UNITED
NATIONS

A

General Assembly

Distr.
RESTRICTED

A/CN.2/R.563
21 May 1992

ORIGINAL: ENGLISH

COMMITTEE ON CONTRIBUTIONS
Fifty-second session
15 June-2 July 1992

PROGRESS REPORT ON THE FURTHER DEVELOPMENT OF PRICE-ADJUSTED RATES OF EXCHANGE

Note by the Statistical Division

1. The present note continues the series of studies on price-adjusted rates of exchange (PARE) prepared by the United Nations Statistical Division over the years. The main objective of this paper is to summarize the major findings of a draft of a publication of the United Nations Statistical Division 1/ on the distribution of world gross domestic product (GDP) that are relevant for the work of the Committee on Contributions. The Statistical Division study provides an analysis of changes over time of total and per capita world GDP based on different conversion rates. It includes an analysis of the changes in the distribution of GDP between countries as well as between regions alternatively measured on the basis of different conversion rates.

2. In the paper on the distribution of world GDP, the following six conversion rates were applied and compared: the market exchange rate (MER), the World Atlas rate (WA) developed by the World Bank, purchasing power parities (PPPs) and three different PAREs. PAREs were developed by the former Statistical Office and were described in previous documents submitted to the Committee on Contributions. 2/ The further development presented herein makes a clear distinction between the different PAREs and gives an explicit description of them. Additionally, they are evaluated more thoroughly than before because important characteristics have been highlighted as a result of the recent study. It is clarified what the different types of PAREs measure and what type of analytical use they would best serve.

3. Section I of the present note includes conceptual issues related to different PAREs and other conversion rates. Section II contains a brief summary of findings of the analysis concerning the changes in world GDP distribution between countries and regions for the period 1970 to 1989.

Section III focuses on the quantitative effects of different PAREs on the assessment scale of the Committee on Contributions with special regard to countries with distortions in exchange rates.

I. CONCEPTUAL ISSUES IN THE FURTHER DEVELOPMENT OF THE PARE CONVERSION RATE

4. The basic issue of comparing data expressed in different currencies is a need for a conversion rate that is neutral in the sense that it does not distort the results of the comparison. For this reason, the basic assumption is that the conversion rates for this particular analytical purpose reflect well the relative price changes over time. Although the present note focuses on PARE, it is worthwhile to start with a review of why market exchange rates differ from the ideal rates, as most of the alternative conversion rates, including other PAREs, use market exchange rate as a base. They can then be evaluated by analysing which distortion a particular alternative conversion rate removes.

5. MERs, even if determined directly by the market as for countries with convertible currencies, are based on the relative prices of only those goods and services that are traded internationally, while several other products and activities are excluded from international trade. On the other hand, the exchange rates are not only set by international trade but also influenced by other international transactions such as foreign investments and loans, incomes and remittances and current and capital transfers. Interest rates, expectations of the financial markets and several other factors determine the actual changes in MERs.

6. MERs may furthermore not adequately reflect price relatives when one or more of the countries compared subsidize their export products or levy duties on selected imports. Moreover, administrative regulations in some countries that require that licences be obtained from institutions other than Government-approved entities in order to export or import selected merchandise, in an attempt to balance foreign trade or protect the domestic producers, may likewise distort the link between prices and exchange rates. Exchange rates also may be determined by other currencies as pegged or fixed in relation to another currency, e.g., in the case of the majority of French-speaking nations in Africa. There are rates whose values are fixed by government decree or directed by some form of government control, largely depending on movements of market forces in parallel markets.

7. Since the objective is the quantification of the relative prices, the alternative conversion rates are usually based on direct or indirect price comparisons. PAREs and the WA rate are partly or almost entirely based on the GDP deflator indices while PPPs are derived from the price relatives of common baskets of goods and services expressed in the currencies of each of the participating countries. PAREs and WA take the base period exchange rate as the point of departure and focus on the changes over time, while PPPs focus on

relative prices in a base period. In the case of PPPs, estimates for countries excluded from the direct comparison and data extrapolation over time is prepared in a way similar to the PARE calculation.

8. Although there are certain differences between PAREs developed by the United Nations Statistical Office or Division, all of them are derived for each year by extrapolating the exchange rate for a fixed base-year or base-period exchange rate by price movements based on GDP implicit price deflators. The latter are obtained by dividing the constant price values into the current values of GDP for each year, and adjusting the result to index number form by attributing a value equal to 100 to the base year and calculating the index numbers for previous and subsequent years of the series, using the rates of price changes implicit in the deflators.

9. Compared to MERs, PARE calculations have several advantages as they eliminate most of the disturbing factors referred to in paragraphs 5 and 6. PARE calculations are based on wider bases than MERs in the sense that the GDP implicit price deflators applied reflect not only internationally tradable but also other goods and services produced by the economies. Besides, PARE calculations are mostly free from the other effects mentioned in paragraph 5, such as the impact of the international capital markets. Regarding the distortive factors mentioned in paragraph 6, e.g., any kind of government control over the exchange rate, these effects are mostly eliminated.

10. However, none of the problems are eliminated entirely by the PARE calculation because the base year or period exchange rates play a very important role in the PARE calculations. Their use is based on the assumption that the base year or period exchange rates are close to the relative prices of goods and services between the countries that are compared. In practice, it is very difficult to find a base year or period that meets this requirement. An in-depth, in-house analysis was conducted, which dealt with a historical examination of the trade balance in the current account of the balance of payments as contained in the International Monetary Fund (IMF) Balance of Payments Statistics Yearbook. The study was abandoned because it failed to produce a single year in which MERs were closer to the equilibrium foreign exchange rates than in any other years. In addition, it also became evident that investigation of the trade balance alone could not adequately identify such a base year, particularly because services should have been an important factor but their comparison was not possible because of the dearth of comparable and consistent information on them. Summarizing the experience, the base year may show any of the distorting factors. This is why base periods longer than one year were identified and more than one of them was tested.

11. While eliminating several disturbing effects, some new difficulties emerge in the use of PAREs. For example, not only exchange rates but also prices may be controlled by Governments and not only exports and imports but also domestic production of goods and services can be subsidized. Furthermore, government control of exchange rates and prices often go hand in hand. Since prices may also be distorted, these are distortive factors

pertaining to international comparison in the cases of PAREs and WA as well as PPPs. Another question is whether prices reflect quality, in other words, whether prices are directly comparable. Additionally, price statistics and national accounts data may be of poor quality in some countries or they may be distorted.

12. While evaluating the advantages and disadvantages of PAREs, it must be noted that none of the other alternative conversion rates can solve the above-mentioned problems entirely. Besides, as the numeric results of the recent study discussed in section II below prove, application of PAREs may result in data that are sufficiently comparable for most countries, if the base-period market exchange rate is not heavily distorted.

13. There are two versions of PARE as developed by the Statistical Division that were elaborated not only for the purpose of the Statistical Division study but that had been developed earlier for the purposes of the Committee on Contributions. Since there was a permanent improvement in PARE methodology, the differences between the two PAREs were not clarified so far as they were never used at the same time.

14. In its examination of PARE, the Committee on Contributions first dealt with a relative PARE, although it was simply referred to as PARE in documents prepared before May 1988. In the case of the relative PARE, adjustments based on price movements relative to the United States dollar price changes are applied. In other words, the relative PARE is obtained by multiplying the average exchange rate (expressed in United States dollars) for the base period by a price index of domestic prices relative to the price index for the United States. The relative PARE simulates exchange rates that respond perfectly to the changes in relative price levels. The price indices are based on the same period as the average exchange rate. According to this definition the exchange rate of the United States dollar is not adjusted because for the United States there is no difference between numerator and denominator.

15. The other PARE, hereafter called absolute PARE, was introduced in 1988 at the forty-eighth session of the Committee on Contributions. 3/ In this calculation the division by the United States price index was omitted. Instead, the PARE rate was derived by multiplying the average exchange rate (expressed in United States dollars) for the base period by the price index of the country concerned. The base of the price index is the same period as that for the average exchange rate. In the case of the absolute PARE, adjustments based on price movements were applied to all countries, including the United States. The absolute PARE eliminates inflation in all countries, resulting in a growth rate of world, regional or country GDP expressed in United States dollars, which is equal to the real growth rates.

16. It cannot be stated in general which PARE is more useful or better. The evaluation of different PAREs can be made only according to the purpose of the actual analysis. Based on studies of GDP changes over time, the absolute PARE has more analytical use, if the focus is on real growth and its comparison. However, if a comparison is made between the tendencies based on other

conversion rates, such as the market rate, the WA rate or current PPPs, the relative PARE is a more appropriate rate than the absolute PARE since the relative PARE is expressed in current United States dollars. There is no difference between relative and absolute PAREs when they are used to analyse the GDP distribution in a particular year; in those types of analyses they provide the same results since one is derived by a simple multiplication of or division by the United States dollar price index (which is equal to the absolute PARE belonging to the United States).

II. CHANGES OVER TIME IN THE DISTRIBUTION OF GDP AND THE LEVEL OF WORLD PER CAPITA GDP

17. The Statistical Division study on distribution of world GDP provides an analysis of changes over time of total and per capita world GDP based on different conversion rates for the period 1970 to 1989. It includes an analysis of the changes in the distribution of GDP between countries, alternatively measured on the basis of the different conversion rates. The conversion rates that are applied in the paper are the following: MERs, WA and PPPs, absolute 1970-1989 and 1980-1989 PAREs and relative 1970-1989 PAREs. Some additional calculations were prepared on the basis of relative 1970-1979 and 1980-1989 PAREs and the absolute 1970-1979 PAREs.

18. In the case of PAREs, the choice of base year or period is an important issue. In the Statistical Division study, in order to avoid the distortions related to one particular year, base periods were applied instead of individual base years. At first, the following three periods were identified: i.e., a 20-year base period (1970-1989), and two 10-year base periods (1970-1979 and 1980-1989). Since a number of structural changes in international trade and in financial and capital markets took place during the period 1970 to 1989, PAREs based on 1970-1979 data produced results that were not relevant for the second half of the period. Therefore the study focused mostly on the 1970-1989 and the 1980-1989 base periods.

19. The study shows the effects of applying alternative conversion rates to estimates of total and per capita world GDP and analyses the effects of the distribution of world GDP between countries and regions.

