggregations. The detailed PPC and expenditure data provided here can be used to analyze price and quantity structures of countries on an internationally comparable basis (see section on uses of the data). Users should, however, be aware of the limitations described below.

3. Section II describes the content and coverage of the report; Section III deals with sources of the data; Section IV describes a complementary data base maintained at the University of Pennsylvania (Penn); Section V points to some uses of the numbers; Section VI presents brief descriptions of ICP methods, and Section VII describes the limitations of ICP data. Section VIII describes the methods and limitations of the Bank staff estimates of expenditures for non-ICP countries. Section IX discusses alternative approaches to estimating ICP-type data and Section X addresses the issues of extrapolations to other countries and years. Section XI reports on the direction of future work and Section XII describes

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[1] The report was written by Sultan Ahmad and Philemon Oyewole. The Systems Division of the International Economics Department provided valuable assistance in developing codes for the indicators and creating the *STARS* diskettes. The data were provided by United Nations Statistical Division (UNSTAT), Statistical Office of the European Communities (Eurostat), Organization for Economic Cooperation and Development (OECD), Austrian Central Statistical Office and the University of Pennsylvania; these are gratefully acknowledged. The data were put together by Philemon Oyewole, assisted at various times by Taranjit Kaur, Jiali Li and Nam Pham. John Astin, Jitendra Borpujari, Ramesh Chander, Magda Czismadia, Alan Heston, John O'Connor and Jong-goo Park made valuable comments on an earlier draft. The Bank does not guarantee accuracy of the information. The opinions expressed here are the authors' own and may not be attributed to the World Bank or its affiliates or to the organizations from which the original data were obtained. Comments and corrections on improving the data should be addressed to: *Chief, Socio-Economic Data Division, World Bank, Washington, D.C. 20433, USA.*

how the *STARS* software works. The main body of the report presents the data tables, followed by notes and references.

2. Content and coverage

4. The report contains two types of data, those generated by ICP and those estimated by Bank staff. Data generated by ICP consist of three tables:

(a) per capita GDP expenditure in national currency;

(b) Purchasing Power of Currency (PPC)[2] expressed as units of national currency per base currency, such as the "international dollar"(I$)[3]; and

(c) per capita quantities or national currency GDP expenditure converted to the base currency by PPC rates.

5. These data are based on **actual surveys** and are to be distinguished from those published by Summers and Heston in Penn World Tables or by the World Bank in the *World Development Reports* (WDR) 1992 and 1993, Table 30, that contain **shortcut estimates** for countries that did not participate in ICP and extrapolations to non-benchmark years (see section XI below).

6. Bank staff estimates consist of only one table which is analogous to the first ICP table, Per capita GDP expenditure in national currency. ICP data refer to 1975, 1980, 1985 and 1990 while the Bank staff estimates of expenditure details refer to the latest year between 1981 and 1991 for which data are available for a country. ICP data are available for 87[4] countries and Bank staff estimates are for 55 additional countries. Table A lists the countries and years for which data are presented here.

7. ICP surveys have traditionally been carried out in five-yearly phases. The table below shows the base year and country coverage of each phase. A total of ninety countries have so far been exposed to ICP surveys. The entire Latin American continent was absent from the Phase V (1985) survey. Phase

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[2] *Purchasing Power of Currency* (PPC) is defined here as the number of units of a country's currency required to purchase the same amounts of goods and services as, say, one US dollar would buy in the United States; it has the same meaning as Purchasing Power Parity (PPP) in ICP literature. Following Kravis, the term PPC is used here to distinguish it from PPP in its purest form which refers to relative prices of a fixed basket (I.B. Kravis (1984), "Comparative Studies of National Incomes and Prices," *Journal of Economic Literature*, March, p. 2).

[3] An "international dollar" has the same purchasing power as the US dollar for total GDP for US, but the purchasing power of components are determined by average international price structure instead of US price relatives.

[4] Although a total of 90 countries have so far participated in at least one of the ICP surveys, data for three of them were not available for the report. These countries are: Nepal (1985), Czechoslovakia (1990) and USSR (1990).

VI for 1990 was completed only in Europe and non-European member countries of the OECD. The present plan is to do a worldwide survey in 1993 covering over eighty countries.

ICP: Participation by Developing and Industrialized Countries 1970-90*

Phases (I-VI)	Developing Countries	Industrialized Countries	Total
1970	4	6	10
1973	8	8	16
1975	21	13	34
1980	42	18	60
1985	42	22	64
1990	6	24	35 [5]

* Coverage changes include countries that dropped out from ICP; these, numbering 7 in 1980, 18 in 1985 and 39 in 1990, were all developing countries.

8. The first three phases (1970, 1973 and 1975) were coordinated centrally from the University of Pennsylvania in a single global framework. From 1980, however, the work is being organized by regional coordinators for their respective sets of countries, and the regional results are linked together at a later stage to form the global comparison. The global results for 1980 were processed by UNSTAT and for 1985 by Eurostat. For 1985, regional as well as globally linked results are presented here.

9. All the tables are presented in a uniform format: the same set of indicators is used irrespective of the table, region or year. The list of indicators is collated and harmonized from lists for various regions and the phases of ICP completed so far. Since the lists changed from one ICP phase to another, and were more detailed in some regions than in others, the collated list presented here strikes a compromise between keeping all indicators and coping with missing information, or retaining indicators with observations and combining some available details. Out of over 500 possible lines of data, the tables present 255 lines, consisting of the most detailed level and successive aggregations, leading up to GDP. The most detailed level is called the "basic heading" ("category" in earlier phases); it is defined as the most detailed level for which expenditure data are available. The PPC data for each basic heading represent an average for the "items" included in the basic heading. Expenditure weights at the item level are not collected.

[5] The ICP report presents data for 24 of the 30 countries for 1990 as the data for the other six countries (former Czechoslovakia, Hungary, Poland, Romania, former USSR and former Yugoslavia) are still being processed.

10. ICP data are grouped at the level of 150 to over 250 basic headings depending on the region but less than 60 lines of data are published,[6] consisting of about 35 to 40 lines of basic headings and various levels of successive aggregations leading up to GDP. The more detailed data presented here are more or less as they have been reported by the organizations that produced them, without any modification.

11. As ICP progressed through various phases, it absorbed changes in methods and practices which have introduced elements of incomparability between the exercises. For instance, the 1975 exercise was conducted in a global framework whereas since 1980, the exercise has been regionalized, involving a two-step process in which countries are first compared within each region and then linked to other regions to form a global comparison. Not all the regions followed the same classification schemes or methods of aggregation, and the linking procedure has not been uniform in all cases. Also, the 1985 regional data presented here are expressed in regional currencies. Consequently, readers are advised to use regional data for comparing countries within a region and to use global data for comparing countries across the regions.

12. A complementary data set, maintained at the University of Pennsylvania, concentrates on a smaller number of basic headings but adjusts official data to make them more comparable across regions and benchmark years. A description by Alan Heston of the Penn data set is presented in Section IV below.

3. Sources of data

13. The World Bank is *not* the primary source of ICP data; the organizations listed below are. The World Bank collected the information from these sources, established some consistency among the tables, and packaged them in this report for the convenience of users. Readers should refer to the published reports for details on how these data were compiled in the first place and address any remaining questions to the respective organizations. The sources of ICP data are as follows:

ICP Phase III (1975)	United Nations Statistical Division (UNSTAT), United Nations, New York, N.Y. 10017. The data were published in the ICP phase III report, Irving B. Kravis, Alan Heston and Robert Summers, *World Product and Income: International Comparison of Real Gross Product* (Baltimore and London: The Johns Hopkins University Press, 1982 for the World Bank).
ICP Phase IV (1980)	UNSTAT, United Nations, New York, N.Y. 10017. The data were published in the ICP phase IV report, *World Comparisons of Purchasing Power and Real Product for 1980 - Phase IV of the International Comparison Project* (New York: United Nations and Commission of the European Communities, 1987).
ICP Phase V (1985)	For countries in the Organization for Economic Cooperation and Development (OECD), OECD, Paris, France, and the Statistical Office

[6] However, all the details for 1975 (and earlier years) and for 1985 Africa and the Caribbean regional comparisons were published, and all the detailed data have been made available to users on request.

of the European Communities (Eurostat), Luxembourg. The data were published in *Purchasing Power Parities and Real Expenditures, 1985* (Paris: OECD, 1987). Unpublished details were provided by OECD.

For East European (the so-called Europe Group II) countries, Economic Commission for Europe (ECE), Palais des Nations, Geneva, Switzerland, and the Austrian Central Statistical Office (ACSO), Vienna, Austria. The data were published in *International Comparison of Gross Domestic Product in Europe, 1985: Report of the European Comparison Programme* (New York: United Nations and ECE, 1988). Unpublished details were provided by ACSO and Eurostat.

For African countries, Eurostat, Luxembourg. The data were published in *Comparison of Price Levels and Economic Aggregates 1985: The Results for 22 African Countries* (Brussels and Luxembourg: Eurostat, 1989).

For Asian countries, UNSTAT, United Nations, New York and the Economic and Social Commission for Asia and the Pacific (ESCAP), Bangkok, Thailand. The data were reported in *Purchasing Power Parities and Quantity Comparison for the ESCAP Region* (New York: ESCAP and United Nations, 1992). Unpublished details were provided by UNSTAT.

For the Caribbean countries, Eurostat, Luxembourg. The data were reported in "Comparison of Price Levels and Economic Aggregates: The Results of 7 Caribbean Countries" (Luxembourg: Eurostat, 1992), processed. Unpublished details were provided by Eurostat.

For global comparisons linking all the regional results (excluding the Caribbean), UNSTAT, New York. The results appear in *World Comparisons of Real Gross Domestic Product and Purchasing Power, 1985* (UNSTAT, Forthcoming).

1990 For OECD countries, OECD, Paris, France, and Eurostat, Luxembourg. The data were published in *Purchasing Power Parities and Real Expenditures - EKS Results, Vol. 1, 1990* (Paris: OECD, 1992).[7]

[7] Volume II of the 1990 OECD report with Geary-Khamis results is to be published in 1993. Also, a separate report for all European countries, including former Czechoslovakia, Hungary, Poland, Romania, former USSR and former Yugoslavia for 1990 is under preparation by ECE.

4. ICP benchmark data files maintained at Penn

14. Professors Alan Heston and Robert Summers at the University of Pennsylvania also maintain a data base of previous benchmark estimates. The Penn group's approach has been to make it possible to generate world comparisons for each benchmark that were more or less comparable in methods from benchmark to benchmark. This has usually required modification of the original benchmark input data in several ways.

4.A. The Penn benchmark data set

15. The benchmark input expenditure data are given as a distribution across GDP for 139 basic headings that can be applied to whatever set of national accounts data a researcher may be using. A set of supercountry weights used by the Penn group is also supplied, along with labels of the basic headings, population, and exchange rates used in calculating the basic heading price levels (basic heading parities divided by the exchange rate). In addition the latest benchmark output data are provided which includes two tables; the first table provides nominal expenditures in US dollars at exchange rates for the detailed headings and the second table provides the same detail in "real"[8] (PPC converted) terms in international dollars as estimated by the Geary procedure. The price level for any detailed heading is its nominal value divided by its real value, and the same will be true for any aggregation that the researcher may choose to make.

4.B. Some important modifications of the original ICP benchmarks

16. In addition to using the most up-to-date national accounts revisions of the benchmark countries, a number of modifications of the basic benchmark data sets have been made as follows:

(a) With respect to the 1970 and 1975 benchmarks, some modifications of the health and education inputs were carried out. In earlier benchmarks, the amount of privately and publicly financed services in medicine were separated for each heading like physician's services, hospital care and the like. In more recent benchmarks the focus has been on treating privately and publicly provided services in separate headings. The earlier benchmarks were modified to conform as much as possible to the later treatments for the health headings.

In both health and education another modification in later benchmarks was to move as close to price of the service as possible. In health this has meant using priced services where possible and using salary data for practitioners (as opposed to using numbers of practitioners as the quantity measure and indirectly estimating the PPC).

(b) Treatment of change in stocks has generally followed the earlier benchmarks. Negative headings cannot be included in the Geary aggregation, so it has been necessary to

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[8] The term "real" is used in ICP literature to denote national currency expenditure converted to a common currency by PPC rates which equalize prices in place-to-place comparisons just as constant prices do in time-to-time comparisons. The terms "real", "quantity" or "real quantity" are used synonymously.

estimate a price separately. The price level for this heading is taken as the price level of all of the commodity headings.

(c) For estimation of world output, since 1980, the benchmark estimates have been done on the basis of regions and the regional results linked to form the world comparison. The Penn group has provided inputs that allow estimation of any groupings of the benchmark countries. However, their results have been presented using all the benchmark countries in one world comparison. Researchers may use the Penn input data to build up world comparisons in other ways, also.

(d) Several changes have been made in input parities where inquiries suggested that the original published benchmark parities were doubtful. These changes include housing services in Japan, construction in Sri Lanka, cereal consumption in Bangladesh, and government, health and education in India, all for 1985.

5. Uses of ICP data

17. ICP data show that PPC rates are generally lower than market exchange rates for most countries except for the most developed ones; that they are much lower for services than for goods; and that the difference at the aggregate GDP level tends to increase inversely with per capita income. As a result, valuation of GDP in terms of a common currency is generally higher at PPC rates for poorer countries than at exchange rates.

18. ICP data, consisting of benchmark and various extrapolations (see section on extrapolations to other countries and years), have been used in studies relating to diverse macroeconomic subjects. This is evidenced by the large number of citations of these data in professional writings. The whole new growth literature of the last ten years, for instance, have made extensive use of PPC-based data.[9] The detailed price and expenditure data of ICP can be useful in studies of, for instance, structural adjustment, poverty analysis, income distribution, and rural-urban differentials in standards of living.

19. In the area of structural adjustment, patterns of real quantity and price structures can be assessed with a view to formulating policies promoting a desired pattern. Since relative prices of services are lower and those of investment goods higher in poorer countries, the shares of services and government in total expenditure in "real" terms are higher and the share of investment is lower in these countries than conventional measures would indicate. Because data are made available on the detailed components of GDP a variety of structural relationships involving real quantities and prices could be explored. For example, these data have been used to examine the relationship between prices, income level, and real quantity compositions.[10]

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[9] Robert Summers (1989), "Analytical Uses of ICP-based International Comparisons", paper presented at World Bank seminar on *Bank Uses of ICP*, Washington, D.C.; June 8.

[10] Irving Kravis, Zoltan Kenessey, Alan Heston and Robert Summers (1975), *A System of International Comparisons of Gross Product and Purchasing Power* (Baltimore: John Hopkins University Press), henceforth referred to as *A Systems...*

20. Differences in per capita income between countries are generally associated with differences in relative price structures. The "structural" channels through which these differences emerge have been examined through an analysis of ICP data. For example, productivity differentials, relative factor endowment including human capital, trade balance, GDP shares of tourism receipts, value added in minerals, expenditure on nontradables, military etc., have been examined as possible channels.[11]

21. Although ICP's synthetic "international price" (see Section VI below) cannot be used as guide to resource allocation[12], use can be made of the ICP data for a detailed analysis of the cost of living across countries and computation of poverty lines[13]. The price levels of various representative baskets of basic consumption items could be used to develop an international price index of basic needs. This could be used both to assess the incidence of poverty and to monitor progress of policies targeted for poverty alleviation. ICP also finds uses in the analysis of social dimensions of economic development. Researchers often would like to examine a social or demographic indicator including infant mortality, morbidity, or age dependency ratio, in relation to an income measure. For such analysis to have more meaningful applications, real GDP converted at PPCs has been preferred to an exchange rate converted measure. To facilitate such exploration, the World Development Indicators (WDI) of the World Bank presents actual or estimated PPC-based GDP per capita for the countries included in the tables.

22. ICP data would change the view of world distribution of income. Measured in PPC terms, the distribution of incomes of nations appears less skewed than exchange rate conversion would indicate. As the weights of nations in a global economy would shift, so would the weighted average growth rates of different regions, and the overall growth rate of the world as a whole[14]. The Fund's *World Economic Outlook* (WEO), May 1993[15], for instance, shows the share of developing countries as jumping from

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[11] Examples include Christopher Clague (1986), "Determinants of the National Price Level: Some empirical Results", *Review of Economics and Statistics*, May, 68, 320-323; I. B. Kravis, and R. E. Lipsey (1987), "The Assessment of National Price Levels" in Sven W. Arndt and J. David Richardson, eds., *Real-Financial Linkages Among Open Economies*, Cambridge, Massachusetts: MIT Press, 97-134.; Rodney E. Falvey, and Norman Gemmell (1991), "Explaining Service-Price Differences in International Comparisons", *American Economic Review*, 81 Dec., 1295-1309; Jeffrey H. Bergstrand (1991), "Structural Determinants of Real Exchange Rates and National Price Levels: Some Empirical Evidence", *American Economic Review*, 81 March, 325-334; and Jeffrey H. Bergstrand (1992), "Productivity, Factor Endowments, Military Expenditures, and National Price Levels", paper presented at the Symposium on "International Comparison of Price Structures and their Influence on Productivity and Growth", Miami, Florida, July 17-18, 1992.

[12] Paul Isenman (1980), "Inter-Country Comparisons of "Real" (PPP) Incomes: Revised Estimates and Unresolved Questions", *World Development*, 8(1).

[13] See World Bank, *World Development Report 1991.*

[14] See International Monetary Fund, *World Economic Outlook, May 1993* (Washington, D.C: IMF, 1993); R. Summers, I. Kravis and A. Heston (1984), "Changes in the World Income Distribution", *Journal of Policy Modeling*, VI (May), pp.237-269; United Nations, *Trends in International Distribution of Gross World Product*, special issue of national accounts statistics, 1993 (forthcoming).

[15] See Annex IV, pp.116-119.

18 percent of world output in exchange rate terms to 34 percent in PPC terms in 1990 resulting in an increase in the growth rate of the world economy by nearly one half of one percent a year over the period 1983-92.

23. Another analytical use of ICP data is found in exchange rate developments. Why exchange rates do not track PPCs or under what circumstances one could infer market exchange rates from PPCs is of interest to academics and policy makers alike. One instance of trying to infer exchange rates from PPCs was at the World Bank in estimating the incomes of the economies of the former Soviet Union (FSU) transforming from planned to market economy. The Bank developed a conversion factor known as SACF (Synthetic Atlas-type Conversion Factor)[16] based on estimated PPCs of the FSU economies and the relationship between PPCs (from ICP) and exchange rates for comparator market economies. The World Bank does not use ICP estimates of per capita income for operational purposes.

