

**Getting Better in Pictures**

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By Charles Kenny

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**ABSTRACT**

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A lot of people are depressed about the state of global development. And they are particularly miserable about Africa. *Getting Better: Why Global Development Is Succeeding—And How We Can Improve the World Even More* (Basic Books) explores the bad news and the good news about development. It lays out the evidence on growing income disparities between the global rich and the global poor that are at the heart of a narrative of crisis. And it chronicles the failed search for a silver bullet to overcome economic malaise. But it also discusses the considerable successes of development. Not least, the evidence for any country being stuck in a Malthusian nightmare is threadbare. The book points to global progress in health, education, civil and political rights, access to infrastructure and even access to beer. This progress is historically unprecedented and has been faster in the developing world than in the developed. The book argues that ideas and technologies are the driving forces behind progress. And it suggests what the success of development and the importance of innovation to that success mean for policies in and policies towards the developing world.

The book has no charts or graphs. However, many of the arguments made in the book are easily illustrated. This essay provides a summary of the book and pictures to accompany the discussion.

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## I. Introduction: Abandon Hope?

A lot of people are depressed about the state of global development. And they are particularly miserable about Africa. There is a widespread belief that the region remains mired in a Malthusian trap, home to many of the “bottom billion” who are living in “fourteenth century” conditions. And many argue that aid has been a dead loss in fixing the problem. According to this view of the world, we’re stuck in a serious crisis of development.

*Getting Better* explores the bad news and the good news about development. It lays out the evidence on growing income disparities between the global rich and the global poor that are at the heart of a narrative of crisis. And it chronicles the failed search for a silver bullet to overcome economic malaise.

But it also discusses the considerable successes of development. Not least, the evidence for any country being stuck in a Malthusian nightmare is threadbare. The book points to global progress in health, education, civil and political rights, access to infrastructure and even access to beer. This progress is historically unprecedented and has been faster in the developing world than in the developed.

The book argues that ideas and technologies are the driving forces behind progress. And it suggests what the success of development and the importance of innovation to that success mean for policies in and policies toward the developing world.

## II. The Bad News: Diverging Incomes

Despite declining global levels of poverty, poor countries have grown more slowly than rich ones since the Second World War. Harvard Economist Lant Pritchett titles his analysis of the long term global evidence on income trends “Divergence, Big Time.” These trends have left global income considerably skewed in favor of a lucky few. Today, the top tenth of the World’s population is about 100 times richer than the bottom tenth.

The evidence regarding large parts of Africa is particularly stark—stagnant incomes since time immemorial, leaving the continent ever further behind. For example, the United States had a GDP per capita a little more than seven times larger than Senegal in 1960. By 2004, the United States was around 26 times richer.

Figure 2.1 shows evidence on global income divergence from a source with large and recent country coverage: the Penn World Tables.<sup>1</sup> Covering 95 countries from 1960 to 2000, the data suggest that average incomes for these countries increased from \$3,900 to \$10,250 over 40 years (marked by the thick black line). The two thin black lines show the progress of income in the poorest

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<sup>1</sup> <http://pwt.econ.upenn.edu/>

and richest 20 countries out of our sample. The line for the richest trends up. The line for the poorest hardly budges. Average income among the 20 richest countries increased 181 percent over that period, a little ahead of the global average. For the poorest 20 countries over a 40-year period, income increased by just \$267, or 38 percent—a performance far weaker than average. This figure excludes many of the countries with the poorest performance, which did not report GDP data over the full 40-year period. Some of these excluded countries will have seen incomes decline between 1960 and 2000.

**Figure 2.1: Divergence of Global Incomes**

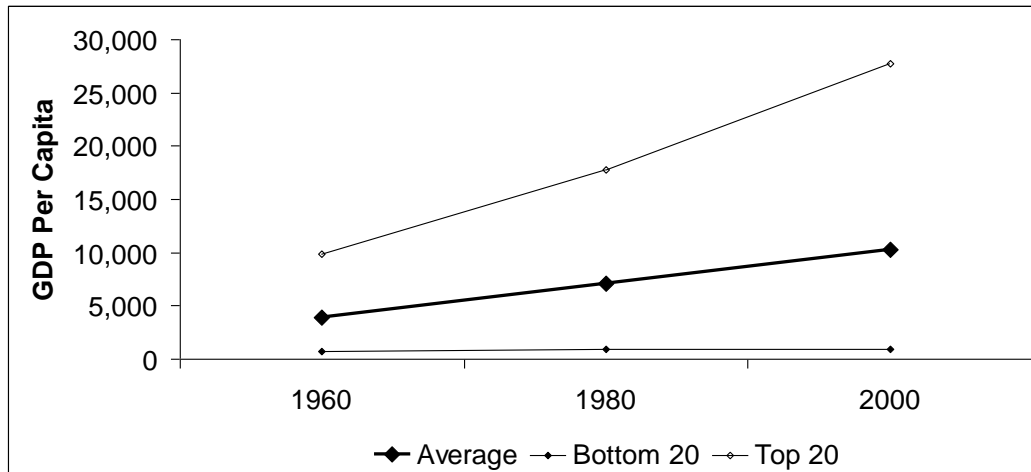


Figure 2.2 displays data on incomes for a little over 5 billion people in 1993.<sup>2</sup> It uses data on individual rather than country incomes, and so accounts for income inequality both within and across countries. The horizontal scale measures cumulative population, the vertical scale measures income. The graph suggests that about four-and-a-half billion people live on less than \$10,000 a year.

