

## Global poverty and inequality in the 20th century: turning the corner?

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*Living standards increased markedly during the 20th century. Moreover, recent studies have shown that over about the last thirty years, the majority of the world's poor have achieved income growth faster than in developed countries for the first time in two centuries. But because income differences had become very wide and the developed countries' incomes are still growing, absolute (dollar) income gaps will continue to widen for some time yet.*

*The continued improvements in living standards and the recent reduction of inequality follow the return in the second half of the 20th century to widespread peace, sustained global economic growth, and freer global markets in trade and investment. This provided a favourable global setting for domestic economic reforms in very populous poor countries including China, India and Indonesia, which triggered their strong economic growth. Wider public understanding of this recent progress would benefit from better international statistics, and better statistical practices.*

*Continuing progress against persistent extreme poverty requires the maintenance and improvement of the globalised international environment of the late 20th century (including through further trade liberalisation, especially of rich countries' barriers against poor countries' exports), and peace and economic reform in those countries whose share of global trade has been declining.*

### Summary

Nations achieved large advances in life expectancy, nutrition, and education in the 20th century, and in the more equal distribution of them. Less widely noted is that over the last thirty years or so, the majority of the world's poor have begun slowly to catch up with living standards in developed countries for the first time in over two centuries. So far, the convergence is only relative (that is, the average person in a poor country has faster income growth than the average person in a rich country). Absolute (dollar) income gaps are still

widening. But catch-up is clearly apparent when correctly measured in terms of the purchasing power of average national income per head.

The continued improvements in living standards and the recent reduction of inequality follow the return in the second half of the 20th century to widespread peace, sustained global economic growth, and freer global markets in trade and investment. Other influences include the decline since the late 1970s in the application of central planning and other statist development models.

China and India together account for almost 40 per cent of the world's population and both were formerly extremely poor. While they remain very poor, their rapid recent economic progress, consequent on their policy reforms of the last two decades, bulks large in today's improved global inequality statistics. Moreover, many other populous economies including Pakistan, Bangladesh, Indonesia and the other Asian 'tigers' have all experienced strong real per capita GDP growth over the last few decades, notwithstanding the Asian crisis of the late 1990s.

The proportion of the world's population in extreme poverty has declined from about three-quarters in 1820 to one-fifth today, and despite some setbacks, that proportion continued to fall slowly over the 1990s. However economic growth in the poorest countries over the 1990s was insufficient, relative to the decade's population increase of 690 million, to reduce the estimated number in extreme poverty, which remains at about 1.2 billion. While there are some reasons to suspect the global poverty count may be too high, and by an increasing margin over time, extreme poverty remains the main international economic challenge for the 21st century.

The continuation of outward-looking economic policies can ensure living standards in the developing world continue to grow faster than in the developed world, but good policies are not assured. Moreover, arithmetic dictates that absolute (dollar) differences between average incomes in the rich and poor countries will continue to widen for some time, because the starting point differences are so wide, and because the rich countries will themselves keep growing. Australians concerned with development and poverty issues need to understand that arithmetic reality, and not be discouraged by it, or diverted by it from the support for successful policies.

Globalisation's critics frequently attribute to it economic problems that in fact arise from the presence of ethnic and religious fragmentation, civil war, poor governance and corruption; and the absence of social trust, modern institutions, and outward-looking economic policies. These problems have to

be remedied principally by the peoples affected. The international diffusion of modern ideas, ideals and institutions are not the problem; they are part of the solution.

The challenge is to maintain and improve the policies (in both rich and poor countries) which, in the last quarter of the 20th century, turned the corner in the world's battle against inequality and poverty. The recent achievements in containing poverty and reducing international inequality are not widely recognised. Maintaining public support for effective policies would be assisted by better global statistics and better international statistical practices.

## Introduction

At the start of the new century, it is useful to review briefly the successes and the failures of the 20th century in raising living standards and reducing inequality for the world's poorest. The review carries important lessons for the focus of international economic policy effort in the early 21st century.

The real value of goods and services produced in the 20th century was greater than produced cumulatively in all previous human history. Yet about one billion people (almost one-fifth of the world's population) still barely subsist, just as all our forebears did for all but the last few hundred years.<sup>1</sup>

The global income distribution widened for over 200 years from the dawn of the first industrial revolution, as the gains from technologically-driven productivity growth accrued mostly to the Western European and New World economies, and diffused only slowly to many developing countries. Consequently, the income distribution at the end of the 20th century is wider than at the start.

But recent studies have shown that over the last 30 or so years, the majority of the world's poor have begun slowly to catch up with living standards in developed countries for the first time in two centuries.<sup>2</sup>

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1 The cumulative output estimates are by J. Bradford DeLong, cited in [IMF (2000) (b), pp 50-151]. The estimates of numbers in extreme poverty (ie defined to be living on US\$1-a-day or less) are around 1.2 billion at [World Bank (2000) (b) p 23].

2 This paper deals mostly with what the World Bank now calls 'income poverty', in distinction to its wider concept of poverty as 'deprivation in well-being'. The wider concept, drawn from the work of Amartya Sen, includes not only income-related dimensions such as education

In international economics, the most important unfinished business of the 20th century is to build the national policies and institutions that will lift the living standards of the one billion people still suffering persistent, extreme poverty.

In developing countries, this will require political support for peace, for sound economic policies and institutions, and for the far-reaching social and economic transformations associated with achieving higher levels of productivity, the key to improved living standards.

In developed countries, it requires political support for trade and investment liberalisation to open their markets to developing economies, and to provide bilateral and multilateral aid and technical assistance.

And in all countries, it requires political support for the multilateral, rules-based international institutions that provided the economic framework within which much was achieved in the second half of the 20th century.

Instead of this necessary political support, it seems to be popularly believed that the return to greater international economic integration in the second half of the 20th century (after the economic dis-integration arising from the Great Depression and the two World Wars) has failed the poor; that they are falling further behind the world's richest countries; and that in some sense, 'globalisation' is to blame. It seems to be believed by many that both across countries and within countries, the rich are getting richer, and the poor, poorer (Box 1). Critics point both to the perception of widening income inequality (a relative concept), and the apparent stagnancy of the numbers in extreme poverty (an absolute concept usually measured against a US\$1-a-day poverty line).

If the world's poor were indeed failing to become richer, Australians could be less confident that the poor would progressively demand better labour and environmental standards, to mention just two areas of sensitivity in current international debate over the terms on which international trade should take place. Moreover, an erroneous belief that extreme poverty is an insuperable problem can damage community support for bilateral development assistance, and for the vital work of the international financial institutions with the world's poorest countries.

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and health, but also vulnerability, exposure to risk, and lack of 'voice' (including lack of civil liberties, political rights and good governance). See [World Bank (2000) (b) pp 15-21; Sen (1999)].

If the erroneous belief that international inequality is still worsening is not contested, it can damage confidence in open global markets for trade and investment. History has shown open markets to be the best vehicle for accelerated global and regional growth in income and living standards for the poor, and thereby for improvements in Australia's own security and living standards.

### **Box 1: Claims of rising inequality**

'The time has come to write the obituary of globalism as an economic doctrine that purports to bring progress and development to international society. It has failed. The special UN General Assembly session in Geneva last week concluded that poverty, inequality and insecurity have increased in the world since globalism was launched.' [Pfaff (2000)]

'Globalization has dramatically increased inequality between and within nations...'. [Mazur (2000)]

'In the past decade the number of poor people in the world (outside China) is estimated to have risen by more than 100 million.' [Thomas (2000)]  
(Vinod Thomas is a vice president of the World Bank)

'On average, initially poor countries have grown more slowly than rich countries, so that the gap between rich and poor countries has widened.' [World Bank (2000) (b) p 50]

'The average income in the richest 20 countries is 37 times the average in the poorest 20 – a gap that has doubled in the past 40 years.' [IMF (2000) (c), p 2]

'New evidence suggests that global inequality is worsening rapidly. ...

The regions of the lower- and middle-income pole contain many states whose capacity to govern is stagnant or eroding, mainly in Africa, the Middle East, Central Asia, Russia and parts of East Asia. Here, a rising proportion of people find their access to basic necessities restricted at the same time as they see people on television driving Mercedes cars.' [Wade (2001)]

## Gains in average world income and living standards in the 20th century

The 20th century generated unprecedented real growth in world GDP, with average annual growth for the century as a whole of about 3 per cent per annum. As a result, real global GDP rose at least 19 fold from 1900 to 2000 [IMF (2000) (b) pp 150-151].<sup>3</sup> Indicators of income growth in previous centuries are of course fragmentary, but estimates by economic historians suggest that global GDP growth was typically less than 0.2 per cent per annum in the period 1000 to 1500, rising to about 0.3 per cent until 1820. Growth then accelerated remarkably to about 2.1 per cent per annum towards the end of the 19th century, as the first industrial revolution raised productivity in the West [Maddison (2000) p 11].

Strong productivity growth permitted not only the measured rise in GDP over the 20th century, but also a near halving in the industrial economies of annual hours worked per person employed [Crafts (1999) pp 22-23].

World population growth in the 20th century was also unprecedentedly fast, almost quadrupling from 1.6 billion at the start of the century to 6.3 billion at the end. Public health breakthroughs and economic growth caused death rates to fall remarkably almost everywhere, while birth rates initially remained high in the countries where death rates had fallen most recently. While this so-called 'demographic transition' works its way through economies offering better life expectancies, population growth rates typically rise strongly for a protracted period before falling [IMF (2000) (b) pp 151-152].<sup>4</sup>

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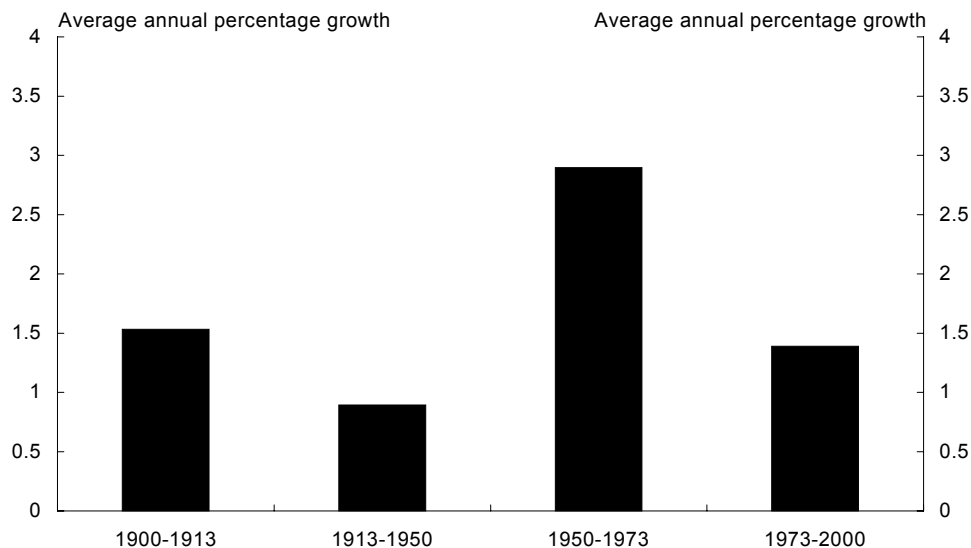
3 New products and quality improvements are hard to measure in GDP. Their impacts are understated, and the underestimation gets worse over time. By allowing for such underestimation, some estimate actual global annual real GDP growth could have been 0.7 per cent higher still during the 20th century. If so, actual GDP was 38 times higher in 2000 than in 1900, not just 19 times higher. See DeLong, cited in [IMF (2000) (b) p 151 fn 3].