24. On a national or local level, ICP data can be useful for project cost analysis since specific ICP surveys on plant and equipment provide detailed information on prices, quantities, quality and installation cost which are useful in the assessment of planned projects. An analysis of the structural characteristics of the economy via actual prices is also made possible by ICP data. For example, structural imbalances between monetized and informal sectors of the economy at different stages of development could be examined in relation to a comparator country. Such analysis can reveal identifiable agents, actions and products that aggravate the imbalance between the formal and informal sectors, and provide direction for formulating policies to reduce the imbalance. A country could also take measures to improve the supply situation based on analysis of its price structure in relation to its regional price levels. Such analysis may point to the need to improve the transport and storage facilities, packaging and marketing practices, or even grant targeted subsidies.

25. Several countries have combined ICP work with national price and expenditure statistics. Sri Lanka, for instance, publishes ICP-type expenditure details annually; Nigeria introduced ICP-type specifications in their reformed Consumer Price Index (CPI) making it easier to do ICP with CPI data; and Bangladesh began developing national accounts deflators based on ICP. The European Communities (EC) uses ICP-based income to weight member country CPI to obtain the average Community index. Operationally, the EC has used ICP numbers to determine allocation of Community's "Structural Fund" to reduce regional disparities[17].

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[16] Developed by World Bank staff in the Socio-Economic Data Division, International Economics Department of the World Bank, for the primary purpose of assigning the new states of the Soviet Union to income categories for Bank analytical and operational purposes. See details in World Bank (1992), *Measuring the Incomes of Economies of the Former Soviet Union*, Policy Research Working Papers Series No.1057, World Bank (December).

[17] J.A. Astin (1993), "Promoting the Use of the Outputs of ICP", paper presented at the Expert Group Meeting on ICP Methodology of Philadelphia (January 27-29) (Eurostat, Luxembourg).

6. Methods of International Comparisons Programme (ICP)

26. ICP methods have been extensively documented. In addition to the reports listed in Section III above, readers may wish to refer to the ICP Phase I report[18] which discusses many methods and their relative merits and de-merits. The ICP Handbook[19] of the United Nations also provides summary descriptions of ICP sources and methods. This report only touches on the basic elements of these methods.

27. The primary purpose of ICP is to compare the values of quantities of goods and services embodied in the gross domestic products of different countries on a uniform basis. To accomplish this, ICP evaluates each country's quantities at a uniform set of prices. This is done by computing price ratios of a vast array of comparable items of final purchase and weighting them by national GDP expenditures. The result is a conversion factor, called the PPC, which is defined as the number of units of a country's currency required to purchase the same amounts of goods and services as, say, one US dollar would buy in the United States (please see footnote 1). It is postulated that for the purpose of comparing national accounts aggregates, conversion of national currency values to a common currency by PPC is to be preferred to conversion by exchange rates, because, while exchange rates may sometimes equalize prices of tradable goods, PPCs by definition equalize prices of all goods and services in national accounts across countries.

28. ICP has concentrated on the expenditure side of GDP (see section on alternative approaches to PPC below) in preference to production and income approaches, citing statistical difficulties. Its basic method starts with the identity: $E = P * Q$ or $Q = E / P$, where E = expenditure; P = price; and Q = quantity. It collects two types of data: (a) prices of closely specified items of final expenditure classified into 150 to over 250 basic headings, and (b) GDP expenditure divided into these basic headings. Out of a list of 1000 to 2000 specifications (depending on the region), each country supplies prices of an average 3 to 5 items per basic heading. The item prices are collected in many markets and outlets - rural and urban, formal and informal - to obtain national, annual averages. PPCs are computed by obtaining average ratios of prices of comparable items in each basic heading and averaging them at various levels of aggregation using the GDP expenditure weights. The PPCs are then used to convert values in national currencies to values in a common currency.

6.A. Binary methods

29. The traditional method of comparing countries is to take two countries at a time, called the binary method. Cross-country price ratios of matching items are aggregated by using alternatively the expenditure weights of the denominator and the numerator country to obtain two alternative estimates of PPC, namely, the Laspeyres Index and the Paasche Index. These two estimates, combined into a single estimate by obtaining their geometric mean, yields the Fisher Ideal Index. The formulae are given in Annex 3.

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[18] Kravis et. al., *A System ...*

[19] *Handbook of the International Comparison Programme*, Studies in Methods, Series F, No. 62 (New York: United Nations, 1992).

30. Binary measures most accurately reflect the situation between two countries. However, they are not appropriate when comparing a number of countries at the same time because these indices must also be transitive - i.e., comparisons of country B with country A and country C with country A must yield a valid comparison of B and C. Binary results would be transitive if all countries were compared with a single base country, but not with each other. However, the results would change with the change of the base country. Early research in ICP involved finding a multilateral method which would yield transitive results and which would also be base-country invariant.

6.B. Multilateral methods

31. There are two steps in calculating multilateral PPCs, one for the basic headings and another for the higher levels of aggregation. The first step involves computing transitive and base country invariant indices at the basic heading level. Two methods have been used for this purpose, the Country-Product-Dummy (CPD)[20] method and the Elteto, Koves and Szulc (EKS) method. Typically, the price matrix for each basic heading has missing cells as there are more items than prices submitted by the countries; if only prices that match with those in the base country were used, many observed prices would be left out. Both the CPD and the EKS methods make use of all the observed prices as long as they have a match with at least one other country, not necessarily the base country. The CPD is a regression method in which two sets of dummy variables - one for the countries and another for the items - are used to obtain an average at the basic heading level. The EKS (explained below) obtains a similar average by a series of binary comparisons. At present, various methods are used at the basic heading level; Kravis et. al. used the CPD, while Eurostat prefers the EKS method.

32. There are many multilateral methods of aggregation[21] of which two are used in ICP, the Geary-Khamis (GK) method and the EKS method. The GK method[22], preferred by the Kravis team, involves using the observed price and expenditure data to obtain estimates of quantity implicitly for each country and evaluating the implicit quantities at a common set of average prices, called "international prices", denominated in a base currency, say, the US dollar. Quantities estimated at "international prices" are expressed in "international dollars" (see footnote 3 for a definition of I$). The "international price" of an item is the quantity weighted average of the prices of the item in all the countries being compared, after the prices have been made commensurate with each other by converting them to the base currency by each country's PPC at the GDP level. The PPC for a country is the ratio of expenditure in national currency to expenditure in "international prices". Thus PPC converted numbers in I$ can be calculated in two alternative ways: (a) deflating local currency values by their respective PPCs or (b) evaluating the quantities at "international prices". The GK formula is given in Annex 3.

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[20] See Kravis et.al., *A Systems...*, Ch. 5.

[21] See Kravis et.al., *op. cit.*, Ch. 5.

[22] Named after the two authors of the system: R.G. Geary (1958), "A Note on Comparisons of Exchange Rate and Purchasing Power Between Countries", *Journal of the Royal Statistical Society* 21, pp. 97-99; and S.H. Khamis (1967), "Some Problems Relating to International Comparability and Fluctuating of Production Volume Indicators", *Bulletin of International Statistical Institute* 42, pp. 213-320. See also S.H Khamis (1970), "Properties and Condition for the Existence of a New Type of Index Number", *Sankhya* 32, pp. 81-98, and S.H Khamis (1972) "A New System of Index Numbers for National and International Purposes" *Journal of the Royal Statistical Society* 135, pp. 96-121.

33. The EKS method[23] is the geometric mean of all direct and indirect Fisher indices between all possible pairs of countries. This transforms a set of essentially non-transitive binary comparisons into a transitive one. The formula appears in Annex 3.

34. There is no universal agreement on which method to use for multilateral aggregations. Both GK and EKS are transitive and base country invariant. The attraction of GK is that it has additive consistency. Additive consistency means that PPC converted values for, say, consumption, government, investment and net foreign balance can be added to match total GDP independently converted, thus making it possible to set up a consistent set of national accounts in which components add up to totals. Also, valuation of outputs of different countries at a single set of average prices has a parallel with constant price value series in which quantities of different years are valued at the fixed prices of the base year. The biggest drawback about GK is that the single set of quantity weighted average international prices tends to be closer to the price structure of richer countries, *which would lead to overvaluation of quantities of the relatively poor countries* (the so-called Gerschenkron effect[24]) in the set. This tendency of GK has been reduced by regionalizing ICP, where economic disparity among countries being compared is minimized. However, Eurostat prefers to use the EKS, which being a function of binary comparisons, reflects the situation between any two countries more accurately. Also, it gives equal weight to each country and therefore minimizes the Gerschenkron effect.[25] The drawback of EKS is that it is not additive, i.e., components of national accounts would not add up to totals. EC and OECD have decided to publish both EKS and GK results, although only the EKS results are classified as "official".

6.C. Regionalization, fixity and global linkage

35. ICP started out as a single system of global comparison where all the countries would be compared simultaneously. Gradually it became apparent that such a scheme was not administratively feasible without losing currentness of results. It is also not analytically desirable; comparisons of countries far apart geographically and at different stages of development would not yield meaningful results because of the difficulty of finding sets of items that were reasonably representative and comparable at the same time. By conducting the comparisons within regions, these problems are minimized. Regional results are linked together into a global comparison with the help of "core countries". A number of core or bridge countries in each region are compared bilaterally and the results used to link the regions. Since the global price structure is different from any regional price structure, linking would have the potential of altering regional rankings. However, the EC insist on "fixity", meaning that the relative positions of countries in the EC comparison could not be altered either in the OECD, ECE or the global comparison. This has introduced an element of incomparability in the final results.

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[23] Named after the authors, Elteto, Koves, and Szulc. See L. Drechsler (1973), "Weighting of Index Numbers in International Comparisons", *Review of Income and Wealth*, Mar., pp.17-34.

[24] The valuation of country's quantities tends to be high when a price structure much different from its own is the basis for the valuations. See Kravis et. al., *A System* .., p. 74.

[25] The GK also can be calculated with equal weights which would minimize the Gerschenkron effect; for such an index, see Doris M. Iklé, "A New Approach to the Index Number Problem" *Quarterly Journal of Economics*, vol. 86, May 1972, pp 188-211.

36. The core country mechanism has not worked too well because of lack of an adequate number of countries willing to act as core countries. Instead of "core countries", a system of "core commodities" for linking regions is to be tested in the 1993 round of surveys for some developing countries. In this system, all the countries are asked to price a set of common items which would provide the linkage. This method has several advantages: it would provide many bridges to link the regions, the results would not be dependent on the choice of link countries, and the burden of work would be spread among all participants. The disadvantage is that items have to be broadly defined and corrections for quality difference would be needed to make the prices comparable.

7. Limitations of ICP data

7.A. Price data

37. *Representative or comparable?* ICP prices have to be both representative and comparable, yet representative items in two countries may not be comparable just as comparable items may not be representative. Representative items, usually included in consumer price indices, tend to be cheaper items and yield lower PPC estimates compared with a situation where comparable items are favored at the expense of representative items for low income countries.[26] Over the years, different countries have tilted one way or another, lending an element of incomparability in the numbers.

38. *Inconsistency with national accounts deflators.* ICP prices, when divided into total expenditure, should yield the correct quantities embodied in national accounts. However, this may not be achieved in practice. The ICP prices can be different from those used in national accounts, and can yield incorrect implicit quantity estimates.

39. *Mismatch of quality.* Potentially, the most important source of error in the comparison is the difficulty of comparing like with like. A potato is not always a potato if the conditions of sale are considered. Since items tend to be of lower quality in poorer countries, failure to match qualities would likely underestimate PPCs and over-estimate real quantities in these countries. In comparing East European countries with Austria, a scheme of quality correction has been introduced, but its implementation has remained spotty and arbitrary. Efforts are underway to improve the scheme and implement it uniformly.

40. *Comparison resistant services.* Prices of items that are not sold at market prices - such as medical, educational, housing, transportation services - especially in non-market economies, cannot be easily compared. In these cases quantities are compared directly and prices obtained implicitly. However, since for services inputs are taken as measures of outputs, the question of productivity differences is likely to be ignored, introducing another element of incomparability in the numbers.

41. *Mixed composition of basic headings.* Since all countries do not price all items, the average at the basic heading level represents a different composition of items for different countries. For instance,

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[26] This may have been the case in the 1985 ESCAP comparison in which countries such as Bangladesh took most of the items from their regular price collection while India conducted special surveys and priced high quality items ostensibly to match quality, making India appear poorest, relative to the other countries in the region.

one country may price ordinary long grain and short grain rice while another may price Uncle Ben's and Basmati. The PPC for the second country would be higher than if they both priced the same items; the quantity estimates would, therefore, be incorrect. However, a fixed basket is not acceptable as it would not be equally representative in every country.

7.B. Expenditure data

42. In most developing countries, GDP expenditure is broken down into broad categories such as private consumption, government consumption, investment, and net foreign balance. Private consumption, which forms the bulk of the expenditure, is obtained as a residual where the data needed to estimate it directly are not usually available. The details of the type needed by ICP are obtained in an *ad hoc* manner and may not be very reliable. They will remain so until countries pay more attention to developing the expenditure side of their national accounts. Until that happens, results at more detailed levels will continue to be less reliable than at more aggregate ones.

7.C. Aggregation methods

43. As shown in the table below, different ICP phases, or regions within phases, have used different methods of aggregation, the EKS or the Geary-Khamis. As noted earlier (see the section on methods of ICP), each method has its advantages and disadvantages, and there are valid reasons for choosing one or the other. However, they introduce an element of incomparability in the numbers presented here. Geary-Khamis method is additive meaning that the quantity estimates of components add up to aggregates including GDP, but it tends to give inflated estimates for poorer countries. On the other hand, while the EKS method does not have this drawback, it is not additive, i.e. components will not add up to totals. The table below shows when and where particular aggregation method was used.

Aggregation Methods: When and Where Used

ICP Phase/Region	Method of Aggregation Used
1975(Global)	G-K
1980(Global)	G-K
1985 (Global)	Regional methods[27]
1985 (OECD)*	G-K
1985 (ESCAP)@	G-K
1985 (AFRICA)*	G-K
1985 (CARIBBEAN)*	G-K
1985 (EUROPE GROUP 2)	Binary with Austria[28]
1990 (OECD)	EKS

Note:
* The initial basic parities were calculated using the EKS method.
@ The initial basic parities were calculated using the CPD method.

7.D. Presentation of results

44. In addition to using different aggregation formulae, regions have reported PPCs differently. The PPCs for Phase III (1975) and Phase IV (1980) are in "international dollars" while those for Phase V (1985) are in different currencies depending on the region. The 1990 values are expressed in US dollars (not "international dollars"). The PPCs and the corresponding "real" quantity estimates for the regions are, therefore, not always comparable.

45. Apart from the indications given in the titles, readers may quickly spot whether a certain table uses an "international" currency (e.g., I$) or a base country currency (e.g., US dollar) by looking at the PPC table. If the numbers in the PPC table for the base country are all equal to 1.0 for all components, the values are in base country currency, not in "international" currency; if these PPCs are not always equal to 1.0, then these are in "international" currency. As defined earlier, estimates in "international currencies" are based on average "international price" structures, while values in any base currency are based on that country's price structure.

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[27] The global numbers are linked by binary comparisons between "core countries" from different regions; the relative positions of countries within the regional comparisons were not altered. In the process, some components do not add up to totals.

[28] The Europe Group 2 countries (Hungary, Poland and former Yugoslavia), which made binary comparisons with Austria, were integrated into ECE report using the Geary-Khamis.

46. Globally linked results are supposed to place all regional numbers on a comparable basis. However, as noted earlier (Section VI.C), for lack of adequate number of link countries, the end results have not been very satisfactory.

7.E. Other limitations

47. Limitations as well as usefulness of ICP numbers have been discussed in many places.[29] While the available ICP data have been used widely in the academic world, they have been little used in policy decisions because of limitations of the type noted below.

48. *Lack of continuity of country coverage.* Although a total of 90 countries -- 24 industrialized and 66 developing -- have been surveyed at one time or another, some countries have come in and out of the system. Latin American countries, Israel, Malaysia, Mexico and Syria are cases in point. Also about 70 countries accounting for a third of the population and one-quarter of the income of developing countries are yet to be surveyed. The coverage also has significant geographic gaps. China and most of the middle eastern countries are yet to be covered. China is expected to participate in the 1993 ESCAP survey but only in a limited way, comparing Guangdong province with Hong Kong and Shanghai with Japan. There is no program in place for the Middle East and Latin America is again likely to stay out in the anticipated 1993 survey. The exercise has now many regional centers and global linkage is weak and uncertain as UN, which is in charge of global comparison, has cut back resources devoted to ICP. For ensuring consistency between regions and integrity of the global comparison, the surveys need strong central coordination which is lacking. Without such a central coordination and support, it would be hard to expand coverage, produce globally linked results, and maintain continuity.

49. *Long time lag.* Some regional results have been published speedily, but the speed with which globally linked results can be published is determined by the slowest region. Currently, the process takes an inordinately long time, making the data less relevant for current purposes. The 1985 global results, for instance, are yet to be published.

50. *Absence of inter-temporal cohesion.* ICP quantities extrapolated from one survey year to another by growth rates computed from constant price national accounts and adjusted for US inflation do not usually match the survey data. This is to be expected as comparing numbers of two ICP surveys are like comparing current price data; the growth rates of these numbers would not be consistent with constant price growth rates. While this inconsistency is more so in exchange rate converted numbers such as in

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[29] See, for instance, World Bank, "Methodological problems and proposals relating to the estimation of internationally comparable per capita GNP figures" (SecM83-1120), December 1983; "Per Capita Income: Estimating internationally comparable numbers" (SecM89-73), January 1989; Robin Marris (1984), "Comparing the incomes of nations: a critique of the International Comparison Project", *Journal of Economic Literature*, 22 (March), pp. 40-57; Irving Kravis (1984), "Comparative studies of national incomes and prices", *Journal of Economic Literature*, 22 (March), pp.1-39, and Paul Isenman (1980), (op. cit.).

the *World Bank Atlas* than in ICP numbers, it is believed that the inconsistency can be reduced by harmonizing ICP with CPI and national accounting.[30]

7.F. Miscellaneous adjustments to ICP data

51. In order to harmonize all the data sets into 255 lines (or indicators) for all countries and across all phases, some similar but not identical detailed items have had to be aggregated under a common heading. In such cases the PPCs were derived by dividing the resulting expenditures by the corresponding real quantity values. For ICP exercises that made use of the EKS method, this procedure will not give exact PPC values. For OECD and the Caribbean in 1985, the real quantity values for these composite totals were obtained by dividing nominal expenditures by corresponding PPCs. For ESCAP in 1985, the PPCs were obtained as quotients of nominal expenditures and corresponding real quantity values. For Europe Group 2 in 1985, the PPCs of computed aggregates were first obtained as the quotients of nominal expenditures and corresponding real quantity values, and then adjusted to Austria = 1 since the PPC for this region is in Austrian schilling.