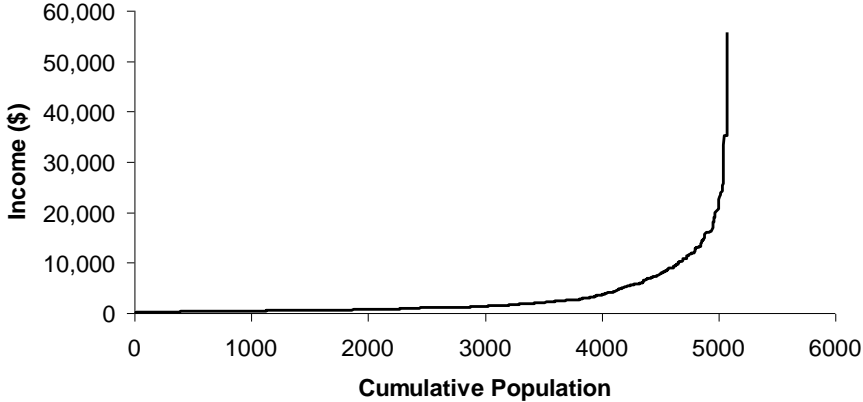
Figure 2.3 shows that relative income is sticky over time. It takes the GDP per capita figures for the 39 countries for which Maddison provided 1900 and 2003 data, ranks them according to per capita income in these two years, and plots the results.<sup>3</sup> Each diamond on the graph represents one country. Relatively poor countries in 1900 are toward the left of the graph (the poorest is snug against the y-axis). Relatively poor countries in 2003 are toward the bottom of the graph. That most countries line up along a diagonal from bottom left to top right suggests that there is a clear

<sup>2</sup> Using data from Milanovic 2002. Data is as provided by Milanovic; Yemen and the bottom 10 percent of urban Argentina and New Zealand are dropped from the sample (reported annual incomes were given as \$3.3 and \$195, respectively).

<sup>3</sup> Data from Maddison 2001; updated data available at [http://www.ggdc.net/MADDISON/Historical\\_Statistics/horizontal-file\\_02-2010.xls](http://www.ggdc.net/MADDISON/Historical_Statistics/horizontal-file_02-2010.xls)

relationship between 1900 income ranking and 2003 income ranking. The average country has only moved just over five places in the rankings over 103 years (from third poorest to eighth poorest out of 39 countries, for example). The two outliers to the top left of center are Japan and Norway. These countries have grown comparatively rapidly, and have climbed in the income rankings over the century. The country that has fallen furthest in the rankings, by fifteen places, is New Zealand. But most countries are in about the same place in terms of income ranking in 2003 as they were in 1900.<sup>4</sup>

**Figure 2.2: Global Incomes**



**Figure 2.3: Country Income Ranks in 1900 and 2003**

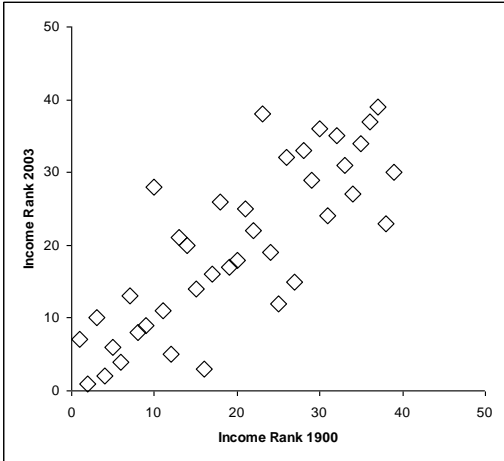


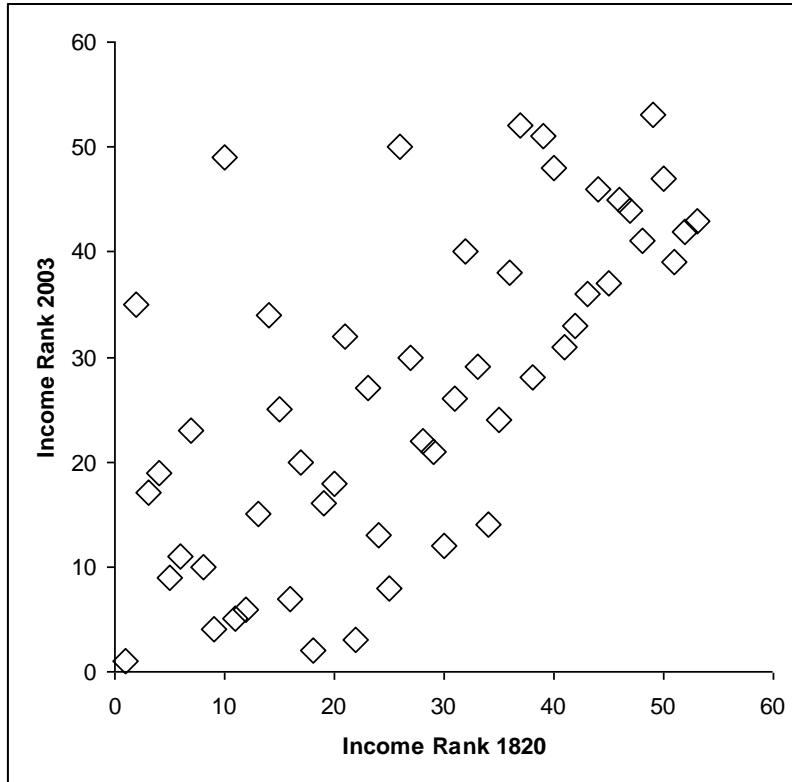
Figure 2.4 (Country Income Ranks in 1820 and 2003) shows that even if we take the relationship further back, it appears to hold strong. Ranking the 53 countries with 1820 and 2003 data, the figure suggests there is still a clear pattern: the average country has moved only 10 places in the rankings