4 The demographic transition is important to understanding global income inequality trends. A country experiencing fast natural population growth can experience slower GDP per capita growth for an extended period, because the rise in the ratio of dependent young to workers increases the denominator (population) by more than it increases the numerator (GDP). But this need not mean any persistent hindrance to its ultimate 'catch up' in living standards with rich countries with stable population, or only slow population growth. The transitional GDP growth problem (which may be protracted) has demographic causes, not economic causes. See [Firebaugh (1999)].

Real per capita world GDP rose by a factor of about five over the 20th century. The rate of per capita GDP growth over the century varied markedly, in four distinct phases:

- a high-growth phase from 1900 to 1913, when global trade and investment flows continued around high levels established in the late 19th century, the last period of high international economic integration;
- the phase of lowest 20th century growth from 1913 to 1950, when World War I, the beggar-thy-neighbour trade protectionism of the Great Depression and the disruption of World War II greatly retarded economic activity;
- the highest growth phase of 1950 to 1973, when the post-World War II framework designed in the 1944 Bretton Woods conference facilitated trade liberalisation and stable growth; and
- the final quarter of the century, when periods in the 1970s and 1980s of oil price shocks, exchange rate instability and stagflation in the major industrial economies reduced global per capita growth rates to a little less than in the period 1900 to 1913 (see Chart 1).

**Chart 1: Four periods of 20th century world per capita income growth**



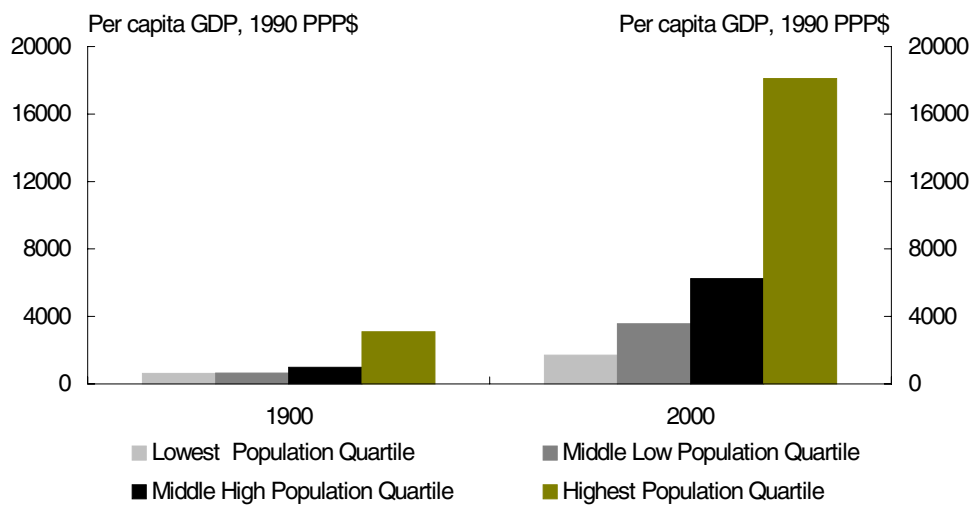
Source: International Monetary Fund (2000) (a).

Not only has aggregate growth been extraordinarily large, but structural change in the advanced economies has been unprecedented too. For example, agriculture, which had been humans' principal occupation since the dawn of civilization, employed about half the labour force in Western Europe at the beginning of the 20th century, but 5 per cent or less at the end.

But it would be a poor boast for the 20th century if higher average global income, growing faster than ever before, left a rising proportion of the world's poor untouched. In fact, national growth performances have remained very divergent, and the absolute gaps (that is, the gaps in dollar terms) in per capita GDP have indeed widened.<sup>5</sup>

Even so, the middle fifty per cent of the world's population had become richer by the end of the 20th century than the richest quarter had been at the start of the century. And even the poorest quarter had grown richer by the end of the century than those in the second richest quarter at the start of the century (Chart 2).

**Chart 2: Income levels by quartile, 1900 and 2000**



Source: International Monetary Fund (2000) (a).

<sup>5</sup> This statement is based on conversion of national per capita GDPs to the common denominator of US dollars, using Purchasing Power Parities. The meaning and importance of PPP conversion is discussed at Box 4.



Moreover the concentration on measured income alone provides too narrow a comparison. Various 'quality of life' indicators have improved even more strongly than incomes.

## Life expectancy

Life expectancy provides a particularly interesting indicator, as advances in life expectancy capture the influences of advances in knowledge about health, advances in spending on public health measures, better education (including about diet and hygiene) and rising incomes.

In 1870, the world's highest life expectancies at birth were in Norway (49.3 years) and Australia (48.0 years). Life expectancy in Japan was 37 years. In the 1880s, Indian life expectancy was 25 years, and it fell to only 20 years in the 1920s, when Spanish influenza swept the country [Crafts (2000) pp 7-8; Caldwell (1999) p 121].

By the mid 1990s, the highest life expectancies in the rich countries of the 1870s had been exceeded by practically every country on earth. The average life expectancy in developing countries was 65 years; in India it was 61.6 years; and only in Angola, Malawi and Mozambique did life expectancies remain lower than the levels in Australia and Norway in the 1870s.

Supporting indicators suggest that the quality of life is improving, as well as sheer longevity, for reasons that include economic gains in nutrition, not just public health gains (such as immunisation). For example, child malnutrition rates have declined by a quarter in the last 40 years, with associated improvements in stunting (low height for age – an indicator of long-term malnutrition) and wasting (low weight for height – an indicator of short-term malnutrition). [UNDP (1998) p 19]

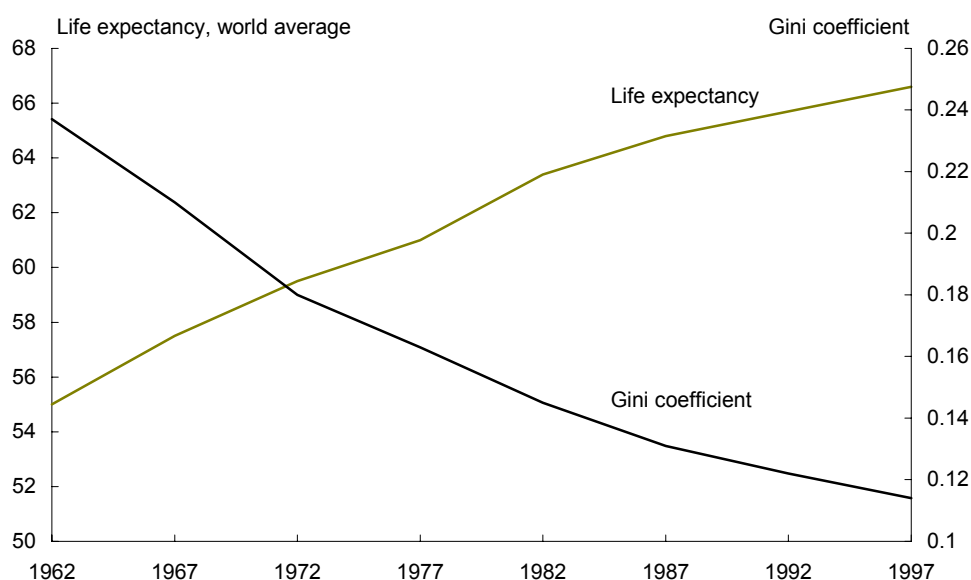
Rapid progress in extending life expectancies continued through most of the second half of the 20th century, and the inequality in life expectancies across countries declined strongly (Chart 3). However in the 1990s, progress in raising global life expectancies slowed, mostly because AIDS in Africa greatly slowed the rise in life expectancies there,<sup>6</sup> and life expectancies actually fell in Eastern

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6 In an extreme case, life expectancy in Botswana actually fell by 13.5 years.

Europe and Central Asia in the economic disruptions following the end of central planning and the break-up of the USSR.<sup>7</sup>

**Chart 3: Global average life expectancy, and Gini coefficients for life expectancy inequality between countries, 1962-1997**



Note: The Gini coefficient is a measure of inequality, ranging from 0 to 1. A higher number indicates greater inequality.

Source: Melchior, A., Telle, K., and Wiig, H. (2000).

## Education

There has also been great improvement in education levels over the 20th century (measured by gross enrolment ratios), and significant narrowing of the gap between rich and poor countries.<sup>8</sup>

In contrast with the evidence for life expectancy, where advances were spread through most of the 20th century, much of the educational catch-up by poor countries has been only in the last 20 or 30 years, and the catch-up is so far

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<sup>7</sup> Life expectancies in the former USSR and the Ukraine actually commenced falling slightly from the early 1960s.

<sup>8</sup> The gross enrolment ratio for a particular level of schooling is the number of students at that level, divided by the number of the population in the relevant age group. Because mature age students can enrol, the gross enrolment ratio can be more than 100 per cent, which is relevant to how some countries fare under the Human Development Index (see Box 2).

only in relative terms, not yet in absolute terms. (Primary education is now nearly universal in both rich countries and most developing countries except those of sub-Saharan Africa. But the absolute gap in percentages enjoying tertiary education is still widening between rich and poor countries, and remains about constant for secondary education.)

## The Human Development Index

The United National Development Program (UNDP) has attempted to integrate indicators of income, life expectancy and education into a single Human Development Index (HDI). The HDI has severe conceptual and practical limitations (see Box 2 for an outline of its construction). But it is widely reported and taps some current views of 'economic development as freedom', in accord with which some basic claims (including health and education) deserve particular weight.<sup>9</sup>

Although the UNDP has computed the index only back to 1960, Crafts (2000) has extended the estimates back to 1950 for many countries and back to 1870 for some of the industrial countries (including Australia).

Progress in the 20th century in terms of the HDI was quite remarkable.

In 1870, Australia led the world in the HDI, with a figure of 0.539. By 1995, that figure would only have ranked a country 127th in the world. By 1995 Australia's 1870 HDI figure has been surpassed by all but a few countries such as Haiti, India and Nepal. [Crafts (2000) pp 6-9]

## Environmental degradation and sustainable development

It may be objected that undoubted advances in incomes as measured in national accounts, and in life expectancy, education and other social indicators, have been bought at the cost of damage to environmental capital, so that 'sustainable progress' has been lower than measured progress.

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9 The view of *Development as Freedom* is eloquently argued by Nobel Laureate Amartya Sen in a book of this title. The practical influence of his theoretical argument is apparent in much contemporary work of the UNDP and the World Bank (such as the latter's recent work on *The Quality of Growth*). See bibliography for details.

## Box 2: The Human Development Index

The Human Development Index is constructed so as to focus most on the escape from poverty, and can assume the values between 0 (least developed) and 1 (most developed). It is a composite index based on three sub-indices:

- longevity (as measured by life expectancy at birth);
- educational attainment (as measured by a combination of adult literacy (two-thirds weight) and the combined gross primary, secondary and tertiary enrolment ratios); and
- income (as adjusted in a formula using the logarithm of GDP per capita, converted to \$US at PPPs).