A. Changes in world GDP over time

20. World GDP based on different conversion rates for the two decades is presented in figure 1. The figure shows that, although the WA rate is an adjusted MER, time series based on MER and WA rates are almost identical. Both indicate a more than sixfold increase in world GDP but the annual growth rates varied considerably over time. However, the curve based on the relative 1970-1989 PARE shows a steady growth of world GDP over time. As a result of the choice of the base period, the beginning and end points of the curve are identical to those corresponding to world GDP levels based on a MER conversion. Since the PARE curve eliminates real appreciations and

depreciations of the currencies of all countries relative to the United States dollar, the differences in the trends based on the relative PARE and MER reflect changes in exchange rates between the currencies of different countries. World GDP based on an absolute PARE conversion, which could be considered as GDP at constant prices using 1980-1989 and 1970-1989 base periods, was almost twice as high in 1989 as it was in 1970. The annual growth rate was steady during the whole period. The growth rates of world GDP based on PPPs and the relative 1970-1989 PARE are very similar owing to the similarity of the manner in which conversion methods attempt to link the prices of different countries directly without using the links of actual MER rates. The other reason is that the method used to update PPPs between benchmark years is similar to the method used to derive relative PAREs.

B. Level and changes over time in world per capita GDP

21. The world per capita GDP based on different conversion rates for the two decades is presented in figure 2. Since the world population grew by almost 50 per cent between 1970 and 1989 and the annual population growth rate was quite steady, a comparison between the two figures shows that the trends of the per capita GDP and total GDP are similar. However, the slopes of the curves in figures 1 and 2 are not the same as a result of the division by the population growth rate. Figure 2 shows that, as in the case of world GDP, time series based on the relative PARE, MER and WA rates indicate more than a fourfold increase in per capita GDP. Since the PPP curve covers only 117 countries while world GDP based on PARE and MER conversions covers 178 countries, per capita GDP data based on PPPs are much higher than those based on any other conversion rate. However, there is not only a difference in the level of per capita GDP but also in its trend; the curve based on PPPs has a steeper slope than any of the other curves in figure 2. Curves based on MER and WA rates are almost identical. Sudden changes in the annual growth rate for MER and WA are caused by overall changes in the value of the United States dollar vis-à-vis all other currencies.

22. The comparison of the per capita GDP curves based on the relative PARE and MER conversion suggests that the United States currency was gradually depreciating in real terms between 1977 and 1980, and between 1980 and 1985 the dollar was permanently appreciating. The world per capita GDP based on the relative PARE was lower than that based on MER in the years 1970-1979, while it was higher than it until 1986. Since the main causes of the depreciation and appreciation were the relatively high interest rates and positive expectations and not the difference in inflation rates, the United States dollar was relatively undervalued before and overvalued after 1981. This reversed after 1985, for reasons such as large trade deficits and changes in expectations, and the United States dollar was continuously depreciating. As a consequence, world GDP expressed in United States dollars was relatively higher than before. In 1986 world GDP data based on MER and relative PARE conversions were equal, which implies that the PARE rate and exchange rate in that year were the same.

23. The main reason for the large difference between world GDP growth based on absolute PAREs and other conversion rates is that the trends based on the latter reflect inflation in the United States, while the trend based on the absolute PAREs excludes United States inflation. While the trends of world per capita GDP based on the two different absolute PARE conversions both reflect real growth, they are slightly different because of a different structure of average MERs between countries for the 1970-1979 and 1980-1989 base periods. Alternative absolute PARE conversions resulted in a lower level of world per capita GDP based on the absolute 1970-1989 PARE than when per capita GDP was calculated on the basis of the absolute 1980-1989 PARE. The reason is that both the level and the structure of base period average exchange rates, which are the starting points of the PARE calculation, differ between the two base periods.

24. In the case of PAREs, one of the most important findings is that the trends over time were quite similar for different absolute and different relative PAREs while there was a certain difference in the level of GDP figures based on PAREs for different base periods. In the case of absolute PAREs, the level of world GDP data based on the 1970-1989 PARE was lower than the level of world GDP data based on the 1980-1989 PARE. However, in the case of world GDP data based on relative PAREs, the level of the one based on the 1970-1989 PARE was higher than the one based on the 1980-1989 PARE.

25. This finding results from the fact that, while the measurement unit, the United States dollar, on average was stronger during the second decade than during the whole 1970-1989 period, its inflation rate was higher than the difference in the strength of the United States dollar. While the calculation based on the relative PARE does not eliminate United States dollar inflation, but only the relative inflation of the particular countries, the levels of GDP data based on relative PAREs reflect only the strength of the unit of measurement, the United States dollar. GDP data based on an absolute PARE calculation are deflated by any kind of inflation index. Therefore, their levels depend not only on the strength of the United States dollar but also on its inflation rate. Since world GDP data based on the relative 1970-1989 PARE are expressed in a stronger United States dollar than the ones based on the relative 1980-1989 PARE, the level of the former is lower than the level of the latter.

26. The average per capita GDP for the periods 1970-1989 and 1980-1989 based on MERs and the average per capita GDP converted on the basis of the absolute 1970-1989 and 1980-1989 PAREs respectively are equal. This is because the price relatives used in the PAREs are calculated as period averages of MERs. The same equality is not true in the case of the relative PARE.

C. Distribution of world GDP among countries

27. The analysis with the application of Lorenz curve and Gini indices (see figure 3) shows that data calculated by PAREs do not indicate substantial changes in the level of inequality in the world while data calculated by

either the MER or WA rates show an increase in inequality of GDP distribution. Data based on PPPs demonstrate much less inequality in the distribution of GDP than any of the other alternative conversion rates.

28. Data based on PAREs (see figure 4) show that the richest eighth of the world population became richer while the sixth and the seventh eighths' share decreased the most and continuously. The composition of the richest countries' group changed. Some of the countries that had been the richest at the beginning of the period could not maintain their relative advantage and some other countries overtook them. The poorest half of the world population even increased its share of the world GDP.

29. Similarly to PAREs, data for MER (see figure 5) and WA show that the proportion of the richest quarter of the population increased and the group that lost the most is the third (second richest) quarter, and not the poorest half of the world. Although the share of the poorer half of the population also decreased, these countries account for only 30 per cent of the decrease.

D. Changes in the rank of the countries

30. The rank of the countries was fairly stable over the last two decades based on each conversion rate. Comparing the first and last years, the typical rank correlation coefficient is 0.90-0.94. This means that the country ranks based on the same conversion rates did not change significantly during the period. In the case of PAREs, the rank of the countries changed, even though Lorenz curves and Gini indices do not indicate any substantial change in GDP distribution. The rank of the countries based on MER and WA rates changed more in each 5- or 10-year period than the ranks based on PAREs. However, the changes in rank of countries for the whole period, based on PAREs, were not smaller than in the case of MER and WA rates. This implies that, while the directions of change (i.e., increase or decrease) in the country ranks were mostly stable during the whole period in the case of PAREs, they varied considerably in the case of MER and WA rates.

31. In order to refine the analysis of changes in country ranks, tables 1 and 2 identify for MER, 1970-1989 PARE and PPPs, those countries with 20 or more rank increases or decreases between 1970 and 1989. As the country coverage of PPPs is lower, the threshold of 20 was replaced by 13. The dividing line in each column is between countries whose rank increased or decreased by more than 30 steps, and for PPPs by more than 20 steps.

32. Comparing the country ranks between 1970 and 1989 on the basis of the 1970-1989 PARE, there are 44 countries that changed their rank by more than 20 steps. Twenty of them improved their situation, while the position of the remaining 24 countries worsened. The range is wide: Seychelles improved by 86 steps, while at the other extreme Lebanon experienced a 97 step decrease. Both lists of countries are heterogeneous in terms of country types: there are countries with large and small populations, from different continents as well as countries with high and low per capita GDP in 1970. The compositions

of the two country groups are quite similar to the ones based on MER, although the list is shorter for PARE, and Japan, for example, is not included. What is different is that the increases or decreases were stable for the majority of the countries over the whole period.

33. Although there were some differences in the GDP distribution calculated by different conversion rates, the rank correlation coefficient between the ranks of countries for pairs of alternative conversion rates is very high (between 0.923 and 0.997) for each year. The ranks of countries were less correlated in 1970 while they were closest to each other in 1985. This implies that in 1970 the conversion rate structures were less similar while in 1985 they were the closest to each other.

E. Distribution of world GDP among regions

34. Two aspects of the issue of world GDP distribution between regions are examined in the Statistical Division study. One of them is a comparison between regions according to their shares in world GDP and per capita GDP data based on different conversion rates over the two decades. The other question is whether the GDP per capita of countries is correlated with the average GDP per capita of the regions in which they are located, in other words, whether the differences in per capita GDP between regions are quantitatively more important than the differences within each region or vice versa.

35. Two types of regionalization were carried out for the purpose of the study. One of them was defined on the basis of the principal geographic regions of the world, roughly by continent; eight regions were identified this way. In order to make the analysis more sophisticated, the eight main regions were subdivided into 14 more homogeneous subregions, in which, for example, Asia was subdivided into five subregions; Japan was split off from the rest of Asia; Australia and New Zealand were separated from Oceania; and Africa was split into two subregions.

36. Calculations based on different regionalizations have led sometimes to different conclusions. The differences between the regions were always more dominant than the differences within the regions. The calculation based on 14 regions showed that the differences between regions were becoming relatively more important over time; however, when based on the less homogeneous 8 regional groupings, the results indicated the opposite conclusion, namely that regional differences between regions were becoming relatively less important during the period 1970-1989.

37. In line with the findings for individual countries, the regional analysis shows that patterns for MER and WA conversions are very similar to each other as well as to the main trends based on PARE conversions. Furthermore, trends in PARE-related figures show smoother changes over time than the figures based on MER and WA conversions.

38. Concering the changes in the share of world GDP of the regions, the data for the first and last years of the period based on PARE (see figures 6A and B) calculations, the GDP shares of most of the regions decreased or stagnated. The exceptions are eastern Asia and Japan, south-eastern and southern Asia and North Africa. The most remarkable increase is registered by eastern Asia, excluding Japan; this region doubled its share of world GDP between 1970 and 1989. However, the calculations based on MER and WA conversions (see figure 7) show a notable decline in the share of North America and Eastern Europe and the former Union of Soviet Socialist Republics and some decrease in the proportions of southern Asia, sub-Saharan Africa and the Caribbean. The slack is taken over primarily by Japan, the Middle East and Western Europe.

