A Converging or Diverging World?

Bob Sutcliffe

Abstract

This paper discusses some of the problems of method and data in measuring world inequality. It describes some recent attempts to do so and produces its own estimates. There is no simple answer to the question of whether or not the world is becoming more unequal. If a variety of methods are employed and compared, a complex answer emerges, showing that inequality is both declining in some ways and increasing in others. However, there has clearly been an enormous, recent increase in the gap between the very rich and the very poor.

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A Converging Or Diverging World?[1]

Bob Sutcliffe

The richest human beings in history—from Croesus to Henry Ford—were not as rich (in terms of the absolute real value of what they owned or received as income) as the richest people alive today. At the beginning of 2005, the world had seven and a half million people with non-property wealth of more than $1 million (Merrill Lynch and Capgemini, 2005), of whom 691 were dollar billionaires (*Forbes Magazine,* 2005); some sports and rock music stars had incomes of more than $30 million a year, and the annual pay of the highest paid corporate chief executive officer (the head of Yahoo!) was greater than $100 million (AFL-CIO, Executive PayWatch, 2005).

This latter figure was the same as the annual income, according to World Bank calculations, of the combined income of at least 300,000 of the world's poorest people. Unlike the rich, the poorest people alive today are as poor as the poorest people in history. Millions of people throughout the world often see on television harrowing pictures of masses of people literally dying for lack of food or other basic needs. While economists can and, of course, do argue about how we can measure such things, the common observer would surely, if asked, say that economic inequality among the human race is not only high, but higher than it has ever been, and is probably rapidly diverging further.

Anyone desirous of a more systematic answer would find that professional economists are much divided about how economically unequal the human population is, and if it is becoming more or less so. The reason for the discrepancies is that when it comes to advancing beyond an impressionistic view of this question to the use of rigorous measures, a large number of methodological questions are encountered, to which different writers give different answers. The main ones can be summarized as:

1) Inequality of what? (income, wealth, or some other measure related to welfare, such as longevity);
2) Inequality among/between whom? (the countries of the world, men and women, capitalists and workers, different ethnic groups, rural and urban dwellers, the healthy and the sick, the old and the young, or total human individuals);
3) How to compare incomes in different currencies?
4) Using data from where?
5) Using what measure? (integral statistical measures of inequality, or more simply, the ratio of the rich and the poor).

In this paper, I shall first try to review some of the answers given to these five methodological questions and explain some of my own choices. Then, I will outline a series of calculations about inequality, its level and evolution, using a variety of methodologies and data sources. Finally, I will sum up the answer to the question posed in the title as I see it, and comment on the state of debate on the question.

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1   This paper draws heavily on Sutcliffe (2003; 2004).

Five methodological questions

What variable?

In modern times, income has been the most commonly used indicator of economic welfare and economic development. It may be the average income of a country or of households, or the personal incomes of individuals or groups. The overwhelming majority of recent writings about inequality, therefore, concentrate on measuring this variable. This is partly because, of all the possible candidates, it is the variable about which the greatest amount of data is available. There are fewer studies of the distribution of wealth, for example, than of the distribution of income, partly because of limitations in the availability of data; but also, the central role of people's income in determining their material situation in life seems instinctively important. In spite of this, the measurement of income is problematic, and there have been endless debates about how to do it, or about what other variables might be more significant.

In the results of recent calculations and discussions, a trend can be discerned: comparing incomes tends to suggest that the world is more unequal than proposed alternatives, notably, the frequently proposed alternative, life expectancy; also, using life expectancy, rather than income, as the crucial variable has a greater tendency to suggest that, over time, there is convergence, rather than divergence. Since writers and commentators tend to choose their variables to produce conclusions they feel ideologically and politically comfortable with, we can see a tendency, at present, to escape from the disturbing conclusions produced by studies of income towards the more comforting ones resulting from adding another convergent indicator, such as life expectancy.

The United Nations Development Programme (UNDP) launched its Human Development Index (HDI) in 1990, not as a measure of inequality as such, but as a means of dethroning income per head from its traditional place as the privileged indicator of development. However, as UNDP emphasized at the time, human development was distributed in a much more equal way than income per head. The index is made up of three indicators: the logarithm of income per head, life expectancy at birth, and education (a combination of adult literacy and combined enrolment ratios). Plausible maximum and minimum values are assigned to each indicator, and the value of each indicator for each country is assigned a value between 0 and 1 according to its position between the extremes. The HDI is the arithmetical average of these three values, and can therefore itself vary between 0 and 1; but nearly all the developed countries are necessarily close to 1. This is because they are close to an upper limit for life expectancy which seems to be approaching a biological maximum; and they have close to 100 per cent levels of literacy and educational enrolment and so are approaching a logical maximum (100 per cent) for the combined education indicator. Only income has no logical upper bound, but the difference between poor and rich countries is strongly attenuated in the HDI by taking the log, instead of the actual value; this has the effect of reducing the ratio between the countries with the highest and lowest gross domestic products (GDPs) per head from 63 to 1 to 3.7 to 1. All this means that the very structure of the index prevents countries with a high level from raising it more than marginally. Countries with a lower level have some way to go and can attain significant percentage increases in the index. The result is that all progress in less developed countries translates into international convergence.

With many variables other than income whose distribution we could measure, one of several problems tends to arise. Sometimes, the variables are too specific; their distribution in a population measures particular outcomes which are not necessarily universally accepted as indicators of welfare. This is

why the inventors of the Human Development Index looked for indicators of potential or capacity, rather than particular outcomes, such as the possession of particular goods or services. Other variables, which sound as if they should measure welfare, such as happiness or life-satisfaction, have aroused much interest among economists recently; but no satisfactory way has yet been found to make such variables sufficiently objective.

Ever greater amounts of data about social and economic variables and their distribution are produced, either by public authorities or by social science research, and they are increasingly used to give a more detailed picture of the many kinds of inequality in human societies; but they have not yet displaced income as the most commonly compared criterion in the systematic measurement of inequality. So, for the most part, the rest of this paper restricts itself to looking at the distribution of income as the measure of convergence or divergence.

It is a pity, in a way, that the growing discussion of distribution involves overusing the variable that more recent contributions to development thinking have tried to demote from its earlier position of primacy. However, we may draw some comfort from the fact that one of the chief criticisms levelled against the use of income per head is precisely that it did not take distribution into account.

Inequality among/between whom?

Inequality is ubiquitous in human society; and much of the social sciences can be seen as a response to some kind of inequality. If humans were all equal, there would be less need for social science. That means that there are many inequalities which could be examined. Much of the discussion of development has implied a primary interest in distribution between large groups of countries, labelled rich and poor, developed and underdeveloped, North and South, and so on. The interest here is the gap between two or sometimes more groups of countries which are considered qualitatively different. This gap is a crude, but often revealing, measure of world inequality; but it would not pass many of the tests which statisticians demand of a measure of inequality. In particular, it measures a gap, but, as a measure, does not take into account the size of the population on either side of the gap.