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<sup>4</sup> This is during a period where the average income has increased more than sixfold, from just over \$2,000 to over \$13,000, and the gap between the richest and poorest countries in our sample has increased from \$4,000 in 1900 to \$27,000 in 2003.

over 183 years. The outliers with *positive* performance are Australia and New Zealand. Jamaica fell furthest in the rankings, by 20 places. But again, being relatively rich in 1820 is a good predictor of being relatively rich in 2003.

**Figure 2.4: Country Income Ranks in 1820 and 2003**



### III. The Worse News: It's Hard to Raise Growth Rates

East Asia is the one developing region that has managed to sustain economic growth rates higher than rich countries over the last fifty years. This East Asian “miracle” is a topic in numerous academic papers—over 6,500 by one rough measure—and a subject of lively debate about causes and policy pointers. Sadly, no consensus has emerged. Those who believe that investment is fundamental to economic growth war against technologists over the role of capital versus ideas in East Asia’s performance. Dirigistes battle free marketeers over the lessons regarding the state in development. We don’t even know for certain if government policies of any type were central to the process at all. While in East Asia we don’t know whom to praise, in Africa we don’t know what’s to blame. Millions of calculations run by thousands of economists haven’t brought us any firm policy conclusions in either case.

But recent analyses of relative economic performance have suggested a central role for history in determining who is rich and who is poor. Scholars now link wealth with influences such as the mortality rate of colonial settlers in the 18th and 19th centuries, climate, natural resource abundance, and the extent of human losses to the slave trade. The impact of such “initial conditions” on long-term income performance acts through the strength of government institutions such as legal systems and parliaments. But such institutions are slow to change (which helps to account for the stability of growth rates in rich countries over long time periods). So a growing mound of research papers adds to the conclusion that we know much more about the histories that rich countries or poor countries share than we do about the policies that will make poor countries rich.

Figure 3.1 suggests the stability of long-term growth in a rich country. It shows data for U.S. income per capita between 1870 and 2005.<sup>5</sup> The figure is presented using a log scale, so that equal percentage increases are the same size. If the U.S. growth rate had been exactly the same every year over those 135 years, U.S. income would have followed a pattern represented by the dotted line. The actual path of GDP change tracks closely with this “constant growth” line, suggesting a very steady growth performance over the long term. The only significant deviation is caused by the Great Depression and the Second World War, but the United States was back on the same track by 1950. You would hardly know that a radical shift in U.S. policies and participation in a global conflagration had occurred. Over the whole period from 1870 to 2005, the size and policy stance of the U.S. government changed radically—interstates, support for education, social security and welfare, Medicare, and so on and so forth—and yet long-term growth rates have remained pretty much constant.

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<sup>5</sup> Data source Maddison 2001, updated.

**Figure 3.1: The Long-Term Pattern of U.S. Income Growth**

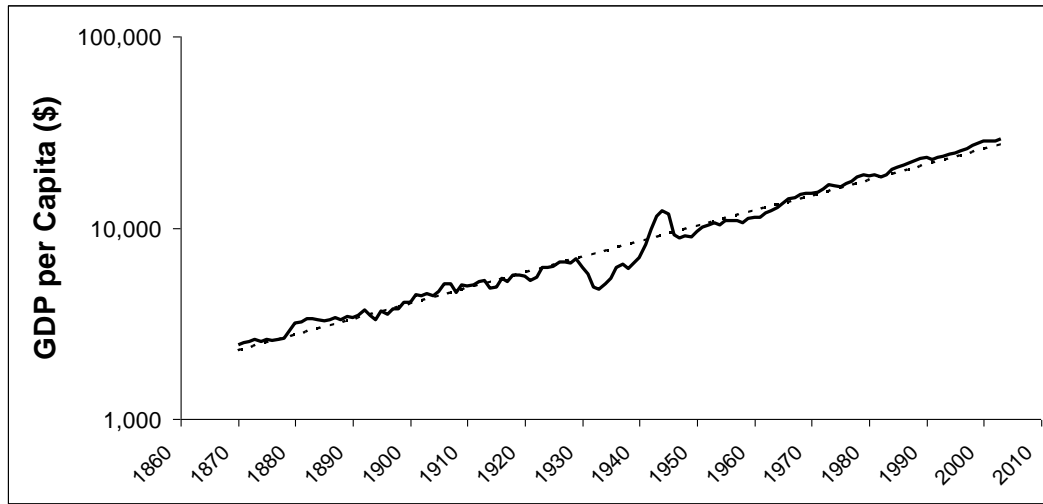


Figure 3.2 shows that Germany, despite two major world wars, a considerable interwar depression, and the division of the country into Soviet and Western spheres of influence, follows a similar pattern. These events left the country very close to the long-term trend-line growth rate as well as very close to the average long-term growth rate of the United States.<sup>6</sup>