39. On the basis of its per capita GDP (see figures 8 and 9), the richest region was North America. The next richest regions were Australia and New Zealand, which are treated as subregions of Oceania, and Japan, which is identified as a subregion of eastern Asia. The fourth richest region was Western Europe. When analysing the changes over time, GDP data based on the PARE conversion show an almost steady real growth during the whole period for all four regions mentioned. The trends of per capita GDP based on an MER conversion are less similar for the four regions. The growth is steady only in the case of the United States. All the other three regions were affected by changes in the United States dollar exchange rate vis-à-vis other currencies between 1980 and 1989. At the time of the appreciation of the United States dollar, per capita GDP data of the countries expressed in United States dollars were relatively low, while at the time of the depreciation of the United States currency, their data in terms of the United States dollar showed rapid increases. Japan is the country in these richest groups that had the fastest growth between 1970 and 1989 based on most conversion rates. The above regions are very different from the other regions not only because of exceptionally high average per capita GDP but also because of large increases over time.

40. The Middle East and Eastern Europe were the next richest regions between 1970 and 1989. Data based on PAREs indicate a turning-point in 1977 in the case of the Middle East. The figures suggest that real per capita GDP was not substantially higher in the Middle East in 1989 than 1970 even though there was a considerable increase between 1970 and 1979. Data based on MER conversion do not follow the decrease indicated by data based on PAREs before 1982. This suggests that the currencies of the countries in the Middle East gradually appreciated in real terms between 1977 and 1982. The Middle East shows one of the rare examples where MER and WA conversions substantially differ from each other. Data based on the latter indicate a decrease in per capita GDP after 1986. Per capita GDP data based on PAREs show a continuous growth in Eastern Europe. Data based on an MER conversion show an almost steady increase of per capita GDP in the region except for the years when considerable increases in the United States dollar exchange rate occurred. Evaluation of data on Eastern Europe is not easy, since in the meantime it has become clear that there are more limitations in comparability than had been assumed.

41. Latin America, the Caribbean, other Oceania and North Africa are the four regions that constitute the third group. Per capita GDP in Latin America and the Caribbean increased steadily in real terms when based on PAREs. The trend based on an MER conversion shows a different pattern for the two regions. The changes in the United States dollar exchange rates did not affect the data of the Caribbean too much, which implies that the currencies of the countries in that region appreciated and depreciated in parallel with the United States dollar. On the other hand, changes in the United States dollar were reflected in the Latin American per capita GDP data for all years except the period 1983-1986. Although data based on PPPs show Latin America as the fifth region in the rank of countries, growth in that region slowed down considerably after 1981.

42. Data based on PAREs do not show any substantial change in per capita GDP in other Oceania, while the ones based on MERs clearly reflect the changes in the United States dollar exchange rate. North Africa shows a real increase during the first period but stagnation in the second decade. The exchange rates of the currencies of this region, however, seem to have appreciated in parallel with the United States dollar between 1982 and 1985. At the end of the period, though, a significant real depreciation is indicated by the data.

43. In per capita GDP terms, the poorest regions are sub-Saharan Africa, south-eastern Asia, eastern Asia and southern Asia. Two regions, i.e., eastern Asia (excluding Japan) and south-eastern Asia, show a steady increase in their per capita GDP in real terms. Southern Asia's per capita GDP stagnated, while per capita GDP decreased in real terms in sub-Saharan Africa. Data based on an MER conversion show a slight increase in per capita GDP in southern Asia and south-eastern Asia and also indicate that the exchange rates changed in parallel with the United States dollar. Per capita GDP data for eastern Asia show more rapid changes, while data for sub-Saharan Africa suggest that the currencies of these countries depreciated significantly in real terms in later years.

III. ASSESSMENT SCALES CALCULATED ON THE BASIS OF DIFFERENT PARES

44. In order to illustrate the impact of absolute and relative PAREs based on periods of 1970-1989 and 1980-1989, they were applied to the scale of assessments. Income data adjusted for debt, floor and ceiling, etc., based on absolute PAREs are shown in table 3, while the same data based on relative PAREs can be found in table 4. The first column in each table includes the assessment scale based on the MER published by IMF, while the second and the third columns show the scales based on PAREs. Figures in the heading of tables refer to the 10-year average per capita GDP of each country, which is considered as the per capita income limit in the assessment scale formula. Columns 4 to 9 show the point differences between the rates based on different conversion rates.

45. A comparison of tables 3 and 4 shows that data based on absolute and relative PAREs are similar. According to the total differences, scales based

on the market rate and on the 1980-1989 PAREs are the most similar to each other, while the scales based on the market rate and the 1970-1989 PAREs are the most different from each other. This is because the calculation is based on the average data for the years of 1980-1989 and the period of 1970-1989 was not at all homogeneous.

46. According to the changes in assessment rates, there are five country groups that can be identified easily. One of them includes the countries for which the are substantial differences between rates calculated by the application of PAREs and by the market rate. The second group covers those countries for which the rates in the case of the market and the 1980-1989 PAREs are similar but whose rates differ significantly from the above-mentioned three (IMF, absolute 1980-1989 PARE and relative 1980-1989 PARE) rates when 1970-1989 PAREs are applied. Countries in the third group have only a very slight difference in their rates, while the position of the countries of the fifth group do not change at all when the conversions are changed. The fifth group includes the countries with distortions in exchange rates.

47. The first country group includes countries whose rates do not change a lot in absolute terms, but for which even 0.01 or 0.02 rate changes are substantial. Bahrain, for example, has 0.03 rates based on the IMF rate but only 0.02 rates based on each of the PAREs. The cases of Bangladesh and Yemen are similar, the corresponding rates being 0.02 and 0.01. The rates of the Democratic People's Republic of Korea based on the IMF rate are 0.05; however based on any PARE they are only 0.02. Morocco and Guatemala are further examples, but in their case the PARE rates result in higher rates.

48. There are some other countries belonging to the first group whose rates differ significantly according to the different conversion rates. China is the country whose rates differ the most: 0.76 rates based on the IMF rate as against only 0.27 to 0.28 rates calculated by the 1970-1989 PAREs and 0.21 to 0.22 rates based on the 1980-1989 PAREs. Japan is also an interesting example since its rates differ even according to the absolute and relative PAREs: it has 14.39 rates calculated by the IMF rate as against 13.53 and 13.59 rates based on the 1970-1989 PAREs and 14.17 and 14.24 rates according to the 1980-1989 PAREs. Finland, France and Italy have higher rates also based on the IMF rates than according to the PAREs.

49. In the case of the former Soviet Union, the lowest rates were calculated on the basis of the 1980-1989 PAREs, while the highest rates are based on the 1970-1989 PAREs. There are only two countries that have lower rates based on the IMF rate than on the PAREs, namely Peru and Romania.

50. The second group is constituted by countries whose rates are similar based on the IMF and the 1980-1989 PAREs but different from them according to the 1970-1989 PAREs. As might be expected, data calculated by the PAREs based on the same period are more similar to the ones based on the IMF rate than data based on the 1970-1989 PAREs, since the base period for the assessment scale calculation is based on the period 1980-1989. The period 1970-1989 was

not homogeneous; there were significant changes in prices and exchange rates as well as in the relative position of some countries, with the result that the PAREs based on the period of 1970-1989 and 1980-1989 differ for several countries.

51. In the cases of Argentina, Austria, Brunei Darussalem, Kuwait, Qatar, Saudi Arabia, Spain and the United Kingdom, rates based on 1970-1989 PAREs were lower than according to the other three conversion rates. However, for Belgium, Costa Rica, Cuba, Czechoslovakia, Egypt, Hungary, India, the Republic of Korea, Mexico, Norway, Portugal, Tunisia, Yugoslavia and Zimbabwe, the rates based on 1970-1989 PAREs were higher than according to the other three rates.

52. The third and the fourth groups can be easily identified from tables 3 and 4. Examples of countries whose position differs slightly are Algeria, Austrlia and Sweden. Countries that have the same rates based on each conversion rate are for example Bhutan, Cameroon and Luxembourg.

53. With regard to the countries with distortions in exchange rates, Afghanistan, Lebanon and Nicaragua are not affected by the changes in the conversion rate. Peru and Uganda are slightly influenced. Peru's rates are higher by 1 to 3 points according to the PARE calculations than according to the market rate. Uganda's rate increases by 1 point for all the conversion rates except the 1970-1989 PAREs, where the increase amounts to 2 points. However, the positions of both Iraq and the Islamic Republic of Iran change significantly. According to the 1970-1989 PAREs points, the rates of Iraq and the Islamic Republic of Iran are higher by around 40 per cent than when based on the MER, while according to the 1980-1989 PAREs they are almost twice as high as when based on the MER.

Notes

1/ "Distribution of world GDP, 1970-1989" United Nations Statistical Division, draft only.