An adequate measure of world inequality has, at least, to weight the observed levels of income by population. Many calculations have been done of indexes of world inequality by comparing the income per head of countries and weighting them by the size of their population. These I will call measures of intercountry distribution. All the well-known measures of inequality can be calculated in this way. The problem with it is that it involves, in effect, assuming that all the population of a country have the same income (the income per head). There seems something very suspect about ignoring inequalities within countries and only comparing those between them. There could, however, be two justifications for doing it. First, there is an enormously greater quantity of data on the relative national income per head of different countries than on the internal distribution of that income. So, granted this limitation, we can obtain much more information, albeit inadequate, by looking at country averages. Second, as we shall see later, nearly everyone who has studied the subject agrees that intercountry differences are responsible for much more of world inequality than intracountry differences. So, if we observe both a level and trend in intercountry distribution, they are likely to tell us quite a lot about what is happening to world distribution in general.

Ideally, however, it would be more enlightening to combine intercountry and intracountry inequality figures to produce a more accurate estimate of what I will call global inequality, to distinguish it from intercountry inequality. To calculate global inequality, we need to have good surveys of income

distribution within countries. The number of these is growing, but their quality leaves a lot to be desired. Also, since they involve expensive and time-consuming surveys of thousands of people, they are not done very often. Very few countries have annual estimates of inequality, but virtually all of them have annual estimates of the national income.

Comparing incomes—how?

One question about data on incomes has caused huge confusion, and it is necessary to be clear about it. When looking at the distribution of income in the world, we have to reduce incomes of different countries to one standard. Traditionally, it has been done by using exchange rates and converting the income of each country to the currency of a single country (usually to the US dollar). As a result, the international component of inequality appears to change when exchange rates change, which is highly misleading.

Until recently, that was the only way things could be done; but now we have data based on 'purchasing power parity' or PPP (the comparative buying power, or real equivalence, of currencies). Many problems remain with PPP values, but they are the only way to make coherent comparisons of incomes between countries. They produce estimates, however, which are astonishingly different from exchange rate-based calculations. For instance, the US income per head is 34 times the Chinese income per head, converting with exchange rates, but only 8 times as great using PPP (and incidentally, on PPP estimates, the total size of the US economy is now only 1.7 times that of China, and on present trends, will be overtaken by 2011). So when we make this apparently technical choice between two methods of converting one currency to another, we come up with not only different figures on income distribution, but also with two totally different world economic (and thus political) pictures.

One way of looking at this is to say that PPP is the equivalent of correcting economic figures for inflation. So PPP eliminates price differences among places similarly to how inflation-adjustment eliminates the distorting effects of price differences over time. As a result of the work of a few economists, historical estimates have now been produced of the level of income per head of different countries which are comparable over time and over space. While, in practice, there remain many defects in the PPP figures we have, this is nonetheless a massive breakthrough for economists and economic historians. The greatest enthusiasts for it describe it as the economic equivalent of decoding the human genome.

Data from where?

The recent great upsurge of interest in calculating world inequality and its trends has gone hand in hand with the improvement of comparative national income or product figures between countries. There are now three easily available series of historical national income figures in PPP, or international prices as they are sometimes referred to; thirty years ago, there were none. The first is produced by the group at the Organization for Economic Cooperation and Development (OECD) led by Angus Maddison (2001; 2003). I have used his figures in the long-term comparisons below, since they begin at an earlier date (some as early as 1820) than the second set of estimates by a team centred at the University of Pennsylvania and related to the United Nations International Comparisons project. This team produces the Penn World Tables (current version 6.1) (Heston, Summers and Aten, 2002), which calculate many more macroeconomic variables in PPP terms than Maddison, starting for most countries in 1960. I have used these in one of the comparative calculations below. The third series is produced by the World Bank, begun in 1975 (World Bank, 2005a). I have used these in nearly all the calculations for recent dates, mainly because they are kept more up to date than the other data sets, and are very easy to use in combination with distribution estimates.

For intracountry distribution of income, there are a number of sources of data, principally the World Income Inequality Database (http://www.wider.unu.edu/wiid/wiid.htm)—which started life as an extension of a much used database, and which I have used in my historical calculations, compiled by Deininger and Squire (1996) of the World Bank—and the Luxembourg Income Study (www.lisproject. org). Serious students of inequality need to consult these. In the calculations below of recent trends in world inequality, I have used almost entirely the growing set of data on income distribution published in the annual *World Development Indicators* (*WDI*) by the World Bank (2005a). This consists of information based on household surveys during the last ten years or so for a growing number of countries (122 in the 2005 issue of *WDI*). These data are easy to obtain and use, but it cannot be said that they are adequate. Some of them are old, there is no guarantee that they are obtained using consistent methods, and any detailed study of what has happened to inequality in any given country will need to acquire much more detailed data from other sources. They will be referred to below because of their convenience.

In principle at least, these data allow inter and intracountry data to be combined to produce an idea of global inequality; but the intracountry dimension of inequality which is being added is that between households. There are other kinds of intracountry inequality which these data do not touch, for instance, gender or ethnic-based inequalities. Some of the most serious dimensions of gender inequalities take place within households, and so, household surveys cannot usually provide information about that.

What statistical measure?

I have used a variety of simple statistical measures in the calculations below. First is the simple calculation of the gap between incomes per head of broad groups of countries. The main integral statistical measure of inequality which I use is the Gini coefficient. This is a measure of the degree of inequality between a population which aims to take all its members into account. The resulting measure, varying between 0 for complete equality and 1 for maximum inequality, can be affected by changes in distribution at any point in the distribution. The smaller the groups into which the population is divided, the more accurate is the measure of inequality.

In addition to the Gini coefficient, there are a number of other measures which many statisticians and researchers believe offer more useful results than the Gini coefficient. These include the Theil index and the mean logarithmic deviation, both of which are increasingly popular. I have not used them, partly because, like many other people, I have spent a lifetime with the Gini coefficient and have a greater instinctive understanding of it than of the others; but also, the conclusions about recent changes in intercountry and global inequality outlined below are not changed when another statistical coefficient is used. In all the recent studies of which I am aware, different measures produce very similar results.

In terms of results, there is a more basic choice of statistical measures. This is between an integral measure, such as the Gini, and a ratio of the extremes of a distribution. This is a very important choice, since it is possible for integral measures, such as the Gini, to move in one direction, while the ratio of extremes moves in another.