The HDI is a simple average of three individual indices. Each index is computed in accord with the general formula:

$$\text{Index} = (\text{Actual Value} - \text{Minimum Value}) / (\text{Maximum Value} - \text{Minimum Value})$$

Fixed minimum and maximum values have been established for each of the indicators:

- Life expectancy: 25 years and 85 years;
- Adult Literacy: 0 per cent and 100 per cent;
- Combined gross enrolment ratio: 0 per cent and 100 per cent; and
- GDP per capita (PPP \$US): the logarithms of \$100 and \$40,000.

The HDI is based on arbitrary weighting decisions. Its three component indices are weighted equally, and also some subtle weighting decisions are imposed through its treatment of the sub-components of the education index, and in capping the gross enrolment ratio at 100 per cent.

The issue of sustainable development is a complicated topic in its own right, beyond the scope of this paper. It is currently the subject of a major project in the OECD, reporting later this year. But in summary terms, economists see sustainability as being able to at least maintain living standards without reducing the capital stock, which includes not only environmental capital but also physical and knowledge capital. Nordhaus (1995) has argued that over the

20th century, it seems likely that increases in the capital stock from investment, technological progress and education dominated any reductions in environmental capital. So for this reason among others (such as the problems of underestimating actual long-term GDP growth noted above), Crafts (1999) concludes that sustainable income growth over the 20th century, correctly measured, was likely to have been higher than actually measured income growth, not lower.

Australian studies of the experience of the APEC economies suggest that, since the early 1980s, natural resource depletion rates have been falling and that 'extended genuine savings' have been rising strongly.<sup>10</sup> More generally, the OECD has shown that the quality of environmental protection gets higher as countries get richer [DFAT (2000) pp 47-51].

## Trends in income inequality in the 20th century

Over the long haul, national per capita income levels must closely relate to national productivity levels, and per capita income growth must be related to productivity growth. So the story of international income inequality trends in the 20th century is essentially the story of international productivity trends.

Annual productivity growth rates in advanced countries are typically only 1 or 2 per cent, and even rather short periods of extraordinarily accelerated productivity growth only produce numbers of 3 or 4 per cent.

International trends in income growth and inequality are typically the product of compounding over decades or even centuries of these apparently rather small differences in annual productivity growth rates.

## Is there an appropriate benchmark for international inequality?

It is not common to ask what the international distribution of income ought to look like. Unavoidably, that question is in large part subjective, although the obviously wide international range of productivity levels implies that an economically sustainable distribution of income will remain wide for some

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<sup>10</sup> 'Extended genuine savings' = (measured savings + investment in education) - (depreciation of capital + depletion of natural resources + the costs of pollution damage).

time (absent sustained international transfers at very much higher levels than are now in prospect).

The interest in the international income distribution should perhaps focus more on its trend than its level, as the trend provides an indication of whether productivity growth in poorer countries is sufficiently fast to allow relative and absolute catch-up on higher income levels.

### Turning the corner?

Strict statistical comparison of international inequality over the 20th century is difficult, because reliable national income and household expenditure data for most developing countries are available only since about the mid 1960s. Indeed many of the current developing countries were only created in the second half of the 20th century. When founded in 1945, the United Nations had only 51 member countries; now, it has 189.

Nevertheless, for 42 countries for which data are available for the whole 20th century, the IMF estimates inequality was greater in 2000 than in 1900.<sup>11</sup> Chart 4 arrays the world population from poorest to richest countries, and shows the cumulative population shares of global income produced, in a so-called Lorenz curve. Perfect equality is represented by the 45-degree line, and inequality is greater the further the Lorenz curve lies from the diagonal. The Gini coefficient is a measure of the area between the diagonal and the Lorenz curve. The coefficient can range between 0 (for a perfectly equal income distribution) and 1; the closer the coefficient is to 1, the more unequal the distribution. The Gini coefficient for the 42 countries shown was 0.40 in 1900 and 0.48 in 2000.

However for the last 30 or so years – for which data on 115 countries are available – inequality has been falling. After reaching a peak somewhere in the 1960s, the Gini coefficient has since been decreasing. Note, though, that the Lorenz curves cross at about the point of the poorest 17 per cent of the global population: by all measures, the very poorest 17 per cent have a smaller share of the total global consumption now than previously.

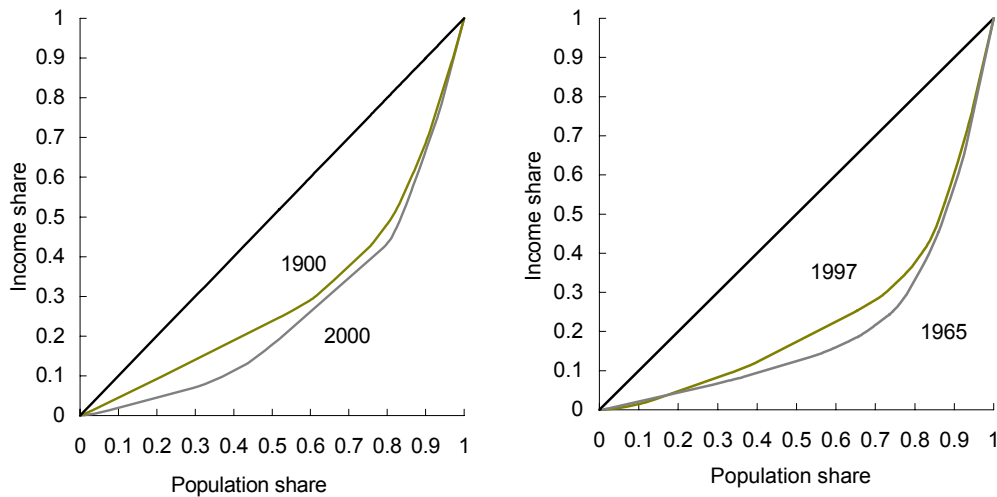
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11 In 1990, these 42 countries accounted for between about 80 and 90 per cent of world population and GDP. See [IMF (2000) (b) p 155].

### Chart 4: Global inequality

1900 and 2000 (42 countries)

1965 and 1997 (115 countries)



Note: In part because the numbers of countries represented in these two diagrams are very different, one can not compare the Gini coefficients between the two diagrams.

Sources: Left panel: International Monetary Fund (2000) (b). Right panel: Melchior, A., Telle, K., and Wiig, H. (2000).

The message of recently narrowing inequality is a product of quite recent academic research, and is contrary to the message coming out of the multilateral development banks and UN agencies.<sup>12</sup> Better understanding these contrasting pictures reveals much about the complexity of measuring international inequality, and suggests a little about the causes of the trends.

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12 One of the first to analyse these developments was T. Paul Schultz of the Yale University Economic Growth Centre, in 1998. His findings have been confirmed by Boltho and Toniolo in 1999 for the Oxford Review of Economic Policy, Glenn Firebaugh in the May 1999 American Journal of Sociology, and Melchior, Telle, and Wiig in a 2000 study for the Royal Norwegian Ministry of Foreign Affairs. The significance of the findings for 'turning the corner' were noted in a 2001 essay by J. Bradford DeLong. Firebaugh used data only through to 1989. This data set misses some of the recent effect on narrowing inequality from the continued strong economic growth through the 1990s in populous, poor countries including India and China. So Firebaugh speaks only of a 'great plateau in the historical trend' of rising inequality, rather than the narrowing of inequality or turning point that authors using more recent data have identified. See bibliography for details.

## What is measured by international inequality measures?

Although it is common to speak of the global income distribution, the data behind such discussions are almost invariably national averages: national GDPs divided by national populations to yield national per capita averages, rather than international aggregations of the actual distributions of each nation's income across its individuals or households.<sup>13</sup>

From this basic fact, many statistical confusions and erroneous diagnoses arise. It is possible to compare trends in poverty and inequality by country (so that, say, the experience of China (population 1¼ billion) and Estonia (population 1 million) have the same weight), or weighted by the number of people in the country; it is possible to convert measures in national currencies at market exchange rates, or at purchasing power parities (discussed further below); and it is possible to compare movements in two countries, or small groups of countries, or all countries.<sup>14</sup> All these comparisons may be in a sense 'correct' (that is, accurate counts of something or other), but many of them lead to what statisticians have characterised as 'material errors': that is, they give a fundamentally misleading impression to the user of the statistics of the phenomenon being described (see Box 3).

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13 An interesting exception to this generalisation is the work of Branco Milanovic, who has studied household income or expenditure survey data for 91 countries that have conducted at least two surveys (accounting for 84 per cent of the world's population). He has projected the available data to the years 1988 and 1993, to produce two snapshots of what he calls the 'true income distribution' at those two points in time. Data for both years was not available for some 61 countries (mostly only with small populations) [Milanovic (1999)]. His results are further discussed below.

14 At another level, movements in per capita GDP averages may be driven more in particular periods by either growth in GDP, or growth in population. For example, per capita GDP might grow only slowly for a period if a poor country is passing through the demographic transition mentioned above, with high rates of population growth adding to the number of dependents relative to the number of workers. Firebaugh (1999) enumerates this effect.



### Box 3: 'Material errors' in statistics

Vice-President of the Academy of Social Sciences in Australia and former Australian Statistician, Ian Castles, has made extensive statistical criticisms of the treatment by the *UN Human Development Report, 1999* of trends in poverty and inequality. At the request of the 2000 meeting of the United Nations Statistical Commission, the criticisms have been examined by a group of eminent statisticians chaired by an officer of Statistics Canada, with participants from India, Africa (representing Afristat), the UK, the Netherlands and Switzerland (representing the International Statistical Institute).

In measuring any complex concept, different approaches to measurement may all be 'correct', and yet yield fundamentally conflicting representations of the concept under study. How, then, to choose amongst them? The group offered two useful propositions [Friends of the Chair (2000), paragraphs 6 and 59]:

#### 'Fitness for purpose'

'We decided that we should take a fairly broad interpretation of the term 'accuracy'. We started from the concept associated with the measurement of data quality, which defines 'accuracy' as 'fitness for purpose'. In other words, are the data chosen... appropriate in light of the objectives of the application and given any alternatives? Have the limitations of the data been appropriately considered and communicated to the readers...?'

#### 'Material errors'

'Errors of all types can be divided into material and non-material errors. Material errors are those which leave the reader with a fundamentally distorted picture of the phenomenon being described, whereas non-material errors result in the reader having a slightly erroneous but essentially valid picture. .... For example, [in illustrating that the use of international comparisons by exchange rates constitutes a material error in comparing living standards] the use of PPPs rather than \$US conversions would show that the fifth of the world's people living in the highest income countries have 60 per cent to 65 per cent, not 86 per cent, of the world's income, and that the gap in per capita income between the countries with the richest fifth of the world's population and those with the poorest fifth is not 74 to 1, but 16 to 1, and that the gap is not unequivocally widening but moderately fluctuating.'

## International inequality and national inequality

Because almost all statements about international inequality are based on national average per capita GDPs, it is conceivable that trends in inequality as measured by national averages might be overwhelmed by trends in inequality within countries. (For example if a poor country experienced strong but extremely unevenly-distributed GDP growth, global inequality proxied by national GDPs per capita might narrow, but actual inequality in living standards between the world's individuals might widen.) But considerable research suggests that much the greater part of the movements in world inequality arise between country averages, not within countries. [Schultz (1998); Milanovic (1999); Firebaug (1999); Melchior, Telle and Wiig (2000); Milanovic and Yitshaki (2000)]

Moreover, any movements in national inequality are best treated as a separate policy issue from trends in international inequality. National governments influence national income distributions, through their policies of taxing, spending and regulating, and are accountable to their own citizens for those policy choices. If intra-country inequality is widening in a way unacceptable to the country's citizens, the efficient policy responses are likely to be at the national level, and it is not clear what (if anything) the international community could do about it. In contrast, if international inequality is widening, the questions and the policy responses are likely to be different: Is globalisation systematically disadvantaging poor countries, or not? If so, what are the implications for national and multilateral trade and aid policies (particularly in rich countries)?