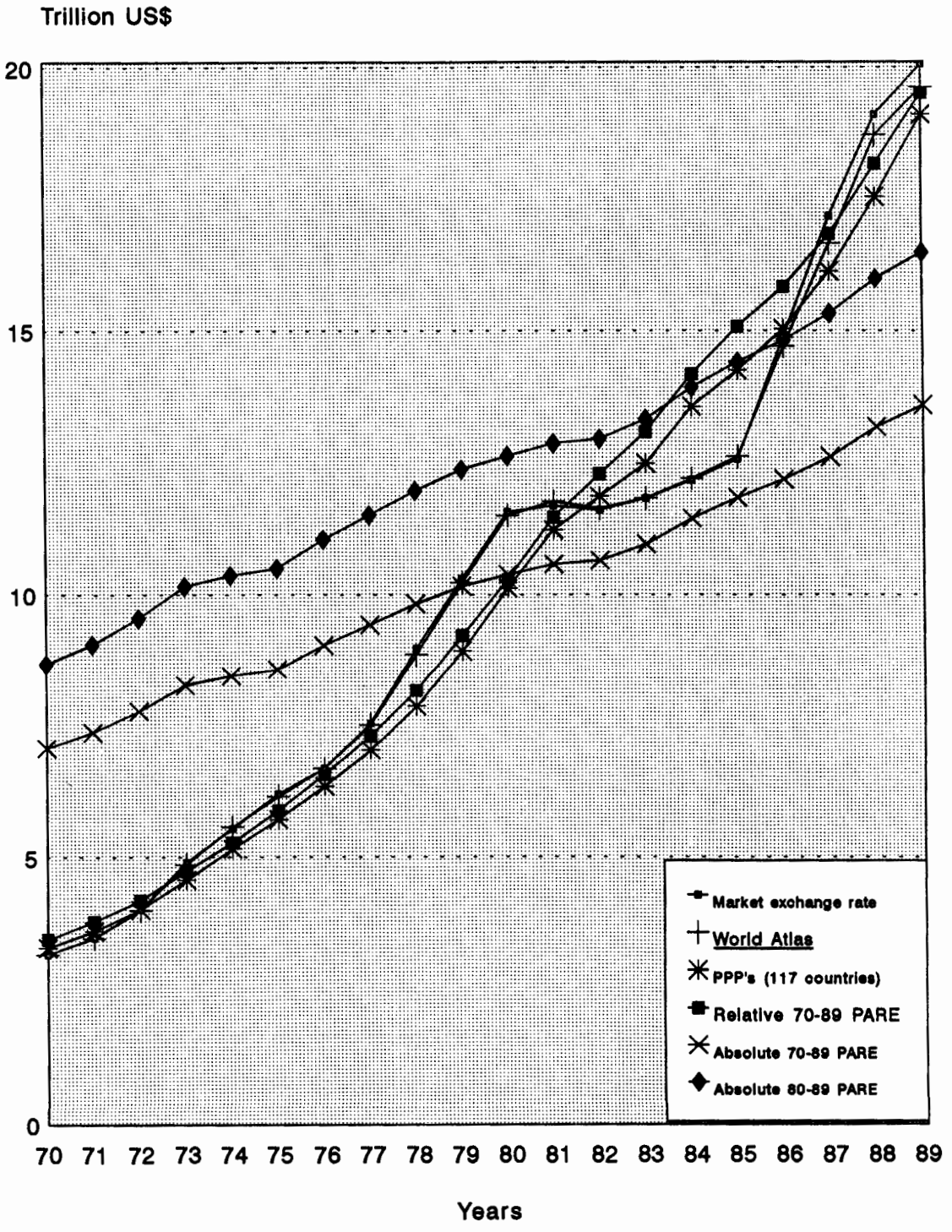
2/ A/CN.2/R.480, A/CN.2/R.489, A/CN.2/R.498, A/CN.2/R.510, A/CN.2/R.522, A/CN.2/R.533, A/CN.2/R.544 and A/CN.2/R.556; Official Records of the General Assembly, Thirty-fifth Session, Supplement No. 11 (A/35/11), ibid., Thirty-eighth Session, Supplement No. 11 (A/38/11), ibid., Thirty-ninth Session, Supplement No. 11 (A/39/11), ibid., Forty-first Session, Supplement No. 11 (A/41/11), ibid., Forty-second Session, Supplement No. 11 (A/42/11), ibid., Forty-third Session, Supplement No. 11 (A/43/11), ibid., Forty-fourth Session, Supplement No. 11 (A/44/11), ibid., Forty-fifth Session, Supplement No. 11 (A/45/11) and ibid., Forty-sixth Session, Supplement No. 11 (A/46/11).

3/ A/CN.2/R.522.

4/ The Gini index is a numerical measure of inequality. The value of the Gini index will lie between 0 (that is complete equality) and 1 (that is *complete inequality*). A higher Gini index indicates higher inequality.

Figure 1

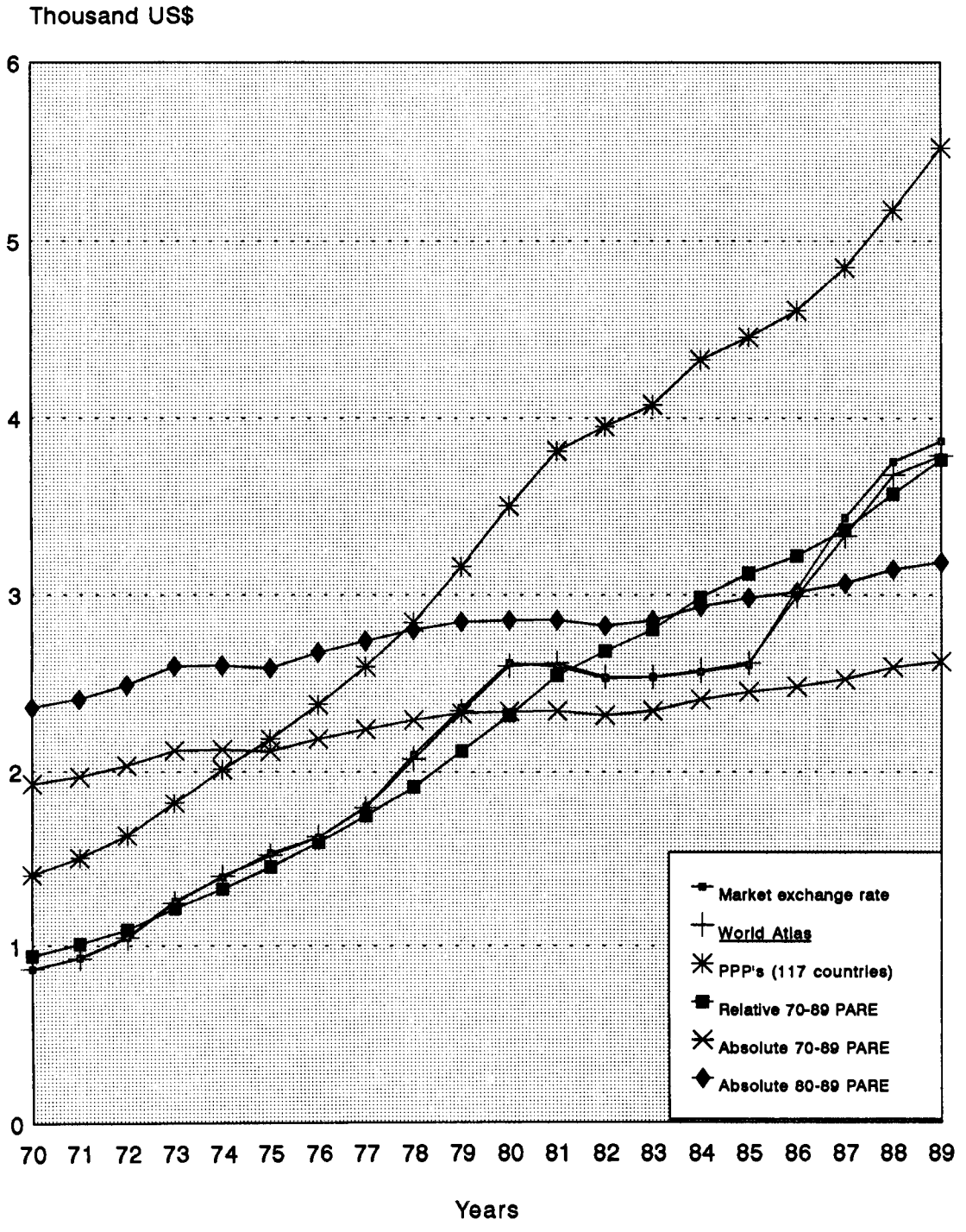
WORLD GDP, 1970 - 1989



Source: United Nations Statistical Division.

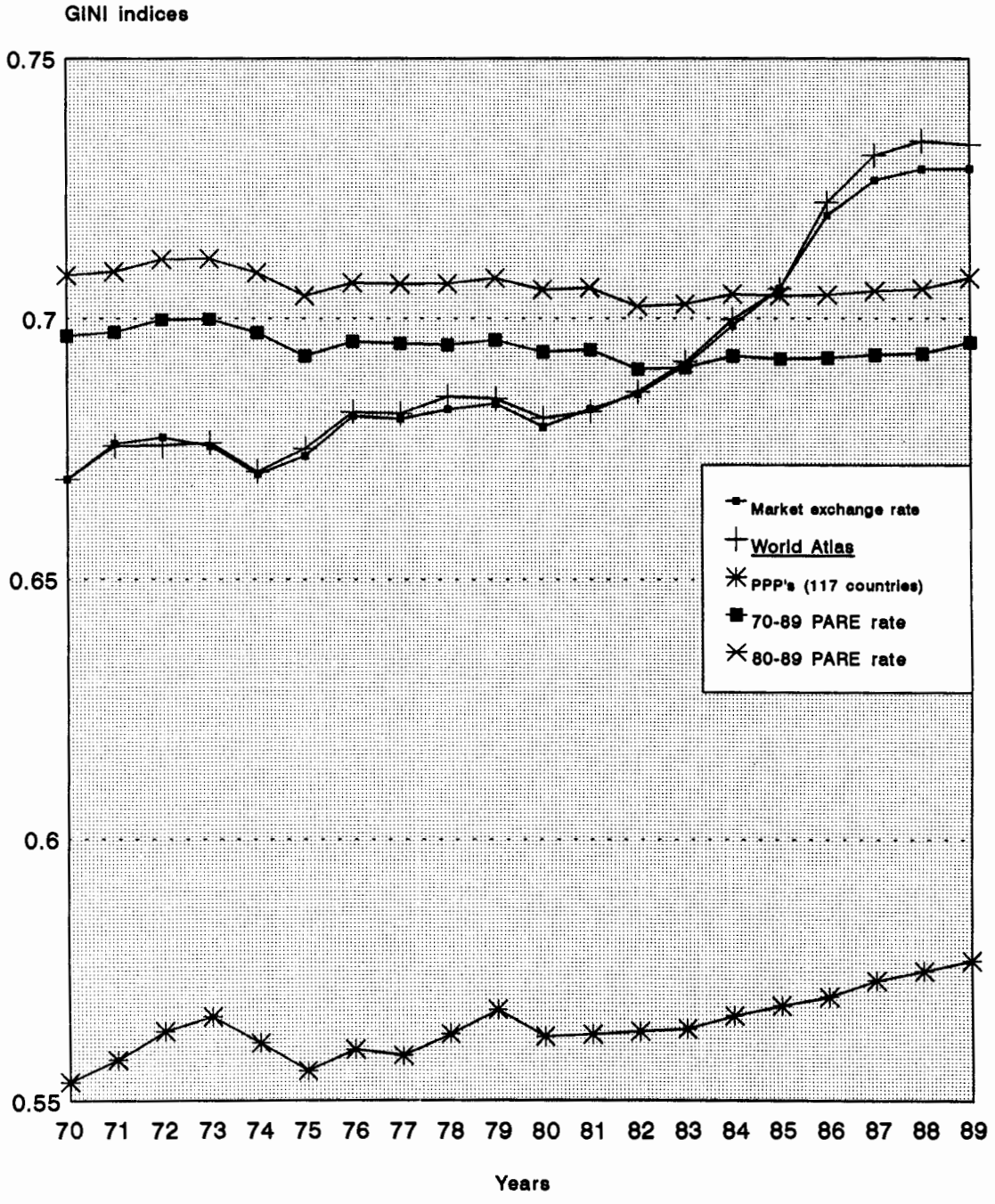
/...