**Figure 3.2: The Long-Term Pattern of German Income Growth**

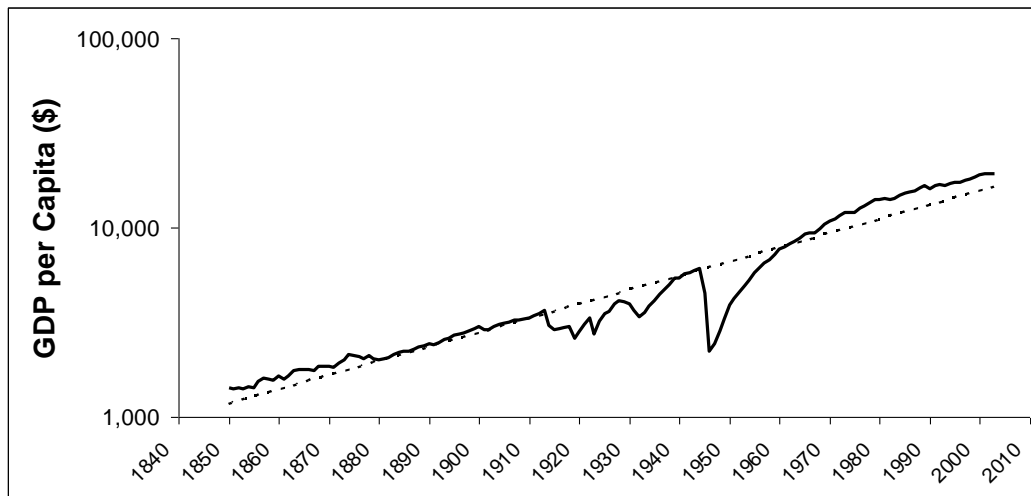


Figure 3.3 shows the relationship of growth rates over the shorter term for a wide sample of countries. It suggests that while the trend in rich countries especially is too stable to be accounted for by policies, the “wiggles” in growth trends over the shorter term are actually too short-lived to be

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<sup>6</sup> Data source Maddison 2001, updated.



accounted for by policy change. The x-axis shows the growth of a country over the first ten years, the y-axis that same country's growth over the next ten years. As can be seen, the relationship is weak.<sup>7</sup> Some countries grow fast in the first decade and fast again in the second (those appear in the top right of the graph). Others stagnated across both decades (in the bottom left of the graph). But as many grow fast and then slow, or slow and then fast. The figure suggests considerable randomness in patterns of growth over the decades. This matters because (as pointed out in a paper by Bill Easterly, Michael Kremer, Lant Pritchett and Larry Summers) policies tend to change more slowly over time.<sup>8</sup>

**Figure 3.3: Correlation of Economic Growth over Decades**

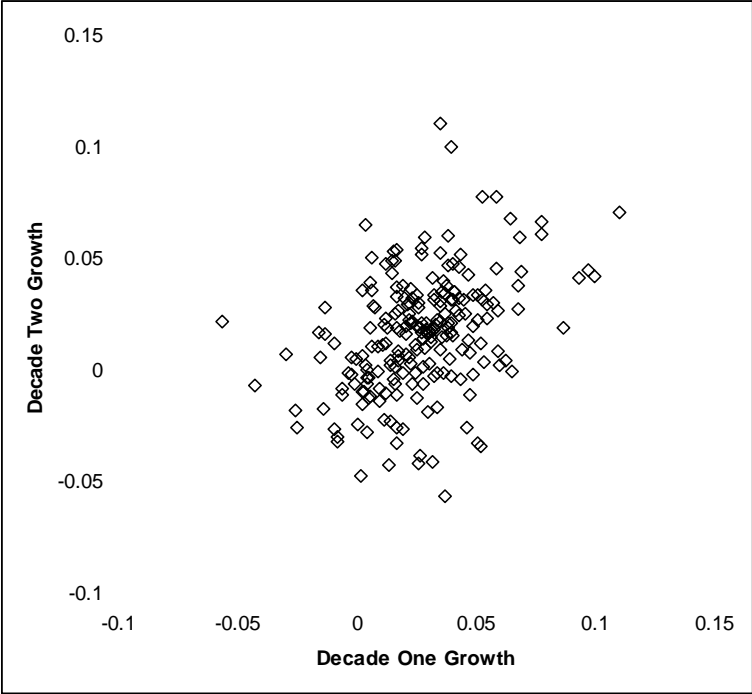


Figure 3.4 displays investment and GDP per capita growth rates on an annual basis for every country and year for which the Penn World Tables has data. Looking at the figure, it would be hard to argue that a very strong short-term relationship between investment and growth, as posited by traditional models of economic growth, actually holds.<sup>9</sup> Countries often see low investment and high growth, or high investment and low growth.