## International comparisons of national incomes and poverty lines

National per capita GDPs and national household or individual consumption levels need to be converted to a common currency for international comparisons of inequality levels. Similarly, conversion to a common currency is necessary to estimate the absolute number of the extremely poor relative to some internationally-standardised poverty line, such as the US\$1-a-day figure. Different ways of doing this conversion have proven one of the main statistical reasons for conflicting claims about recent trends in inequality.

Statisticians have agreed that when the purpose is to compare real incomes or living standards internationally, account should be taken of the differences in

prices across countries, to get a better estimate of the actual purchasing power of local incomes. The most extensively developed means to account for global price differences is the use of purchasing power parities (PPPs), which are ratios which allow inter-country comparisons of real GDPs in a common currency (usually the US dollar) that eliminate the effect of different national price levels – see Box 4.

The use of PPPs is particularly important for developing countries, as typically the poorer the country, the more its domestic prices diverge from world prices, because more consumption is supplied from home production (ie outside markets), and local markets are in any event frequently more de-linked from international trade. Moreover, developing countries' exchange rates are more frequently subject to administrative control, which can move them further from market-clearing rates. Finally, those exchange rates that are market-determined can be volatile and heavily influenced by capital flows, in ways that do not directly or immediately impact on slow-changing characteristics such as poverty and inequality.

The International Monetary Fund (IMF), the OECD and Eurostat invariably use PPPs for living standard comparisons, and the World Bank generally uses them for analytical purposes. However, the practice of the UNDP has been more variable. While it rightly uses PPPs in computing its HDI, many of its recent statements alleging still-rising inequality (such as in its widely-reported annual Human Development Reports) are based on market exchange rate comparisons.

#### **Box 4: Comparing real living standards by Purchasing Power Parities**

Purchasing Power Parities (PPPs) are ratios of the national currency prices of the same good or service in different countries. They may be computed for individual goods or services (witness The Economist's 'Big Mac Index'), for commodity groups, and for broader aggregation levels up to GDP itself. At the GDP level, PPPs are ratios which allow inter-country comparisons of real GDPs in a common currency (usually the US dollar) that eliminate the effect of different national price levels.

The current (1993) United Nations System of National Accounts states that 'When the objective is to compare the volumes of goods or services produced or consumed per head, data in national currencies must be converted into a common currency by means of purchasing power parities and not exchange rates.' (para. 1.38)

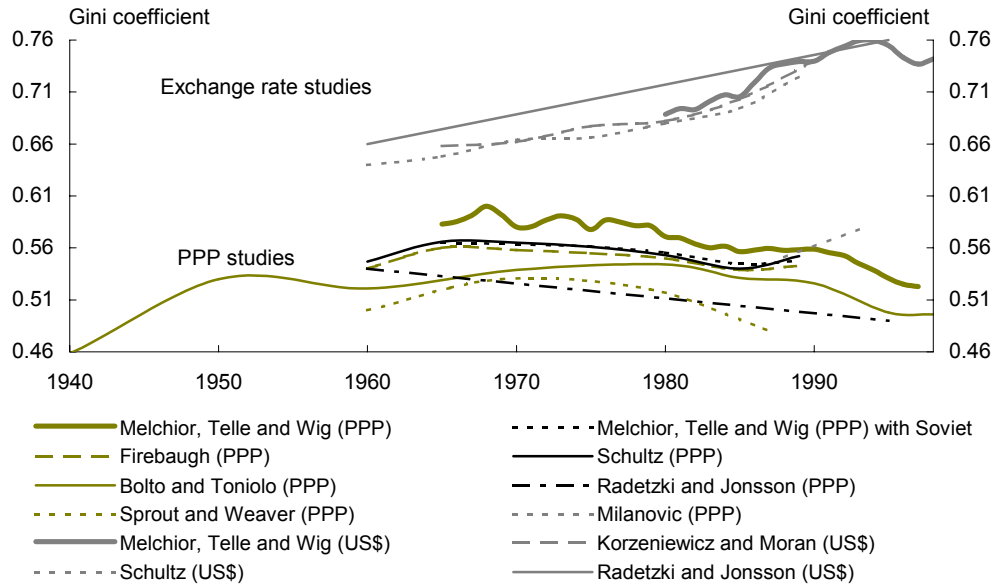
Global PPPs are computed approximately every five years through the International Comparison Program, co-ordinated by the World Bank and drawing on the work of Eurostat and the OECD for the industrial economies. Prices are estimated for those countries for which direct measurements are not available. Annual PPPs are constructed by extrapolation of the periodic benchmarks. PPPs are now available for over 100 countries (though not extending back any lengthy period for some countries, such as those of the former Soviet Union).

The aggregation process for PPPs uses (in effect) 'world average' prices, which in practice are closer to the relative prices prevailing in middle-income countries than to poor country prices. Studies have shown that the effect may be to somewhat overstate poor countries' income levels, and understate their growth rates. But those biases are generally judged to be small, and GDP comparisons at PPPs are much more congruent with other evidence about real national living standards than are GDP comparisons at market exchange rates. [Nuxoll (1994)]

Since the exchange rates of poorer countries have tended to depreciate over time (especially in recent years in comparison with the appreciating US dollar), it is possible to present a misleading picture of still-widening inequality by use of comparisons based on market exchange rates. The systematic difference between exchange rate comparisons erroneously showing widening inequality

in living standards, and PPP comparisons correctly showing narrowing inequality, are summarised in Chart 5.<sup>15</sup>

**Chart 5: Gini coefficients in different studies**



Source: Melchior, A., Telle, K., and Wigg, H. (2000)

Various arguments are offered for continuing to use exchange rate comparisons of living standards, such as the timely availability of accurate exchange rates, their common use for other everyday purposes, and widespread public understanding of them. But the convenient use of a conceptually wrong measure cannot be defended.

<sup>15</sup> The only study using PPPs that shows a rise in inequality is the study based on household surveys noted above. [Milanovic (1999)] This study (whose data set is also the basis of the argument by Wade (2001)) uses only two observation points (1988 and 1993), and available household expenditure or income survey data are projected forwards or backwards to those dates. Its underlying data was made available for other researchers to study in February 2001, so its findings have not yet been verified. Household survey data for populous developing countries have large and growing question marks over their accuracy relative to national accounts measures of the same concepts, as discussed below (see [Deaton (2000)]). Household survey data capture private spending or income, whereas GDP per capita data also capture public spending and investment (eg on health and education), so this difference too could contribute to the Milanovic results. Finally, it is not yet clear whether those results are influenced by the two years chosen for observation. (On this last point, all the other studies showing a declining trend for inequality over the last 30 years nonetheless show considerable year-to-year variation around that trend (see Chart 5), so the choice of any two observation points may be influential.)

PPPs are of poorer statistical quality for developing countries than for developed economies, and the improvement of PPP data has languished in recent years. Following mounting recent criticism from the international statistical community, there is now a proposal to seek better funding of the International Comparison Program, which generates global PPPs. Such improvements should be supported by all interested in developing efficient anti-poverty policies based on a correct measurement and analysis of trends in inequality and in persistent extreme poverty.

### Other statistical disputes in claims about inequality trends

While the choice of PPPs or exchange rates for international comparisons is one of the main statistical grounds for disputed claims over trends in inequality, it is far from the only one (see Box 5). Three other prominent methods used by those arguing that inequality is worsening are:

- To conduct comparisons by number of countries, rather than number of people.
  - Since the purpose of economic activity is to raise individuals' welfare, there are strong grounds to assess economic progress in terms of its impacts on the world's people, rather than on countries.
- To exclude from comparisons the most important success stories. (China is the country most often excluded).
  - This step is rationalised, if at all, by the notion that China is in some sense a 'special case', so large as to somehow distort the figures. But every country is a 'special case', and other large success stories include India, Pakistan, Bangladesh, Indonesia and the other 'Asian Tigers'. Should all success stories be excluded from the analysis of inequality trends?
- To focus on the extremes of the income distribution, rather than the overall distribution. Rather than use Lorenz curves or Gini coefficients, anti-poverty advocates often prefer to compare the richest and poorest 20 countries, the richest and poorest deciles of the global population, or (in the extreme) the richest and poorest country.
  - This paper argues that claims about the global income distribution ought to use information about the whole income distribution, not just the extreme tails of the distribution.

- As can be seen from Chart 4 above, while the Lorenz curve summarising global inequality in 1997 has moved inwards from the Lorenz curve for 1965 (ie, inequality has declined), the curves cross at the point corresponding to about the poorest 17 per cent of the world's population. That is, in 1997, the poorest 17 per cent accounted for cumulatively slightly less of the world's PPP-adjusted income than they did in 1965 (even though absolute income levels may have risen for some of those people).
- At least some countries from among the ranks of the rich will always be growing solidly, while among the ranks of the poorest countries, some at any one time are likely to be particularly disrupted by war, famine or disease, and thus to be reduced to living standards little, if at all, above subsistence. So any inequality measure which focuses only on the richest and the poorest country, or those other countries well out in the tails of the Lorenz curve, is likely to show continuing widening divergence.
- As a value judgement, it is perfectly reasonable to care more about ensuring a few dollars of extra income for the desperately poor than a few dollars extra for the already rich. Some inequality indexes, such as the Theil index, attribute a fixed higher weight to the poorer end of the income distribution. The Atkinson index allows the researcher to 'dial in' any chosen degree of poverty aversion. Researchers have shown that even using such indexes instead of the Gini index, the picture of narrowing global inequality is maintained. [Schultz (1998); Firebaugh (1999); Melchior and Telle (2001)]

### **Box 5: Six common misconceptions about global inequality: 'material errors' in the use of statistics**

1. 'The distance between the richest and poorest country [measured by GDP per capita] was about 3 to 1 in 1820, 11 to 1 in 1913, 35 to 1 in 1950, 44 to 1 in 1973 and 72 to 1 in 1992. [UNDP (1999) p 38]

Such comparisons are unstable and may be misleading (depending on the period under review) because of the often idiosyncratic movements of income in just a few countries. For example between 1973 and 1992, Luxembourg overtook the United States to become the richest country, while the Congo experienced catastrophic economic losses (a 60 per cent decline in income from 1965 to 1998) because of extreme political strife [Melchior et al (2000) p 9 fn 7]. In considering global inequality, it is preferable to use information on many or all of the world's countries, as in measures such as the Gini coefficient.

2. 'In 1960 per capita GDP in the richest 20 countries was 18 times that in the poorest 20 countries. By 1995 this gap had widened to 37 times, a phenomenon often referred to as *divergence...*'<sup>16</sup> [World Bank (2000) (b) p 51 Box 3.3; emphasis in original.]

This claim actually compares 4 different sets of countries over 35 years as if they were only two sets (richest and poorest 20) of the same countries. But in fact, the countries comprising both the richest and poorest 20 have changed, but particularly those in the poorest 20. For example, on one reckoning discussed below, the poorest 20 countries in 1975 contained 48 per cent of the world's population, but by 1999 only 7 per cent.