Figure 2 WORLD PER CAPITA GDP, 1970 - 1989



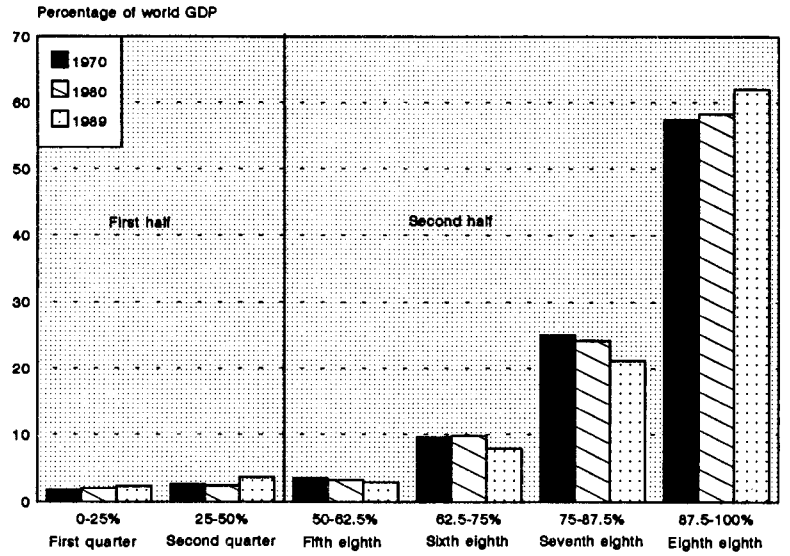
Source: United Nations Statistical Division.

Figure 3 GINI INDICES MEASURING INEQUALITY OF WORLD GDP DISTRIBUTION, 1970 - 1989, BASED ON ALTERNATIVE CONVERSION RATES



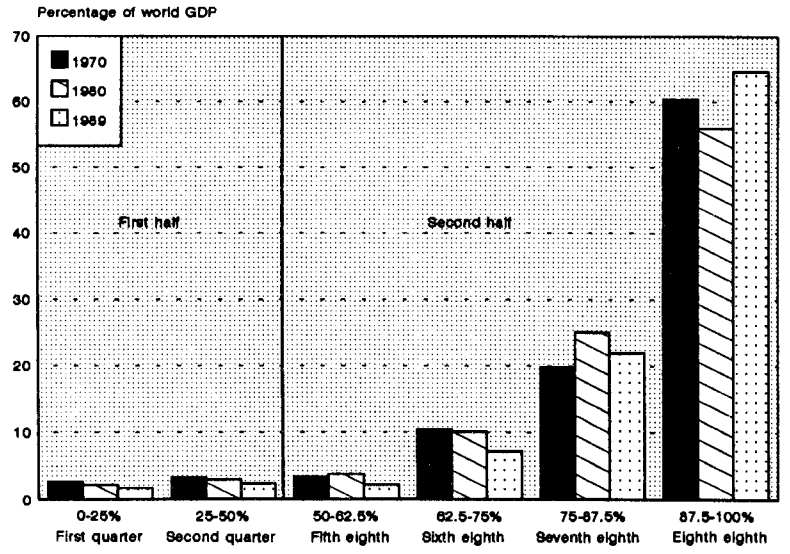
Source: United Nations Statistical Division.

Figure 4 SHARES OF WORLD GDP BY QUARTERS AND EIGHTHS OF THE POPULATION IN 1970, 1980 AND 1989, BASED ON 70-89 PARE CONVERSION



Source: United Nations Statistical Division.

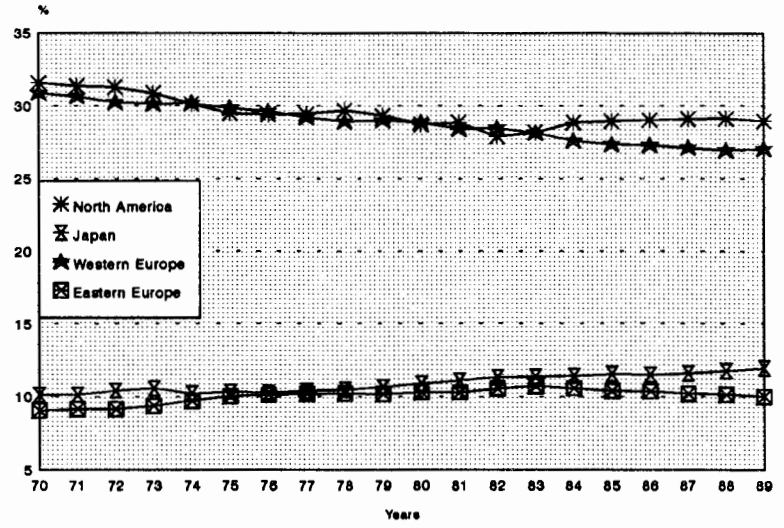
Figure 5 SHARES OF WORLD GDP BY QUARTERS AND EIGHTHS OF THE POPULATION IN 1970, 1980 AND 1989, BASED ON MARKET EXCHANGE RATE CONVERSION



Source: United Nation Statistical Division.

Figure 6A

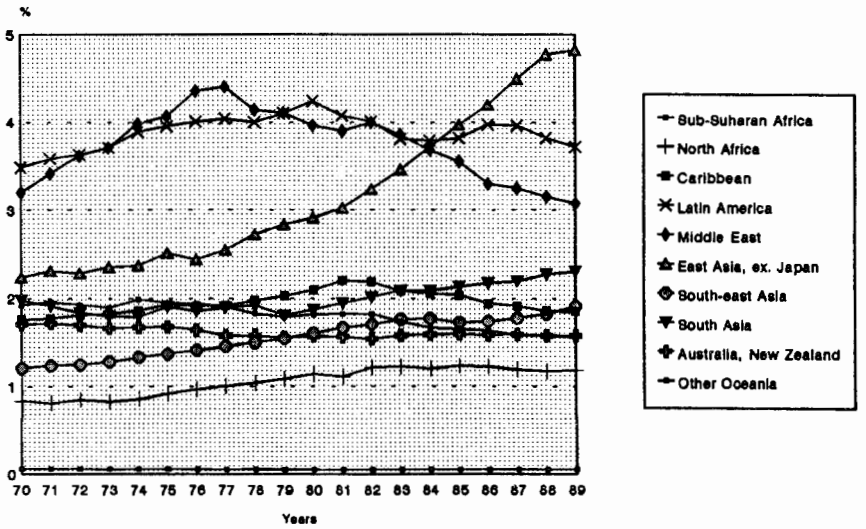
GDP distribution
by region, based on 70-89 PARE conversion
(Regions with more then 5% share)



Source: United Nations Statistical Division.

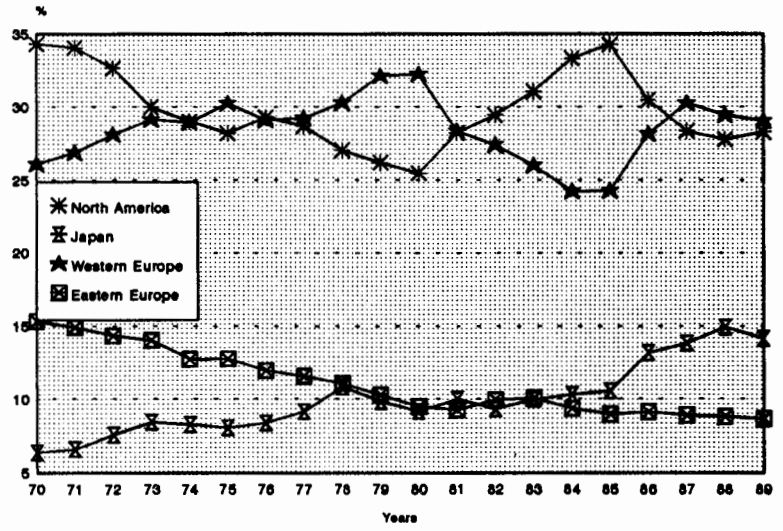
Figure 6B

GDP distribution
by region, based on 70-89 PARE conversion
(Regions with less than 5% share)



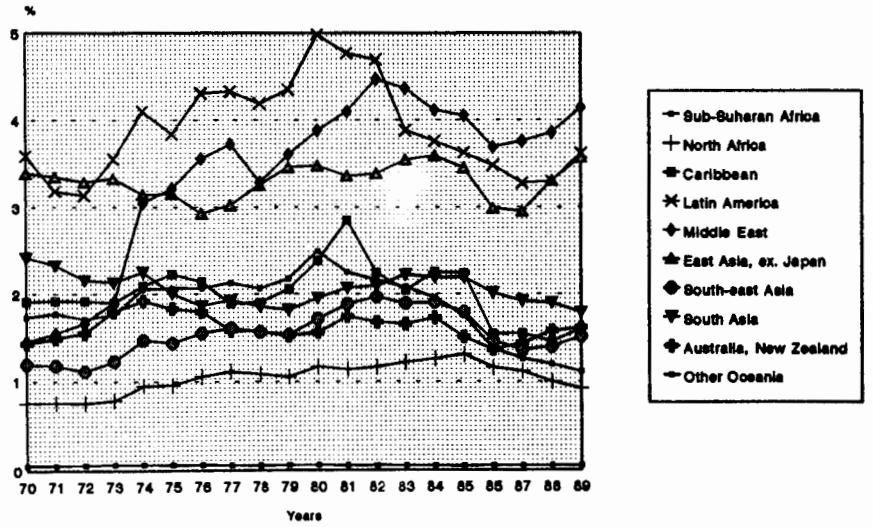
Source: United Nations Statistical Division.

Figure 7A GDP distribution
by region, based on market exchange rate
(Regions with more then 5% share)



Source: United Nations Statistical Division.