52. In the 1985 regional exercises, two countries, Japan and Austria, are classified among two regions simultaneously. Japan appears both in OECD (Japan1) and in ESCAP (Japan2). Similarly, Austria appears both in OECD (Austria1) and Europe Group 2 (Austria2).

53. For the 1990 exercise, the PPCs at aggregate levels were initially in OECD = 1. These were adjusted to USA = 1 to harmonize them with the PPCs at the detailed levels which are in US dollars.

54. Despite these limitations, ICP remains appealing as the only extensive single source of internationally comparable PPC and expenditure data that are available for a large number of countries, and for some of them, for a number of years.

8. World Bank staff estimates of expenditure details

8.A. Methods

55. Estimates in national currency terms of the 255 GDP expenditure categories (basic headings and aggregates), to match those of ICP, were made for 55 countries (including the 15 FSU economies) that have not yet participated in the ICP exercise, but have at least some data on GDP aggregates. Countries were selected on the basis of their membership or prospective membership of the Bank. The main reason why these estimates were made was to provide weights for global or regional aggregations, and to develop the expenditure side of GDP. *It must be emphasized that these desk estimates are very tentative and should be used with caution.* Countries are encouraged to examine the estimates, make suggestions for improvements and adopt programs of compiling actual expenditure data on a regular basis.

56. The estimation method starts with the actual expenditure data available in the national accounts of a given country. The gaps (missing data from the 255 categories) are then filled by one or more of

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[30] See Sultan Ahmad (1993), *Intertemporal and Interspatial Comparisons of Income - The Meaning of Relative Prices*, World Bank Policy Research Working Paper No. WPS 1157, July.

three ways discussed below. Often actual data were available only on summary categories of the GDP in the national accounts. These data include:

1. GDP
2. Total private consumption
3. General government consumption
4. Gross domestic investment
5. Fixed investment
6. Change in stocks, and
7. Net foreign balance.

These data were used as control totals to be distributed over their respective more detailed categories. The central database of the Bank (ANDREX) provided most of these control totals for a majority of the countries. Some countries, e.g. Angola and Libya, had only GDP data. No estimates were made for countries without actual GDP. Estimates were made for the latest year for which data on control totals were available.

57. The filling of gaps was done in two stages: missing control totals were first estimated then their more detailed components were derived. The control totals were got in one of two ways. The first was to consult national statistical sources, as well as publications of other international organizations for actual data; the second was to use the percentage distribution of a compatible country that participated in the 1985 ICP phase. Thus, if for example "gross domestic investment" for a country A is missing, then the percentage of GDP of gross domestic investment of an ICP country B will be applied to the GDP of country A to estimate this missing data.

58. The detailed components of the seven control totals were obtained by first examining national and international statistical sources for actual data, and then by estimating missing ones using percentage distributions derived from one of the following three sources: (1) national household expenditure surveys, (2) the CPI, and (3) data of compatible ICP countries.

59. For some countries, it was possible to get actual expenditure data on certain sub-categories from publications of other international organizations. The International Monetary Fund (IMF) publications: *Government Finance Statistics Yearbook*, and *The International Financial Statistics*, as well as the World Health Organization (WHO) and the United Nations Educational, Social and Cultural Organization (UNESCO) *Yearbooks* provided information on government expenditure on health, and education. The UN publications: *National Accounts Statistics: Main Aggregates and Detailed Tables*, and *Compendium of Social Statistics and Indicators* were consulted for the sub-aggregates of private consumption, as well as for information on capital formation. The Food and Agriculture Organization's (FAO) *Food Balance Sheet* was consulted for the breakdowns of food consumption expenditure. Since these data in the *Food Balance Sheets* are usually given in units of quantity (tons, dozens, etc.), to obtain value estimates, consumer price data were sought for in various other FAO publications, national publications, and other international sources. In order to fill more of the gaps with actual expenditure data at detailed levels, available figures were lifted from national statistical sources, such as *The Annual Abstract of Statistics*, *Statistical Bulletin*, reports of the Ministries of Education, Health, Planning, as well as of the Central Banks. These were further supplemented by information from the IMF's Reports on *Recent Economic Developments (REDs)*, and the World Bank's *Country Economic Memoranda* (CEMs) and *Staff Appraisal Reports*.

60. When the sources of actual data for a given country were exhausted, the remaining gaps were filled by distributing values of a summary category over its corresponding more detailed specifications, using percentage distributions (weights henceforth) derived from the three sources mentioned above. The exercise followed a descending hierarchical procedure. For example, if actual data were available only for "Food, Beverages and Tobacco" summary category, these would be distributed first over "Food", "Beverages" and "Tobacco". Next, "Food" would be distributed over "Bread and Cereals", "Meat", "Fish", "Milk, Cheese and Eggs", etc. "Meat" would further be distributed over "Beef and Veal", "Pork", "Lamb and Mutton" etc. Finally, "Lamb and Mutton" would be distributed over "Fresh Lamb and Mutton" and "Frozen Lamb and Mutton". In obtaining the weights to be used for these distribution first preference was given to reports on national household budget surveys when available. These reports can be very useful in deriving weights for private consumption sub-aggregates, especially when the surveys are recent, and cover the entire country or a representative portion of it. The FAO's *Review of Food Consumption Surveys* often gives results of such surveys for the various countries of the world. Countries for which weights from household surveys were available include: Algeria, Angola, Burkina Faso, Burundi, Equatorial Guinea, Libya, St. Vincent and the Grenadines, Seychelles, Somalia, South Africa, and Uganda.

61. When no appropriate household budget survey data were available, CPI weights were used for the estimation of components for private consumption. These CPI weights are sometimes available in national statistical publications. The International Labour Office (ILO) *Statistical Sources and Methods: Vol.1 Consumer Price Indices* also contains CPI weights for a few of the countries of interest. The countries for which CPI weights have been used include: Comoros, (the former) Czechoslovakia, Gabon, Gambia, Ghana, Haiti, Liberia, Oman, Saudi Arabia, Togo, Western Samoa, and Zaire.

62. Weights for filling any remaining gaps were derived from 1985 ICP data of compatible countries. Compatibility was judged, albeit arbitrarily, on several factors which included similarities in population, *Atlas* GDP per capita, economic growth rates, linguistic and socio-demographic characteristics, and/or regional affiliation of a given country with another that participated in the 1985 ICP exercise. Annex 2 lists the 55 countries and the countries in 1985 ICP judged compatible for this exercise. Only expenditure data were estimated for this exercise. It might be possible in the future to make PPC (and consequently real quantity) estimates when prices at detailed levels are available. One source that will be examined for this purpose is ILO's *October Enquiry* prices which are reported annually for about 90 closely defined items of consumption.

63. A complete set of footnotes indicating the sources and methods of estimation of individual indicators for each country is presented at the end of the book.

8.B. Limitations

64. These are basically desk estimates based on incomplete information and should be used with caution. These estimates suffer from problems of derived quality, i.e. they are only as good as the data that were used as the weights for the estimation. Data of 1985 ICP countries were used on the assumption that the countries were compatible. However, since our choice was limited by the composition of those countries that have actually participated in the ICP phase V, the most appropriate countries might not have been used for some of the countries concerned. Also, our judgement of compatibility assumed similarity of consumption patterns which may not hold despite the best of efforts to match countries on the basis of identifiable socio-economic, linguistic, and regional similarities. In

addition, the benchmark year was held constant at 1985 for the ICP countries, whereas estimates were made for other countries based on the latest years for which data were available. The greater the gap between the benchmark year and the estimate year, the greater the error introduced in the assumption of equality of consumption patterns.

65. The household surveys that were used for estimation did not cover the entire country in some cases. Sometimes these covered only the urban sectors, or specified categories of the populace such as urban black single households. In addition, there was the problem of time lapse. Often the latest available household surveys were several years older than the estimate years. While this may not have much effect on consumption of basic items, it may distort the pattern of consumption assumed particularly for consumer durables. Thus, the farther away the year of estimation is to the household survey exercise, the less reliable are the weights derived from the latter for the estimation exercise. Similar comments could be made for weights derived from the CPI as were made for household surveys.

66. For the 15 economies of the former Soviet Union, the net foreign balance refers to inter-republic transactions valued at foreign (as against domestic) prices. It is also to be noted that the estimates refer to 1987 when the 15 economies were still under one administration. Thus the control totals received from the official sources have had to be adjusted by World Bank staff to reflect the current territorial status.

9. Alternative approaches to international comparisons

67. The available ICP estimates of PPCs are from the expenditure side of national accounts. But there are the two other sides of national accounts: production and income. Ideally, PPC calculations from all three sides should yield comparable results. However, recent work on the production side has given different results indicative of lower GDP estimates for developing countries than those estimated by the expenditure-based ICP. Also, efforts are underway to take an integrated and analytic view of the problem from all three sides to make estimates of PPCs based on models.

9.A. Production side approach to PPCs

68. The production side approach to PPC, pioneered by Paige and Bombach[31], and attempted by others[32], involves the task of "double deflation" in which for each industry price comparisons must be made for matched outputs as well as matched inputs. The statistical difficulties of performing such comparisons are, therefore, much greater than in the expenditure approach. This is probably because, despite its long history, this approach has not been extensively applied. Professor Angus Maddison and his colleagues at Groningen University have worked on a simplified version of this approach under the project, International Comparison of Output and Productivity (ICOP). Instead of comparing both output and input prices, they have concentrated on gross outputs. Also, instead of using observed prices of

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[31] D. Paige and G. Bombach (1959), *A Comparison of National Output and Productivity of the United Kingdom and the United States* (Paris: OECD).

[32] "Comparisons of Levels of Labour Productivity in Industry in Austria, Czechoslovakia, France and Hungary", (Austrian Central Statistical Office (ACSO) for Economic Commission for Europe (ECE), 1972); "Comparison of Level of Industrial Production and Productivity of Austria and Hungary", (ACSO and Hungarian Central Statistical Office, 1977).

specified commodities, they have worked with unit values. Their results for manufacturing sectors show that PPCs calculated by this approach are closer to exchange rates than those produced by ICP[33]. Maddison and van Ark (1989)[34] follow a binary method in which Fisher quantity indices are estimated. Ratios of physical quantities of matched output are weighted by country unit values to obtain Laspeyres and Paasche quantity indices and the geometric mean of the two gives the desired Fisher quantity index.

69. Comparisons on the basis of gross outputs involves the assumption that the ratio between gross output and net value added is the same between pairs of countries for each industry. Also, since only a proportion of the total number of products in the countries to be compared can be matched, an assumption has to be made either that (i) the ratio of outputs observed for matched products in one industry is the same for the industry as a whole, or (ii) the ratio of prices (unit values) observed for the covered output is representative for the entire industry.

70. ICOP has extended this work to some 25 countries mostly for commodity producing sectors and to total GDP for some of them. Efforts are underway to refine methods and extend coverage to other countries. The interest in this kind of work is great. However, paucity of countries with surveys of industries has so far limited its implementation.

9.B. Models for comparing economies

71. Modelling for international economic comparisons attempts a more comprehensive analytical framework combining all three of the expenditure, production and income approaches to economic comparisons. Included in this group of approaches are the proposals of Kurabayashi and Sakuma[35], Seton[36], and Velupillai[37]. These approaches, excepting that of Seton, are yet to be implemented.

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[33] See Bart van Ark (1993), *International Comparisons of Output and Productivity - Manufacturing Productivity Performance of Ten Countries from 1950 to 1990*; Groningen Growth and Development Centre Monograph Series, No.1.

[34] Angus Maddison, and Bart van Ark (1989); "International Comparisons of Purchasing Power, Real Output and Labour Productivity: A Case Study of Brazilian, Mexican, and U.S. Manufacturing, 1975", *The Review of Income and Wealth*, Journal of the International Association for Research in Income and Wealth, Income and Wealth Series 35(1), March.

[35] Y. Kurabayashi and I. Sakuma (1990): *Studies in International Comparison of Real Product and Prices*, Kinokuniya Co. Ltd., Tokyo.

[36] F. Seton (1992), *The Economics of Cost, Use and Value: The Evaluation of Performance Structure, and Prices across Time, Space and Economic System*, Clarendon Press, Oxford, and A.E. Steenge and E. Bramer (1993), "International Economic Comparisons Using Seton Eigenprices with Case Studies of Germany, Indonesia, Latvia, and the Netherlands," September (World Bank, Socio-Economic Data Division, processed).

[37] K. Velupillai with S. Zambelli (1993), "The Economics of Purchasing Power and Production Based Approaches to International Comparisons of Output, Expenditure and Income," (World Bank, Socio-Economic Data Division, forthcoming).

72. The model of Kurabayashi and Sakuma basically makes use of a linear multisector input-output framework of production data, and the given wage structure, to construct a vector of international prices of production that ensure a uniform rate of profit. The model makes possible an analysis of the wage-profit relationship observed in the economies being compared. It is analogous to working with the production and income accounts of the national accounts frameworks as against the expenditure accounts used by the ICP.

73. Seton's proposal attempts to integrate cost-based and utility-based value schemes to come up with a set of "eigenprices" that could then be used in comparing the structure and performance of economies. Basically, the model starts with the observed final outputs in the economy, and goes on to determine what market prices would have prevailed had the economy operated under perfect competition in all markets. The approach proposes a systematic extraction of an economy's key characteristics from an input-output (I-O) table.

74. The Velupillai model makes use of I-O tables and attempts to construct production-based measures of international comparison. By way of a set of algorithms, it attempts to construct the standard system permitting abstraction from the dependence of value on income distribution, and subsystems permitting representation of the economy into as many vertically integrated sectors as there are identified commodities in the production structure. Taking cues from the proposals of Kurabayashi and Sakuma, as well as Seton, it goes on to construct indices for production prices and productivity indices. These production prices the authors refer to as "International Production Prices" or "World Average Prices" measure the intrinsic economic potentialities in interdependent productive systems. The model, which is yet to be demonstrated empirically, can be implemented only in statistically advanced countries that have I-O tables.

10. Extensions to non-benchmark countries and years

75. As ICP data have not been, and are not likely to be, available for all countries and years, it is necessary to develop methods of estimating comparable numbers for non-benchmark countries and extending all estimates back and forth in time.

76. Extension to other countries have been attempted using shortcut and reduced information methods. Shortcuts usually concentrate on the estimation of a single indicator like per capita GDP and use regression techniques to link ICP type estimates to a set of physical or economic indicators. Shortcuts with physical indicators use variables such as consumption of steel, energy, newsprint, etc., to predict ICP type numbers[38]. Shortcuts with economic indicators use variables such as exchange rate-based estimates of per capita income, openness of an economy, capital endowment including human capital, and prices collected for other purposes[39]. Reduced information methods employ a smaller set of observed

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[38] W. Beckerman (1966), *International Comparisons of Real Income* (Paris: OECD) and with R. Bacon (1966), "International Comparisons for Income Levels: A suggested New Measure," *Economic Journal* 76 (September, pp.519-536).

[39] Paul David (1972), "Just How Misleading are Official Exchange Rates," *Economic Journal* 82 (September); Robert Summers and Sultan Ahmad (1974), "Better Estimates of Dollar Gross Domestic Product for 101 Countries: Exchange Rate Bias Eliminated", University of Pennsylvania, Wharton

price and expenditure data and use ICP type methods to obtain comparisons for GDP and several other major aggregates[40].

77. The most well known data sets on shortcut estimates available to users are the various versions of the Penn World Tables (PWT), and the World Bank's *World Development Reports (WDR)* 1992 and 1993. While both PWT and WDR present estimates for GDP per capita for current years, PWT breaks it down into several components and provides a time series extending back to 1950. The latest PWT estimates use regressions linking ICP estimates with estimates based on post adjustment price data from UN and private industry sources. The WDR estimates are based on regressions linking ICP estimates with Atlas estimates of per capita income and secondary school enrolment, which are used as rough proxies for inter-country wage differentials for unskilled and skilled human capita respectively. Following Isenman[41], the rationale adopted here is that ICP and conventional estimates of GDP differ mainly because wage differentials persist among nations due to constraints on the international mobility of labor.

78. Extensions over time are usually done by applying constant price growth rates to PPC-based numbers and adjusting them by US inflation rates. The results would be the same if PPCs were extrapolated by relative rates of inflation in the country and US and using it to convert current price national currency estimates. However, data of one benchmark year extrapolated to another benchmark year by this method will not usually equal the benchmark survey results. There are index number problems for which such an inconsistency is to be expected but some steps can also be taken, especially in ICP, to reduce the inconsistency[42]. While Summers and Heston use a "consistentizing" procedure

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Econometric Society, Dec. 28-30, 1974, in San Francisco, California); I. Kravis, A. Heston and R. Summers (1978), "Real GDP Per Capita for More than One Hundred Countries", *Economic Journal* 88 (June), pp.215-242; C. Clague and V. Tanzi (1972), "Human Capital, Natural Resources and the Purchasing Power Parity Doctrine: Some Empirical Results", *Economia Internazionale*, 25, No.1 (February), pp.3-16; R. Summers and A. Heston (1988), "A New Set of International Comparisons of Real Product and Price Levels: Estimates for 130 Countries, 1950-1985", *Review of Income and Wealth* 34(1) (March), pp. 1-25; (1991), "Penn World Table (Mark 5): An Expanded set of International Comparisons, 1950-1988," *Quarterly Journal of Economics* (May), pp.327-368; Paul Isenman (1980), op. cit.; Sultan Ahmad (1992), *Regression Estimates of Per Capita GDP Based on Purchasing Power Parities*, World Bank Policy Research Working Paper No. 956 (August).

[40] Sultan Ahmad (1980), *Approaches to Purchasing Power Parity and Real Product Comparisons Using Shortcuts and Reduced Information*, World Bank Staff Working Paper No.418 (September); (1988), "International Real Income Comparisons with Reduced Information", in J. Salazar-Carillo and D. S. Prasada Rao (eds.), *World Comparisons of Incomes, Prices and Products* (North Holland), pp.75-93.

[41] See Isenman (1980), op.cit., and World Bank, *World Development Report 1993*, Technical Notes to Table 30 (p. 321).

[42] Sultan Ahmad (1993), "Improving Inter-Spatial and Inter-Temporal Comparability of National Accounts", *Journal of Development Economics*, special symposium issue on the Conference of Data Base of Development Analysis, Yale University, May 1992, (forthcoming).

to adjust growth rates implicit in ICP and national accounts,[43] the search for improved methods of inter-spatial and inter-temporal extrapolations continues.