As the UN Statistical Commission's 'Friends of the Chair' (a panel of eminent statisticians) concluded of a similar type of claim made in the Human Development Report 1999, 'Presenting estimates for different time periods based on different sets of countries can be seriously misleading to readers if the time series or rate of growth is likely to be of primary interest.'

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16 Although not stated in the text cited above, a footnote to the Bank's accompanying diagram makes it clear that China was excluded from the calculations of the poorest 20 countries in 1960 (and was no longer in that group in 1995). But as discussed below, that 'graduation' was also achieved by a large minority of other countries in the 1960 group.



### **Box 5: Six common misconceptions about global inequality: 'material errors' in the use of statistics (continued)**

It recommended: 'The [Human Development Report Office] should provide comparable time series (in particular those based on a constant set of countries) to avoid having users draw false inferences from inconsistent statistics.' [Friends of the Chair of the United Nations Statistical Commission (2000) p 14-15, 30.]

3. 'In 1960 the 20 per cent of the world's population living in the richest countries had 30 times the income of the poorest 20 per cent – in 1997, 74 times as much. This continues the trend of nearly two centuries.' [UNDP (1999) p 36]

The quoted comparison is at exchange rates. Statisticians have agreed that conversion at purchasing power parities gives a more realistic comparison of living standards (see pp 18-21 above).

Moreover, the identification of trends is influenced by the choice of start and end points. Using PPPs, global income disparity peaked in 1968, remained at nearly those levels until 1976, and has gradually (and with annual fluctuations) declined since. [Schultz (1998), Figures 1 and 2]

Using PPPs, from 1968 to 1998, the ratio of incomes of the richest to poorest quintiles' decreased from 15:1 to 13.1 – that is, inequality decreased. The income of the poorest 20 per cent more than doubled, while that of the richest 20 per cent grew by 75 per cent. [Melchior et al (2000), p 16] This is a clear break in the trend of the last two centuries, not a continuation of it.

4. 'On average, initially poor countries have grown more slowly than rich countries, so that the gap between rich and poor countries has widened.' [World Bank (2000) (b) p 50]

For welfare purposes, it makes more sense to count people rather than countries. The gap between the richest and poorest countries (whether, say, the richest or poorest 10 or 20) has indeed widened, but the poorest countries are a changing group and now account for fewer people than ever before. An increasing majority of the developing world's population is now catching up in relative terms to the rich.

**Box 5: Six common misconceptions about global inequality: 'material errors' in the use of statistics (continued)**

5. 'In the past decade the number of poor people in the world (outside China) is estimated to have risen by more than 100 million.' [Thomas (2000)] (Vinod Thomas is a vice president of the World Bank)

or '...low human development countries (excluding India) have not raised the annual growth in their per capita income above 1.5 per cent in the past 33 years.' [UNDP (1996) p 11]

It is misleading to make a statement that purports to be about the number of poor people in the world (or the per capita income growth rates of the poorest), but exclude the biggest countries that have contributed the most to reducing the number of poor people in the world. In the first quote, if we exclude China, why not exclude India as well? In the second quote, if we exclude India, why not China? And if both of them, why not exclude Indonesia too? The statements, translated into their general form, read: 'Setting aside the countries that have succeeded in reducing the number of people in poverty, the number of poor people in the world is rising.'

6. 'By the late 1990s the fifth of the world's people living in the highest income countries had 86 per cent of the world GDP – the bottom fifth just 1 per cent.' [UNDP (1999) p 3]

Rhetorical statements from the World Bank frequently use the same formulation, rounded to the claim that the richest 20 per cent enjoy 80 per cent of world GDP.

These statistics compare national GDPs at market exchange rates. But since they are statements about the equity of living standards, they should use PPP conversions. At PPPs, the proportion of the world's goods and services produced by the richest 20 per cent of the global population was in the range of 60-65 per cent in the late 1990s, not 86 per cent.

The 'Friends of the Chair' judged that the UNDP's use of exchange rate conversions rather than PPPs in such comparisons was a 'material error' leading to a 'fundamentally distorted picture of the phenomenon being described'. [Friends of the Chair (2000), paragraph 59 page 28.]

## 'Divergence, big time' from slow compounding of productivity differences

From the dawn of human history to the mid-18th century, the world was a much more equal place than today. Productivity levels across the world were very low and fairly uniform.

'...the differences between the standards of living of the average peasant in the Yangzi delta, the average peasant in the Rhine valley, the average peasant in the Nile valley, and the average peasant in the Ganges delta were small: a factor of two at most. Malthusian population pressure kept populations high enough to push average standards of living worldwide close to subsistence, and more natural resources or better technology showed up much more in higher population densities than in higher standards of living.' [DeLong, (2001)]

The Industrial Revolution in the UK from about 1760 to 1830 lifted real per capita GDP growth rates by a factor of 4 or 5. But the ensuing annual average per capita growth rates over 1820 to 1870 still averaged less than 1.5 per cent. Even the inexorable compounding of that growth in the UK (and in the Western European countries and the US, which successfully deployed the same technologies) made very little observable difference for at least 75 years. As recently as 1820, global disparities in national average incomes had only risen to three, and three-quarters of the world's population lived below the then-equivalent of today's US\$1-a-day poverty line [World Bank (2000) (b) p 45].

'...so slow was the pace of change that people, or at least aristocratic intellectuals, could think of their predecessors of a thousand years before as effectively their contemporaries. Marcus Tullius Cicero [106 to 43 BC] a Roman aristocrat and politician, might have felt more or less at home in the company of Thomas Jefferson [1743 to 1826]. The plows were better in Jefferson's time. Sailing ships were much improved. But these might have been insufficient to create a sense of a qualitative change in the order of life for the elite. And being a slave of Jefferson was probably a lot like being a slave of Cicero.' [DeLong, (1998)]

Indeed, the shape of the international income distribution at the end of the 20th century still bears the influence of the dawn of the first industrial revolution in the mid 18th century. This is because the initial, passing surge of productivity growth in the West led gradually to sustainably higher incomes,

out of which more savings funded more investment in a virtuous circle of continued higher growth, compounded for 250 years.

The early 20th century saw an almost equally dramatic acceleration of productivity growth from about 1913 to 1972, from the deployment of further major technological breakthroughs of the late 19th century.<sup>17</sup> This 'second industrial revolution' started in the US but spread back to the same countries that were early diffusers of the first industrial revolution's technologies.

It had been theorised by earlier generations of growth specialists that, given free trade and capital flows, high savings and relatively low returns to marginal investment in richer countries would lead to capital flows and investment at higher return in poorer countries and gradual 'unconditional convergence' in living standards. Within the OECD membership and among the regions of western European countries, the US and Japan (which all shared advanced institutions and broadly pro-capitalist values), such convergence is indeed observable through the second half of the 20th century. And some formerly less developed countries (such as Japan, Korea, Singapore, Hong Kong and Taiwan) did catch up with or even overtake living standards in the countries that originally benefited from the industrial revolutions. But from about the middle of the 18th century until the last quarter of the 20th century, most poor countries were not catching up.

Thus at the end of the 20th century, the picture compared to the mid 18th century is (in the title of one influential analysis) 'divergence, big time'. [Pritchett (1997)] The narrowing inequality of the last thirty years has not been sufficient to overcome the widening inequality of the preceding 220 years. Possible reasons that have been identified for the 220 year divergence include the need for poor countries to enjoy peace, the rule of law, functioning economic institutions and a stable economic environment if they are to generate, attract and productively use savings and investment (either domestic or foreign).

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17 Gordon identifies the key technologies as electricity; the internal combustion engine; industrial chemistry (chemicals, plastics and pharmaceuticals); communications/entertainment (the telegraph, wireless and sound and film recording); and urban sanitation. [Gordon (2000)]

## The effects of central planning on global income equality

One important influence on income divergence over the first 70 years of the 20th century that is surprisingly little-mentioned is the failure of the century's biggest economic experiment, central planning. From 1917 to 1989, up to one-third of the world's population organised their economies by central planning, and many more (particularly in decolonising Africa and Asia) were influenced to follow related statist development models.

Economists have estimated that the initial effects of central planning in Russia and China were positive on measured GDP growth (though perhaps less so on citizens' actual living standards) [Boltho and Toniolo (1999), Table 7]. However once the early gains from capital deepening with established industrial technologies were exhausted, the central planning problems of allocative inefficiency, weak innovation and perverse incentives progressively detracted from economic performance.

The adverse consequences of central planning and other statist development models were important in limiting economic performance in much of the world around the third quarter of the 20th century. Recent analysis makes a telling criticism of the inward looking development models most de-colonising countries borrowed from central planning in that era:

'The postwar trade that was liberalized the most was in fact intra-OECD trade, not trade between the OECD and the rest. From the very beginning in the 1940s, the General Agreement on Tariffs and Trade explicitly excused low-income countries from the need to dismantle their import barriers and exchange controls. This permission probably lowered their national incomes, but it was consistent with the dominant protectionist and anti-global ideology prevailing in emerging nations at that time. Thus the succeeding rounds of liberalization under GATT, from the Dillon and Kennedy rounds through the Uruguay Round, brought freer trade and higher incomes mainly to OECD members. We emphasize again that these facts do not show that globalization favors rich participants. Rather, globalization favors all participants who liberalize, especially those who are newly industrializing, and penalizes those who choose not to liberalize, leaving them behind.' [Lindert and Williamson (2001) p 22]

The lost growth under central planning in the third quarter of the 20th century continues to be important for the level of national incomes and the evolution of national income distributions in the formerly centrally planned economies.

Looking ahead, income distributions that were extremely compressed under central planning by both the virtual elimination of private income from capital and the egalitarian administration of the wage distribution, could now be expected to widen.

‘A mechanism that mobilizes scarce resources for simple aims in a primitive economy, becomes progressively less efficient as the economy's degree of sophistication increases. ... Had planning been scrapped in the 1950s in Russia and in the 1960s in China, today's judgement might well be a good deal more favourable.’ [Boltho and Toniolo (1999), p 11]

## The persistence of extreme poverty

While the global income distribution is now narrowing in relative terms as a result of successes such as (but not limited to) India and China, the poorest 17 per cent nonetheless produce a smaller share of the world's output than they did 30 years ago (Chart 4). The number in extreme poverty has been roughly stable at about 1.2 billion over the 1990s (Table 1). Since the world population grows by about 70 million a year (mostly in poor countries), to merely keep the absolute number of extremely poor constant has itself been an achievement, albeit not one with which the world should rest satisfied. Because of this growth in the denominator, the proportion of the developing world's population in extreme poverty has fallen from 29 per cent at the start of the 1990s to 24 per cent at the end of the decade. [World Bank (2000) (b) p 23]

## Income poverty relative to the US\$1 a day measure

After the decade of the 1990s when real GDP growth in the low and middle income countries averaged 3.3 per cent a year, why has the estimated number in extreme poverty not fallen? Does the failure of the number to fall provide ‘fuel for the argument that economic growth does little to reduce poverty’? [Deaton (2000)] Are the estimates right? Is globalisation to blame, or are there other reasons? Has the same group of countries been permanently mired in extreme poverty, over the period of recent improvement, or is it a changing group? Answers to the foregoing questions requires examination of the specific country cases of persistent extreme poverty, rather than generalisations about the developing world as a whole.