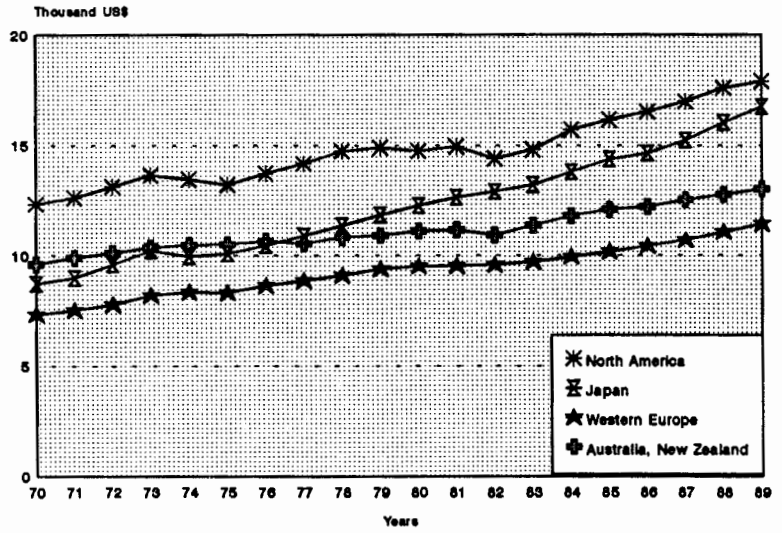
Figure 7B GDP distribution
by region, based on market exchange rate
(Regions with less than 5% share)



Source: United Nations Statistical Division.

Figure 8A

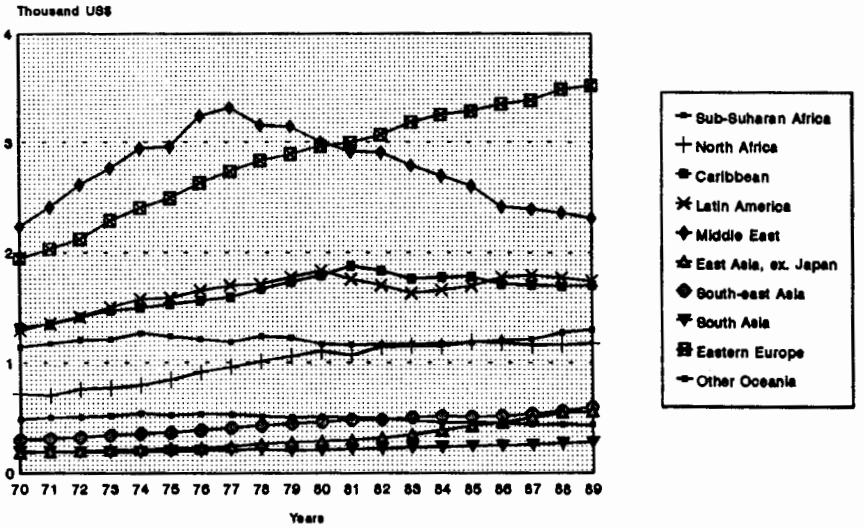
Per capita GDP by region,
based on 80-89 PARE conversion
(Regions with high per capita GDP)



Source: United Nations Statistical Division.

Figure 8B

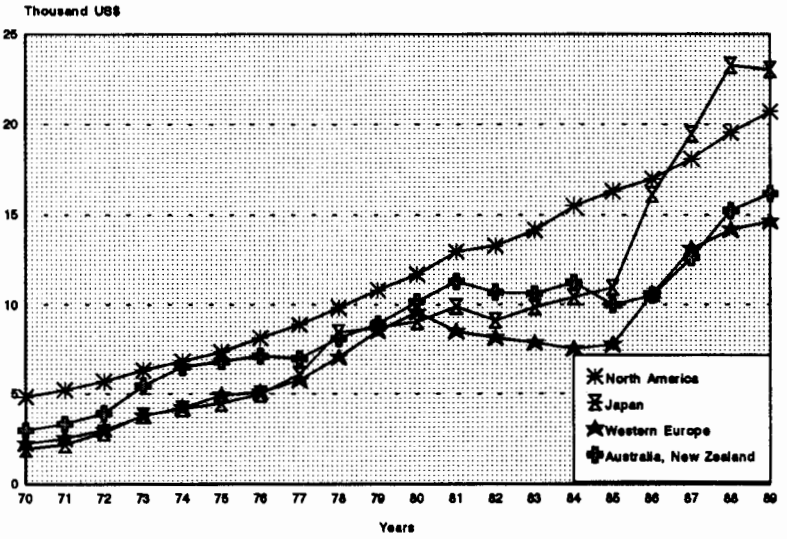
Per capita GDP by region,
based on 70-89 PARE conversion
(Regions with low per capita GDP)



Source: United Nations Statistical Division

Figure 9A

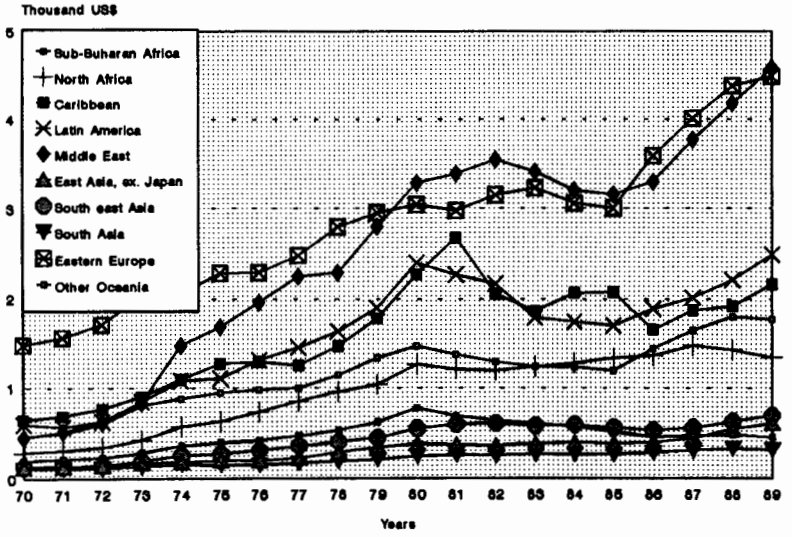
Per capita GDP by region,
based on market exchange rate conversion
(Regions with high per capita GDP)



Source: United Nations Statistical Division.

Figure 9B

Per capita GDP by region,
based on market exchange rate conversion
(Regions with low per capita GDP)



Source: United Nations Statistical Division.

Table 1

Countries with 20 a/ or more rank increases between 1970 and 1989

Market rate		1970–1989 PARE		PPP	
Maldives	20	United Arab Emirates	20	Barbados	13
Rwanda	21	Singapore	21	Swaziland	15
Japan	23	Bulgaria	21	Thailand	15
Malaysia	23	Swaziland	22	Saudi Arabia	15
Cameroon	24	Tonga	24	Iran (Islamic Rep. of)	15
Saint Kitts and Nevis	24	Malaysia	24	Tunisia	15
Cape Verde	26	Mauritius	28	Malaysia	18
Egypt	27	Indonesia	28	Bangladesh	19
Afghanistan	28	Yemen	28	Gambia	20
Thailand	29	Thailand	31	Indonesia	33
Mauritius	30	Guinea-Bissau	31	Botswana	34
Haiti	31	Republic of Korea	34	Lesotho	35
Grenada	32	China	36	Oman	39
Barbados	32	Egypt	38		
Saint Vincent and the Grenadines	33	Norway	42		
Seychelles	33	Maldives	45		
Iraq	33	Botswana	47		
Indonesia	34	Dem. People's Rep. of Korea	51		
Lao People's Dem. Rep.	35	Anguilla	71		
Oman	37	Seychelles	86		
Anguilla	41				
Tonga	44				
Yemen	45				
Iran (Islamic Rep. of)	48				
Republic of Korea	57				
Botswana	67				

a/ In the case of PPPs, countries with 13 or more rank increases.

Table 2

Countries with 20 a/ or more rank decreases between 1970 and 1989

Market exchange rate		1970–1989 PARE		PPP	
Guatemala	-20	Bolivia	-20	Sierra Leone	-13
Kuwait	-21	Guatemala	-20	Guatemala	-13
Samoa	-21	Madagascar	-20	Nigeria	-15
Zimbabwe	-21	United States Virgin Islands	-20	Bolivia	-15
Albania	-23	French Guiana	-22	El Salvador	-16
United States Virgin Islands	-23	Liberia	-22	Sudan	-17
Viet Nam	-24	Zambia	-22	Guyana	-18
Madagascar	-25	Mozambique	-23	Peru	-18
Mongolia	-25	Peru	-23	Argentina	-19
Mozambique	-25	Iraq	-24	Jamaica	-20
Sierra Leone	-25	Jamaica	-24	Madagascar	-22
Hungary	-26	Bahrain	-25	Angola	-23
Namibia	-26	Gabon	-27	Zambia	-24
Chile	-30	Kuwait	-27	Papua New Guinea	-24
Kiribati	-30	Papua New Guinea	-27	Nicaragua	-26
Jamaica	-31	Uganda	-31		
Ghana	-35	Namibia	-32		
Guinea-Bissau	-35	Kiribati	-34		
Venezuela	-35	Sao Tome and Principe	-39		
Nigeria	-37	Angola	-43		
Uganda	-37	Djibouti	-43		
Poland	-38	Nicaragua	-45		
Argentina	-39	Equatorial Guinea	-49		
Vanuatu	-42	Lebanon	-97		
Zambia	-61				
Lebanon	-65				
Guyana	-70				
Nicaragua	-70				

a/ In the case of PPPs, countries with 13 or more rank decreases.