11. Directions for future work

79. The objectives of future work is to expand coverage, improve quality of numbers, achieve regularity, ensure continuity, disseminate data quickly and promote policy use of the results. These objectives complement each other for it will be difficult to expand coverage if policy relevance of the numbers is not demonstrated, and a precondition of policy use is availability of the numbers continuously and in a timely manner. An agenda was agreed at the ICP Expert Group Meeting in Philadelphia in January 1993 and endorsed subsequently by the UN Statistical Commission meeting in New York in February 1993. In particular, ICP needs improved central coordination as well as substantive redirection[44] to:

- package ICP as an exercise in international comparison of price and "real" quantity structures and not merely of per capita income;
- integrate ICP with national statistical routines so that countries will not find the exercise too expensive to undertake and the numbers irrelevant for their regular policy work;
- improve quality of numbers by harmonizing price work with national accounts and CPI, improving expenditure details, and introducing sampling procedures;
- move ICP from a five-yearly effort to an annual exercise, both to increase currentness of the data and to improve its consistency with time-to-time comparisons;
- develop Personal Computer (PC) based portable software to cut down on processing time and speed up dissemination;
- explore alternative approaches to PPC calculation to improve credibility of the numbers; and, finally,
- promote research in policy use such as structural adjustment, poverty evaluation and monitoring and market development.

80. Several programs are already in place to move ICP in the desirable direction. The 1993 survey is expected to have an expanded coverage, including China (in a limited way) and several newly independent countries of the former Soviet Union, former Czechoslovakia, and former Yugoslavia. Europe has adopted an annual program. ICP software is being developed by Eurostat/EuroCost in collaboration with the World Bank. There is an initiative for the World Bank to collaborate with IMF

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[43] R. Summers and A. Heston (1988), "A New Set of International Comparisons .....", *RIW*, March.

[44] Sultan Ahmad (1993), "ICP at Cross Roads - Can We Choose the Right Path?", paper presented at the ICP expert group meeting in Philadelphia, January 27-29, 1993 (Processed).

and ILO to explore the possibility of harmonizing the ICP with CPI. Alternative approaches to PPCs are also being pursued. Analytical use of the numbers has increased in recent months, raising hopes that the operational usefulness of ICP will be reviewed more intensively.

81. The World Bank is expected to keep this data base updated as new and revised estimates become available. Readers are encouraged to send comments and corrections.

12. *STARS* diskette: How it works

82. Data on the ICP "STARS" diskette contain the same stub of 255 indicators for each of the countries. More detailed breakdowns of the GDP for specific countries are obtainable from the Socio-Economic Data Division. The countries are grouped according to regions, where a region may refer to geographic region such as "Asia", or a group of countries such as the "OECD". To access the data one will be required to:

1. Select the desired type of comparison exercise (Global or Regional)
2. Select the desired set of data (GDP expenditures, PPC, or Real Quantities)
3. Select the country of interest (Nigeria, Ghana, France, India, etc.)
4. If regional comparison was chosen, select the region of interest (Africa, OECD, Asia, etc.) by depressing the "Insert" key at the country[45] selection stage.
5. Select desired indicators, or series (eg. food, bread, fresh fish, rents of tenants, etc)
6. Select the year of interest (1975, 1980, etc.)
7. Select report layout (world print or country print) for viewing, or data extraction.

83. The accessed data could then be viewed on the screen or exported in Lotus, Javelin, or ASCII format. Further instructions are given in the manual "*STARS*, World Bank Data on Diskette 1991-92, User's Guide" accompanying the diskettes.

[45] Regional comparisons available for 1985 and 1990 only. For PPCs and real quantities, entries for a given country will not be the same as in corresponding global comparisons, since country compositions are different.

Table A: Countries in the Report by Region, Source and Year

	Country	Region	Source	Year 1975	1980	1981	1985	1986	1987	1988	1989	1990	1991
1	Afghanistan	ASA	BSE			X							
2	Albania	EG2	BSE				X						
3	Algeria	AFR	BSE									X	
4	Angola	AFR	BSE								X		
5	Argentina	LAT	ICP		X								
6	Armenian	EG2	BSE						X				
7	Australia	OEC	ICP				X					X	
8	Austria 1	OEC	ICP	X	X		X					X	
9	Austria 2	EG2	ICP				X						
10	Azerbaijan	EG2	BSE						X				
11	Bahamas	CAR	ICP				X						
12	Bangladesh	ASA	ICP				X						
13	Barbados	CAR	ICP				X						
14	Belarus	EG2	BSE						X				
15	Belgium	OEC	ICP	X	X		X					X	
16	Belize	LAT	BSE								X		
17	Benin	AFR	ICP				X						
18	Bolivia	LAT	ICP		X								
19	Botswana	AFR	ICP		X		X						
20	Brazil	LAT	ICP	X	X								
21	Bulgaria	EG2	BSE									X	
22	Burkina Faso	AFR	BSE									X	
23	Burundi	AFR	BSE				X						
24	Cambodia	ASA	BSE									X	
25	Cameroon	AFR	ICP		X		X						
26	Canada	OEC	ICP		X		X					X	
27	Cape Verde	AFR	BSE									X	
28	Chad	AFR	BSE									X	
29	Chile	LAT	BSE									X	
30	Colombia	LAT	ICP							X			
31	Comoro Is.	AFR	BSE									X	
32	Congo	AFR	ICP				X						
33	Costa Rica	LAT	ICP						X				
34	Cote D'Ivoire	AFR	ICP		X		X						
35	Czechoslovakia	EG2	BSE									X	
36	Central Africa Rep.	AFR	BSE									X	
37	Denmark	OEC	ICP	X	X		X					X	
38	Djibouti	AFR	BSE									X	
39	Dominican.Rep	LAT	ICP									X	
40	Ecuador	LAT	ICP									X	
41	Egypt	AFR	ICP				X						
42	El Salvador	LAT	ICP						X				
43	Estonia	EG2	BSE									X	
44	Ethiopia	AFR	ICP		X		X						
45	Eq. Guinea	AFR	BSE									X	
46	Finland	OEC	ICP									X	
47	France	OEC	ICP	X	X		X					X	
48	Gabon	AFR	BSE									X	
49	Gambia	AFR	BSE								X		
50	Georgia	EG2	BSE						X				
51	Germany	OEC	ICP	X	X		X					X	
52	Ghana	AFR	BSE									X	
53	Greece	OEC	ICP		X		X					X	
54	Grenada	CAR	ICP				X						
55	Guatemala	LAT	ICP									X	
56	Guinea	AFR	BSE									X	
57	Guinea-Bissau	AFR	BSE									X	
58	Honduras	LAT	ICP									X	
59	Hong Kong	ASA	ICP		X		X						
60	Hungary	EG2	ICP	X	X		X						
61	Iceland	OEC	ICP									X	
62	India	ASA	ICP	X	X		X						
63	Indonesia	ASA	ICP									X	
64	Iran, Islamic Rep.	ASA	ICP	X			X						

Table A: Countries in the Report by Region, Source and Year

				Year									
	Country	*Region*	*Source*	*1975*	*1980*	*1981*	*1985*	*1986*	*1987*	*1988*	*1989*	*1990*	*1991*
65	Ireland	OEC	ICP	X	X		X					X	
66	Israel	MES	ICP	X									
67	Italy	OEC	ICP	X	X		X					X	
68	Jamaica	CAR	ICP	X			X						
69	Japan 1	OEC	ICP	X	X		X					X	
70	Japan 2	ASA	ICP				X						
71	Kazakhstan	EG2	BSE						X				
72	Kenya	AFR	ICP	X	X		X						
73	Korea	ASA	ICP	X	X		X						
74	Kyrgyz Rep.	EG2	BSE						X				
75	Lao Pdr	ASA	BSE										X
76	Latvia	EG2	BSE						X				
77	Liberia	AFR	BSE					X					
78	Libya	AFR	BSE									X	
79	Lithuania	EG2	BSE						X				
80	Luxembourg	OEC	ICP	X	X		X					X	
81	Madagascar	AFR	ICP		X		X						
82	Malawi	AFR	ICP	X	X		X						
83	Malaysia	ASA	ICP	X								X	
84	Mali	AFR	ICP		X								
85	Mauritius	AFR	ICP				X						
86	Mexico	LAT	ICP	X									
87	Moldova	EG2	BSE						X				
88	Mongolia	ASA	BSE	X									X
89	Morocco	AFR	ICP		X		X						
90	Mozambique	AFR	BSE										X
91	Namibia	AFR	BSE										X
92	Netherland	OEC	ICP	X	X		X					X	
93	New Zealand	OEC	ICP				X					X	
94	Nigeria	AFR	ICP		X		X						
95	Norway	OEC	ICP		X		X					X	
96	Oman	MES	BSE							X			
97	Pakistan	ASA	ICP	X	X		X						
98	Panama	LAT	ICP		X								
99	Paraguay	LAT	ICP		X								
100	Peru	LAT	ICP		X								
101	Philippines	ASA	ICP	X	X		X						
102	Poland	EG2	ICP	X	X		X						
103	Portugal	OEC	ICP		X		X					X	
104	Russia	EG2	BSE						X				
105	Rwanda	AFR	ICP				X						
106	Sao Tome & Principe	AFR	BSE									X	
107	Saudi Arabia	MES	BSE									X	
108	Senegal	AFR	ICP		X		X						
109	Seychelles	AFR	BSE									X	
110	Siera Leone	AFR	ICP				X						
111	Somalia	AFR	BSE				X						
112	South Africa	AFR	BSE									X	
113	Spain	OEC	ICP	X	X		X					X	
114	Sri Lanka	ASA	ICP	X	X		X						
115	St. Lucia	CAR	ICP				X						
116	St. Vincent	CAR	BSE									X	
117	Suriname	LAT	ICP				X						
118	Swaziland	AFR	ICP				X						
119	Sweden	OEC	ICP				X					X	
120	Switzerland	OEC	ICP									X	
121	Syria	MES	ICP		X		X					X	
122	Tajikistan	EG2	BSE						X				
123	Tanzania	AFR	ICP				X						
124	Thailand	ASA	ICP	X			X						
125	Togo	AFR	BSE									X	
126	Trinidad And Tobago	CAR	ICP				X						
127	Tunisia	AFR	ICP		X		X						
128	Turkey	OEC	ICP				X					X	

Table A: Countries in the Report by Region, Source and Year

	Country	Region	Source	Year 1975	1980	1981	1985	1986	1987	1988	1989	1990	1991
129	Turkmenistan	EG2	BSE						X				
130	Uganda	AFR	BSE									X	
131	Ukraine	EG2	BSE						X				
132	United Kingdom	OEC	ICP	X	X		X					X	
133	United States	OEC	ICP	X	X		X					X	
134	Uruguay	LAT	ICP		X								
135	Uzbekistan	EG2	BSE						X				
136	Venezula	LAT	ICP	X	X								
137	Vietnam	ASA	BSE									X	
138	W.Samoa	ASA	BSE									X	
139	Yemen Rep.	MES	BSE										X
140	Yugoslavia	EG2	ICP	X	X		X						
141	Zaire	AFR	BSE								X		
142	Zambia	AFR	ICP	X	X		X						
143	Zimbabwe	AFR	ICP		X		X						

Notes:
ICP = International Comparison Program
BSE = Bank Staff Estimate
X = Country has data for the year concerned
MES = Middle East
EG2 = Europe Group 2
AFR = Africa
ASA = Asia
OEC = Europe and OECD members
CAR = Caribbean

Table B: Comparible 1985 ICP Countries used in the Estimation

	Estimated Country	*Year of Estimate*	*Compatible ICP Country*
1	Afghanistan	1981	Poland
2	Albania	1985	Poland
3	Algeria	1990	Morroco
4	Angola	1989	Senegal
5	Armenian	1987	Poland
6	Azerbaijan	1987	Poland
7	Belarus	1987	Poland
8	Belize	1989	Jamaica
9	Bulgaria	1990	Greece
10	Burkina Faso	1990	Mali
11	Burundi	1985	Rwanda
12	Cambodia	1990	Poland
13	Cape Verde	1989	Swaziland
14	Chad	1990	Mali
15	Comoro Is.	1990	Zambia
16	Czechoslovakia	1990	Greece
17	Central Africa Republic	1990	Benin
18	Djibouti	1990	Mali
19	Estonia	1987	Poland
20	E.Guinea	1990	Rwanda
21	Gabon	1990	Botswana
22	Gambia	1989	Sierra-Leone
23	Georgia	1987	Poland
24	Ghana	1990	Zambia
25	Guinea	1990	Benin
26	Guinea-Bissau	1990	Benin
27	Kazakhstan	1987	Poland
28	Kyrgyz Rep.	1987	Poland
29	Lao PDR	1991	Bangladesh
30	Latvia	1987	Poland
31	Liberia	1986	Senegal
32	Libya	1990	Egypt
33	Lithuania	1987	Poland
34	Moldova	1987	Poland
35	Mongolia	1991	Phillipines
36	Mozambique	1991	Malawi
37	Namibia	1991	Swaziland
38	Oman	1988	Egypt
39	Russia	1987	Poland
40	Sao Tome & Principe	1990	Zambia
41	Saudi Arabia	1990	Iran, Islamic Rep.
42	Seychelles	1990	Mauritius
43	Somalia	1985	Malawi
44	South Africa	1990	Mauritius
45	St. Vincent	1990	St. Lucia
46	Tajikistan	1987	Poland
47	Togo	1990	Rwanda
48	Turkmenistan	1987	Poland
49	Uganda	1990	Rwanda
50	Ukraine	1987	Poland
51	Uzbekistan	1987	Poland
52	Vietnam	1990	Poland
53	W.Samoa	1990	Indonesia
54	Yemen Rep.	1991	Egypt
55	Zaire	1989	Tanzania

Table 16. ICP 1985 Europe Group 2: Per Capita Real Quantities (in international Austrian schillings)

	COUNTRY--->	Austria	Hungary	Poland	Yugoslavia
1	Final consumption of the household	115,661.31	57,831.07	42,068.50	56,444.88
2	Food, beverages & tobacco	28,782.87	18,807.10	16,200.27	20,497.24
3	Food	21,995.43	14,861.97	11,946.48	14,401.81
4	Bread and cereals	2,101.38	1,796.01	1,484.50	2,462.42
5	Rice	85.89	81.41	19.26	107.12
6	Flour, other cereals	286.35	252.27	208.44	715.00
7	Bread	717.74	833.17	857.87	970.68
8	Bakery products, biscuits, cakes, etc.	801.65	494.84	379.96	452.65
9	Noodles, macaroni, spaghetti, etc.	59.05	120.41	16.33	141.89
10	Cereal preparations	150.69	13.93	2.63	75.08
11	Meat	5,291.71	4,521.41	3,655.60	3,907.37
12	Beef and veal	649.28	192.26	498.27	925.06
13	Pork	1,623.55	1,703.76	945.62	687.38
14	Lamb, goat & mutton	44.59	80.74	61.99	83.76
15	Poultry	886.35	1,102.80	311.99	467.90
16	Dried or processed meat, etc.	2,087.54	1,441.85	1,837.74	1,743.26
17	Fish	362.61	98.84	326.36	292.48
18	Fish fresh/frozen	156.84	65.69	139.49	184.86
19	Processed fish/seafood, canned, etc.	196.77	31.17	120.75	98.19
20	Smoked or preserved fish & seafoods	9.00	1.98	66.12	9.43
21	Other seafoods	.	..	..	..
22	Milk, cheese & eggs	3,069.15	2,475.06	1,914.78	2,083.89
23	Milk fresh	1,112.02	649.88	804.72	566.54
24	Milk preserved	72.11	62.38	47.02	28.21
25	Other milk products	463.08	644.76	202.24	434.52
26	Cheese	712.81	290.11	371.35	411.84
27	Eggs & egg products	709.12	827.93	489.45	642.78
28	Oils and fats	1,715.82	1,019.33	1,042.21	743.34
29	Butter	744.62	275.32	761.02	117.42
30	Margarine, edible oils & lard	971.20	744.00	281.19	625.92
31	Fruits, vegetables & tubers	4,771.40	2,447.07	1,850.11	2,604.43
32	Fruits	2,874.15	1,066.92	375.96	945.84
33	Fresh fruits	2,128.01	804.55	290.27	562.09
34	Dried, frozen, preserved, juices, etc.	746.14	262.37	85.70	383.75
35	Vegetables	1,531.58	1,163.85	997.63	1,469.76
36	Fresh vegetables	1,115.86	922.08	749.19	907.31
37	Dried, frozen, preserved vegetables	415.72	241.77	248.43	562.45
38	Tubers, including potatoes	365.67	216.30	476.52	188.82
39	Potatoes	269.72	216.30	475.31	177.10
40	Manioc & other tubers	95.95	..	1.21	11.72
41	Other foods	4,683.38	2,504.26	1,672.93	2,307.88
42	Coffee, tea, cocoa	1,776.65	916.21	391.05	1,009.18
43	Coffee	1,603.34	842.55	247.28	854.72
44	Tea	50.99	41.79	139.03	141.59
45	Cocoa	122.33	31.87	4.75	12.87
46	Sugar, sweets, spices	2,906.72	1,588.06	1,281.88	1,298.70
47	Sugar	286.86	417.09	362.48	431.53
48	Other sweets and spices	2,619.87	1,170.96	919.40	867.17
49	Jam, syrup, honey & the like	289.89	117.21	78.52	197.80
50	Chocolate, ice cream, confectionery, etc.	1,768.82	596.73	391.81	469.03
51	Condiments, spices, salt, etc.	561.16	457.02	449.07	200.34
52	Beverages	4,767.56	2,782.70	3,520.62	4,808.58
53	Non-alcoholic beverages	888.31	390.65	136.91	654.48
54	Mineral water	285.27	15.13	28.99	405.32
55	Soft drinks	603.04	375.52	107.92	249.16
56	Alcoholic beverages	3,879.25	2,392.06	3,383.71	4,154.09
57	Liquors & spirits	996.47	1,298.69	2,877.62	2,011.33
58	Wine, cider	1,496.11	662.75	382.25	884.13
59	Beer	1,386.67	430.62	123.83	1,258.64
60	Other alcoholic beverages	..	..	..	..
61	Tobacco	2,019.88	1,162.43	733.17	1,286.85
62	Cigarettes	1,950.56	1,016.20	416.59	1,153.99
63	Cigars, cigarillos	24.73	143.06	312.50	119.86
64	Other tobacco products & stimulants	44.59	3.17	4.08	13.00

Table 16. ICP 1985 Europe Group 2: Per Capita Real Quantities (in international Austrian schillings)