First, it is worth noting that the number of poor below the \$1-a-day line is very ‘sticky’ because in Sub-Saharan Africa (home to about 290 million of the

extremely poor), many are in fact significantly below that poverty line [Chen and Ravallion (2000) p 13]. So quite a lot of pro-poor growth would still not initially lift many above that line. Realistically, there is likely to be slow progress in reduction of the Sub-Saharan poverty numbers for this reason alone, even after the policy and institutional preconditions for growth are met.

Second, the Asian crisis at the end of the 1990s probably had a noticeable effect on the trend in numbers in poverty. While the actual incidence of poverty in East Asia rose by less than half a percentage point with the crisis, if instead measured against the counter-factual of what might have happened had the crisis not occurred, some 20 million people remained in the ranks of the extremely poor who might otherwise have graduated to higher income ranks. 'So this assessment of the counter-factual suggests that we would have seen a continuing decrease in the number of poor in the developing world after 1993 [when the number fell from 1.3 billion to 1.2 billion] if not for the Asian crisis.' [Chen and Ravallion (2000) p 11]

**Table 1: Income poverty by region, selected years, 1987-98**

| Region                          | People living on less than \$1-a-day<br>(millions) |         |         |         |         |
|---------------------------------|--|---------|---------|---------|---------|
|                                 | 1987   | 1990    | 1993    | 1996    | 1998(a) |
| East Asia and Pacific           | 417.5  | 452.4   | 431.9   | 265.1   | 278.3   |
| Excluding China                 | 114.1  | 92.0    | 83.5    | 55.1    | 65.1    |
| Europe and Central Asia         | 1.1  | 7.1     | 18.3    | 23.8    | 24.0    |
| Latin America and the Caribbean | 63.7   | 73.8    | 70.8    | 76.0    | 78.2    |
| Middle East and North Africa    | 9.3  | 5.7     | 5.0     | 5.0     | 5.5     |
| South Asia                      | 474.4  | 495.1   | 505.1   | 531.7   | 522.0   |
| Sub-Saharan Africa              | 217.2  | 242.3   | 273.3   | 289.0   | 290.9   |
| Total                           | 1,183.2  | 1,276.4 | 1,304.3 | 1,190.6 | 1,198.9 |
| Excluding China                 | 879.8  | 915.9   | 955.9   | 980.5   | 985.7   |

| Region                                  | Share of population living on less than \$1-a-day<br>(per cent) |      |      |      |         |
|---|---|------|------|------|---------|
|   | 1987  | 1990 | 1993 | 1996 | 1998(a) |
| East Asia and Pacific                   | 26.6  | 27.6 | 25.2 | 14.9 | 15.3    |
| Excluding China                         | 23.9  | 18.5 | 15.9 | 10.0 | 11.3    |
| Europe and Central Asia                 | 0.2   | 1.6  | 4.0  | 5.1  | 5.1     |
| Latin America and the Caribbean         | 15.3  | 16.8 | 15.3 | 15.6 | 15.6    |
| Middle East and North Africa            | 4.3   | 2.4  | 1.9  | 1.8  | 1.9     |
| South Asia                              | 44.9  | 44.0 | 42.4 | 42.3 | 40.0    |
| Sub-Saharan Africa                      | 46.6  | 47.7 | 49.7 | 48.5 | 46.3    |
| Total (as per cent of developing world) | 28.3  | 29.0 | 28.1 | 24.5 | 24.0    |
| Excluding China                         | 28.5  | 28.1 | 27.7 | 27.0 | 26.2    |

(a) Preliminary.

Note: The poverty line is \$1.08 a day at 1993 PPP. Poverty estimates are based on income or consumption data from the countries in each region for which at least one survey was available during 1985-98. Where survey years do not coincide with the years in the table, the estimates were adjusted using the closest available survey and applying the consumption growth rate from national accounts. Using the assumption that the sample of countries covered by surveys is representative of the region as a whole, the number of poor people was then estimated by region. This assumption is obviously less robust in the regions with the lowest survey coverage. For further details on data and methodology see Chen and Ravallion (2000).

Source: [World Bank (2000) (b) p 23].

## Statistical issues in the US\$1-a-day estimates

There are also some reasons to doubt the accuracy of the data on people living below the US\$1-a-day poverty line, and to suspect that there is an overestimation which is rising over time.

The estimate requires conversion of the US\$1-a-day amount into local currencies by PPPs, and then the estimation from national household consumption or income surveys of how many individuals live below the local currency equivalent of that poverty line. So the process builds in all the



uncertainties arising from limitations in the PPP numbers for poor countries. Researchers have noted that these PPP problems drive large churning over time in poverty numbers for individual countries, which cannot be reconciled with real changes observed 'on the ground' (such as rates of real per capita GDP growth in local currencies, or observed rises in consumption of foodstuffs, etc). [Deaton (2000) pp 4-5].

Another potentially serious problem is that the national sample surveys of household consumption or income estimate consumption to be growing noticeably slower than per capita consumption in the national accounts of those same countries. This tendency is prevalent around the developing world, and particularly marked in India, China and Latin America.

The picture in India warrants particular comment. India alone accounts for about one-third of the world's 1.2 billion in extreme poverty, more than any other country. It has a strong statistical service, and a high academic interest in its poverty measures [World Bank (2000) (b) p 26, Box 1.8].

- Its household expenditure survey estimates of consumption used to roughly agree with its national accounts estimates in the 1950s; now, survey-based consumption estimates are only about half the national accounts estimates. If the differences were resolved in favour of the national accounts measures, the numbers apparently living below the US\$1-a-day line would fall dramatically.<sup>18</sup>
- Price index problems have also been estimated to cause overstatement of poverty numbers by some 23 million people.
- And most remarkably, experiments have suggested that, if household surveys were conducted more frequently (as happens in richer countries) thus improving peoples' recall of their actual consumption, about 175 million Indians would be moved above the poverty line.
- 'The change in the survey reporting period reduces Indian poverty by as much as the total number of poor in China! Clearly, the 1.2 billion has a very large margin of error.' [Deaton (2000) p 26]

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18 Even if, for want of detailed reconciliation between the national accounts and household survey data, we merely took the average of the two measures, the reduction in the numbers in poverty would be significant.

One prominent Indian development economist, T.N. Srinivasan, concludes that:

‘Under the circumstances aggregate poverty estimates are of limited, essentially propagandistic rather than analytical value.’ [Srinivasan (2000) p 15]

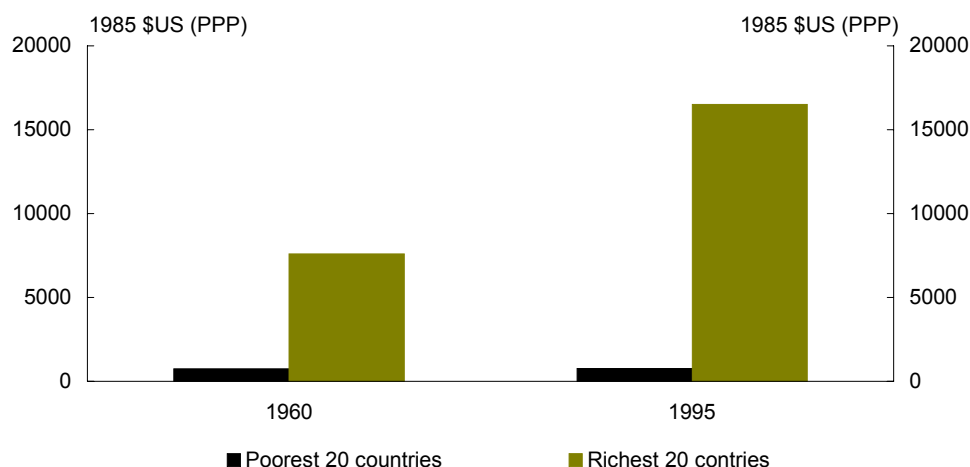
This paper does not raise these measurement issues in order to question the seriousness of the poverty problem. Obviously, those perhaps erroneously counted as living below the US\$1-a-day poverty line are not rich: they are very poor, rather than extremely poor. But the success of economic growth in the late 20th century in raising extremely poor people to the ranks of the very poor is not trivial, either to the people concerned or to the analysis of what is happening to global poverty and inequality, and of discerning what policies work best to reduce poverty.

As in the case of inequality statistics, there is clearly a strong argument in the area of poverty numbers for greatly improving international statistical practice, so as to better understand and analyse what is going on.

### **Movement in the ranks of the world’s poorest countries**

Recent papers from the United Nations [UNDP (1999) p 38] and the World Bank [World Bank (2000) (b) p 51] have featured charts showing static or negative real GDP per capita growth in the poorest group of countries over recent decades. Chart 6 reproduces a recent World Bank representation of this approach.

**Chart 6: 'Widening gaps between rich and poor countries account for much of the increase in worldwide income inequality across individuals over the past 40 years'**



Note: Population weighted averages of per capita GDP in the indicated groups, based on a sample of 123 countries with complete data on per capital GDP over the period 1960–95. China is excluded (by the World Bank) from the poorest 20 in 1960.

Source: [World Bank (2000) (b) Box 3.3 p 51]

However, these comparisons are not based on unchanged samples of rich and poor countries through time. In particular, the group of 20 poorest countries has been a constantly changing one. The number of countries in the world has more than tripled since 1945, providing a steady supply of new states, most with weak economic institutions and many impoverished from wars, a fact that is disguised in group comparisons. This leads to a pessimistic impression of long-term development trends, by introducing a 'failure bias' into analysis (ie the emphasis is placed on whichever 20 countries are the worst GDP performers at the time, rather than on tracking a constant group of poor countries, many of which have commenced GDP growth and thereby lifted themselves out of the poorest 20). In an attempt to grapple with this problem, the World Bank has excluded China from its figures for 1960 in Chart 6, but the issue is broader than just this one large example of successful growth.

Table 2 provides one listing of the world's 20 poorest countries in 1975, 1980, 1985, 1990, 1995 and 1999 using a purchasing power parity series provided by the World Bank. Different PPP series (such as the Penn World Table series) might produce a somewhat different listing, and it would be undesirable to build arguments related to precise rankings on lists such as in Table 2. This paper restricts itself to several broad points, which are likely to be supported in other possible PPP comparisons.

In total over the 24 years and at the six observation points, 31 different countries have been in the group. Eight countries that were originally in the poorest 20 in 1975 achieved sufficiently strong growth in GDP per capita to leave the ranks of the poorest 20 by 1999: China, India, Pakistan, Bangladesh, Nepal, Dominica, Lesotho and Indonesia.

The poorest 20 countries in 1975 had a combined population then of 1.9 billion and represented 47.6 per cent of the world's population at that time. The poorest 20 countries in 1999 had a combined population of 434 million and a share of the world population of 7.3 per cent. The 20 poorest countries used to be a mix of African, South Asian and East Asian countries with one Caribbean country (Dominica). Today, 19 of the poorest 20 are in sub-Saharan Africa; the Republic of Yemen is the twentieth.