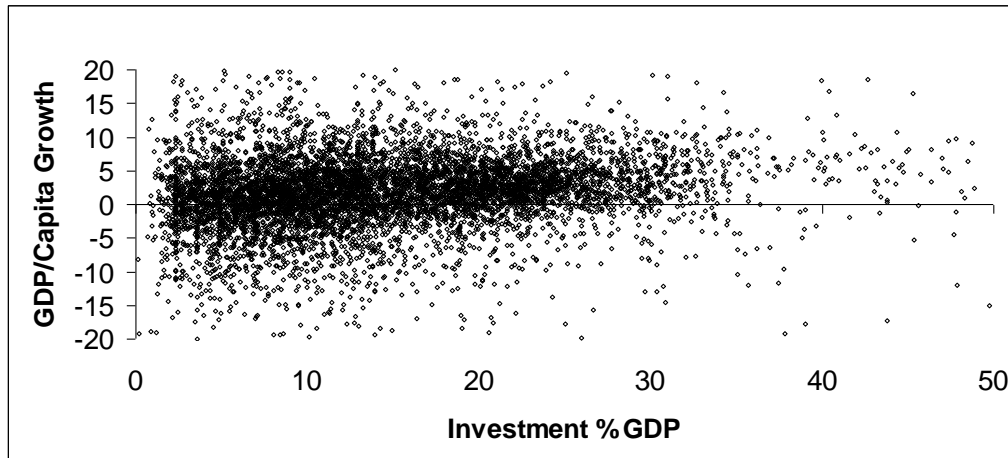
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<sup>7</sup> Data for graphs comes from Easterly and Levine 1997.

<sup>8</sup> Easterly et al. 1993.

<sup>9</sup> The figure is bounded at 50 percent investment and -20 to +20 GDP growth.

Figure 3.4: Investment and Growth



#### IV. The Good News: The End of the Malthusian Trap

Malthus was concerned with what he felt were the excessive breeding habits of the unwashed masses. Populations, he suggested, expanded until a lack of food and resources meant that as many people died each year as were born. Paul Ehrlich's *The Population Bomb* updated the same argument for the late 20th century: "the battle to feed all of humanity is over. In the 1970s and 1980s hundreds of millions of people will starve to death," he argued. Many people suggest that parts of the developing world remain stuck in such a "Malthusian trap" to this day.

The first bit of good news in this book is that there is little evidence from anywhere that growing populations condemn a country to a declining standard of living. Every region in the world is seeing dramatic growth in *output* even if growth in average *incomes* is considerably more concentrated. Looking at Africa in particular, while populations continue to expand, there is no link from population growth to declining income, and mortality rates are falling, not rising. Even if the institutions which are central to per capita growth develop slowly, the technologies required for greater output—GDP increases—spread fast. And this is enough to prevent widespread and recurring famine.

Meanwhile, neo-Malthusian threats at the global level regarding the use of finite natural resources like fossil fuels or water are a real concern, but responses (should) involve policies that focus on sustainable consumption, not population control. Overall, the jeremiad of a long-dead English parson has little relevance to the developing world in the 21st century.

Figure 4.1 shows that the Malthusian situation of stagnant output growth is widely overcome.<sup>10</sup> It provides country average and variation statistics regarding the rate of GDP growth over the last 2000 years. Around two-thirds of countries see GDP growth rates which fall within the line marked for each period, with average growth across all countries represented by the box. Again, the figure suggests that slow growing economies were the global rule prior to the 19th century. But it is also worth noting what the data suggest about more recent periods. The 19th century brought considerable diversity in GDP performance. Conversely, the 20th century has seen rapid GDP growth everywhere.

**Figure 4.1: GDP Growth and Standard Deviation**

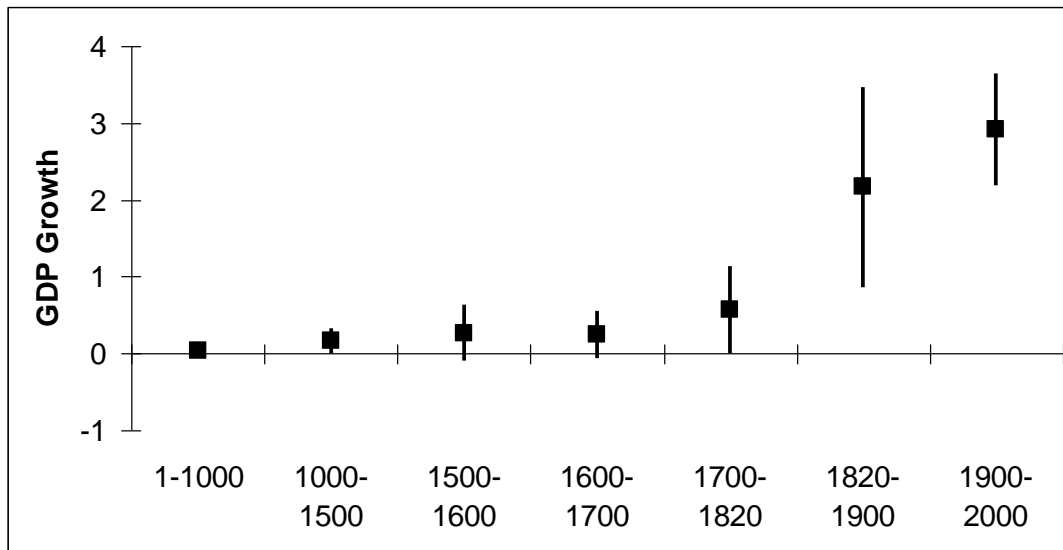


Figure 4.2 helps to demonstrate that nowhere looks Malthusian any more.<sup>11</sup> The solid line in the figure tracks the progress of wages for craftsmen and population in England over the 500 years from Roger Bacon to the start of the American Revolution. The line starts at bottom right, with a population of over 6 million. As the British population declined as under the scourge of the Black Death, wages increased by around 70 percent (at top left in the figure). Then the plague subsided, populations recovered and wages began to decline. In 1775, both the British population and wage rates, back at the bottom right, were similar to their level 500 years earlier. This suggests comparatively stagnant output in the country over that 500-year period. Compare this Malthusian pattern to Ghana since 1913 (the dotted line). There, incomes per capita have risen by about 63

<sup>10</sup> <sup>10</sup> Data is from Maddison 2001 updated; sample size is between 27 countries (1–1000) and 39 countries (1900–2000). The dataset is largely made up of wealthy countries, but the 20th century sample does include countries such as Brazil, China, India, Indonesia, and Mexico.