	COUNTRY--->	Austria	Hungary	Poland	Yugoslavia
65	Clothing and footwear	13,865.24	4,416.02	3,537.87	5,186.16
66	Clothing	11,732.36	3,411.47	2,767.96	3,953.03
67	Clothing materials	1,010.47	296.81	395.44	525.74
68	Men's clothing	3,310.68	853.88	662.33	1,285.13
69	Women's clothing	4,596.55	653.80	708.55	993.28
70	Children's clothing	1,438.19	1,035.98	445.59	626.10
71	Clothing accessories	1,246.37	212.04	127.73	118.44
72	Haberdashery, millinery	103.32	156.53	168.50	159.25
73	Clothing, rental and repair	26.79	202.42	259.82	245.08
74	Footwear	2,132.88	1,004.55	769.91	1,233.13
75	Footwear, men's	657.70	332.94	225.00	451.25
76	Footwear, women's	998.15	383.12	331.04	553.13
77	Footwear, children's, infants'	425.11	266.03	165.63	192.45
78	Repairs to footwear	51.93	22.46	48.25	36.30
79	Gross rent, fuel & power	10,904.05	6,361.18	4,150.60	5,132.27
80	Gross rent	6,871.71	3,590.89	2,606.27	3,813.81
81	Rents	4,991.00	2,066.43	1,848.75	1,946.76
82	Rents of tenants	..	..	..	..
83	Imputed rents of owner-occupiers	..	..	..	..
84	Repair & maintenance of houses	804.92	929.90	98.77	794.18
85	Sanitary services & water charges	1,075.79	594.56	658.76	1,072.87
86	Fuel and power	4,032.34	2,770.29	1,544.33	1,318.46
87	Electricity	1,700.91	775.66	469.13	876.11
88	Gas	274.60	260.79	280.23	13.00
89	Liquid fuels	1,099.96	759.80	7.55	57.84
90	Other fuels	956.86	974.04	787.42	371.51
91	House furnishings, operations	9,341.72	4,358.58	3,466.07	4,794.77
92	Furnitures & appliances	7,265.65	2,858.84	2,351.82	3,637.20
93	Furnitures. etc.	4,314.30	1,369.43	1,203.51	1,557.95
94	Furniture, fixtures	3,525.14	1,021.55	942.43	1,131.88
95	Floor coverings	742.25	285.76	206.37	339.83
96	Repairs to furniture, fixture, floor coverings.	46.91	62.12	54.72	86.24
97	Household textiles	782.63	361.73	549.31	614.19
98	Household textiles, etc.	782.63	361.73	549.31	549.81
99	Repairs to textiles & other furnishings	..	..	..	64.38
100	Major household appliances	2,168.72	1,127.67	599.00	1,465.06
101	Refrigerators, freezers, & similar equipment	417.97	248.42	175.78	405.59
102	Washing & cleaning appliances	497.94	231.45	126.11	346.85
103	Cooking ,washing, heating	684.28	82.82	99.34	193.77
104	Cooking & other food warming appliances	83.34	58.17	20.23	148.58
105	Sewing machines, electric fans, toasters, etc.	169.25	73.24	74.34	233.77
106	Room climate control equipment	55.41	132.14	6.28	66.16
107	Repairs to major household appliances	260.54	301.44	96.92	70.34
108	Household goods and services	2,076.07	1,499.74	1,114.25	1,157.57
109	Household goods	649.69	479.85	580.29	504.57
110	Glassware, tableware & utensils	649.69	479.85	580.29	504.57
111	Glassware & tableware	157.23	103.51	364.27	177.01
112	Cutlery and flatware	164.26	109.21	62.83	70.69
113	Kitchen & domestic utensils without motor	328.19	267.12	153.19	243.18
114	Repairs to glassware, tableware & utensils	..	..	..	13.70
115	Garden appliances	..	..	..	..
116	Light-bulb, cable, switches, batteries, etc.	..	..	..	..
117	Household operation	1,426.38	1,019.89	533.96	653.00
118	Non-durable household goods	1,094.51	859.15	423.09	618.13
119	Paper products for household	288.51	97.56	24.51	20.90
120	Cleaning maintenance supplies (soap,etc.)	710.96	643.07	187.79	162.79
121	Laundry, dry cleaning	..	..	..	..
122	Other non-durable household products	95.04	118.52	210.80	434.45
123	Domestic services	86.41	60.06	43.38	16.54
124	Household services	245.47	100.68	67.49	18.33
125	Total medical care & services	6,980.46	4,741.06	2,489.79	4,125.75
126	Private medical care & services	6,980.46	4,741.06	2,489.79	4,125.75
127	Medical & pharmaceutical products	1,048.92	783.43	356.60	846.93
128	Pharmaceutical products	892.27	750.12	352.62	596.13

Table 16. ICP 1985 Europe Group 2: Per Capita Real Quantities (in international Austrian schillings)

	COUNTRY--->	Austria	Hungary	Poland	Yugoslavia
129	Drugs & medical preparations	858.66	695.86	312.30	586.66
130	Medical supplies	33.61	54.26	40.31	9.48
131	Therapeutic appliances & equipment	156.65	33.31	3.99	250.80
132	Health services	5,931.54	3,957.64	2,133.19	3,278.82
133	Services of physicians, nurses, etc	1,861.09	1,339.32	32.96	1,679.51
134	Services of physicians/gen. practitioners	..	..	..	..
135	Services of specialists	..	..	..	..
136	Services of dentists	..	..	..	..
137	Services of nurses	..	..	..	..
138	Other medical services	..	..	..	..
139	Hospital care & the like	4,070 46	2,618.32	2,100.23	1,599.31
140	Medical personnel	..	..	..	..
141	Other than medical personnel	..	..	..	..
142	Public medical care (Current consumption of govt.)	..	..	..	..
143	Transport and communication	21,310.99	4,769.26	3,117.32	6,120.43
144	Personal transportation equipment	6,802.33	1,091.59	465.52	1,251.20
145	Passenger cars	6,349.23	945.78	385.19	1,164.94
146	Other personal transport	453.10	145.81	80.33	86.25
147	Operation costs of transportation equipment	11,146.66	2,006.45	1,138.90	3,250.36
148	Tires, tubes, accessories	1,308.72	158.55	125.18	810.08
149	Repair charges for personal transport	3,391.25	448.98	390.97	415.08
150	Fuel & lubricant (gasoline, grease, etc.)	5,789.00	1,331.52	583.10	1,699.56
151	Other expenses (parking, tolls, etc.)	657.68	67.40	39.65	325.64
152	Purchased transport	2,341.11	1,495.24	1,280.91	1,143.72
153	Local transport	693.83	558.79	612.09	326.04
154	Local taxis	427.45	110.62	377.12	41.58
155	Local buses, trams & the like	266.38	448.17	234.96	284.46
156	Long distance transport	1,647.28	936.44	668.82	817.68
157	Railway transport	425.81	338.54	145.96	284.07
158	Road transport	500.69	298.80	301.73	437.64
159	Air transport	704.91	24.96	166.07	87.91
160	Other long distance transport	15.87	274.15	55.06	8.06
161	Communication	1,020.89	175.99	232.00	475.15
162	Postal communication	277.82	88.75	83.32	95.86
163	Telephone, telegraph	743.07	87.24	148.69	379.29
164	Recreation, entertainment, education, & others.	12,866.00	7,506.60	5,453.06	6,061.01
165	Equipment and services	7,646.31	3,649.07	1,830.11	2,933.95
166	Equipment for recreation	4,571.22	1,736.19	835.62	1,485.76
167	Radios, televisions, phonographs	1,643.71	717.53	261.90	595.71
168	Musical instruments, boats, etc.	450.96	161.03	111.07	138.70
169	Camera, VCR, & other optical equipment.	1,124.30	27.66	63.32	76.76
170	Semi & non-durable goods	1,287.25	522.18	296.96	540.33
171	Repair to equipment & accessories	65.00	307.78	102.36	134.25
172	Services for recreations	2,324.55	1,437.38	510.49	1,070.73
173	Public entertainment	2,324.55	1,437.38	510.49	1,070.73
174	Cinema, theatre, sports ground, etc.	286.54	140.52	206.38	287.36
175	TV & radio licence; hire of equipment.	2,038.01	1,296.86	304.11	783.37
176	Others: religious, recreational and cultural	..	..	..	..
177	Books, newspapers, magazines, etc.	750.54	475.49	483.99	377.47
178	Stationery for educational purposes	..	..	..	..
179	Total education expenditures	5,219.68	3,857.54	3,622.96	3,127.06
180	Private education expenditures	..	..	..	..
181	Public education expenditures	..	..	..	..
182	Miscellaneous goods & services	17,077.62	7,978.30	3,653.51	6,278.24
183	Personal care	3,110.50	1,556.18	705.84	1,879.41
184	Barber and beauty shops	412.88	484.69	104.37	130.58
185	Toilet articles (all kinds)	..	..	..	..
186	Jewelry, watch, etc. - personal effects	1,009.57	461.11	285.53	806.31
187	Other personal care goods	1,612.19	303.27	152.37	720.91
188	Stationery for non-educational purposes	75.86	307.11	163.57	221.61
189	Other	13,967.12	6,422.11	2,947.67	4,398.84
190	Restaurants, cafes & hotels	11,152.71	4,580.66	2,648.78	3,204.90
191	Workers' cafeterias	..	..	..	..
192	Restaurants, cafes, etc.	7,491.07	4,209.16	2,263.06	1,978.34

Table 16. ICP 1985 Europe Group 2: Per Capita Real Quantities (in international Austrian schillings)

	COUNTRY--->	Austria	Hungary	Poland	Yugoslavia
193	Hotels, lodgings	3,661.64	371.51	385.72	1,226.56
194	Finance, other services	2,814.41	1,841.45	298.89	1,193.94
195	Financial services (bank, insurance, etc.)	..	..	..	..
196	Services N.E.C.	..	..	..	..
197	Welfare services	2,814.41	1,841.45	298.89	1,193.94
198	Net expenditures of residents abroad	-5,467.64	-1,107.03	..	-1,751.00
199	Capital formation	51,494.39	20,038.75	22,360.66	18,048.09
200	Domestic capital formation	51,167.58	18,988.83	21,801.81	18,597.50
201	Gross fixed capital formation	47,133.70	18,316.99	18,353.99	13,642.85
202	Producer durable	22,152.22	6,335.08	5,833.10	7,541.71
203	Machinery & non-electrical equipment	11,935.63	3,902.46	2,365.62	4,436.36
204	Products of processing	..	..	..	..
205	Engines, turbines	690.84	461.92	84.97	921.80
206	Agricultural machinery	1,172.15	627.20	669.36	951.13
207	Office machinery & equipment	1,979.63	327.31	35.10	339.26
208	Metal & woodworking machinery	1,238.29	392.77	291.07	471.88
209	Tool, finished metal	..	..	..	..
210	Construction, mining & oil field equipment	1,095.18	419.87	403.22	502.59
211	Special Ind. machinery, paper, printing, etc.	2,194.72	950.09	406.97	408.73
212	Machinery for food, chemical, etc.	..	..	..	..
213	Textile & leather working machinery	..	..	..	..
214	General industrial machinery	2,934.04	609.35	403.46	486.58
215	Service Industrial machinery	285.72	76.01	48.82	312.44
216	Other machinery equipment	..	..	..	..
217	Precision, optical instruments	345.06	37.94	22.65	41.95
218	Electrical machinery & appliances	4,738.23	1,125.73	2,419.46	1,661.68
219	Electrical equipment, including lights	..	..	..	..
220	Electrical generation & transmission equip.	1,785.93	316.52	610.39	770.29
221	Radio, TV & other communication equip.	1,644.78	553.52	561.98	398.58
222	Other electrical equipment	743.80	29.41	1,013.11	394.63
223	Telecommunication & measuring instruments	563.72	226.28	233.97	98.18
224	Transportation equipment	3,625.51	1,099.33	944.74	1,156.71
225	Motor vehicles, engines	..	..	..	..
226	Railway vehicles	356.04	113.85	221.15	100.22
227	Passenger motor cars & other motor vehicles	2,699.40	941.96	342.34	872.76
228	Passenger automobiles	1,720.82	80.58	6.02	195.10
229	Trucks, buses, trailers	978.58	861.38	336.32	677.65
230	Aircraft	194.80	..	92.56	59.17
231	Ships, boats	112.72	21.08	258.16	122.36
232	Other transport equipment	262.54	22.44	30.53	2.20
233	Other	1,852.85	207.56	103.28	286.96
234	Furniture, fixtures	750.51	81.20	3.15	207.07
235	Other producer durable goods	1,102.34	126.36	100.13	79.88
236	Construction	24,981.48	11,981.90	12,520.89	6,101.14
237	Residential buildings	8,566.68	4,146.24	3,361.36	2,764.30
238	Family dwellings	..	..	..	..
239	Multifamily dwellings	..	..	..	..
240	Non-residential buildings	9,243.18	3,804.54	3,904.27	1,717.53
241	Agricultural buildings	..	..	..	..
242	Industrial buildings	..	..	..	..
243	Buildings for market services	..	..	..	..
244	Buildings for non-market services	..	..	..	..
245	Other constructions	..	..	..	..
246	Transport routes, roads, bridges, tunnels	..	..	..	..
247	Other transport utility	..	..	..	..
248	Other civil engineering	..	..	..	..
249	Other products	..	..	..	..
250	Changes in stocks	4,033.88	671.84	3,447.83	4,954.65
251	Net foreign balance	326.80	1,049.93	558.84	-549.41
252	Government consumption, total	13,736.47	3,880.49	6,945.85	8,044.89
253	Compensation of employees	..	..	..	..
254	Commodities, goods & services.	..	..	..	..
255	Gross domestic product	180,892.12	86,750.32	71,375.01	82,537.86

Table 17. ICP 1985 Europe Group 2: Purchasing Power of Currency (per international Austrian Schilling)

	COUNTRY--->	Austria	Hungary	Poland	Yugoslavia
1	Final consumption of the household	1.0000	0.9513	3.9878	5.7240
2	Food, beverages & tobacco	1.0000	1.1569	5.2948	6.9459
3	Food	1.0000	1.1251	5.0498	7.2896
4	Bread and cereals	1.0000	0.7741	3.4698	5.0267
5	Rice	1.0000	2.7007	5.6891	17.9723
6	Flour, other cereals	1.0000	0.6130	3.5873	5.1657
7	Bread	1.0000	0.5794	2.3708	2.9993
8	Bakery products, biscuits, cakes, etc.	1.0000	0.9351	4.5928	6.9686
9	Noodles, macaroni, spaghetti, etc.	1.0000	0.6616	3.7472	4.7297
10	Cereal preparations	1.0000	2.2542	13.2547	17.4207
11	Meat	1.0000	1.0344	4.2088	6.2003
12	Beef and veal	1.0000	0.8149	3.1670	5.5134
13	Pork	1.0000	1.1260	5.0190	6.2580
14	Lamb, goat & mutton	1.0000	0.8781	4.0950	7.7981
15	Poultry	1.0000	1.1895	6.4020	8.3952
16	Dried or processed meat, etc.	1.0000	1.0476	3.6407	5.4297
17	Fish	1.0000	1.3180	3.6104	6.5539
18	Fish fresh/frozen	1.0000	0.8689	2.2779	4.8739
19	Processed fish/seafood, canned, etc.	1.0000	2.2297	6.0419	9.4567
20	Smoked or preserved fish & seafoods	1.0000	1.5582	2.5274	3.2882
21	Other seafoods	..	..	..	..
22	Milk, cheese & eggs	1.0000	0.8085	3.6101	6.7571
23	Milk fresh	1.0000	0.8294	2.6864	6.1923
24	Milk preserved	1.0000	0.6534	2.7448	5.9541
25	Other milk products	1.0000	0.6619	3.6307	5.6558
26	Cheese	1.0000	0.7909	3.2482	6.6958
27	Eggs & egg products	1.0000	1.2338	7.4167	10.9273
28	Oils and fats	1.0000	0.9889	6.2282	9.4541
29	Butter	1.0000	0.8694	6.4909	10.3716
30	Margarine, edible oils & lard	1.0000	0.9965	6.5557	8.8793
31	Fruits, vegetables & tubers	1.0000	1.3380	6.3933	8.9130
32	Fruits	1.0000	1.5943	8.8407	10.8810
33	Fresh fruits	1.0000	1.4035	8.5165	11.6393
34	Dried, frozen, preserved, juices, etc.	1.0000	2.2075	9.9315	9.9303
35	Vegetables	1.0000	1.0922	5.8198	7.3553
36	Fresh vegetables	1.0000	1.0968	6.3951	6.9487
37	Dried, frozen, preserved vegetables	1.0000	1.1219	4.3865	7.6380
38	Tubers, including potatoes	1.0000	1.1491	3.6355	7.7172
39	Potatoes	1.0000	1.1892	3.7664	8.1428
40	Manioc & other tubers	1.0000	1.1892	1.8989	4.9622
41	Other foods	1.0000	1.8036	8.5674	9.0691
42	Coffee, tea, cocoa	1.0000	2.8066	18.4640	12.3418
43	Coffee	1.0000	2.9595	22.0435	13.7756
44	Tea	1.0000	1.1816	8.8401	4.7538
45	Cocoa	1.0000	2.6700	19.0896	10.6427
46	Sugar, sweets, spices	1.0000	1.4718	6.1840	8.1147
47	Sugar	1.0000	1.6669	5.5855	7.1754
48	Other sweets and spices	1.0000	1.3878	6.3704	8.4950
49	Jam, syrup, honey & the like	1.0000	0.9908	7.0989	5.9616
50	Chocolate, ice cream, confectionery, etc.	1.0000	1.8731	7.9286	9.4412
51	Condiments, spices, salt, etc.	1.0000	0.8561	4.2604	8.0968
52	Beverages	1.0000	1.7699	8.3317	7.7485
53	Non-alcoholic beverages	1.0000	1.2011	8.2479	11.9336
54	Mineral water	1.0000	1.4592	5.0685	9.7443
55	Soft drinks	1.0000	1.2774	9.6076	14.0316
56	Alcoholic beverages	1.0000	1.8667	8.3625	7.0847
57	Liquors & spirits	1.0000	2.2846	11.4525	8.4858
58	Wine, cider	1.0000	1.4549	8.6405	7.6967
59	Beer	1.0000	2.8571	14.2990	7.3196
60	Other alcoholic beverages	..	..	..	..
61	Tobacco	1.0000	0.7122	3.0545	4.6348
62	Cigarettes	1.0000	0.6948	3.1701	4.6238
63	Cigars, cigarillos	1.0000	0.4436	1.4955	2.7417
64	Other tobacco products & stimulants	1.0000	1.5987	5.8387	3.0894

Table 17. ICP 1985 Europe Group 2: Purchasing Power of Currency (per international Austrian Schilling)