Is an integral measure better than a ratio of extremes? The ratio of extremes has the advantage that it can be understood much more intuitively, while integral measures, such as the Gini coefficient, are more abstract and require more explanation. However, the ratio of extremes only compares two parts of the available data, and so, at best, can give a limited view of the distribution. On the one hand, measures
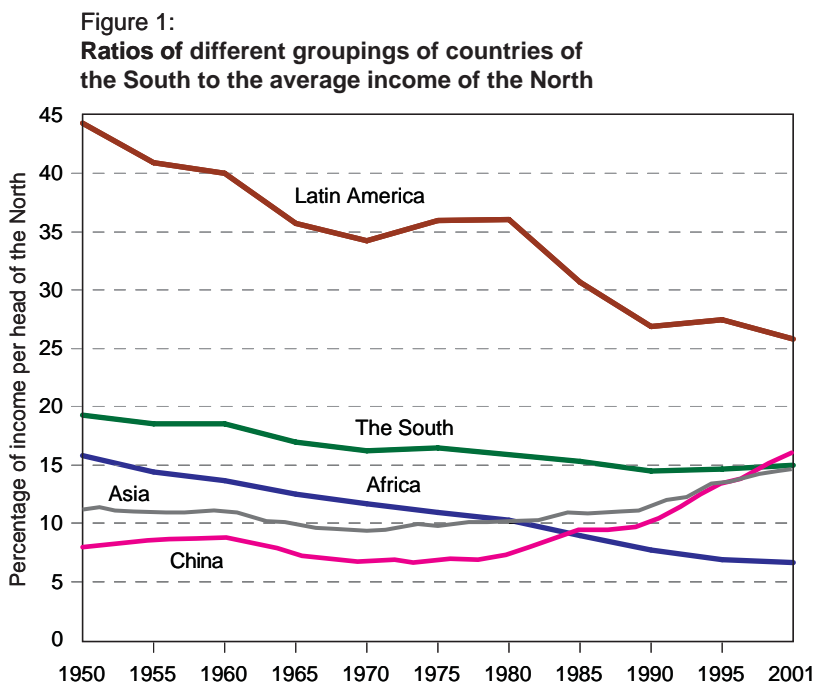
of the ratio of extremes can, in some cases, use all the available data (for instance, by measuring the ratio of the top to the bottom half of the population); but even here, they present no more than a relation of two summary figures. On the other hand, the ratio of extremes may be a better indicator of social justice than integral measures.

Ratios of extremes can be used to look at ratios between the incomes of defined groups, usually percentages, of the population with specified relative income levels: for instance, the ratio of the income of the highest 20 per cent to that of the lowest 20 per cent. Any similar ratio can be used, from the 'Robin Hood ratio' (top 50 per cent to bottom 50 per cent) to the ratio between the top and bottom 1 per cent, or even less, of the population. In these measures of inequality, the intervening figures do not enter into the conclusion (except in the special case of the 50/50 formula which, of course, includes all values).

Calculating inequality

Convergence and divergence between North and South

We can start a review of measurements of inequality with one which is both simple and revealing. It is simply the gap between the average income of the rich countries of the North and that of the rest of the world (the South as a whole and various geographical components of it). It is clear in Figure 1 that—in spite of decolonization, thousands of economic development plans, billions of dollars in aid, the opera- tions of dozens of multilateral development agencies, thousands of non-governmental organizations (NGOs) and billions of words—the gap between the North and the South widened continuously from 1950 to 1990. For Africa and Latin America, the gap has continued to grow until the present; but since 1980, Asia, and China in particular, has been closing it. After 1990, the faster growth of Asia has out- weighed the relative decline of Africa and Latin America, and so, the relative position of the South as

Figure 1:
**Ratios of different groupings of countries of
the South to the average income of the North**

Source: Author's calculations based on data in Maddison (2003).

Note: The North = Australia, Canada, Japan, New Zealand, USA and Western Europe; The South = the rest of the world except for Eastern Europe and ex-USSR; Asia includes China, but not Japan.

a whole has very marginally improved. The contrast between these two opposed tendencies is a central feature of world distribution during the last two or three decades, and will be referred to again.

The recent course of intercountry inequality

The gap tells us quite a lot about inequality, but does not provide a single summary indicator of it. We can, however, process exactly the same data in a more sophisticated way by taking our knowledge of the population and national income of virtually every country of the world and calculating from them an overall coefficient of inequality in different years. The Gini coefficient, which I have used, basically measures the cumulative of the differences between a country's income and the world average, weighting each country's difference by its population.
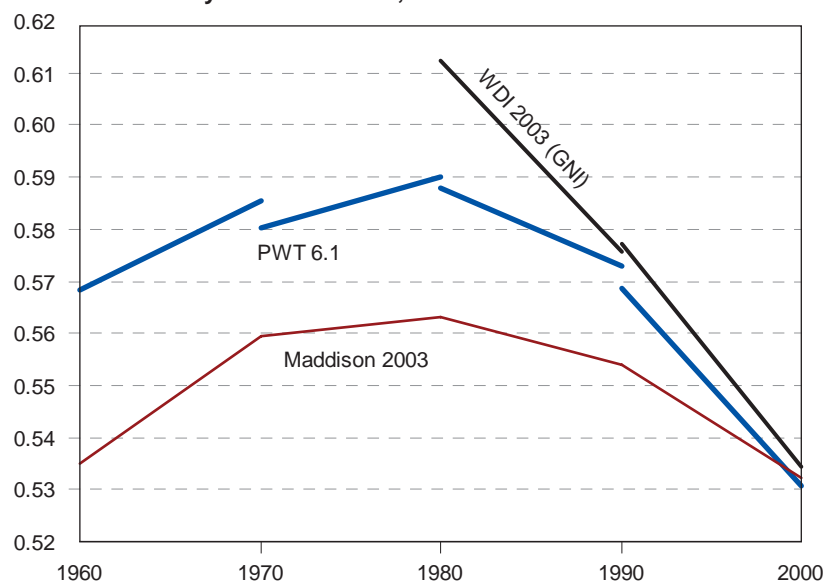
Since not all the available estimates of income are the same, I have calculated the coefficient using the three different sources of PPP income data mentioned above. Up to 1960, Maddison's data are the only ones available. They show a long-term and very substantial increase in world intercountry inequality from 1820 to 1980. After 1960, Maddison's figures can be compared for the period from 1960 with the data from the Penn World Tables (version 6.1); and from 1980, a three-way comparison is possible, including the World Bank's *WDI* figures. Decadal comparisons are shown in Figure 2.

As far as their direction of movement is concerned, all three PPP data sets are consistent with an inverted 'U' which rises up to 1980 and falls in the two subsequent decades. Since 1980, according to this measure, intercountry distribution of income has been growing less unequal; but the degrees of change between the three sets are mysteriously different. The *WDI* figures show the largest fall and Maddison the smallest. By 2000, they were giving more or less the same reading.