**Table 2: Twenty poorest countries: 1975 to 1999**

|   | 1975   | 1980 | 1985             | 1990  | 1995                                 | 1999 |
|---|--|------|------------------|-------|--------------------------------------|------|
| Countries<br>now in<br>poorest<br>20 group  | Benin, Burkina Faso, Burundi, Chad, Guinea-Bissau, Malawi, Mali, Nigeria, Sierra Leone |      |                  |       |                                      |      |
|   | Kenya  |      |                  | Kenya |                                      |      |
|   | Ethiopia, Madagascar, Mozambique, Zambia   |      |                  |       |                                      |      |
|   | Niger  |      | Niger            |       |                                      |      |
|   | Congo (Republic)   |      | Congo (Republic) |       |                                      |      |
|   |  |      |                  |       | Tanzania, Yemen (Republic)           |      |
|   |  |      |                  |       | Congo (Democratic Republic), Eritrea |      |
| Countries<br>once in<br>poorest 20<br>group | Uganda   |      |                  |       |                                      |      |
|   | Bangladesh, Nepal  |      |                  |       |                                      |      |
|   | Sudan  |      |                  |       |                                      |      |
|   |  |      | Bhutan           |       |                                      |      |
|   | China, Pakistan  |      |                  |       |                                      |      |
|   | Dominica, India, Indonesia, Lesotho  |      |                  |       |                                      |      |

A few more countries stayed in the poorest 20 over 24 years than graduated from the group, but still it is striking that a large minority of countries did succeed in growing fast enough to make extraordinary progress against poverty. Moreover, the original growth prospects for some of these countries were seen thirty or forty years ago to be just as bleak as the growth prospects today for sub-Saharan African countries.

For example, for the period 1913 to 1950, both China and India are estimated to have suffered declines in real per capita GDP of 0.3 per cent a year, and even in the following quarter-century, their positive growth rates were much less than their recent growth rates. [Crafts (1999), Table 2] But now,

‘As best as we can estimate, India's real GDP per capita at constant prices has grown at an average of four per cent per year over the past two decades – a pace at which per capita income doubles every eighteen years. As best as we can estimate, China's real GDP per capita at constant prices has grown at an average of seven per cent per year over the past two decades – a pace at which per capita income doubles every decade. ... Nearly two and a half billion people in these two countries have seen their material standards of living and productivity levels increase remarkably.’ [DeLong (2001)]

Over the last quarter century, what policies and domestic institutions separated those countries that have lifted themselves out of Table 2 from those for whom extreme poverty persists, or has even worsened?

One analytically suggestive grouping of the set of the countries from Table 2 is as follows:

- **Group A:** Countries whose GDP per capita has improved sufficiently over time for them to leave the list.
  - This group comprises Bangladesh, Bhutan, China, Dominica, India, Indonesia, Lesotho, Nepal, Pakistan, Sudan and Uganda.
- **Group B:** Countries that have been consistently poor performers – remaining in the poorest 20 countries and not substantially improving living standards since 1975.
  - Benin, Burkina Faso, Burundi, Chad, Republic of the Congo, Guinea-Bissau, Kenya, Malawi, Mali, Mozambique, Nigeria, and Sierra Leone constitute this group.

- This category also includes countries that entered the list (either because newly-created, or having data become available for the first time) part way through the period and remained there: Eritrea, Ethiopia, Tanzania and Yemen.
- **Group C:** Countries where PPP-adjusted GDP per capita has fallen substantially over the period, either entering the list of poorest 20 countries or worsening their position within the list.
  - This category consists of the Democratic Republic of the Congo (the former Zaire), Madagascar, Niger and Zambia.

The most significant factors differentiating among the groups are involvement in conflict and political instability coupled with weak trade growth (Groups B and C), contrasting with increasing openness in the economy and peace in Group A countries.

- Comparison between the three groups produces a striking dissimilarity in average annual percentage growth of exports of goods and services from 1965 to 1998. The average growth for Group A countries is 6.6 per cent per annum, compared to 3.1 per cent per annum for Group B and 0.1 per cent per annum for Group C. It has been clearly shown that trade growth and income growth are not merely correlated, but that there is causation, from trade growth, to income growth [Bhagwati and Srinivasan (1999)].
- It is also notable that the 8 countries from Group A that had 'graduated' from the 1975 list of the world's 20 poorest countries by 1999 had, with one exception (Nepal), achieved such strong relative growth as to begin convergence towards developed countries' growing real per capita GDP.<sup>19</sup>
- Members of Groups B and C have merely to be listed to illustrate the damage to economic performance that is associated with civil conflict, political instability and poor governance.<sup>20</sup> The IMF has also recently tabulated the relatively poorer performance of those sub-Saharan African countries affected by war or civil disturbances [IMF (2001) pp 32-33].

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19 This identification of convergence follows the IMF's categorisation of developing countries into fast convergers, slow convergers, those not converging, and those regressing. See [IMF (2000) (b) p116].

20 The question of the direction of causality is further discussed below. The following examples are drawn from [Easterly (2001)] and other sources cited therein.

- A one-party state since 1978, Sierra Leone's economic performance deteriorated rapidly since the commencement of civil war in 1990.
- Zambia was ruled in the interests of the Nyanja group (15 per cent of the population) in the face of periodic riots by the Bemba (37 per cent), until democratic elections in 1991, in which the Bemba group led the winning coalition.
- Economic mismanagement and recent ethnic conflict has caused real per capita incomes in the Democratic Republic of the Congo to fall substantially.
- The Nigerian government had mainly represented the Muslim north of the country, with most government processes being a competition by Nigerian states seeking their share of rents from oil production.
- Similarly, Burundi has experienced ethnic conflict. Malawi experienced 30 years of authoritarian rule without significant economic reform until 1994, and the Ethiopian economy has struggled, first under socialist rule, then border war with neighbouring Eritrea.
- Burundi, Ethiopia and Nigeria have all experienced periods of genocidal killings.
- The Republic of Yemen and its antecedent northern and southern states was once known as *Arabia felix* because of its fertility, but has suffered from the early 1960s to the mid 1990s from political assassinations, uprisings and civil wars within and between the former Yemen Arab Republic and the Peoples' Democratic Republic of Yemen.
- The Prime Minister of Ethiopia recently noted: '... ethnic, religious and other sources of diversity are the hall-marks of African societies ....' and 'Rent-seeking in our economies is not a more or less important phenomenon as would be the case in most economies. It is the centrepiece of our economies.'<sup>21</sup>

These all represent severe problems, but they are not the problems of 'globalisation' in general or closer international economic integration in particular. Chart 7 shows that African trade (exports plus imports as a share of world trade) has been slightly declining as a share of world trade, with the

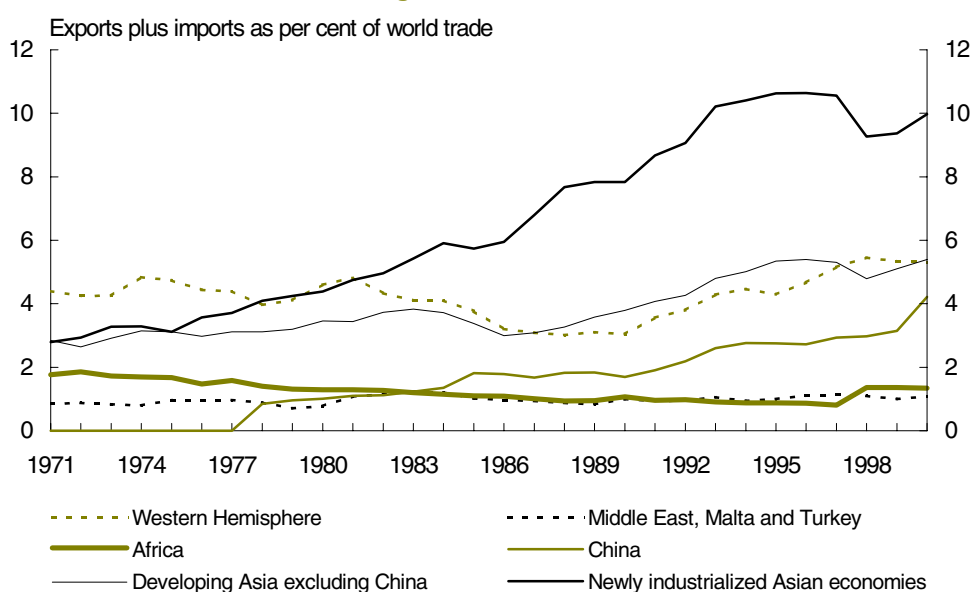
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21 Menes Zenawi, Remarks at Harvard University, 5 September 2000, cited in [Easterly (2001)].

exception of the transient increase in its share driven by the contraction during the 1997-1998 Asian crisis of imports in the crisis-affected countries.

It is one of the ironies of the last few years that globalisation's critics attribute to it economic problems that in fact arise from ethnic and religious fragmentation, civil war, corruption, and the absence of modern institutions and social trust. These problems have existed from the dawn of civilisation, and are countered by the international diffusion of those modern ideas, ideals and institutions that have evolved to most successfully deal with them.

**Chart 7: Declining African share of world trade**



Source: IMF staff estimates, updating [International Monetary Fund (2000) (a)].

## Wars and 'tropical underdevelopment': causes or effects?

Civil unrest and wars have been common in many of today's 20 poorest countries. More broadly,

'Today, nearly all wars occur not between countries, but within them. Of the 27 substantial armed conflicts that took place in 1999, 25 were civil wars. These wars also took place within relatively poor countries. Of the 40 poorest countries in the world, 24 are either in the midst of war or have recently emerged from it. A fifth of all Africans live in countries ravaged by armed conflict.' [Wolf, (2001)]



Africa is the most conflict ridden region on earth, and the only region in which the number of armed conflicts has been on the increase.<sup>22</sup> But as with many correlations in economics, the question is causality, if any: does civil strife cause poverty, or does poverty cause civil strife, or are both caused by other factors?

Recent research suggests the picture is complex, with wars perhaps as much a consequence of the nature of African poverty, as its cause. The global pattern of civil wars suggest that countries are particularly vulnerable to civil war when they are poor (so the opportunity costs of going to war are low), have weak governments (unable to finance a predominant military force to crush rebels), have heavy dependency on resource exports (both taxable by governments and lootable by rebels), and have a dominant ethnic or religious group, but also a large ethnic or religious minority permanently excluded from proportionate influence on government. (Highly diverse societies are not so prone to civil war, apparently because of the difficulty of maintaining a rebel alliance among many small minority groups.) Finally, having had one civil war disposes to others: successive wars are frequently about the terms of settlement of earlier wars. [Collier and Hoeffler (2000)]

Ethnic or religious divisions constitute a particular challenge for implementing good economic policies, as there is low communal trust; keen competition for government pay-offs; high corruption; competition among ethnic or religious groups to over-exploit natural resources and so reap economic rents before the other group can; little preparedness by any government to make public investments beyond its own ethnic or religious support base; under-investment in education (because the government invests only in the education of the preferred group, religion or sex); a tendency for public offices to be either monopolised by the dominant group, or parceled out among groups on a quota basis (which creates damaging policy biases as each arm of the bureaucracy conducts policy to benefit its own ethnic support base and tax the others'); and a tendency for each group '... to 'free ride' on inflation stabilization, trade opening, privatization or another (sic) costly policy reform, hoping that the costs will be borne by the group that initiates reform.' [Easterly (2001) p 5]

If, as Collier and Hoeffler suggest, part of sub-Saharan Africa's problem is not that it is unusually disposed to violence, but that it is unusually poor in ways

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22 Stockholm International Peace Research Institute's 1999 Yearbook, cited in [Collier and Hoeffler (2000) p 1].

that lower the opportunity costs of violence, it is useful to ask why other formerly very poor and similarly ethnically or religiously fragmented countries in South Asia and East Asia graduated out of the list of the poorest 20 countries, while Sub-Saharan African countries have not?<sup>23</sup>

Recent research suggests that good quality institutions are particularly valuable in cases of high ethnic or religious fragmentation, by creating 'rules of the game' that reduce the economic and political problems mentioned above. The institutions necessary to achieve these outcomes include the rule of law, freedom from expropriation, freedom from government repudiation of contracts, and bureaucratic quality. Strikingly, these institutional strengths are those likely both to protect minority political rights, and to be supportive of economic activity. Initial research suggests that such institutional strengths not only increase economic performance, but also reduce the risks of civil war and genocide. [Easterly (2001)]

This line of argument still leaves a profound political problem: how to build such institutions where they are lacking? Obviously the necessary constitutional improvements have to be implemented by the communities and governments concerned; they cannot be simply wished on them by well-intentioned foreigners.