	COUNTRY--->	Austria	Hungary	Poland	Yugoslavia
65	Clothing and footwear	1.0000	1.3998	5.4346	7.5789
66	Clothing	1.0000	1.3719	5.6019	7.4335
67	Clothing materials	1.0000	1.3565	5.4466	6.9482
68	Men's clothing	1.0000	1.4177	5.9066	7.2418
69	Women's clothing	1.0000	1.2517	5.8788	7.5615
70	Children's clothing	1.0000	1.4889	5.3243	8.3965
71	Clothing accessories	1.0000	1.8209	5.1617	10.2121
72	Haberdashery, millinery	1.0000	1.2448	5.1839	4.7578
73	Clothing, rental and repair	1.0000	0.5022	2.8644	4.0143
74	Footwear	1.0000	1.4941	4.8326	8.0430
75	Footwear, men's	1.0000	1.5998	4.8002	7.7912
76	Footwear, women's	1.0000	1.5099	5.6777	7.4352
77	Footwear, children's, infants'	1.0000	1.4419	4.3386	10.7481
78	Repairs to footwear	1.0000	0.9450	1.3976	6.2048
79	Gross rent, fuel & power	1.0000	0.4426	1.4612	3.2194
80	Gross rent	1.0000	0.3487	1.5840	2.0340
81	Rents	1.0000	0.2909	1.2842	1.1616
82	Rents of tenants	..	..	..	..
83	Imputed rents of owner-occupiers	..	..	..	..
84	Repair & maintenance of houses	1.0000	0.5909	6.0424	6.0151
85	Sanitary services & water charges	1.0000	0.5909	2.1404	3.0366
86	Fuel and power	1.0000	0.6431	1.1709	7.4905
87	Electricity	1.0000	0.7038	1.1329	6.0618
88	Gas	1.0000	0.3725	0.5346	14.1129
89	Liquid fuels	1.0000	0.6748	4.0728	11.7308
90	Other fuels	1.0000	0.6497	1.1531	9.9202
91	House furnishings, operations	1.0000	1.3938	5.8678	7.6508
92	Furnitures & appliances	1.0000	1.4653	6.2788	8.0539
93	Furnitures, etc.	1.0000	1.6036	5.9543	7.4554
94	Furniture, fixtures	1.0000	1.6996	5.4220	7.5740
95	Floor coverings	1.0000	1.5393	9.4880	6.3896
96	Repairs to furniture, fixture, floor coverings.	1.0000	0.4761	3.6458	8.9285
97	Household textiles	1.0000	1.7354	5.8252	8.4064
98	Household textiles, etc.	1.0000	1.7354	5.8252	8.3271
99	Repairs to textiles & other furnishings	1.0000	..	..	8.9285
100	Major household appliances	1.0000	1.2322	7.5401	8.9005
101	Refrigerators, freezers, & similar equipment	1.0000	1.8220	11.5443	9.3521
102	Washing & cleaning appliances	1.0000	1.2408	9.1236	8.0203
103	Cooking ,washing, heating	1.0000	1.4971	8.1915	11.7274
104	Cooking & other food warming appliances	1.0000	1.3407	5.1736	6.7538
105	Sewing machines, electric fans, toasters, etc.	1.0000	2.2709	6.5005	8.3682
106	Room climate control equipment	1.0000	0.9735	6.2804	6.7668
107	Repairs to major household appliances	1.0000	0.4673	3.0829	14.4860
108	Household goods and services	1.0000	1.2024	4.8551	6.4858
109	Household goods	1.0000	1.4923	4.1426	7.7183
110	Glassware, tableware & utensils	1.0000	1.4923	4.1426	7.7183
111	Glassware & tableware	1.0000	1.7761	4.0219	9.3080
112	Cutlery and flatware	1.0000	1.9116	6.2854	8.6943
113	Kitchen & domestic utensils without motor	1.0000	1.2480	3.7989	6.2053
114	Repairs to glassware, tableware & utensils	1.0000	..	..	8.6943
115	Garden appliances	..	..	..	..
116	Light-bulb, cable, switches, batteries, etc.	..	..	..	..
117	Household operation	1.0000	1.0669	5.6372	5.5474
118	Non-durable household goods	1.0000	1.2042	6.8925	6.3007
119	Paper products for household	1.0000	2.3475	12.3217	14.4960
120	Cleaning maintenance supplies (soap,etc.)	1.0000	0.9290	6.5823	6.2433
121	Laundry, dry cleaning	..	..	..	..
122	Other non-durable household products	1.0000	1.5029	5.1078	4.6953
123	Domestic services	1.0000	1.7143	3.2715	4.2857
124	Household services	1.0000	0.4248	2.8480	4.3237
125	Total medical care & services	1.0000	0.3652	2.3041	2.9156
126	Private medical care & services	1.0000	0.3652	2.3041	2.9156
127	Medical & pharmaceutical products	1.0000	0.1741	2.5616	1.7703
128	Pharmaceutical products	1.0000	0.1621	2.4425	1.9403

Table 17. ICP 1985 Europe Group 2: Purchasing Power of Currency (per international Austrian Schilling)

	COUNTRY--->	Austria	Hungary	Poland	Yugoslavia
129	Drugs & medical preparations	1.0000	0.1199	2.5751	1.8975
130	Medical supplies	1.0000	0.8098	1.5202	4.5864
131	Therapeutic appliances & equipment	1.0000	0.4681	16.1063	1.2987
132	Health services	1.0000	0.4111	2.2549	3.2355
133	Services of physicians, nurses, etc	1.0000	0.4060	3.6732	2.0641
134	Services of physicians/gen. practitioners	..	..	..	..
135	Services of specialists	..	..	..	..
136	Services of dentists	..	..	..	..
137	Services of nurses	..	..	..	..
138	Other medical services	..	..	..	..
139	Hospital care & the like	1.0000	0.4088	2.4846	4.4327
140	Medical personnel	..	..	..	..
141	Other than medical personnel	..	..	..	..
142	Public medical care (Current consumption of govt.)	..	..	..	..
143	Transport and communication	1.0000	1.2809	5.6142	7.3693
144	Personal transportation equipment	1.0000	1.8828	13.6063	10.2973
145	Passenger cars	1.0000	1.9772	14.9938	10.2309
146	Other personal transport	1.0000	1.2143	6.6634	10.9827
147	Operation costs of transportation equipment	1.0000	1.4148	4.7145	8.3763
148	Tires, tubes, accessories	1.0000	1.8293	8.2017	7.6484
149	Repair charges for personal transport	1.0000	0.9853	4.6239	10.6186
150	Fuel & lubricant (gasoline, grease, etc.)	1.0000	1.7084	4.4289	10.2050
151	Other expenses (parking, tolls, etc.)	1.0000	0.4519	3.3076	2.1420
152	Purchased transport	1.0000	0.7157	3.9019	4.1938
153	Local transport	1.0000	0.6204	2.4921	6.5972
154	Local taxis	1.0000	0.5963	3.8411	3.2631
155	Local buses, trams & the like	1.0000	0.4928	1.2051	5.3890
156	Long distance transport	1.0000	0.7645	5.1752	3.0080
157	Railway transport	1.0000	0.5329	5.2276	1.6398
158	Road transport	1.0000	0.8454	4.7465	3.1001
159	Air transport	1.0000	2.2695	5.7840	4.6091
160	Other long distance transport	1.0000	0.2887	1.9548	6.9172
161	Communication	1.0000	0.9486	1.7505	2.1011
162	Postal communication	1.0000	0.9134	2.3649	3.9890
163	Telephone, telegraph	1.0000	1.0970	1.5665	1.7044
164	Recreation, entertainment, education, & others.	1.0000	0.9256	3.0542	5.1765
165	Equipment and services	1.0000	1.4869	5.5021	8.0346
166	Equipment for recreation	1.0000	1.7216	10.2084	12.1472
167	Radios, televisions, phonographs	1.0000	2.7344	19.7767	16.4685
168	Musical instruments, boats, etc.	1.0000	2.8708	13.2213	16.6148
169	Camera, VCR, & other optical equipment.	1.0000	2.2419	11.9522	16.8477
170	Semi & non-durable goods	1.0000	1.5711	6.6740	7.2696
171	Repair to equipment & accessories	1.0000	0.2144	1.8901	8.7216
172	Services for recreations	1.0000	1.3541	2.7895	5.0823
173	Public entertainment	1.0000	1.3541	2.7895	5.0823
174	Cinema, theatre, sports ground, etc.	1.0000	0.5419	2.2475	2.4216
175	TV & radio licence; hire of equipment.	1.0000	1.5509	2.3400	6.0307
176	Others: religious, recreational and cultural	..	..	..	..
177	Books, newspapers, magazines, etc.	1.0000	0.8294	2.6198	5.3968
178	Stationery for educational purposes	..	..	..	..
179	Total education expenditures	1.0000	0.5794	1.8437	3.3608
180	Private education expenditures	..	..	..	..
181	Public education expenditures	..	..	..	..
182	Miscellaneous goods & services	1.0000	0.9799	4.0703	5.0445
183	Personal care	1.0000	1.2450	5.5079	6.3552
184	Barber and beauty shops	1.0000	0.2895	1.8647	2.8118
185	Toilet articles (all kinds)	..	..	..	..
186	Jewelry, watch, etc. - personal effects	1.0000	1.5793	8.2162	7.9628
187	Other personal care goods	1.0000	2.8757	8.0422	7.3485
188	Stationery for non-educational purposes	1.0000	0.8740	2.9818	6.2949
189	Other	1.0000	0.9310	3.8029	4.7543
190	Restaurants, cafes & hotels	1.0000	0.9937	3.6910	4.4486
191	Workers' cafeterias	..	..	..	..
192	Restaurants, cafes, etc.	1.0000	0.9242	3.7680	5.0490

Table 17. ICP 1985 Europe Group 2: Purchasing Power of Currency (per international Austrian Schilling)

	COUNTRY--->	Austria	Hungary	Poland	Yugoslavia
193	Hotels, lodgings	1.0000	1.9447	3.6088	3.5047
194	Finance, other services	1.0000	0.7776	4.7350	5.6194
195	Financial services (bank, insurance, etc.)	..	..	..	..
196	Services N.E.C.	..	..	..	..
197	Welfare services	1.0000	0.7776	4.7350	5.6194
198	Net expenditures of residents abroad	1.0000	0.4633	..	1.8836
199	Capital formation	1.0000	1.4236	4.2846	9.6784
200	Domestic capital formation	1.0000	1.3491	4.1882	9.8548
201	Gross fixed capital formation	1.0000	1.3910	3.9349	10.2372
202	Producer durable	1.0000	1.5097	4.1909	10.4197
203	Machinery & non-electrical equipment	1.0000	1.6864	4.9670	9.3615
204	Products of processing	..	..	..	..
205	Engines, turbines	1.0000	1.9153	5.7798	10.6849
206	Agricultural machinery	1.0000	1.2531	3.9758	7.2492
207	Office machinery & equipment	1.0000	1.9827	16.9712	11.9999
208	Metal & woodworking machinery	1.0000	1.7593	5.5225	9.6076
209	Tool, finished metal	..	..	..	..
210	Construction, mining & oil field equipment	1.0000	1.3924	4.2647	10.3347
211	Special Ind. machinery, paper, printing, etc.	1.0000	1.8220	5.2825	10.7694
212	Machinery for food, chemical, etc.	..	..	..	..
213	Textile & leather working machinery	..	..	..	..
214	General industrial machinery	1.0000	1.7718	4.3016	8.9423
215	Service Industrial machinery	1.0000	1.4353	2.9119	5.5905
216	Other machinery equipment	..	..	..	..
217	Precision, optical instruments	1.0000	3.9683	10.5010	12.5909
218	Electrical machinery & appliances	1.0000	1.2328	2.9241	13.6960
219	Electrical equipment, including lights	..	..	..	..
220	Electrical generation & transmission equip.	1.0000	1.3645	3.5193	8.4255
221	Radio, TV & other communication equip.	1.0000	1.1532	3.6271	9.7321
222	Other electrical equipment	1.0000	1.9599	2.5414	32.4158
223	Telecommunication & measuring instruments	1.0000	0.9852	2.8568	18.5932
224	Transportation equipment	1.0000	1.2628	5.0922	9.6230
225	Motor vehicles, engines	..	..	..	..
226	Railway vehicles	1.0000	1.0879	2.6856	7.8897
227	Passenger motor cars & other motor vehicles	1.0000	1.2966	6.3954	10.3379
228	Passenger automobiles	1.0000	2.8180	14.1800	15.7737
229	Trucks, buses, trailers	1.0000	1.0566	5.6617	8.1708
230	Aircraft	1.0000	1.4219	4.0418	14.1007
231	Ships, boats	1.0000	0.9484	3.7000	4.3647
232	Other transport equipment	1.0000	2.1317	6.9229	8.5045
233	Other	1.0000	1.6818	5.7711	8.9015
234	Furniture, fixtures	1.0000	1.2345	6.2114	6.1486
235	Other producer durable goods	1.0000	2.1083	6.7032	14.7618
236	Construction	1.0000	1.3061	3.7323	10.2448
237	Residential buildings	1.0000	1.0783	2.8290	6.6885
238	Family dwellings	..	..	..	..
239	Multifamily dwellings	..	..	..	..
240	Non-residential buildings	1.0000	1.3442	4.2064	11.0564
241	Agricultural buildings	..	..	..	..
242	Industrial buildings	..	..	..	..
243	Buildings for market services	..	..	..	..
244	Buildings for non-market services	..	..	..	..
245	Other constructions	..	..	..	..
246	Transport routes, roads, bridges, tunnels	..	..	..	..
247	Other transport utility	..	..	..	..
248	Other civil engineering	..	..	..	..
249	Other products	..	..	..	..
250	Changes in stocks	1.0000	0.6150	5.0349	7.9457
251	Net foreign balance	1.0000	2.4223	7.1138	13.2838
252	Government consumption, total	1.0000	0.6629	2.9350	6.7232
253	Compensation of employees	..	..	..	..
254	Commodities, goods & services.	..	..	..	..
255	Gross domestic product	1.0000	1.0234	3.9400	6.6672

Table 18. ICP 1985 Europe Group 2: Per Capita GDP Expenditure (in national currencies)

	COUNTRY---> CURRENCY-->	Austria Schillings	Hungary Forint	Poland Zlotys	Yugoslavia Dinars
1	Final consumption of the household	120,295.29	57,216.35	174,481.46	336,037.69
2	Food, beverages & tobacco	24,141.76	18,249.85	71,946.40	119,415.02
3	Food	18,575.27	14,197.54	51,221.32	89,136.71
4	Bread and cereals	2,488.58	1,646.53	6,100.09	14,658.69
5	Rice	37.39	95.69	47.70	837.93
6	Flour, other cereals	346.02	186.87	903.54	4,463.13
7	Bread	1,214.79	817.07	3,442.30	4,927.50
8	Bakery products, biscuits, cakes, etc.	739.11	426.61	1,608.92	2,908.19
9	Noodles, macaroni, spaghetti, etc.	77.82	104.99	80.63	884.49
10	Cereal preparations	73.45	15.30	17.00	637.45
11	Meat	5,135.98	4,539.20	14,933.00	23,513.92
12	Beef and veal	763.90	184.34	1,856.59	6,000.67
13	Pork	1,411.40	1,667.76	4,125.91	3,739.55
14	Lamb, goat & mutton	41.89	66.01	236.34	608.16
15	Poultry	673.23	996.34	1,517.08	2,983.62
16	Dried or processed meat, etc.	2,245.57	1,624.75	7,197.08	10,181.92
17	Fish	369.62	132.78	1,201.08	1,953.98
18	Fish fresh/frozen	221.40	80.57	448.54	1,271.90
19	Processed fish/seafood, canned, etc.	134.56	47.52	498.92	635.03
20	Smoked or preserved fish & seafoods	13.66	4.69	253.62	47.05
21	Other seafoods	..	..	..	..
22	Milk, cheese & eggs	3,224.90	2,102.54	7,263.33	14,795.57
23	Milk fresh	1,371.23	664.66	2,665.74	4,325.97
24	Milk preserved	92.54	52.31	165.60	215.55
25	Other milk products	543.43	500.80	861.66	2,883.95
26	Cheese	777.16	250.16	1,315.11	3,006.48
27	Eggs & egg products	440.55	634.61	2,255.22	4,363.62
28	Oils and fats	1,232.03	723.80	4,660.85	5,046.07
29	Butter	490.40	157.64	3,253.20	802.07
30	Margarine, edible oils & lard	741.63	566.16	1,407.65	4,244.00
31	Fruits, vegetables & tubers	3,414.62	2,343.13	8,464.82	16,612.43
32	Fruits	1,831.40	1,083.86	2,117.92	6,557.88
33	Fresh fruits	1,375.21	729.74	1,597.55	4,227.98
34	Dried, frozen, preserved, juices, etc.	456.19	354.12	520.37	2,329.90
35	Vegetables	1,218.64	1,011.45	4,619.65	8,601.67
36	Fresh vegetables	852.20	772.37	3,659.09	4,814.94
37	Dried, frozen, preserved vegetables	366.44	239.08	960.56	3,786.73
38	Tubers, including potatoes	364.58	247.82	1,727.25	1,452.88
39	Potatoes	259.85	247.82	1,724.75	1,389.38
40	Manioc & other tubers	104.73	..	2.50	63.50
41	Other foods	2,809.54	2,709.56	8,598.15	12,556.05
42	Coffee, tea, cocoa	700.13	1,013.34	2,845.38	4,908.23
43	Coffee	602.42	936.90	2,048.09	4,423.95
44	Tea	31.02	30.05	747.89	409.60
45	Cocoa	66.69	46.39	49.40	74.68
46	Sugar, sweets, spices	2,109.41	1,696.22	5,752.77	7,647.82
47	Sugar	215.04	521.18	1,517.73	2,321.18
48	Other sweets and spices	1,894.37	1,175.04	4,235.04	5,326.64
49	Jam, syrup, honey & the like	243.54	97.57	468.28	990.65
50	Chocolate, ice cream, confectionery, etc.	1,126.10	711.61	1,977.73	2,819.15
51	Condiments, spices, salt, etc.	524.73	365.86	1,789.03	1,516.84
52	Beverages	2,507.38	3,003.38	17,887.78	22,721.77
53	Non-alcoholic beverages	551.12	291.11	700.56	4,845.62
54	Mineral water	205.09	15.87	105.64	2,839.54
55	Soft drinks	346.02	275.24	594.92	2,006.08
56	Alcoholic beverages	2,356.27	2,712.27	17,187.22	17,876.15
57	Liquors & spirits	416.02	1,238.71	13,759.08	7,125.75
58	Wine, cider	1,021.36	658.28	2,254.79	4,645.58
59	Beer	918.88	815.28	1,173.35	6,104.82
60	Other alcoholic beverages	..	..	..	..
61	Tobacco	2,559.11	1,048.93	2,837.30	7,556.54
62	Cigarettes	2,450.27	886.94	1,658.93	6,702.82
63	Cigars, cigarillos	60.98	156.54	1,152.82	810.61
64	Other tobacco products & stimulants	47.86	5.45	25.55	43.11

Table 18. ICP 1985 Europe Group 2: Per Capita GDP Expenditure (in national currencies)