<sup>11</sup> Ghana data from Maddison 2001; England data estimated from Clark 2007.

percent, and population has increased nearly tenfold (suggesting GDP has expanded more than fifteen times).<sup>12</sup> This is *not* a Malthusian story.

**Figure 4.2: The English Malthusian Trap and Ghana's Escape**

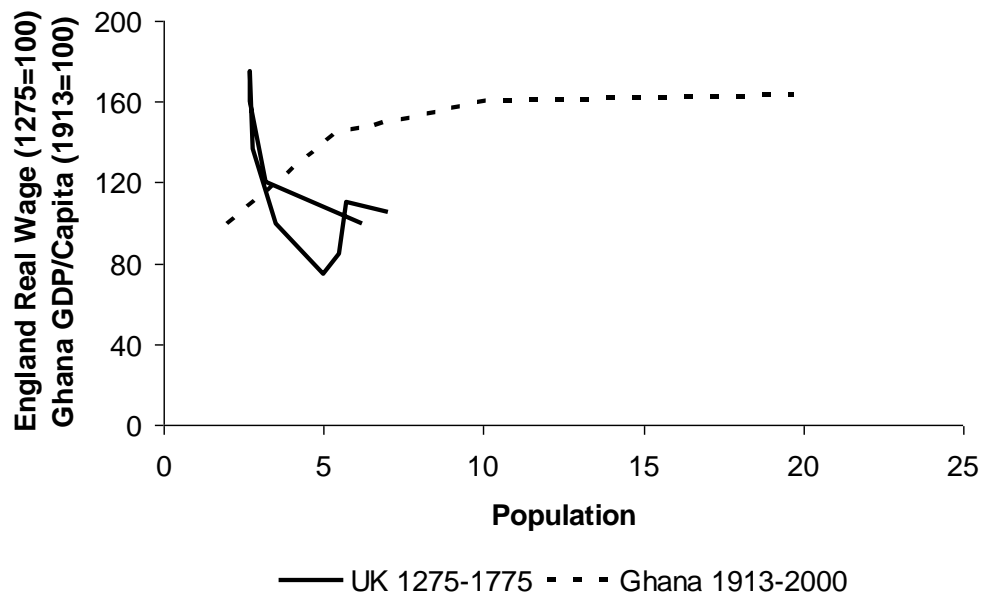
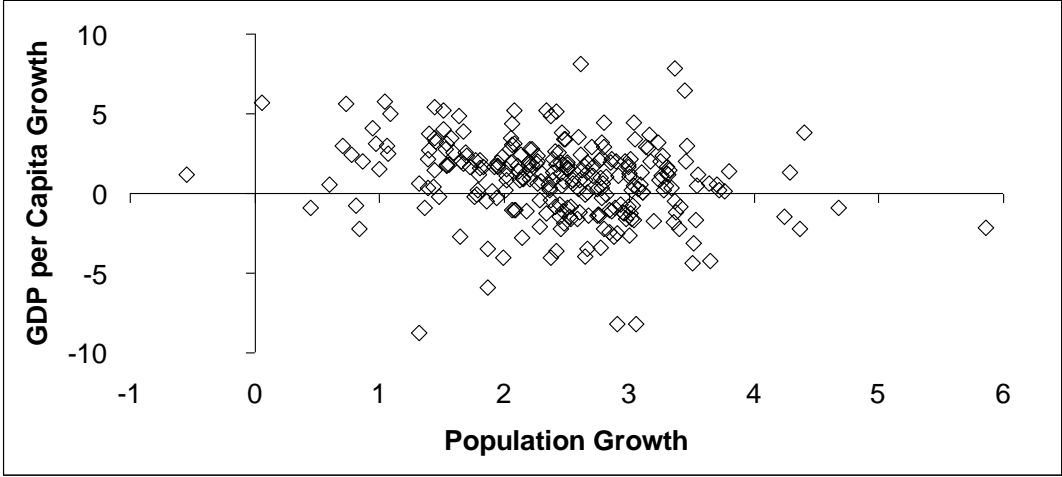


Figure 4.3 displays the lack of a Malthusian relationship between income and population in Africa.<sup>13</sup> It shows the relationship between contemporaneous population and income growth over decades for an African sample of countries, and the lack of any strong relationship is abundantly clear.

<sup>12</sup> GDP per capita is not the same as the real wage, of course. However, over the medium term, there is a very strong relationship between increases in GDP per capita and increases in incomes and consumption by all people, rich and poor, in a country, as noted by Dollar and Kraay 2002. This suggests that it is likely at the least that real wages in Ghana did not decline over a period that saw the population rise tenfold.

<sup>13</sup> Data source: Maddison 2001, updated.