Figure 2:
Three PPP estimates of the
intercountry Gini coefficient, 1960-2000

Sources: Author's calculations using data from Maddison (2003); Heston, Summers and Aten (2002); World Bank (2003).

Note: The PWT and WDI series have steps, because for each decade, the maximum number of countries with figures for both ends of the decade has been chosen. That means some discontinuity since, in each decade compared, there is a different (growing) number of countries. The Maddison figures show only one small discontinuity in 1990, due to the change to independent estimates for the component countries of the USSR, Czechoslovakia and Yugoslavia in that year; otherwise, there are no blank spaces in his data.
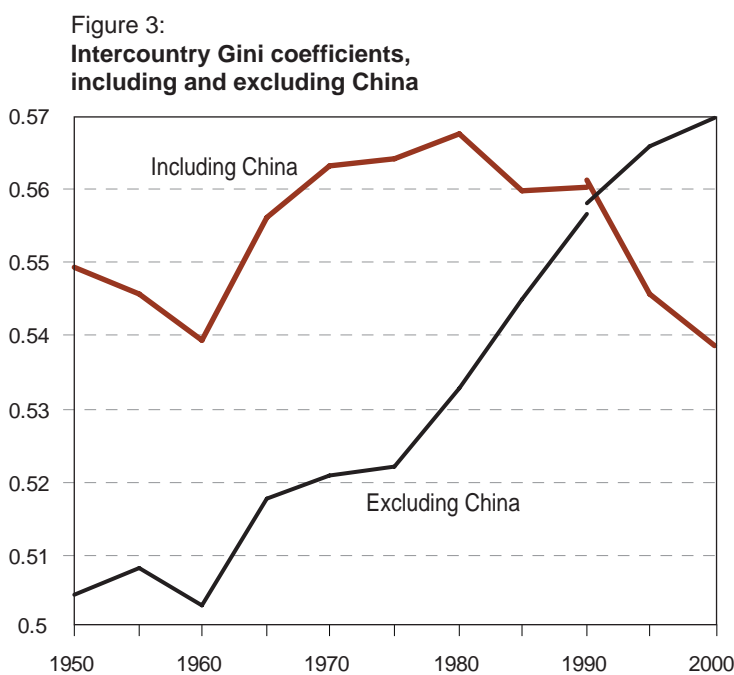
Since Maddison has estimated his data for more years and more countries than the other sources, it pays to look at the intercountry Gini coefficients which his data generate in a little more detail, with a view to understanding more of what has happened. Figure 3 shows the five-yearly Gini coefficient for the whole world since 1950. It falls (greater equality) from 1950 to 1960, probably due to the post-war recovery of Europe and Japan in relation to the USA. It then rises strongly until 1980 (more inequality), due to many factors, but mostly, the rapid growth of the developed countries and the disappointing growth of the South, which we already observed in another way in Figure 1. It then falls again up to 2000. This again has many causes, but probably the most important one is hinted at by removing China from the figures. Inequality then rises continuously and quickly from 1960 to 2000. The interpretation that all of the apparent drop in inequality after 1980 is due to China is too simplistic, since China and other parts of the world interact. So, while it is instructive to omit the figures for China, the influences of China, both for and against equality, remain. What the removal of China does do, is to emphasize the enormous importance of developments in this one huge country to the interpretation of the world, though not only in respect of income distribution.

Global distribution

Most attempts to combine inter and intracountry distribution are made in a similar way. They start off with data for national income or product per head. They then take (from another source) figures for the distribution of income between different groups of the population (often deciles or quintiles arrayed from the poorest to the richest) and calculate an implicit income for each group. For instance, if the income per head of a country is $5,000 and the poorest decile receives 2 per cent of total income, the implicit average income of people in that group is $1,000; if the richest decile receives 50 per cent of total income, then its implicit average income would be $25,000. These calculations result in a matrix of implicit average income levels for every quintile or decile of each country with available data. It might be helpful to think of this information visually. Taking the data for income and distribution from the latest issue of *WDI*, we

Figure 3:
**Intercountry Gini coefficients,
including and excluding China**

Source: Author's calculations using data in Maddison (2003).

can represent it as a graph, in which each vertical column represents the implicit income of one decile of one country. This has been done in Figure 4, in which the tallest building in the city, so to speak, in the rear corner of the graph, represents the income of the richest decile of the population of the USA, while the scarcely visible column in the nearest corner of the graph represents the income of the poorest decile of the population of Sierra Leone. The graph certainly gives a vivid impression of extreme inequality, in particular of the very steep ascent from the poorer majority of the world to its richer minority. However, we need more than graphics to observe the evolution of global inequality.
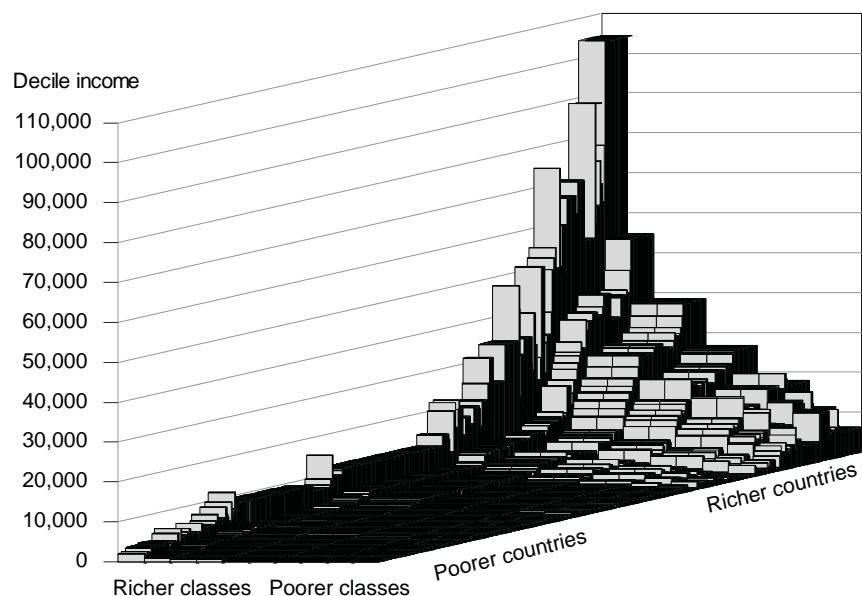
In the long term

Bourguignon and Morrisson's (2002) study is the only one to attempt to trace the long-term history of global distribution. They base their calculations on Maddison's GDP figures from 1820 (Maddison, 1995), using a wide range of sources as well as some estimation to adjust them for distribution. They conclude that global, like intercountry, inequality increases more or less continuously from 1820 onwards, but that the intercountry component increases faster than the intracountry component. At the start of the period, when countries were at much more similar levels than today, the intercountry Gini coefficient was 0.16, but at the same time, the global Gini coefficient was nearer to 0.5. By 1960, the intercountry Gini had reached 0.535 (very similar to that calculated from Maddison's most recent data and shown in Figure 3), while the global Gini was 0.635 (Bourguignon and Morrisson, 2002).