	COUNTRY--> CURRENCY-->	Austria Schillings	Hungary Forint	Poland Zlotys	Yugoslavia Dinars
65	Clothing and footwear	11,293.72	5,035.03	15,661.07	32,015.57
66	Clothing	9,555.52	3,811.82	12,628.88	23,932.80
67	Clothing materials	833.37	332.05	1,776.31	3,012.74
68	Men's clothing	2,695.79	985.73	3,185.51	7,578.14
69	Women's clothing	3,796.97	676.03	3,440.83	6,204.23
70	Children's clothing	1,107.94	1,188.28	1,827.67	4,049.86
71	Clothing accessories	990.34	306.79	523.88	961.05
72	Haberdashery, millinery	91.48	172.50	773.30	670.81
73	Clothing, rental and repair	39.64	150.44	1,101.38	1,455.97
74	Footwear	1,738.20	1,223.21	3,032.19	8,082.77
75	Footwear, men's	536.40	434.41	880.85	2,867.40
76	Footwear, women's	789.75	457.69	1,487.11	3,253.97
77	Footwear, children's, infants'	329.58	297.40	557.13	1,603.64
78	Repairs to footwear	82.46	33.71	107.10	357.76
79	Gross rent, fuel & power	20,119.02	5,194.39	11,190.23	30,485.96
80	Gross rent	14,231.20	2,593.11	8,549.85	16,065.55
81	Rents	11,495.64	1,384.55	5,468.34	5,208.53
82	Rents of tenants	..	..	..	..
83	Imputed rents of owner-occupiers	..	..	..	..
84	Repair & maintenance of houses	885.21	604.28	656.31	5,253.52
85	Sanitary services & water charges	1,850.36	604.28	2,425.20	5,603.50
86	Fuel and power	5,887.82	2,601.28	2,640.38	14,420.41
87	Electricity	2,358.26	756.88	736.88	7,363.26
88	Gas	825.81	292.14	450.52	551.49
89	Liquid fuels	1,208.16	563.15	33.75	745.23
90	Other fuels	1,495.59	989.11	1,419.23	5,760.43
91	House furnishings, operations	7,222.59	4,696.78	15,724.71	28,362.24
92	Furnitures & appliances	5,399.01	3,112.78	10,972.89	21,767.59
93	Furnitures. etc.	3,319.96	1,689.92	5,514.46	8,938.18
94	Furniture, fixtures	2,789.92	1,374.12	4,044.11	6,784.89
95	Floor coverings	485.36	287.63	1,280.35	1,419.87
96	Repairs to furniture, fixture, floor coverings.	44.68	28.17	190.00	733.42
97	Household textiles	562.65	451.31	2,300.42	3,711.86
98	Household textiles, etc.	562.65	451.31	2,300.42	3,291.49
99	Repairs to textiles & other furnishings	..	..	..	420.37
100	Major household appliances	1,516.40	971.55	3,158.01	9,117.55
101	Refrigerators, freezers, & similar equipment	220.87	239.18	1,072.33	2,004.38
102	Washing & cleaning appliances	339.00	195.51	783.32	1,893.92
103	Cooking ,washing, heating	435.78	78.97	518.21	1,447.16
104	Cooking & other food warming appliances	75.17	70.34	94.41	905.15
105	Sewing machines, electric fans, toasters, etc.	118.12	116.07	337.26	1,365.23
106	Room climate control equipment	53.03	123.11	37.76	428.42
107	Repairs to major household appliances	274.43	148.37	314.72	1,073.29
108	Household goods and services	1,823.58	1,584.00	4,751.82	6,594.65
109	Household goods	568.35	626.45	2,102.95	3,406.86
110	Glassware, tableware & utensils	568.35	626.45	2,102.95	3,406.86
111	Glassware & tableware	135.89	158.89	1,266.18	1,423.95
112	Cutlery and flatware	110.83	140.86	266.45	414.65
113	Kitchen & domestic utensils without motor	321.63	326.70	570.32	1,478.82
114	Repairs to glassware, tableware & utensils	..	..	..	89.44
115	Garden appliances	..	..	..	..
116	Light-bulb, cable, switches, batteries, etc.	..	..	..	..
117	Household operation	1,255.23	957.55	2,648.87	3,187.79
118	Non-durable household goods	847.03	800.64	2,256.76	3,014.05
119	Paper products for household	154.98	123.02	162.20	162.74
120	Cleaning maintenance supplies (soap,etc.)	599.11	503.43	1,041.60	856.45
121	Laundry, dry cleaning	..	..	..	..
122	Other non-durable household products	92.94	174.19	1,052.96	1,994.86
123	Domestic services	84.32	100.48	138.49	69.18
124	Household services	323.88	56.43	253.62	104.56
125	Total medical care & services	12,000.97	2,976.88	9,862.79	20,680.41
126	Private medical care & services	12,000.97	2,976.88	9,862.79	20,680.41
127	Medical & pharmaceutical products	2,181.41	283.68	1,899.75	3,118.06
128	Pharmaceutical products	1,810.68	246.78	1,747.78	2,347.21

Table 18. ICP 1985 Europe Group 2: Per Capita GDP Expenditure (in national currencies)

	COUNTRY---> CURRENCY-->	Austria Schillings	Hungary Forint	Poland Zlotys	Yugoslavia Dinars
129	Drugs & medical preparations	1,752.14	170.25	1,641.03	2,271.50
130	Medical supplies	58.55	76.53	106.75	75.71
131	Therapeutic appliances & equipment	370.73	36.90	151.97	770.85
132	Health services	9,819.56	2,693.20	7,963.04	17,562.35
133	Services of physicians, nurses, etc	3,800.90	1,110.53	247.24	7,080.00
134	Services of physicians/gen. practitioners	..	..	..	..
135	Services of specialists	..	..	..	..
136	Services of dentists	..	..	..	..
137	Services of nurses	..	..	..	..
138	Other medical services	..	..	..	..
139	Hospital care & the like	6,018.56	1,582.67	7,715.80	10,482.35
140	Medical personnel	..	..	..	..
141	Other than medical personnel	..	..	..	..
142	Public medical care (Current consumption of govt.)	..	..	..	..
143	Transport and communication	18,038.25	5,170.90	14,813.52	38,176.72
144	Personal transportation equipment	4,130.79	1,248.09	3,846.36	7,823.93
145	Passenger cars	3,803.73	1,120.29	3,460.00	7,140.15
146	Other personal transport	327.06	127.80	386.36	683.78
147	Operation costs of transportation equipment	9,485.39	2,415.63	4,569.06	23,168.41
148	Tires, tubes, accessories	1,019.90	226.03	800.10	4,828.49
149	Repair charges for personal transport	2,927.67	381.91	1,560.67	3,805.06
150	Fuel & lubricant (gasoline, grease, etc.)	4,475.22	1,758.48	1,996.42	13,407.90
151	Other expenses (parking, tolls, etc.)	1,062.59	49.21	211.87	1,126.96
152	Purchased transport	2,670.60	1,220.77	5,701.35	5,471.58
153	Local transport	923.52	461.45	2,030.37	2,863.02
154	Local taxis	450.89	69.58	1,527.97	143.11
155	Local buses, trams & the like	472.63	391.87	502.40	2,719.91
156	Long distance transport	1,747.08	759.32	3,670.98	2,608.56
157	Railway transport	562.52	238.33	1,007.99	615.36
158	Road transport	562.12	283.60	1,607.86	1,523.19
159	Air transport	584.26	46.95	796.13	335.85
160	Other long distance transport	38.18	190.44	259.00	134.16
161	Communication	1,751.46	286.41	696.75	1,712.80
162	Postal communication	373.33	108.93	264.77	513.84
163	Telephone, telegraph	1,378.12	177.48	431.98	1,198.96
164	Recreation, entertainment, education, & others.	15,111.17	8,160.91	19,561.32	36,850.15
165	Equipment and services	6,007.31	4,262.66	7,911.08	18,520.25
166	Equipment for recreation	2,550.36	1,667.67	4,759.21	10,069.15
167	Radios, televisions, phonographs	606.93	724.48	1,912.54	3,622.46
168	Musical instruments, boats, etc.	183.49	188.09	597.51	937.66
169	Camera, VCR, & other optical equipment.	692.84	38.22	466.40	796.97
170	Semi & non-durable goods	969.79	618.09	1,493.13	2,959.29
171	Repair to equipment & accessories	97.31	98.79	289.63	1,752.77
172	Services for recreations	2,496.57	2,090.34	1,529.37	5,844.46
173	Public entertainment	2,496.57	2,090.34	1,529.37	5,844.46
174	Cinema, theatre, sports ground, etc.	517.97	137.66	838.51	1,257.95
175	TV & radio licence; hire of equipment.	1,978.60	1,952.68	690.86	4,586.51
176	Others: religious, recreational and cultural	..	..	..	..
177	Books, newspapers, magazines, etc.	960.38	504.65	1,622.50	2,606.64
178	Stationery for educational purposes	..	..	..	..
179	Total education expenditures	9,103.87	3,898.25	11,650.24	18,329.90
180	Private education expenditures	..	..	..	..
181	Public education expenditures	..	..	..	..
182	Miscellaneous goods & services	18,054.51	8,265.08	15,721.42	33,482.02
183	Personal care	2,752.67	1,714.62	3,440.43	10,569.96
184	Barber and beauty shops	804.60	273.45	379.27	715.53
185	Toilet articles (all kinds)	..	..	..	..
186	Jewelry, watch, etc. - personal effects	693.50	500.24	1,611.53	4,410.40
187	Other personal care goods	1,167.06	631.32	887.04	3,834.93
188	Stationery for non-educational purposes	87.50	309.61	562.59	1,609.10
189	Other	15,301.84	6,550.46	12,280.99	22,912.06
190	Restaurants, cafes & hotels	12,270.94	5,008.36	10,756.87	15,686.77
191	Workers' cafeterias	..	..	..	..
192	Restaurants, cafes, etc.	8,035.15	4,172.60	9,146.59	10,714.05

Table 18. ICP 1985 Europe Group 2: Per Capita GDP Expenditure (in national currencies)

	COUNTRY---> CURRENCY-->	Austria Schillings	Hungary Forint	Poland Zlotys	Yugoslavia Dinars
193	Hotels, lodgings	4,235.79	835.76	1,610.28	4,972.72
194	Finance, other services	3,030.90	1,542.10	1,524.12	7,225.29
195	Financial services (bank, insurance, etc.)	..	..	..	..
196	Services N.E.C.	..	..	..	..
197	Welfare services	3,030.90	1,542.10	1,524.12	7,225.29
198	Net expenditures of residents abroad	-5,686.70	-533.47	..	-3,430.40
199	Capital formation	44,638.12	24,728.55	83,050.47	151,418.67
200	Domestic capital formation	44,311.32	22,185.31	79,074.98	158,716.95
201	Gross fixed capital formation	40,277.43	21,772.13	61,715.52	119,348.77
202	Producer durable	17,767.70	7,671.10	19,607.50	63,028.54
203	Machinery & non-electrical equipment	9,162.01	5,051.70	9,019.52	31,879.91
204	Products of processing	..	..	..	..
205	Engines, turbines	441.43	565.31	313.79	6,293.41
206	Agricultural machinery	1,088.15	729.64	2,470.55	6,400.87
207	Office machinery & equipment	1,303.38	427.27	392.15	2,680.38
208	Metal & woodworking machinery	906.29	505.74	1,176.44	3,318.10
209	Tool, finished metal	..	..	..	..
210	Construction, mining & oil field equipment	874.12	466.62	1,372.52	4,145.74
211	Special Ind. machinery, paper, printing, etc.	1,581.34	1,247.25	1,548.99	3,171.55
212	Machinery for food, chemical, etc.	..	..	..	..
213	Textile & leather working machinery	..	..	..	..
214	General industrial machinery	2,452.95	902.62	1,450.96	3,637.67
215	Service Industrial machinery	315.29	120.39	156.87	1,927.46
216	Other machinery equipment	..	..	..	..
217	Precision, optical instruments	199.07	86.86	137.25	304.73
218	Electrical machinery & appliances	4,215.35	1,234.67	6,294.03	20,247.01
219	Electrical equipment, including lights	..	..	..	..
220	Electrical generation & transmission equip.	1,662.74	402.10	1,999.97	6,042.39
221	Radio, TV & other communication equip.	1,518.86	589.45	1,882.32	3,582.08
222	Other electrical equipment	521.12	40.38	1,803.89	8,962.47
223	Telecommunication & measuring instruments	512.64	202.74	607.85	1,660.07
224	Transportation equipment	2,866.58	1,097.66	3,803.77	8,800.95
225	Motor vehicles, engines	..	..	..	..
226	Railway vehicles	411.38	143.11	686.26	913.60
227	Passenger motor cars & other motor vehicles	1,982.26	896.89	1,607.74	6,625.51
228	Passenger automobiles	1,186.23	156.54	58.81	2,121.46
229	Trucks, buses, trailers	796.03	740.35	1,548.93	4,504.05
230	Aircraft	153.14	..	294.12	655.96
231	Ships, boats	124.95	22.16	1,058.81	591.97
232	Other transport equipment	194.84	35.50	156.84	13.91
233	Other	1,523.76	287.07	490.18	2,100.67
234	Furniture, fixtures	750.89	100.29	19.60	1,273.87
235	Other producer durable goods	772.87	186.78	470.58	826.80
236	Construction	22,509.73	14,101.03	42,108.02	56,320.23
237	Residential buildings	9,483.52	4,949.38	10,527.00	20,467.77
238	Family dwellings	..	..	..	..
239	Multifamily dwellings	..	..	..	..
240	Non-residential buildings	7,820.78	4,327.07	13,895.65	16,067.39
241	Agricultural buildings	..	..	..	..
242	Industrial buildings	..	..	..	..
243	Buildings for market services	..	..	..	..
244	Buildings for non-market services	..	..	..	..
245	Other constructions	..	..	..	..
246	Transport routes, roads, bridges, tunnels	..	..	..	..
247	Other transport utility	..	..	..	..
248	Other civil engineering	..	..	..	..
249	Other products	..	..	..	..
250	Changes in stocks	4,033.88	413.18	17,359.46	39,368.18
251	Net foreign balance	326.80	2,543.24	3,975.49	-7,298.28
252	Government consumption, total	15,958.70	6,839.23	23,684.06	62,837.50
253	Compensation of employees	..	..	..	..
254	Commodities, goods & services.	..	..	..	..
255	Gross domestic product	180,892.12	88,784.13	281,215.99	550,293.86

Annex 1: Index number formulae

I. Fisher Ideal Price Index

The Fisher Ideal is the geometric mean of Laspeyres (base country-weighted) and Paasche (numerator country weighted) indices for any pair of countries j and k:

$$F_{jk} = \sqrt{L_{jk} \cdot S_{jk}}$$

where:

F_{jk} = Fisher index for country j with respect to country k

L_{jk} = Laspeyres index for country j with respect to country k

S_{jk} = Paasche index for country j with respect to country k.

II. Laspeyres and Paasche Price Indices

Laspeyres Index:

$$L_{jk} = \frac{\sum_{i=1}^{m} \left(\frac{p_{ij}}{p_{ik}}\right) \cdot w_{ik}}{\sum_{i=1}^{m} w_{ik}}$$

and

Paasche Index:

$$S_{jk} = \frac{1}{\frac{\sum_{i=1}^{m} \left(\frac{p_{ik}}{p_{ij}}\right) w_{ij}}{\sum_{i=1}^{m} w_{ij}}}$$

where for all i = 1,2,.., m,

p_{ik} = price of product i in base country k;

p_{ij} = price of product i in numerator country j

w_{ik} = expenditure weight of product i in base country k

w_{ij} = expenditure weight of product i in numerator country j

m = total number of products.

For computing Laspeyres, Paasche or Fisher *quantity* indices, ratios of quantities of each item are weighted by prices of one country and the other and the two estimates are averaged. The computing formulae are the same as above except 'p' is replaced by 'q' in all cases.

III. The Geary-Khamis Method

In this method, the PPCs for all n countries and average "international prices" of m basic headings are computed simultaneously. This is done by solving the following system of simultaneous equations:

$$\pi_i = \sum_{j=1}^{n} \frac{p_{ij}}{PPC_j} \left[\frac{q_{ij}}{\sum_{j=1}^{n} q_{ij}} \right] \qquad i=1,\ldots,m,$$

$$PPC_j = \frac{\sum_{i=1}^{m} p_{ij}\, q_{ij}}{\sum_{i=1}^{m} \pi_i\, q_{ij}} \qquad j=1,\ldots,n.$$

where

π_i = average international price of good or service i;
p_{ij} = price of good or service i in country j;
q_{ij} = quantity of good or service i in country j;
PPC_j = purchasing power of currency of country j;
m = number of basic headings;
n = number of countries.

Though the system as written consists of (n+m) equations in (n+m) unknowns, one is redundant (because the PPP of the base country is set equal to 1.0), and the system of equation is homogenous (for any country quantities valued at international prices equals total national currency expenditure deflated by its PPC).

International price of an item is the quantity weighted average of its prices in all the countries after the prices have been deflated by PPC of the country, while PPC of a country is the ratio between its own currency total expenditure (GDP) and expenditure at international prices.

IV. The EKS Method

An EKS index of a country j, relative to country k, is the geometric mean of two direct Fisher indices between j and k and all the indirect indices that can be computed from the rest of the n-2 countries.

$$EKS_{jk} = \left[F_{jk}^{2} \prod_{l=1}^{n} \frac{F_{jl}}{F_{kl}} \right]^{\frac{1}{n}} \text{.....} for\ l \neq j,k$$

where:

F_{jk} = Fisher price index for country j relative to country k
F_{jl} = Fisher price index for country j relative to country l
F_{kl} = Fisher price index for country k relative to country l

For EKS *quantity* indices, all Fisher price indices are replaced by Fisher quantity indices.

Annex 2: Notes to World Bank staff estimates

Afghanistan
Figures without signs were adjusted by weights from Pakistan's 1985 ICP data.
* Actual figures from the National Account file.

Albania
Figures without signs were adjusted by weights from Hungary's 1985 ICP data.
* Actual figures from the National Account file.

Algeria
Figures without signs were adjusted using weights from Morocco's 1985 ICP data.
* Actual figures from the National Account file.
& Figures adjusted by weights from 1988 Household Budget Survey of Algeria, (National Statistical Office).

Angola
Figures without signs were adjusted by weights from Senegal's 1985 ICP data.
* Actual figures from the National Account files.
& Figures adjusted by weights from "The Luanda Household Budget and Nutrition Survey" (Ministry of Planning, Govt. of Angola, 1990).

Belize
Figures without signs were adjusted by weights from Jamaica's 1985 ICP data.
* Actual figures from the National Account file.

Bulgaria
Figures without signs were adjusted by weights from Poland's 1985 ICP data.
* Actual figures from the National Account file.

Burkina Faso
Figures without signs were adjusted by weights from the Mali's 1985 ICP data.
* Actual figures from the National Account file.
> Figures adjusted by weights from the UNESCO's "Statistical Yearbook, 1991".
& Figures adjusted by weight from the Consumer Price Index "Annuaire Statistique de Burkina Faso, 1986".