**Figure 4.3: Decade Population Growth versus GDP per Capita Growth for an African Sample, 1950–2000.**



**V. The Better News: The Great Convergence in Quality of Life**

The next bit of good news regarding development is that looking at almost any measure of the quality of life *except* for income suggests rapid and ubiquitous global improvement. Since 1960, global average infant mortality has more than halved, for example. Nine million children born in 2005 were alive to celebrate their first birthday in 2006 who would have died if global mortality rates had remained unchanged since 1960. And the vast majority of those children lived in developing countries.

Countries in every region of the world, from the poorest to the richest, with stagnant or vibrant economies, have all seen improvements in average levels of health and education over the past half century. Most countries, regardless of economic performance, have seen forward strides in gender equality, civil and political rights. And progress in quality of life has been particularly rapid in countries previously the furthest behind. There are concerns—the picture regarding global violence is mixed, the quality of education in particular remains extremely low in many developing countries, and recent progress on health has slowed, not least because of the crisis of AIDS. Nonetheless, the overall picture from the last 50 years is of a planet with a growing number of people living a better quality of life.

Figure 5.1 displays estimates on life expectancy in India and the UK over the 20th century.<sup>14</sup> It illustrates progress and convergence in health outcomes over that time. The figure suggests India’s average life expectancy was less than half the UK average at the start of the century and over four-fifths at its end. And this in a period where life expectancy in the UK increased over 23 years.

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<sup>14</sup> Maddison 2001.

Figure 5.1: Life Expectancy, Historical Estimates for India and the UK



Figure 5.2 displays average estimated infant mortality across countries from all available data in each time period from data provided by Rodwan Abouharb and Anessa Kimball.<sup>15</sup> It shows the incredible global progress in keeping babies alive. The dotted line represents the standard deviation. Between 1870 and 1889, the average reported infant mortality was 19.7 percent. This early set of observations is among a sample almost exclusively made up of now-wealthy countries with very low current mortality rates. And most sources of error in historical mortality estimates bias statistics downwards (they frequently miss very early and unrecorded infant deaths, for example). Both of these factors suggest that, if anything, actual average global infant mortality in the late 19th century was considerably higher than our estimate of near 20 percent of children born. By 1990–2002, looking at a sample with far broader (and higher-quality) global coverage, average infant mortality across countries was 4.8 percent. A conservative estimate of change would be that we have seen a 75 percent reduction in average global infant mortality over the past 120 years, that is, we have moved from a country average of one child in five dying before their first birthday to 1 child in 20 dying before the age of one.

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<sup>15</sup> Abouharb and Kimball 2007.

**Figure 5.2: Average Global Infant Mortality, 1830–2002**

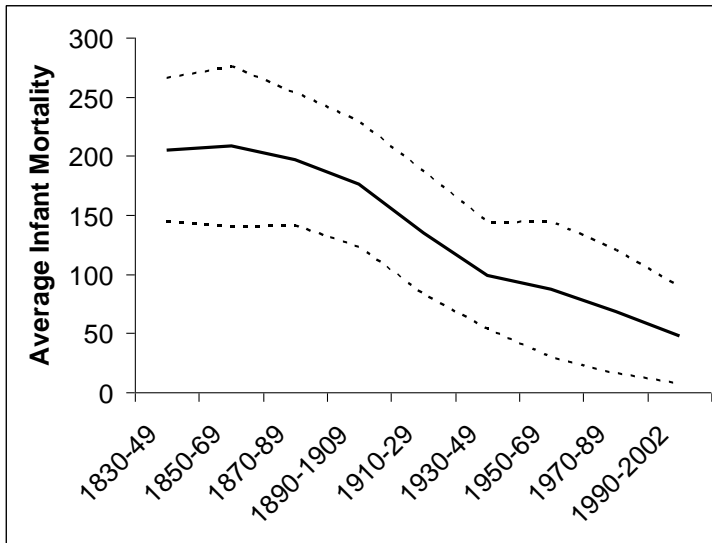


Figure 5.3 displays infant mortality outcomes for Costa Rica and the United States over the course of the period from 1920 to 2000. It is clear that infant survival has converged even while both countries were making dramatic progress in improving the health of newborns.