Table 3

Machine scales based on alternative conversion rates and correspondingly different low per-capita income limits

	STATISTICAL BASE PERIOD: 1980 – 1989 AVERAGE. Income adjusted for debt, low per capita income (gradient of 85 per cent), floor, ceiling. No scheme of limits.								
	IMF	ABSOLUTE PARE		POINT DIFFERENCES					
		1970–1989	1980–1989						
	Low per capita income limit								
	$2600 (1)	$2066 (2)	$2518 (3)	Col.(2) – Col.(1) (4) (+)	(5) (–)	Col.(3) – Col.(1) (6) (+)	(7) (–)	Col.(3) – Col.(2) (8) (+)	(9) (–)
AFGHANISTAN	0.01	0.01	0.01						
ALBANIA	0.01	0.01	0.01						
ALGERIA	0.30	0.31	0.31	0.01		0.01			
ANGOLA	0.01	0.01	0.01						
ANTIGUA AND BARBUDA	0.01	0.01	0.01						
ARGENTINA	0.54	0.52	0.54		–0.02			0.02	
AUSTRALIA	1.49	1.47	1.47		–0.02		–0.02		
AUSTRIA	0.74	0.70	0.73		–0.04		–0.01	0.03	
BAHAMAS	0.02	0.02	0.02						
BAHRAIN	0.03	0.02	0.02		–0.01		–0.01		
BANGLADESH	0.02	0.01	0.01		–0.01		–0.01		
BARBADOS	0.01	0.01	0.01						
BELGIUM	0.95	0.97	0.94	0.02			–0.01		–0.03
BELIZE	0.01	0.01	0.01						
BENIN	0.01	0.01	0.01						
BHUTAN	0.01	0.01	0.01						
BOLIVIA	0.02	0.02	0.02						
BOTSWANA	0.01	0.01	0.01						
BRAZIL	1.73	1.97	1.84	0.24		0.11			–0.13
BRUNEI DARUSSALAM	0.03	0.02	0.03		–0.01			0.01	

Table 3 (continued)

BULGARIA	0.12	0.23	0.18	0.11		0.06			-0.05
BURKINA FASO	0.01	0.01	0.01						
BURUNDI	0.01	0.01	0.01						
CAMBODIA	0.01	0.01	0.01						
CAMEROON	0.03	0.03	0.03						
CANADA	3.08	3.05	3.03		-0.03		-0.05		-0.02
CAPE VERDE	0.01	0.01	0.01						
CENTRAL AFRICAN REPUBLIC	0.01	0.01	0.01						
CHAD	0.01	0.01	0.01						
CHILE	0.08	0.08	0.08						
CHINA	0.76	0.28	0.22		-0.48		-0.54		-0.06
COLOMBIA	0.13	0.14	0.13	0.01					-0.01
COMOROS	0.01	0.01	0.01						
CONGO	0.01	0.01	0.01						
COSTA RICA	0.01	0.02	0.01	0.01					-0.01
COTE D'IVOIRE	0.02	0.02	0.02						
CUBA	0.14	0.19	0.14	0.05					-0.05
CYPRUS	0.02	0.02	0.02						
CZECHOSLOVAKIA	0.31	0.40	0.33	0.09		0.02			-0.07
DEM. PEOPLE'S REP. OF KOREA	0.05	0.02	0.02		-0.03		-0.03		
DENMARK	0.64	0.62	0.63		-0.02		-0.01	0.01	
DJIBOUTI	0.01	0.01	0.01						
DOMINICA	0.01	0.01	0.01						
DOMINICAN REPUBLIC	0.02	0.02	0.02						
ECUADOR	0.04	0.04	0.04						
EGYPT	0.17	0.22	0.18	0.05		0.01			-0.04
EL SALVADOR	0.01	0.01	0.02			0.01		0.01	
EQUATORIAL GUINEA	0.01	0.01	0.01						
ETHIOPIA	0.01	0.01	0.01						
FIJI	0.01	0.01	0.01						
FINLAND	0.56	0.53	0.55		-0.03		-0.01	0.02	
FRANCE	5.87	5.70	5.77		-0.17		-0.10	0.07	
GABON	0.02	0.02	0.02						
GAMBIA	0.01	0.01	0.01						
GERMANY	8.41	8.36	8.28		-0.05		-0.13		-0.08

Table 3 (continued)

GHANA	0.01	0.01	0.01						
GREECE	0.35	0.36	0.34	0.01			-0.01		-0.02
GRENADA	0.01	0.01	0.01						
GUATEMALA	0.03	0.03	0.04			0.01		0.01	
GUINEA	0.01	0.01	0.01						
GUINEA-BISSAU	0.01	0.01	0.01						
GUYANA	0.01	0.01	0.01						
HAITI	0.01	0.01	0.01						
HONDURAS	0.01	0.01	0.01						
HUNGARY	0.12	0.16	0.13	0.04		0.01			-0.03
ICELAND	0.03	0.03	0.03						
INDIA	0.37	0.40	0.38	0.03		0.01			-0.02
INDONESIA	0.19	0.21	0.19	0.02					-0.02
IRAN (ISLAMIC REPUBLIC OF)	0.99	1.41	1.85	0.42		0.86		0.44	
IRAQ	0.24	0.33	0.44	0.09		0.20		0.11	
IRELAND	0.18	0.17	0.18		-0.01			0.01	
ISRAEL	0.25	0.24	0.25		-0.01			0.01	
ITALY	4.76	4.44	4.68		-0.32		-0.08	0.24	
JAMAICA	0.01	0.01	0.01						
JAPAN	14.39	13.53	14.17		-0.86		-0.22	0.64	
JORDAN	0.02	0.02	0.02						
KENYA	0.01	0.01	0.01						
KUWAIT	0.26	0.19	0.25		-0.07		-0.01	0.06	
LAO PEOPLE'S DEM. REP.	0.01	0.01	0.01						
LEBANON	0.01	0.01	0.01						
LESOTHO	0.01	0.01	0.01						
LIBERIA	0.01	0.01	0.01						
LIBYAN ARAB JAMAHIRIYA	0.24	0.23	0.23		-0.01		-0.01		
LIECHTENSTEIN	0.01	0.01	0.01						
LUXEMBOURG	0.06	0.06	0.06						
MADAGASCAR	0.01	0.01	0.01						
MALAWI	0.01	0.01	0.01						
MALAYSIA	0.14	0.17	0.15	0.03		0.01			-0.02
MALDIVES	0.01	0.01	0.01						
MALI	0.01	0.01	0.01						

Table 3 (continued)

MALTA	0.01	0.01	0.01						
MAURITANIA	0.01	0.01	0.01						
MAURITIUS	0.01	0.01	0.01						
MEXICO	0.87	0.97	0.89	0.10		0.02			-0.08
MONGOLIA	0.01	0.01	0.01						
MOROCCO	0.04	0.05	0.05	0.01		0.01			
MOZAMBIQUE	0.01	0.01	0.01						
MYANMAR	0.01	0.01	0.01						
NAMIBIA	0.01	0.01	0.01						
NEPAL	0.01	0.01	0.01						
NETHERLANDS	1.46	1.43	1.44		-0.03		-0.02	0.01	
NEW ZEALAND	0.24	0.22	0.23		-0.02		-0.01	0.01	
NICARAGUA	0.01	0.01	0.01						
NIGER	0.01	0.01	0.01						
NIGERIA	0.21	0.20	0.20		-0.01		-0.01		
NORWAY	0.54	0.62	0.54	0.08					-0.08
OMAN	0.05	0.05	0.05						
PAKISTAN	0.07	0.08	0.07	0.01					-0.01
PANAMA	0.02	0.02	0.02						
PAPUA NEW GUINEA	0.01	0.01	0.01						
PARAGUAY	0.02	0.02	0.02						
PERU	0.07	0.09	0.10	0.02		0.03		0.01	
PHILIPPINES	0.08	0.09	0.08	0.01					-0.01
POLAND	0.36	0.46	0.37	0.10		0.01			-0.09
PORTUGAL	0.20	0.21	0.20	0.01					-0.01
QATAR	0.05	0.04	0.05		-0.01			0.01	
REPUBLIC OF KOREA	0.69	0.75	0.72	0.06		0.03			-0.03
ROMANIA	0.17	0.32	0.27	0.15		0.10			-0.05
RWANDA	0.01	0.01	0.01						
SAINT KITTS AND NEVIS	0.01	0.01	0.01						
SAINT LUCIA	0.01	0.01	0.01						
SAINT VINCENT AND THE GRENADINES	0.01	0.01	0.01						
SAMOA	0.01	0.01	0.01						
SAO TOME AND PRINCIPE	0.01	0.01	0.01						
SAUDI ARABIA	0.95	0.83	0.94		-0.12		-0.01	0.11	

Table 3 (continued)

SENEGAL	0.01	0.01	0.01						
SEYCHELLES	0.01	0.01	0.01						
SIERRA LEONE	0.01	0.01	0.01						
SINGAPORE	0.16	0.16	0.15				-0.01		-0.01
SOLOMON ISLANDS	0.01	0.01	0.01						
SOMALIA	0.01	0.01	0.01						
SOUTH AFRICA	0.41	0.41	0.44			0.03		0.03	
SPAIN	1.96	1.83	1.92		-0.13		-0.04	0.09	
SRI LANKA	0.01	0.01	0.01						
SUDAN	0.01	0.01	0.01						
SURINAME	0.01	0.01	0.01						
SWAZILAND	0.01	0.01	0.01						
SWEDEN	1.10	1.07	1.08		-0.03		-0.02	0.01	
SYRIAN ARAB REPUBLIC	0.12	0.11	0.12		-0.01			0.01	
THAILAND	0.13	0.15	0.13	0.02					-0.02
TOGO	0.01	0.01	0.01						
TRINIDAD AND TOBAGO	0.05	0.05	0.05						
TUNISIA	0.03	0.04	0.03	0.01					-0.01
TURKEY	0.23	0.30	0.24	0.07		0.01			-0.06
UGANDA	0.01	0.02	0.01	0.01					-0.01
UNION OF SOVIET SOCIALIST REPUBLICS	8.84	9.82	8.72	0.98			-0.12		-1.10
UNITED ARAB EMIRATES	0.23	0.25	0.22	0.02			-0.01		-0.03
UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	4.96	4.50	4.91		-0.46		-0.05	0.41	
UNITED REPUBLIC OF TANZANIA	0.01	0.01	0.01						
UNITED STATES OF AMERICA	25.00	25.00	25.00						
URUGUAY	0.05	0.05	0.05						
VANUATU	0.01	0.01	0.01						
VENEZUELA	0.47	0.46	0.46		-0.01		-0.01		
VIET NAM	0.01	0.01	0.01						
YEMEN	0.02	0.01	0.01		-0.01		-0.01		
YUGOSLAVIA	0.42	0.56	0.44	0.14		0.02			-0.12
ZAIRE	0.01	0.01	0.01						
ZAMBIA	0.01	0.01	0.01						
ZIMBABWE	0.01	0.02	0.01	0.01					-0.01
TOTAL	100.00	100.00	100.00	3.04	-3.04	1.58	-1.58	2.39	-2.39

/...