Recent decades

Continuing with the story as Bourguignon and Morrisson tell it, the Gini coefficient went on rising from 0.635 in 1960 to 0.657 in 1980, and remained stable until 1992 (where they end the story, as Maddison did in his earlier 1995 book). So the trend is rising inequality from 1820 to 1980, and then, stabilization; and during this period, the contribution of intracountry inequality falls, and that of inter-country distribution rises.

Figure 4:
A visualization of global income distribution

Source: Sutcliffe (2005).

For recent decades, a number of studies attempt, as Bourguignon and Morrisson have done, to combine national income figures with internal distribution figures to estimate the movement of global distribution. The results of three of these are given in Table 1. There are differences among these three studies regarding the sources of income data (shown in parentheses in the table) and in the way they introduce distribution. Bourguignon and Morrisson, as well as Sutcliffe, estimate for benchmark years only. The former use various sources of distribution data; the latter uses the Deininger-Squire dataset and the *WDI*. Sala-i-Martin (2002a) makes annual estimates of distribution using Deininger-Squire and fitting trend lines. Despite these differences, the methods produce global Gini values which are very close for years for which they all have figures; and they show either a stabilization or a reversal of the earlier rising trend from 1980 onwards.

Other recent estimates using some combination of the same sources of data and measures of in-equality, other than the Gini coefficient (e.g., Firebaugh, 2003), also arrive at broadly similar conclusions. It has to be concluded that all approaches which use PPP income data and then weight them in some way by available internal distribution figures show, as all PPP estimates of intercountry distribution, a decline in inequality since 1980 as measured by one integral measure, be it the Gini or some other coefficient. This has now been demonstrated a sufficient number of times; and the conclusion seems to be rooted in the data.

This, of course, does not mean that it is the correct conclusion; other methodologies and data may give different answers. For one thing, these global distribution estimates retain one of the main sources of error of the intercountry estimates, namely, the fact that not all of national income reaches households which can use them to finance welfare-related benefits. The only way to reach a different conclusion is to question the validity of the data, to use a different methodology, to measure with a different statistical measure or to use a different variable or combination of variables to measure income or welfare.

"True distribution" through direct use of household surveys

Branko Milanovic's (2002) "true distribution" uses a different methodology and produces results appar-ently inconsistent with other recent studies, although it remains a variant of global distribution, and its comparisons are made using PPP conversions. However, since it uses household surveys as raw material, it does not need to go through the stage of imputing the incomes of groups by weighting the national income estimates by the groups' shares. The previously described global distribution method of income imputing implicitly allocates the difference between total household income and total GDP pro rata, that

Table 1:
Global Gini coefficients, 1960-2000

Year	1960	1970	1980	1990	2000
Bourguignon & Morrisson 2002 (Maddison, 1995)	0.635	0.650	0.657	0.657*	
Sutcliffe 2003 (Maddison, 2001)			0.667	0.650	0.627
Sala-i-Martin 2002a (PWT 6.0)		0.657	0.662	0.654	0.633

Sources: Bourguignon and Morrisson (2002); Sutcliffe (2003); Sala-i-Martin (2002a).

Notes: Sources of income data are in parentheses. Sources of distribution data are explained in the source articles.

* 1992.

is, investment and state spending are assumed to be distributed in the same way as household consumption. Milanovic's method completely eliminates this problem. However, it then leaves another one: relative welfare is clearly not restricted to household consumption, since it also, at a minimum, includes the amounts of social spending on free services which contribute to welfare received by each group but which do not figure directly in household expenditure (education, health and a share of infrastructure). Milanovic discusses this problem, but does not solve it.

If we are interested in the global distribution of welfare, then in principle, Milanovic's method is surely the most accurate. Its problem is that it rests on the comparability of the household studies which he uses. The problem of data and the infrequency of PPP benchmark studies mean that he produces estimates of inequality for two years, 1988 and 1993. First, as he mentions, it is striking that his estimates of the global Gini coefficient for these years are 0.63 and 0.66, respectively. This is extremely close to those produced by the other methods examined above. His principal conclusion is, quite rightly, that this shows the world has a level of inequality scarcely encountered in national economies.

His second conclusion, however, differs from that of other studies. Between two dates, lying within the period in which other studies find a falling level of inequality, Milanovic's Gini estimate rises. It remains to be seen if, over a longer period, this method will reproduce this difference. In any case, the existing difference needs to be explained. It would appear, from Milanovic's discussion of this, that the reason is not the fact that he does not use GDP per capita figures (since a similar result appears when he does so, as a control), but that his distribution data permit a more detailed breakdown of internal inequality than the mixture of quintile data used by other global inequality studies, in particular for China and India.

Rising inequality between urban and rural incomes in these two giant countries accounts for much of the difference between his results and those of other studies. The difference seems to be largely due to the fact that his method catches the sharp growth in urban-rural inequality in China and India, while those which use overall national figures do not. It is strongly to be hoped that Milanovic's method can be applied to a longer time period since, in principle, it seems likely to give a more authoritative picture of global interpersonal distribution, although it requires an enormous data collection and homogenization process.

A different story: ratios of extremes

An integral measure of inequality is not necessarily a good estimator of social justice. What is received by the most and least economically privileged part of a population can be a much better indicator, even though it does not use all the data available on distribution among the population. It is quite possible for a Gini coefficient to improve, even though the ratio of incomes at the extremes worsens. At least, therefore, we need to look at indicators of inequality other than the integral measures.

The effects of doing so produce a strikingly different picture of recent developments from that produced by earlier estimates of the Gini coefficient. As a by-product of estimating the average incomes of deciles or quintiles of the population necessary for calculating global Gini coefficients, we can derive the ratios between the richest and poorest sections of the population.

Table 2 shows a comparison of global Gini coefficients with global ratios of extremes. Between 1980 and 2000, the ratio between the richer and poorer halves of the world's population (the 50/50 or 'Robin Hood ratio'), along with the richest/poorest 20 per cent and 10 per cent ratios, fell, mirroring the

Table 2:
Global Gini coefficients and percentile ratios, 1980-2003

Year	1980	1990	2000	2003
Gini coefficient	0.667	0.65	0.627	0.63
50/50 ratio	13.62	10.21	8.83	8.60
20/20 ratio	45.73	33.85	29.49	31.96
10/10 ratio	78.86	64.21	57.41	64.41
5/5 ratio	120.75	101.02	116.41	130.46
1/1 ratio	216.17	275.73	414.57	564.27

Sources: For 1980 to 2000, see Sutcliffe (2003) for an explanation of the method. For 2003, the author's calculations are based on data from World Bank (2005a).