Burundi
Figures without signs were adjusted by weights from the Rwanda's 1985 ICP data.
* Actual figures from the National Account file.
> Actual figures from the UNESCO's "Statistical Yearbook, 1991".
& Figures adjusted by weights from the Household Survey: "Enquete Aupres des Menages de Bujumbura, 1978/79".

Cambodia
Figures without signs were adjusted by weights from Poland's 1985 ICP data.
* Actual figures from the National Account file.

Cape Verde
Figures without signs were adjusted using weights from Swaziland's 1985 ICP.
* Actual figures from the National Account file.

Central African Rep.
Figures without signs were adjusted by weights from Benin's 1985 ICP data.
* Actual figures from the National Account file.

Chad
Figures without signs were adjusted by weights from Mali's 1985 ICP data.
* Actual figures from the National Account file.

Comoros
Figures without signs were adjusted by weights from Zambia's 1985 ICP data.
* Actual figures from the National Account file.
& Figures adjusted by weights from the Comoros' Consumer Price Index (World Bank Recent Economic Development, May 18, 1989).

Czechoslovakia
Figures without signs were adjusted by weights from Poland's 1985 ICP.
* Actual figures from the National Account file.
& Figures adjusted by CPI weights reported in the "Statistical Sources and Methods, Volume 1, Consumer Price Indices," Second edition, ILO, 1987.

Djibouti
Figures without signs were adjusted by weights from Mali's 1985 ICP data.
* Actual figures from the National Account file.

Equatorial Guinea
Figures without signs were adjusted by weights from Senegal's 1985 ICP data.
* Actual figures from the National Account files.
& Figures adjusted by weights from Equatorial Guinea's Consumer Price Index (World Bank, Recent Economic Development, March 8, 1991).

Gabon
Figures without signs were adjusted using weights from Botswana's 1985 ICP.
* Actual figures from the National Account file.
& Figures adjusted by CPI weights reported in the "Statistical Sources and Methods, Volume 1, Consumer Price Indices," second edition, ILO, 1987.

Gambia
Figures without signs were adjusted using weights from Sierra Leone's 1985 ICP.
* Actual figures from the National Account file.
& Figures adjusted by CPI weights reported in the "Statistical Sources and Methods, Volume 1, Consumer Price Indices", second edition, ILO, 1987.

Ghana

Figures without signs were adjusted by weights from Zambia's 1985 ICP.

* Actual figures from the National Account file.

& Figures adjusted by CPI weights reported in the "Statistical Sources and Methods, Volume 1, Consumer Price Indices," second edition, ILO, 1987.

Guinea

Figures without signs were adjusted by weights from Benin's 1985 ICP.

* Actual figures from the National Account file.

Lao PDR

Figures without signs were adjusted by weights from Bangladesh's 1985 ICP.

* Actual figures from the National Account file.

Liberia

Figures without signs were adjusted using weights from Botswana's 1985 ICP.

* Actual figures from the National Account file.

& Figures adjusted by CPI weights reported in the "Statistical Sources and Methods, Volume 1, Consumer Price Indices," second edition, ILO, 1987.

Libya

Figures without signs were adjusted by weights from Egypt's ICP data

* Figures from the National Account File.

& Figures adjusted by weights from the "Report on the Second Phase of the Household Sample Survey (Tripoli Town)" (Census and Statistics Dept., Tripoli, Libya).

Mongolia

Figures without signs were adjusted by weights from Philippines's 1985 ICP data.

* Actual figures from the National Account file.

Mozambique

Figures without signs were adjusted by weights from Malawi's ICP data.

* Figures from the National Account File.

Namibia

Figures without signs were adjusted by weights from Swaziland's 1985 ICP data.

* Figures from the National Account File.

Oman

Figures without signs were adjusted by weights from Egypt's 1985 ICP data.

* Actual figures from the National Account file.

& Figures adjusted by weights from the CPI of Oman's Statistical Year book" (Directorate of National Statistics, Sultanate of Oman, July 1991).

Sao Tome and Principe

Figures without signs were adjusted by weights from Zambia's ICP data.

* Figures from the National Account File.

Saudi Arabia

Figures without signs were adjusted by weights from Iran's 1985 ICP.

* Actual figures from the National Account file.

& Figures adjusted by CPI weights reported in the "Statistical Sources and Methods, Volume 1, Consumer Price Indices," second edition, ILO, 1987.

Seychelles

Figures without signs were adjusted by weights from Mauritius's 1985 ICP.

* Actual figures from the National Account file.

& Figures adjusted by CPI weights reported in the "Statistical Sources and Methods, Volume 1, Consumer Price Indices," second edition, ILO, 1987.

@ Figures adjusted by weights from "Report on the 1978 Household Expenditure Survey" (Seychelles, Statistics Division, Dept. of Finance) Sept. 1979.

Somalia

Figures without signs were adjusted by weights from Malawi's 1985 ICP.

* Actual figures from the National Account file.

@ Figures adjusted by weights from "Mogadishu Family Budget Survey, 1977" (Central Statistical Dept, Mogadishu).

\+ Actual figures from the 1985 Central Govt. Expenditure Report (World Bank, Recent Economic Developments, Oct. 30, 1989).

\+ + Figures adjusted by weights from the Statistical Yearbook, 1991 of the UNESCO.

South Africa

* Actual figures from the National Account file.

** Figures adjusted by weights from "South Africa Statistics, 1990," Pretoria.

< Figures adjusted by weights from the Consumer Price Index (South Africa, Bulletin of Statistics, 1991).

& Figures adjusted by weights from the "Government Finance Yearbook" (IMF, 1990).

\# Figures adjusted by weights from "South Africa's National Accounts, 1946 to 1990" (South African Reserve Bank).

\+ Figures adjusted by weights from "National Accounts Statistics: Main Aggregates and detailed Tables, 1988" (UN).

$ Figures adjusted by weights from "National Accounts Statistics: Main Aggregates and detailed Tables, 1988" (UN), and Mauritius' 1985 ICP data.

St. Vincent And The Grenadines

Figures without signs were adjusted by weights from St. Lucia's 1985 ICP data.

* Actual figures from the National Account file

& Figures adjusted by weights from the Consumer Price Index of St. Vincent and the Grenadines "Digest of Statistics, 1990" (Statistical Unit, Central Planning Division).

Togo

Figures without signs were adjusted by weights from Rwanda's 1985 ICP.

* Actual figures from the National Account file.

& Figures adjusted by CPI weights reported in the "Statistical Sources and Methods, Volume 1, Consumer Price Indices," second edition, ILO, 1987.

Uganda

Figures without signs were adjusted by weights from Rwanda's ICP 1985 data.

* Figures from the National Account file.

& Figures adjusted by weights from Uganda National Household Budget Survey, 1989/90.

Vietnam

Figures without signs were adjusted by weights from Bangladesh's 1985 ICP data.

* Actual figures from the National Account file.

Western Samoa

Figures without signs were adjusted using weights from Indonesia's 1985 ICP.

* Actual figures from the National Account file.

& Figures adjusted by CPI weights reported in the "Statistical Sources and Methods, Volume 1, Consumer Price Indices," second edition, ILO, 1987.

Yemen

Figures without signs were adjusted by weights from Egypt's 985 ICP data.

* Actual figures from the National Account file.

Zaire

Figures without signs were adjusted by weights from Tanzania's 1985 ICP.

* Actual figures from the National Account file.

& Figures adjusted by CPI weights reported in the "Statistical Sources and Methods, Volume 1, Consumer Price Indices," second edition, ILO, 1987.

For All The 15 FSU Economies

Figures without signs were adjusted by weights from Poland's 1985 ICP data.

* Actual figures from the National Account file as adjusted by Bank Staff.

SELECTED REFERENCES

References to ICP Data

ICP 1975

Irving B. Kravis, Alan Heston, Robert Summers, *World Product and Income: International comparisons of real gross product* (Baltimore and London: The Johns Hopkins University Press, 1982).

ICP 1980

United Nations, Commission of the European Communities. *World Comparison of Purchasing Power and Real Product for 1980 - Phase IV of the International Comparison Project; Part Two: Detailed Results for 60 Countries*. New York, 1987.

ICP 1985

OECD. *Purchasing Power Parities and Real Expenditure, 1985*. Paris, 1987.

United Nations Statistical Commission, and Economic Commission for Europe (ECE). *International Comparison of Gross Domestic Product in Europe 1985: Report on the European Comparison Programme*, New York, 1988.

EUROSTAT (Statistical Office of the European Communities). *Comparison of Price Levels and Economic Aggregates 1985: The Results for 22 African Countries*, Bruxells-Luxembourg, 1989.

Economic Commission and Social Commission for Asia and the Pacific (ESCAP), and the United Nations. *Purchasing Power Parities and Quantity Comparison for the ESCAP Region*, (# St/ESCAP/1128) N.Y., 1992.

EUROSTAT. *Comparison of Price Level and Economic Aggregates: The Results for the Southern Carribean Countries*," (# DG/34/B), Luxembourg, 1992.

United Nations. *World Comparisons of Real Gross Domestic Product and Purchasing Power, 1985*, (forthcoming).

ICP 1990

OECD. *Purchasing Power Parities and Real Expenditures - EKS Results, Vol. 1, 1990*, Paris, 1992.

References to Bank Staff Estimates

Afghanistan:
Afghanistan - Recent Economic Developments; Jul. 3, 1990; Jul. 13, 1990; April 28, 1991; May 10, 1991.

Statistical Year Book, March 1981 - March 1982; Central Statistics Office, Afghanistan, 1982.

Algeria:
Algeria - Statistical Appendix; January 14, 1988; IMF.

Algeria - Recent Economic Developments; Jan. 14, 1988,; May 4, 1989.

Statistical Yearbook of Algeria; 1990 edition, #.14, National Board of Statistics, Algeria, 1990.

Angola:
The Luanda Household Budget and Nutrition survey, Feb-April 1990, Survey analysis Plan, Analysis of Survey Results; Ministry of Planning, Government of Angola, UNICEF Luanda, 1991.

Angola - Recent Economic Development; IMF, april 23, 1991.

Angola - Recent Economic Developments; June 14, 1990; June 18, 1990; June 5, 1990; Aug. 14, 1991; Aug. 23, 1991.

Bank of Switzerland:
UBS Business Facts and Figures; August/Sepotember 198, Union bank of Switzerland.

Belize:
The Belize Household Expenditure Surveys; 1980; Central Planning Unit, Belize.

Belize - Recent Economic Developments; May 30, 1989; June 27, 1990, Aug. 19, 1991; Sep. 5, 1991.

Botswana:
Statistical Bulletin; December, 1989, vol.14, # 4., Central Statistics Office, Gaborone, Botswana.

Bulgaria:
Bulgaria - Recent Economic Developments; Feb. 14, 1991; Mar. 19, 1991; April 1, 1991; April 3, 1992.

Cape Verde:
Cape Verde - "Boletim Trimestral de Estatistica"; #0, 1987.

Cape Verde - Recent Economic Developments; Aug. 2, 1989; Jul. 6, 1989; Dec. 20, 1991.

Central African Republic:
Central African Republic; May 22, 1990; May 14, 1990; Jul. 23 1991; Aug. 15, 1991; Dec. 2, 1991.

Chad:

Enquete sur les conditions de vie des menages a N'Djamena; Direction de la Statistique et des Etudes Economiqus et Demographiques, N'Djamena, Chad.

Comoros:
Comoros - Recent Economic Developments; May 18, 1989, IMF.

Comoros - Recent Economic Developments; May 18, 1989; June 1, 1989; June 18, 1989.

Czechoslovakia:
Czechoslovakia - Recent Economic Developments; Dec. 28, 1990; May 31, 1991, Jun. 14, 1991; Dec. 20, 1991; May 6, 1992.

Djibouti:
Djibouti - Recent Economic Developments; Feb. 9, 1990; Feb. 21, 1990.

Equitorial Guinea:
Equatorial Guinea - Statistical Annex; March 1991, IMF.

Equatorial Guinea - Recent Economic Developments; Mar. 10, 1988; Aug. 13, 1987; Dec. 9, 1988; Aug. 29, 1989; Feb. 26, 1991; Dec. 19, 1991; Mar. 8, 1991.

Eurostat:
Purchasing Power Parities and Gross Domestic Product in Real Terms: Results 1985; EUROSTAT (Statistical Office of the European Communities), Bruxells-Luxembourg, 1988.

FAO:
Review of Food Consumption Surveys - 1988; FAO.

Food Balance Sheets, 1984-86 Average; FAO, Rome, 1991.

Bibliography of Food Consumption Surveys; Statistics Division, Economic and social policy department, FAO, Rome, 1981.

Fish and Fishery Products - World Apparent Consumption Statistics Based on Food Balance Sheets (1975-1986); Fishery Information, Data and Statistics Service, Fisheries Department, FAO.

The State of Food and Agriculture 1990; FAO, Rome, 1991.

Review of Food Consumption Surveys - 1981; FAO, Rome.

Ghana:
Ghana - Statistical Appendix; March 11, 1992, IMF.

Quarterly Digest of Statistics, Dec. 1990; Vol. viii, #4, Statistical Services, Accra, Ghana.

Public sector Health Care Expenditure in South Africa, 1970-1990; Working Paper #.1 University of Cape Town, Health Economics Unit, Cape Town, 1990.

Guinea:
Bulletin Trimestriel d'Etudes et de Statistiques; #14, Sep. 1990, Banque Central de la Republique de Guinee.

International Communication:
New African yearbook - 48 African Countries 1991-92 an IC Publication

ILO:
Household Income and Expenditure Statistics, #3, 1968-76; ILO, Geneva.

Yearbook of Labour Statistics, 1991; International Labour Office, Geneva.

Statistical Sources and Methods - Volume 6, Household Income and Expenditure Surveys; ILO, Geneva.

Bulletin of Labour Statistics: October Inquiry Results, 1985 and 1986; ILO, 1987.

IMF:
The Government Finance Statistics Yearbook; various years, IMF.

Lesotho:
Incomes, Expenditure and Consumption of Basotho Households, Main Results from the Household Budget Survey 1986/87; Bureau of Statistics, Lesotho, October, 1988.

Lesotho national Accounts 1980-90; Bureau of Statistics, Lesotho.

Annual Statistical Bulletin 1980; Bureau of Statistics, Maseru, Lesotho.

Central Bank of Lesotho Quarterly Review; June 1991 vol. x, No. 2, Maseru, Kingdom of Lesotho.

Central Bank of Lesotho Quarterly Review; Sep., 1990 vol. IX, #3, Maseru, Kingdom of Lesotho.

Liberia:
Quarterly Statistical Bulletin of Liberia - Second and Third Quarters, 1972; Monrovia Liberia, Ocober, 1972.

Statistical Bulletin (4), 1988; Research Deptment, national Bank of Liberia, Monrovia, Liberia.

Libya:
Report on the Second Phase of the Household Sample Survey, Household Expenditure; Technical Planning Body, Census & Statistical Dept., Libyan Arab Rep.

Mozambique:
Mozambique: Education Expenditure, Management and Financial Review; (White Cover), 1992, The World Bank.

Oman:

Statistical Yearbook, 1990; Nineteenth issue, Directorate General of National Statistics, Development Council, General Secretariat, Sultanate of Oman, July, 1991.

Saudi Arabia:
National Accounts of Saudi Arabia 1405/1406 A.H.; December 3. 1986 A.D., Central Department of Statistics, Kingdom of Saudi Arabia.

Seychelles:
Household Expenditure Survey, 1983-84; Statistics Division, Republic of Seychelles.

Report on the 1978 Household Expenditure Survey; Republic of Seychelles, 1979.

Somalia:
Bulletin; Central Bank of Somalia, No. 59, June 1988.

National Accounts Aggregates 1977-97; Ministry of National Planning and Jubba Valley Dev., Central Statistical Departnment; Somalia.

Statistical Abstract 1984; Somali Democratic Rep.

Mogadishu Family Budget Survey 1977; Central Statistical Department, State Planning Commission, Mogadishu, Somalia, 1978.

South Africa:
South Africa 1991-92, Official Yearbook; Dept. of Information, Rep. of South Africa.

White Paper in Connection with the Budget Statement 1967-68; Rep. of South Africa.

Jaarverslag 1988 Annual Report #2773; South Africa; Board of Trade and Industries.

Income and Expenditure Patterns of Households in Kwandebele, 1984; Research Report # 117 University of South Africa, Pretoria.

Prices, 1982; Report #11-01-17, Central Statistical Services, South Africa.

South Africa Statistics 1990; Rep. of South Africa, Pretoria.

South Africa's National Accounts, 1946 to 1990; Supplement to Quarterly Bulletin, June 1991, South Africa Reserve Bank.

Income and Expenditure Patterns of Urban Single Households in the PWV Area and the Durban Complex, 1980; Burea of Market Research, University of South Africa, Research Report # 94.8, 1983.

Bulletin of Statistics; March, 1991, Rep. of South Africa.

Household expenditure in the Republics of South Africa, Transkei and Bophuthatswana by Population and Main Expenditure Group, 1975; Research report No. 76, Bureau of Market Research, Pretoria, 1979.

St. Vincent and Grenadine:
National Accounts of St. Vincent and the Grenadines, 1980-87; Statistical Office, Central Planning Division, Ministry of Finance and Planning, Kingstown, April 1, 1989.

Togo:
Annuaire Statistique du Togo, 1983-1984; Ministere du Plan, Lome, Togo, Dec. 1985.

Uganda:
Report on the Uganda National Household Budget Survey (1989-90); Statistical Department, Ministry of Planning and Economic Development, Entebbe, 1991.

UN:
Handbook of the International Comparison Programme; United Nations, New York, 1992.

Review of Food Consumption Surveys- 1985 ; Food and Agriculture Organization of the UN.

National Accounts Statistics: Main Aggregates and Detailed Tables, 1988, Part II; United Nations.

UNDP:
Human Development Report 1992; UNDP, New York.

UNESCO:
Statistical Yearbook 1991; UNESCO,

USDA:
World Food Needs and Availabilities, 1985; United States, Dept. of Agriculture.

Western Samoa:
Central Bank of Samoa Bulletin; Sept. 1990, Apia, Western Samoa.

Annual Statistical Abstract, 1982; Dept. of Statistics, Western Samoa.

WHO:
Basic Health Indicators for Member States; WHO, Regional Office for the Eastern Mediterranean, Oct. 1981.

Yemen:
Bank of Yemen, Annual Report for the Year 1981; Research and Statistics Dept. Bank of Yemen, Aden, Yemen.

Statistical Year Book 1981; Prime Minister's Office, central Planning Organisation, Statistics Dept., Yemen.

A full report containing all the printed tables is also available from the Socio-Economic Data Division, International Economics Department, World Bank, Washington, D.C. 20433, USA. (Telephone: 202-4733808).