Table 4

Machine scales based on alternative conversion rates and correspondingly different low per-capita income limits

	STATISTICAL BASE PERIOD: 1980 – 1989 AVERAGE. Income adjusted for debt, low per capita income (gradient of 85 per cent), floor, ceiling. No scheme of limits.								
	IMF	RELATIVE PARE		POINT DIFFERENCES					
		1970–1989	1980–1989						
	Low per capita income limit								
	$2600 (1)	$2577 (2)	$2513 (3)	Col.(2) – Col.(1) (4) (+)	Col.(2) – Col.(1) (5) (–)	Col.(3) – Col.(1) (6) (+)	Col.(3) – Col.(1) (7) (–)	Col.(3) – Col.(2) (8) (+)	Col.(3) – Col.(2) (9) (–)
AFGHANISTAN	0.01	0.01	0.01						
ALBANIA	0.01	0.01	0.01						
ALGERIA	0.30	0.31	0.31	0.01		0.01			
ANGOLA	0.01	0.01	0.01						
ANTIGUA AND BARBUDA	0.01	0.01	0.01						
ARGENTINA	0.54	0.51	0.53		–0.03		–0.01	0.02	
AUSTRALIA	1.49	1.47	1.47		–0.02		–0.02		
AUSTRIA	0.74	0.70	0.73		–0.04		–0.01	0.03	
BAHAMAS	0.02	0.02	0.02						
BAHRAIN	0.03	0.02	0.02		–0.01		–0.01		
BANGLADESH	0.02	0.01	0.01		–0.01		–0.01		
BARBADOS	0.01	0.01	0.01						
BELGIUM	0.95	0.97	0.94	0.02			–0.01		–0.03
BELIZE	0.01	0.01	0.01						
BENIN	0.01	0.01	0.01						
BHUTAN	0.01	0.01	0.01						
BOLIVIA	0.02	0.01	0.02		–0.01			0.01	
BOTSWANA	0.01	0.01	0.01						
BRAZIL	1.73	1.97	1.83	0.24		0.10			–0.14
BRUNEI DARUSSALAM	0.03	0.02	0.03		–0.01			0.01	

Table 4 (continued)

BULGARIA	0.12	0.23	0.18	0.11		0.06			-0.05
BURKINA FASO	0.01	0.01	0.01						
BURUNDI	0.01	0.01	0.01						
CAMBODIA	0.01	0.01	0.01						
CAMEROON	0.03	0.03	0.03						
CANADA	3.08	3.06	3.04		-0.02		-0.04		-0.02
CAPE VERDE	0.01	0.01	0.01						
CENTRAL AFRICAN REPUBLIC	0.01	0.01	0.01						
CHAD	0.01	0.01	0.01						
CHILE	0.08	0.08	0.08						
CHINA	0.76	0.27	0.21		-0.49		-0.55		-0.06
COLOMBIA	0.13	0.14	0.13	0.01					-0.01
COMOROS	0.01	0.01	0.01						
CONGO	0.01	0.01	0.01						
COSTA RICA	0.01	0.02	0.01	0.01					-0.01
COTE D'IVOIRE	0.02	0.02	0.02						
CUBA	0.14	0.20	0.14	0.06					-0.06
CYPRUS	0.02	0.02	0.02						
CZECHOSLOVAKIA	0.31	0.39	0.32	0.08		0.01			-0.07
DEM. PEOPLE'S REP. OF KOREA	0.05	0.02	0.02		-0.03		-0.03		
DENMARK	0.64	0.62	0.63		-0.02		-0.01	0.01	
DJIBOUTI	0.01	0.01	0.01						
DOMINICA	0.01	0.01	0.01						
DOMINICAN REPUBLIC	0.02	0.02	0.02						
ECUADOR	0.04	0.04	0.04						
EGYPT	0.17	0.22	0.18	0.05		0.01			-0.04
EL SALVADOR	0.01	0.01	0.02			0.01		0.01	
EQUATORIAL GUINEA	0.01	0.01	0.01						
ETHIOPIA	0.01	0.01	0.01						
FIJI	0.01	0.01	0.01						
FINLAND	0.56	0.53	0.55		-0.03		-0.01	0.02	
FRANCE	5.87	5.70	5.77		-0.17		-0.10	0.07	
GABON	0.02	0.02	0.02						
GAMBIA	0.01	0.01	0.01						
GERMANY	8.41	8.37	8.28		-0.04		-0.13		-0.09

Table 4 (continued)

GHANA	0.01	0.01	0.01						
GREECE	0.35	0.35	0.34				-0.01		-0.01
GRENADA	0.01	0.01	0.01						
GUATEMALA	0.03	0.03	0.04			0.01		0.01	
GUINEA	0.01	0.01	0.01						
GUINEA-BISSAU	0.01	0.01	0.01						
GUYANA	0.01	0.01	0.01						
HAITI	0.01	0.01	0.01						
HONDURAS	0.01	0.01	0.01						
HUNGARY	0.12	0.16	0.13	0.04		0.01			-0.03
ICELAND	0.03	0.03	0.03						
INDIA	0.37	0.40	0.38	0.03		0.01			-0.02
INDONESIA	0.19	0.21	0.19	0.02					-0.02
IRAN (ISLAMIC REPUBLIC OF)	0.99	1.40	1.84	0.41		0.85		0.44	
IRAQ	0.24	0.32	0.43	0.08		0.19		0.11	
IRELAND	0.18	0.17	0.18		-0.01			0.01	
ISRAEL	0.25	0.24	0.25		-0.01			0.01	
ITALY	4.76	4.44	4.68		-0.32		-0.08	0.24	
JAMAICA	0.01	0.01	0.01						
JAPAN	14.39	13.59	14.24		-0.80		-0.15	0.65	
JORDAN	0.02	0.02	0.02						
KENYA	0.01	0.01	0.01						
KUWAIT	0.26	0.18	0.25		-0.08		-0.01	0.07	
LAO PEOPLE'S DEM. REP.	0.01	0.01	0.01						
LEBANON	0.01	0.01	0.01						
LESOTHO	0.01	0.01	0.01						
LIBERIA	0.01	0.01	0.01						
LIBYAN ARAB JAMAHIRIYA	0.24	0.23	0.23		-0.01		-0.01		
LIECHTENSTEIN	0.01	0.01	0.01						
LUXEMBOURG	0.06	0.06	0.06						
MADAGASCAR	0.01	0.01	0.01						
MALAWI	0.01	0.01	0.01						
MALAYSIA	0.14	0.17	0.15	0.03		0.01			-0.02
MALDIVES	0.01	0.01	0.01						
MALI	0.01	0.01	0.01						

Table 4 (continued)

MALTA	0.01	0.01	0.01						
MAURITANIA	0.01	0.01	0.01						
MAURITIUS	0.01	0.01	0.01						
MEXICO	0.87	0.96	0.88	0.09		0.01			-0.08
MONGOLIA	0.01	0.01	0.01						
MOROCCO	0.04	0.05	0.05	0.01		0.01			
MOZAMBIQUE	0.01	0.01	0.01						
MYANMAR	0.01	0.01	0.01						
NAMIBIA	0.01	0.01	0.01						
NEPAL	0.01	0.01	0.01						
NETHERLANDS	1.46	1.43	1.44		-0.03		-0.02	0.01	
NEW ZEALAND	0.24	0.22	0.23		-0.02		-0.01	0.01	
NICARAGUA	0.01	0.01	0.01						
NIGER	0.01	0.01	0.01						
NIGERIA	0.21	0.20	0.20		-0.01		-0.01		
NORWAY	0.54	0.62	0.54	0.08					-0.08
OMAN	0.05	0.05	0.06			0.01		0.01	
PAKISTAN	0.07	0.08	0.07	0.01					-0.01
PANAMA	0.02	0.02	0.02						
PAPUA NEW GUINEA	0.01	0.01	0.01						
PARAGUAY	0.02	0.02	0.02						
PERU	0.07	0.08	0.09	0.01		0.02		0.01	
PHILIPPINES	0.08	0.08	0.08						
POLAND	0.36	0.46	0.37	0.10		0.01			-0.09
PORTUGAL	0.20	0.21	0.20	0.01					-0.01
QATAR	0.05	0.04	0.05		-0.01			0.01	
REPUBLIC OF KOREA	0.69	0.78	0.74	0.09		0.05			-0.04
ROMANIA	0.17	0.32	0.27	0.15		0.10			-0.05
RWANDA	0.01	0.01	0.01						
SAINT KITTS AND NEVIS	0.01	0.01	0.01						
SAINT LUCIA	0.01	0.01	0.01						
SAINT VINCENT AND THE GRENADINES	0.01	0.01	0.01						
SAMOA	0.01	0.01	0.01						
SAO TOME AND PRINCIPE	0.01	0.01	0.01						
SAUDI ARABIA	0.95	0.81	0.92		-0.14		-0.03	0.11	

/...

Table 4 (continued)

SENEGAL	0.01	0.01	0.01						
SEYCHELLES	0.01	0.01	0.01						
SIERRA LEONE	0.01	0.01	0.01						
SINGAPORE	0.16	0.16	0.16						
SOLOMON ISLANDS	0.01	0.01	0.01						
SOMALIA	0.01	0.01	0.01						
SOUTH AFRICA	0.41	0.41	0.43			0.02		0.02	
SPAIN	1.96	1.84	1.93		-0.12		-0.03	0.09	
SRI LANKA	0.01	0.01	0.01						
SUDAN	0.01	0.01	0.01						
SURINAME	0.01	0.01	0.01						
SWAZILAND	0.01	0.01	0.01						
SWEDEN	1.10	1.07	1.08		-0.03		-0.02	0.01	
SYRIAN ARAB REPUBLIC	0.12	0.11	0.12		-0.01			0.01	
THAILAND	0.13	0.15	0.13	0.02					-0.02
TOGO	0.01	0.01	0.01						
TRINIDAD AND TOBAGO	0.05	0.05	0.05						
TUNISIA	0.03	0.04	0.03	0.01					-0.01
TURKEY	0.23	0.30	0.24	0.07		0.01			-0.06
UGANDA	0.01	0.02	0.01	0.01					-0.01
UNION OF SOVIET SOCIALIST REPUBLICS	8.84	9.82	8.71	0.98			-0.13		-1.11
UNITED ARAB EMIRATES	0.23	0.25	0.22	0.02			-0.01		-0.03
UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	4.96	4.50	4.91		-0.46		-0.05	0.41	
UNITED REPUBLIC OF TANZANIA	0.01	0.01	0.01						
UNITED STATES OF AMERICA	25.00	25.00	25.00						
URUGUAY	0.05	0.05	0.05						
VANUATU	0.01	0.01	0.01						
VENEZUELA	0.47	0.46	0.46		-0.01		-0.01		
VIET NAM	0.01	0.01	0.01						
YEMEN	0.02	0.01	0.01		-0.01		-0.01		
YUGOSLAVIA	0.42	0.56	0.43	0.14		0.01			-0.13
ZAIRE	0.01	0.01	0.01						
ZAMBIA	0.01	0.01	0.01						
ZIMBABWE	0.01	0.02	0.01	0.01					-0.01
TOTAL	100.00	100.00	100.00	3.01	-3.01	1.53	-1.53	2.42	-2.42