Implementation of the necessary reforms will not be easy, but the increasing concentration of persistent extreme poverty among the countries of sub-Saharan Africa appears to have its roots in problems that are unrelated to globalisation or increased international economic integration. Correction requires the implementation of those political and economic values and institutions that are the hallmark of modernity and economic success and are prevalent elsewhere in the world, but still underdeveloped in much of Sub-Saharan Africa.

### **The probably slow narrowing of absolute income gaps**

Even with the continuation of good policies, wide differences in starting-point productivity and living standards, together with the inexorable arithmetic of compound growth, dictate that absolute differences in average national per capita GDPs will continue to widen for some years.

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<sup>23</sup> Singapore, Malaysia and Thailand provide examples of ethnic diversity and economic success from very poor starting points.

The turbulence and extraordinary progress of the 20th century counsels caution in attempting to foresee the 21st century. Yet those interested in how current, very wide income gaps between rich and poor countries might be narrowed, are driven to look at distant horizons. The world's current inequality in living standards compounded over some 220 years, and it will take decades to reduce it significantly.

Today, populous poor countries such as India and China have real per capita GDP levels of about one-tenth those of rich countries, compared at PPPs.

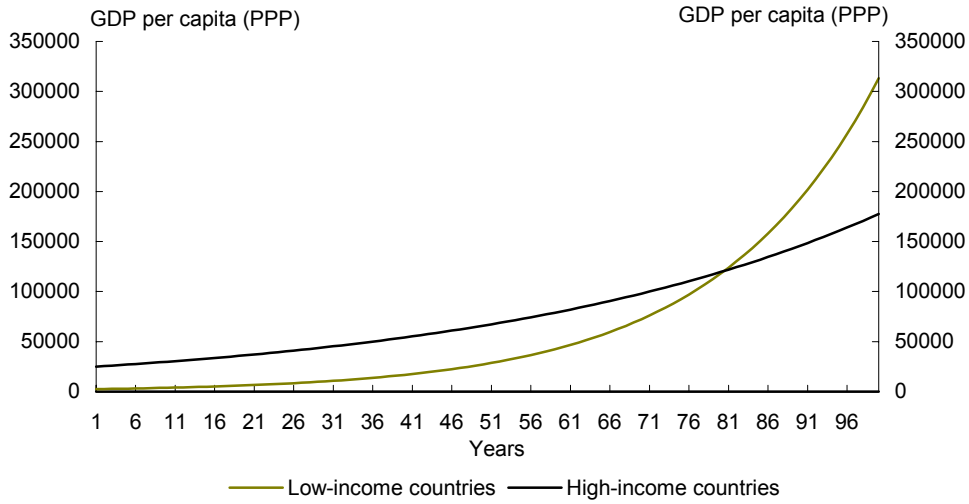
Without in any way offering a forecast, Charts 8 and 9 illustrate with hypothetical numbers what would happen to a pair of countries at current per capita income levels of \$25,000 and \$2,500, growing steadily at 2 per cent per annum and 5 per cent per annum respectively.

Under these assumptions, the relative income gap declines continuously because of the poorer country's faster per capita growth rate, but it would take about 50 years before the absolute (dollar) income gap between the two countries would start to decline. The remaining gap would then be eliminated quite quickly over just the next 30 or so years.

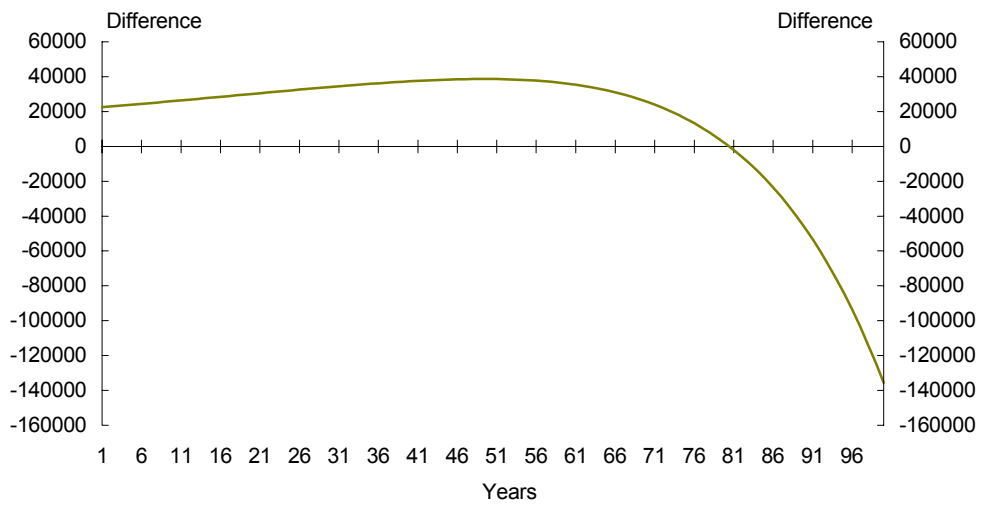
The extrapolation is in a sense unrealistic. Different peoples value material and non-material objectives differently. Growth is seldom steady over very long periods. Productivity differences are unlikely ever to disappear completely (witness today's OECD members). And very rich countries may come to value future growth less highly than they do today. (In the illustration given, the country with real per capita incomes today of \$25,000 would have per capita incomes around \$175,000 by the end of this century if it sustained 2 per cent per annum growth.)

Nevertheless, the exercise does forewarn that while the age of diverging income growth between the rich and poor might now be past, the age of rising absolute income differences is not. But the important objective is not some abstract and implausible global goal of future equality of per capita national incomes, but the practical goals that the extremely poor should be able to live decently, sustainably and with rising living standards through the dignity of their own efforts; that the world's peoples ought to be able to make their own choices about their economic and non-economic priorities; and that the global economic environment provide the framework and the assistance necessary for the world's poorest to become much richer within the space of a few decades.

**Chart 8: Relative and absolute convergence of GDP per capita: hypothetical rich and poor countries**



**Chart 9: Differences in per capita income between high-income and low-income countries**



## Conclusions

The 20th century has seen unprecedented improvements in living standards, including for the poorest fifth of the world's population. In 1820, three-quarters of a century after the dawn of the first industrial revolution, about three-quarters of the world's population still lived on less than the then-equivalent of US\$1-a-day. Today, the proportion below that poverty line is down to one-fifth.

Although real living standards rose in the 20th century for even the poorest fifth of the world's population, living standards in richer countries grew faster still over the century as a whole. The global income distribution continued to widen for about the first three quarters of the 20th century, before beginning to narrow over the last quarter-century for the first time since the initial industrial revolution, a quarter of a millennium ago. While the income distribution was still wider at the end of the century than at the start, the world may have 'turned the corner' towards narrowing global income inequality.

But turning the corner is one thing; staying the course is another. Further reductions in extreme poverty and narrowing of the international income distribution are not automatic: they will require the maintenance and extension of the policies that proved successful in the last half of the 20th century. The main elements of the successful policies include:

- Open markets within the framework of transparent multilateral rules and dispute settlement mechanisms. There is a particular challenge for rich countries to open their markets to the exports of the poor, especially the agricultural and simple manufactured products that are the developing world's most likely specialisations in early stages of growth.
- Stable international growth facilitated by continued reform of international financial arrangements.
- The spread in the developing world of growth-oriented policies proven by the spectacular successes of the rapidly growing economies of the last 30 years.
- The creation of institutions and policies in the world's poorest countries that have been proven by others in the developing world simultaneously to facilitate wealth creation and to discourage corruption, civil war and the abuse of minority rights.

- Sustainable debt burdens, through the enhanced initiative for Heavily Indebted Poor Countries.
- The continuation of effective multilateral and bilateral aid flows to those most in need of assistance, and prepared to institute the domestic reforms that have been shown to work by the rest of the developing world.

All these policies require public support based on understanding that the policies have paid dividends in the latter part of the 20th century – a support that is presently lacking in many quarters of protest against globalisation.

This study emphasises the continuing, primary responsibility of good national policies to improve living standards, even in an age of globalisation. Increased international economic integration is not the cause of persistent extreme poverty, but rather the lack of good national governance, sound national institutions and – in both rich and poor countries – good national policies.

The popular but erroneous belief that international inequality is still widening because of globalisation is very prominent among globalisation's critics. That belief is based on a focus on the very poorest countries alone (which is understandable but inappropriate, since their problems arise mostly from failures of domestic policy and institutions), and a confusing use of inappropriate statistics, still prevalent among some international organisations.

One useful corrective to scepticism about the benefits of integrated global markets in trade and investment would be better statistics on the real trends in poverty and inequality, and better international practice in presenting the statistical evidence. Box 6 provides one set of suggestions for a concerted international work program.

In the words of economic historian and productivity specialist Bradford DeLong,

'...now it is much harder to argue that the world economy is permanently bound to produce slower economic growth in poor countries than in rich countries... The success of Indian and Chinese growth over the past two decades makes the failure of economic growth to take hold in other very poor countries even more heartbreaking. Most of their people have not yet found a place on the escalator that leads to modernity. But cast your mind back a generation and remember how poorly India's and China's economic growth prospects were then viewed. It should be no more difficult to spark economic growth in the next generation for this final group of about one billion people who have not shared significantly in world economic growth.' [DeLong (2001)]

## **Box 6: A manifesto for better analysis of global poverty and inequality**

Global poverty is the 21st century's most serious international economic problem. Its analysis and correction are not helped by exaggeration. Effective policies to combat poverty can not be built on inappropriate use of flawed statistics about the extent, distribution and causes of poverty.

As a foundation to better progress against extreme poverty in the 21st century, it might be possible to achieve agreement in relevant international institutions that:

1. Collection and publication of official statistics should be objective, not part of the advocacy process. Objective collection and publication of international statistics is a key foundation of sound analysis, constructive public debate, and good policy.
2. International comparisons of national shares of global production and of living standards should use Purchasing Power Parities, not exchange rates, as already agreed by national statisticians and embodied in the UN's 1993 System of National Accounts.
3. Statements about the global income distribution should use statistics that fairly represent the entire distribution, not only the extreme tails of the distribution.
4. Statements about income trends in groups of countries should specify the countries involved, to clarify the connection between their policies and their performance. Analyses should either compare the same groups over time, or highlight the ways those groups have changed.
5. Statements about trends in global poverty and inequality should not exclude successful developing countries from the analysis.

Major national governments could support a concerted statistical program in the appropriate international organisations to produce better statistics. And they could encourage cooperation among, and tighter management within, the UN Development Programme, the World Bank, the IMF, the OECD and the regional development banks to ensure consistent analytical use of PPPs in their publications and the avoidance of 'material errors' in statistical practice.

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