Note: The last column is not strictly comparable with the previous ones, but following the earlier methodology would produce very similar results.

fall in the Gini coefficient. However, at some point in this period, each of the ratios, except the 50 per cent one, began to move upwards: inequality grew between the richest and poorest 20 per cent and 10 per cent after 2000; it grew between the richest and poorest 5 per cent from 1990 onwards, and between the top and bottom 1 per cent all the time. The implication of this is that the roughly 60 million humans with the highest incomes in 1980 received 216 times as much as the 60 million with the lowest incomes; this immense divergence has grown ever since, and by 2003, had reached 564 times. This conclusion—that inequality, in this sense, has been increasing—emerges from exactly the same data used to suggest that inequality, in another sense (the Gini coefficient), has been declining. Very few commentators have emphasized this conclusion. An exception is Arne Melchior, using intercountry estimates (see Melchior, 2001; Melchior, Telle and Wiig, 2000; and Melchior and Telle, 2001).

The groups which, according to this method, emerge as the richest 1 per cent of the world's population are the richest 10 per cent of the following economies: Australia, Austria, Belgium, Canada, Denmark, France, Germany, Hong Kong SAR, Ireland, Italy, Luxembourg, Netherlands, Norway, Singapore, Switzerland, UK and USA; and the poorest 1 per cent are composed of the poorest 40 per cent in Sierra Leone, the poorest 30 per cent in Malawi, the poorest 20 per cent in Burundi, Central African Republic, Guinea-Bissau, Madagascar, Niger, Nigeria, Tanzania and Zambia, and the poorest 10 per cent in Burkina Faso, Honduras, Kenya, Lesotho, Mali and Yemen (Afghanistan and Ethiopia would surely have been represented here, but there are no data for those countries). Of course, more detailed intracountry distribution figures would admit people from other countries to these extreme groups. While the estimates for 2003 in Table 2 are not strictly comparable to those for earlier years, they continue a trend which makes it clear that, if our criterion is the ratio of incomes of the very top and very bottom of the economic hierarchy, inequality has not ceased to grow.
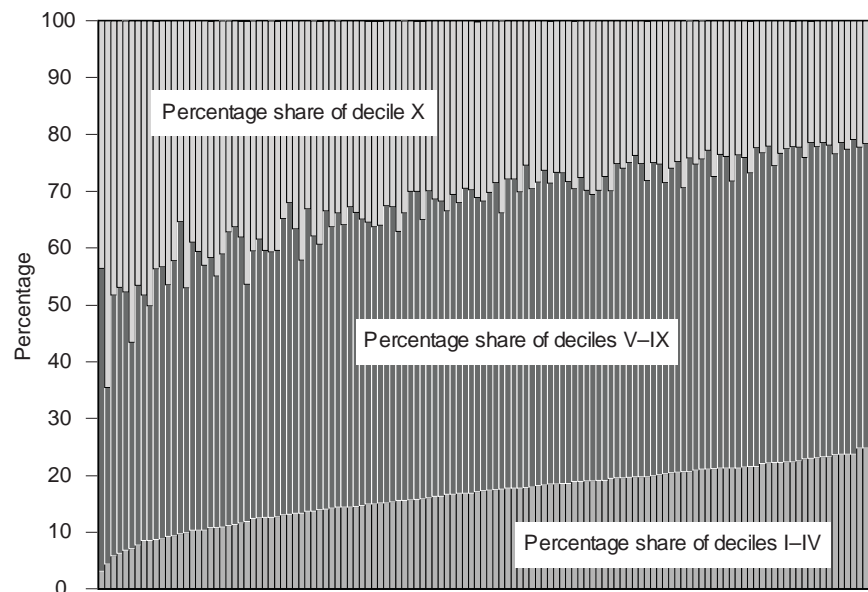
There seems to me little room for debate over the fact that the relative difference between the very rich and the very poor has become worse; and the worsening is greater, the smaller the extreme proportion is compared. So, the immensely rich have done especially well in the last 25 years, while the extremely poor have done especially badly. The top one-tenth of US citizens now receives a total income equal to that of the poorest 2,200,000,000 citizens in the world.

The conclusion is consistent with what has recently become almost a new branch of inequality studies: the investigation of the very high incomes in the richest countries (for example, see Atkinson, 2005; and Krugman, 2002). Atkinson concludes that in the USA and the UK (though not in France), the income shares of the top earners fell from the beginning of the twentieth century until about 1980, but have risen very sharply since then.

The constant share of the middle groups

As I read more of this debate, I am more and more inclined to attach importance to the ratio of extremes as a primary indicator of inequality. This view is strengthened by a discovery which we owe to Gabriel Palma (2003). He observed that if we divide the share of income going to three groups—the richest (decile X), the middle group (deciles V to IX inclusive) and the poorest (deciles I to IV inclusive)—for as many countries as possible, we find a remarkable fact. The middle group gets very nearly the same percentage of income in all countries (average 51.3; standard deviation 4.1), but at the same time, there is great variability among countries in the shares going to the top and bottom groups. Just as, in time, it seems to be the ratio of extremes which is changing much more than the integral measures which include all the middle groups, so, across space, virtually all the intercountry differences in internal income distribution are the result of differences in what the very rich and the poor get. The point is very clearly visible in Figure 5, in which each column represents one country and the countries are ordered from left to right according to the percentage received by the poorest group. The constancy of the middle groups and the variations among the top and bottom groups are plainly visible.

Figure 5:
Income shares by decile groups

Percentage

Percentage share of decile X

Percentage share of deciles V–IX

Percentage share of deciles I–IV

Source: Author's calculations based on data in World Bank (2005a); also see Palma (2003).

Wealth, poverty and inequality

What has happened to egalitarianism?

So far, I may have given the wrong impression that inequality is a subject which is very widely discussed. It is true that in recent years, there has been some revival in the number of academics and researchers in international organizations who write about it. However, in the world as a whole, it would be truer to say that the subject of inequality is systematically avoided, in favour of something which may appear to be the same thing, but is not—namely poverty.

There is certainly no shortage of written and verbal attention given to poverty. It has become the dominating word in discussions of development within the international organizations and the governments of rich countries. The key objective of official development thinking is the reduction of poverty and 'pro-poor growth'. The central objectives of the United Nations Millennium Development Goals are the elimination of poverty. It has also become the focus of large public humanitarian campaigns, such as the recent one around the slogan "Make poverty history". There is a kind of global unanimity on the subject. Nobody, other than a religious ascetic, would dare to say they are not against poverty.

A particular concept of poverty dominates these campaigns and pronouncements: it is poverty as absolute deprivation. It is usually measured by the value of real consumption, the two poverty thresholds being living on $1 a day (PPP dollars in 1990 prices) (extreme poverty) or $2 a day (poverty). The World Bank produces regular updates of the numbers of people living below these thresholds, and the Millennium Development Goals are designed in relation to these figures (one of them is to halve the number of people living on $1 a day by 2015).

There is in official discussions, however, another concept of poverty, that is, of poverty as relative deprivation. There is a long historic debate among social scientists about which of these is appropriate, but the point I wish to draw attention to here is that in virtually all the developed countries, it is the relative—and not the absolute—concept which is used to measure poverty. Most governments of rich countries define poverty as living on less than 50 per cent of the national median income.

However, the definition of poverty applied to poor countries is the absolute one. This has a major consequence: according to the World Bank's figures, poverty is being reduced. The number of people living on $1 a day fell from 1.2 billion in 1990 to 1.1 billion in 2001 (World Bank, 2005b). But what if the rich countries' definition of poverty—which is based on inequality, rather than an absolute level of consumption or income—was applied to the poor countries? The result would be that poverty is being reduced much less rapidly, and perhaps not at all. Some of the world's richest people were active supporters of the "Make poverty history" campaign. I wonder if they would have been quite so enthusiastic about a "Make inequality history" campaign.

Of course, it is statistically possible that less poverty and more equality can go hand in hand; but we have to examine very closely what are the political and ideological conditions in which that happens. The present fashion of 'pro-poor growth' does not involve any questioning of the centrepiece of today's economic orthodoxy, namely that growth comes largely from private sector (capitalist) investment, and that is not going to take place if the investors are not assured that they will gain from it. Will they invest if the poor gain more than they do?

Plans to reduce absolute poverty through minimum income guarantees or reduction in the number of people lacking basic necessities can be important; but poverty always possesses a relative as well as an absolute constituent. It is a major weakness of the Millennium Development Goals, for example, that they propose halving the number of people in absolute extreme poverty without a single mention of inequality; and there is now a very active campaign by anti-egalitarian, pro-capitalist ideologues in favour of the complete separation of the two. That is wrong, not only because inequality is what partly defines poverty, but more importantly, because inequality and policies of poverty reduction should be inseparable. To separate them is to say that redistribution should not form part of the solution of poverty. Everyone is prepared, in some sense, to regard poverty as undesirable; but egalitarians see riches as equally pathological. The objective of reducing poverty is integrally linked to the objective of reduced inequality.

Summing up the evidence

My aim in this paper has been not so much to find a definitive answer to the question of what has happened to inequality as to disentangle some of the confusing and contradictory conclusions which have been arrived at, to help them make a little more sense, to show how they are interconnected, and to evaluate some of the conclusions drawn from them. There is much we shall never know in detail, but also much which will still be discovered.

To questions about inequality, there are many answers, because there are many choices which make significant differences to the results. Some of them are obviously wrong; but when they have been eliminated, more than one answer will still remain, because there is more than one question. The reduction in Gini coefficients after 1980 in studies which use GDP figures by themselves or with quintile distribution figures does reflect the disproportionate rise in income of a few countries—especially China, but also other Asian countries—which has been sufficient to offset the statistical effect of countries—especially Africa—experiencing economic decline. Nonetheless, these results are conditionally contradicted by Milanovic's calculations based directly on household surveys which give more weight to internal differences. It is to be hoped that further research in this direction will clarify whether the same discrepancy exists for a longer period.

I have concluded that more attention should be devoted to what has happened to the ratios of extreme incomes. These may tell a more powerful story in relation to global social justice than the integral measures; and they highlight important changes hidden by integral measures of inequality such as the Gini coefficient. Whether or not the integral measures show convergence, the ratios of extremes reveal dramatically rising polarization between the top and bottom groups.

I am not at all persuaded that the addition of different variables, such as life expectancy, eliminates divergence between countries. The hypothesis is based on the idea that income and longevity are substitutes, so low welfare due to poverty can be compensated by being poor for a longer time. It is true that if you present almost any group of people with a choice, they will choose longer life; but it is not a real choice that anyone is able to make. Longevity does not change current economic welfare. In any case, at a global level, any tendency for the distribution of life expectancy to offset the tendency for the distribution of income no longer exists, due almost entirely to the HIV/AIDS epidemic. During the period 1990 to 2001, life expectancy figures show overall divergence between countries.

An important conclusion is that it is futile to summarize anything as complicated as world inequality in a single figure. The world is made up of innumerable specific inequalities; whenever anything changes, some of these get worse and some get better. This is not an argument against looking for integral measures; but they are not the end of the debate.

To get a more multidimensional picture of actually existing inequality, it is imperative to look at it from many angles, and that means to look at many different statistics. In particular, I have stressed the importance of observing not only the integrated measure, but also the movement of the extremes. When this is done, a different picture of the movement of inequality in the period begins to emerge: one in which not only those around the centre of the distribution are, to some extent, drawing together after centuries of increasing inequality, but where, at the same time, the extremes have been flying apart. This is not a step along a convergence process in which inequality may rise to begin with, as the late starters catch up one by one, but which mutates benignly into greater equality later on, as everyone finally arrives at higher levels of productivity and income (the scenario envisaged in the famous Kuznets curve). There is no sign at all that the malign processes of extreme impoverishment at the bottom or extreme enrichment at the top of the world distribution are coming to an end.

The debate is undoubtedly infected with a good deal of inequality denial. This is what is behind the considerable interest shown in suggestions that divergence has been replaced by convergence in the last two decades. Even if this were true, it is important to stress that there are signs that it will be short-lived, and world inequality, however measured, remains very close to its highest historical levels. The fact is that most calculations agree, the level of the Gini—calculated using PPP income and imputing income to population quintiles or deciles for all countries with published distribution figures—is about 0.63. With one exception, this is a higher level of inequality than for all countries of the world (including such emblems of inequality as Brazil and South Africa). The exception is Namibia, a country still showing the economic legacy of apartheid. The world ratio of the income of the top 10 per cent to the bottom 10 per cent is about 64. On this measure, only nine countries are more unequal than the world as a whole, including Brazil and South Africa. This appalling fact would remain true, even if the trends towards convergence discussed above continued for another 20 years.

Inequality and globalization

Is it possible to see any relation between globalization and world inequality? Maddison's data show a continuous increase in population-weighted intercountry inequality from 1820 to 1980, seemingly not affected by fluctuations in the degree of globalization. Other studies have suggested that during the period of retreat from globalization between the two World Wars, convergence between the wage levels of the richer countries ceased or went into reverse; and yet others have stressed that during the same period, some of the less rich countries began to converge with the richer ones (an argument often made by dependency theories).

The problem, however, seems to be a long way from any kind of clear definition which would allow any empirical test. If the answer has to be a statistical correlation between a single variable which stands for globalization and another which stands for inequality, then the question is both conceptually and practically unanswerable.

Globalization is a concept which receives many definitions, some of them contradictory. The period since 1980 is widely seen as one of particularly strong globalization. However, does globalization include those aspects of the world economy which became more liberal and involved greater integration, or does it also include those aspects which were anything but liberal? In other words, is globalization loosely what happens during a period which has been widely called globalizing, or just those things which really did expand global interchanges of goods, capital and people? The amount of globalization in the second sense, during the present period of globalization in the first sense, has been greatly exaggerated (Sutcliffe and Glyn, 2003). Trade, international investment and international capital flows have, of course, all relatively expanded, but the expansion has been especially concentrated between the countries which were rich at the beginning of the period, and it has been limited by the maintenance of very high discriminatory protection in some sectors of rich country markets (especially agriculture).

In addition, political interest in systematic international redistribution in the form of development aid has sharply declined in the last two decades. Aid is now only about 0.2 per cent of the income of the donor countries, and the 2005 G8 meeting probably did not do much to change that. Considerably greater redistribution is effected by the repatriation of wages by immigrants from the South working in the North. In both cases, however, there is no correlation between the amount of aid or remittances which countries receive and their level of income per head. So, while these mechanisms may produce some specific redistributions, they are not responsible for any general redistribution.

Inequality has as many meanings as globalization. This paper has reviewed integral measures of intercountry and global inequalities, but has also added some calculations of intermediate levels of distribution. It is striking that when we disaggregate income figures by continent, major differences emerge: the recent convergence of Asia contrasting sharply with the strong and continuous divergence of Africa and the less marked divergence of Latin America from the developed economies. Other disaggregations, either between countries or between classes within countries, or combining the two, as in the ratio of extremes measures, are necessary in order to appreciate the complex changes in inequalities which are taking place. A greater understanding of inequality involves also disaggregating countries and income groups into categories which can help to explain its causes: classes, gender, regions, age, health status, disability and many others.

Disaggregation can also be applied to the globalization side of the equation. Policies and tendencies which have enabled particular countries to benefit by increasing involvement in the world goods and capital markets can be identified. By a combination of high investment and the mobilization of competitively cheap labour, the countries of Asia have experienced historically unprecedented growth rates of the economy, industrial production and exports. Some of this growth has been aided by imports of foreign capital; but these, in common with the export of manufactures, have been very unequally distributed. In 2001, the population-weighted Gini coefficient of net inflows of foreign direct investment was 0.7, which makes it more unequal than any of the measures of world income distribution.

The integration of product and capital markets has, of course, been much smoother and more complete among developed countries than between them and developing countries, and this itself must have led to some negative effects of globalization on inequality. Nevertheless, a number of studies have tried to conclude that for poor countries, growth rates would benefit, and an improvement in their incomes

(and consequently, a reduction in world inequality) would follow from the market reforms almost universally promulgated during the last 20 years.

This conclusion, however, is increasingly contested; and it ignores the fact that integration into some world markets has not been under poor countries' control. This is particularly true of the world labour market, the global liberalization of which has never been part of the neoliberal prescriptions. In fact, most richer countries' immigration laws have been continuously tightened in the last 20 years, although sometimes, without the apparently intended results. Hatton and Williamson (1998) have argued that the freedom to migrate from Europe to the USA during the late nineteenth and early twentieth centuries reduced the intercountry distribution between the USA and Western Europe, and so mitigated the forces which were, at the same time, making for greater inequality on a global scale. As was seen in earlier sections, something of that pattern remains today.

A different question relating to the disaggregation of integral measures of distribution is the subject of vigorous debate (see Milanovic, 2005; Quah, 1996; Sala-i-Martin, 2002b). This question is not the overall measure of inequality, but the shape of international income distribution—in particular, if it is or is becoming unimodal, or if it remains bimodal, as it has been for a long time. The answer to this is crucial to finding the relationship between globalization and inequality. Different modalities in distribution correspond to different concepts of globalization. If the distribution is coming to resemble the unimodal one, typical of a single country, this would not necessarily alter measures of inequality such as the Gini coefficient; but it could be taken as evidence that a unified capitalism was establishing itself on a global scale and that the international fissures in the system produced by imperialism were abating, a hypothesis which is frequently heard. However, if the world distribution remains strongly bimodal, if countries still only very rarely evolve from the less privileged to the more privileged group, then this would be strong evidence that the obituaries of imperialism have been premature. Some might see such a result as an indication that globalization continues to be the agent of imperialism; for others, it might mean that the preservation of imperialism was the result of the partial and biased nature of recent globalization, something made possible precisely by the continued imperialist relationship. This interpretation would see actually existing globalization as being something of a mess, something of a myth, as well as something of a fraud.

Is there an answer?

There is no yes-or-no answer to the question "Is the world converging or diverging?". As so often in any serious question relating to human society, the answer is a complex and contradictory mixture of yes and no. The most basic fact about world inequality is that it is monstrously large; and that result is inescapable, whatever the definition of it or the method used to arrive at it. As to its direction of change in the last 25 years, to some extent, there are different answers to the same question; but also, there are different questions. Inequality is not a simple, one-dimensional concept which can be reduced to a single number. Single integral measures of world inequality (where all incomes are, in principle, taken into account) give a different result from measures of the relation of the extremes of income (the richest compared with the poorest). In the last 25 years, we find that the bottom half of world income earners seems to have gained something in relation to the top half (in this sense, less equality), but the bottom 10 per cent have lost seriously in comparison with the top 10 per cent (more inequality), and the bottom 1 per cent have lost enormously in relation to the top 1 per cent (much more inequality). None of these measures is a single real measure of inequality; they are all part of a complex structure of inequalities, some of which can lessen as part of the same overall process in which others increase.

More concretely, the gap between China and the rich countries is closing very rapidly. This produces convergence and is expressed in reductions in most calculations of intercountry and global coefficients of inequality. However, within China, inequality is growing fast, and millions are relatively, if not absolutely, left behind in its headlong growth. This growing inequality must reduce the contribution of China to the reduction of measures of inequality. In addition, the gap is widening between the richest countries and all the other major groups of countries, especially Africa and Latin America. In the case of Africa, poverty is growing and deepening, and there has been a sudden worsening in some other indices as well, such as life expectancy.

Everybody says they are against poverty, but few people examine the role of riches in the maintenance of poverty. Many things which make some people rich, make others poor. That was once more recognized than it is now, and resulted in the building of welfare states, strongly redistributive tax systems and plans for the systematic transfer of resources from rich to poor countries. There was never a golden egalitarian age, but these features of egalitarianism are currently under serious threat, and in some cases, are on the run. In the end, I believe that an answer to inequality will involve insisting on the importance of permanent, compulsory redistribution, rather than occasional charity, and recognizing that, if we are seeking justice, riches and privilege are as unacceptable as poverty and exclusion.

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