**Figure 5.3: Infant Mortality in Costa Rica and the U.S., 1920–2000**

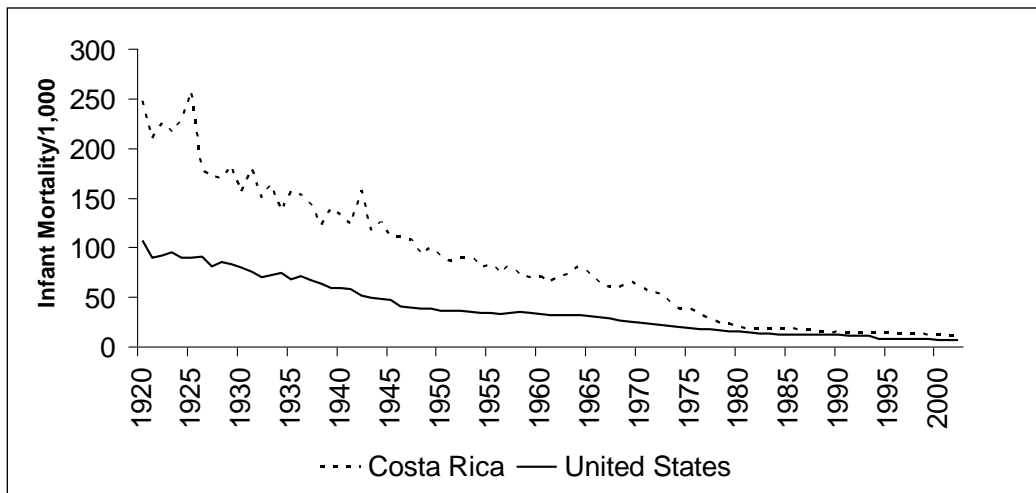


Figure 5.4 illustrates growth and convergence in literacy between the two countries. It suggests that UK literacy levels were already around three-quarters of the adult population in 1850. Rates in most of the rest of the developing world (including India) were well below 1 in 10. But global convergence also began very early, almost certainly in the 19th century.<sup>16</sup> By 1913, adult literacy in India was at 9 percent, and certainly at least since then, the picture is one of rapid convergence with the UK.

**Figure 5.4: Adult Literacy (percentage of adult population)—Historical Estimates for India and the UK**

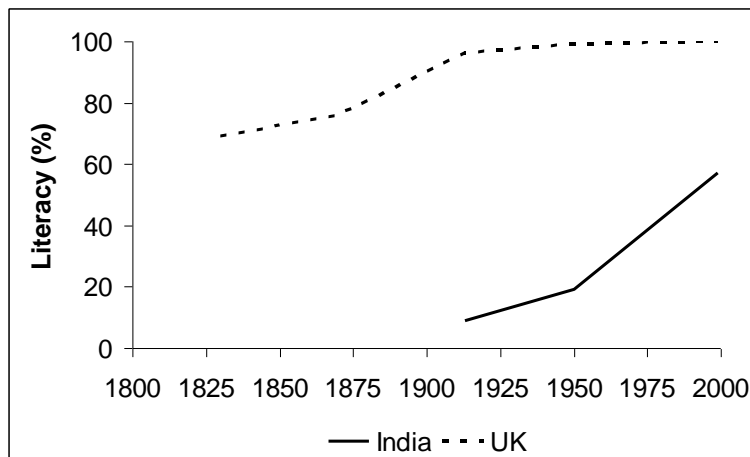


Figure 5.5 and figure 5.6 examine the extent of primary school growth and convergence over time for a number of countries rich and poor, plotting the 1870 enrollment rate for a country against the rate in 1930 (figure 5.5) and 1930 enrollments against 2000 rates (figure 5.6). These figures are based on historical data from Aaron Benavot and Phyllis Riddle.<sup>17</sup> Between 1870 and 1930, there is clear evidence of global progress in extending access to education, with countries increasing average enrollments by perhaps 23 percent. But it also appears there was a first-mover advantage—countries with higher enrollments in 1870 remained countries with higher enrollments in 1930. There is evidence of considerable flattening over the later period (1930–2000).<sup>18</sup> The great majority of countries for which we have earlier data from Benavot and Riddle had reached near 100 percent enrollments by 2000. This suggests far, far more rapid progress from 1930 to 2000 among countries with low enrollments in 1930. Indeed, only at very low rates of 1930s enrollments does there appear to be any relationship with 2000 enrollments. In turn, this suggests that a 70-year period was long

<sup>16</sup> Kenny 2005.

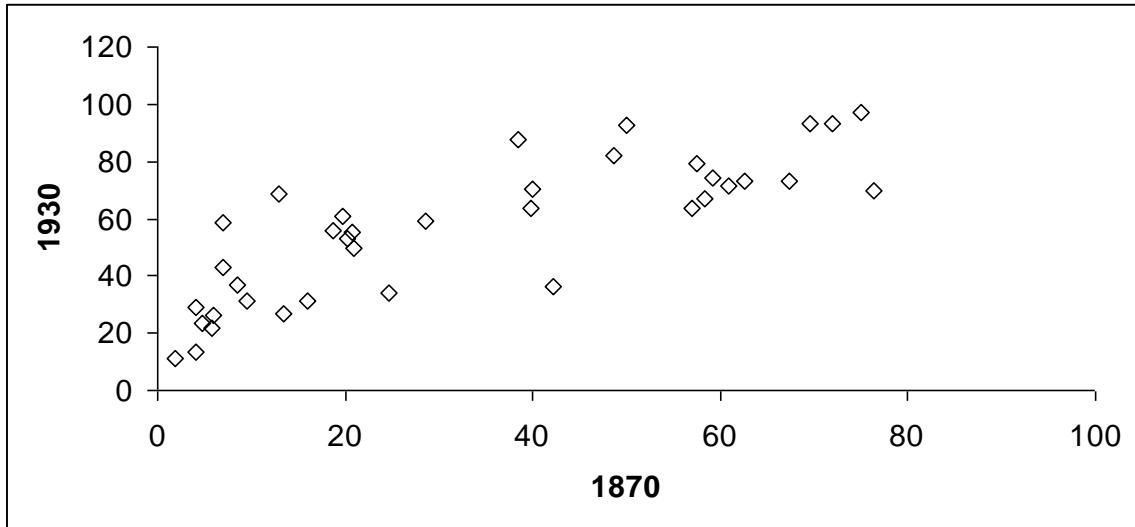
<sup>17</sup> Benavot and Riddle 1988

<sup>18</sup> This is splicing Benavot and Riddle data with World Bank data from 2000, see Kenny 2008b for a discussion.

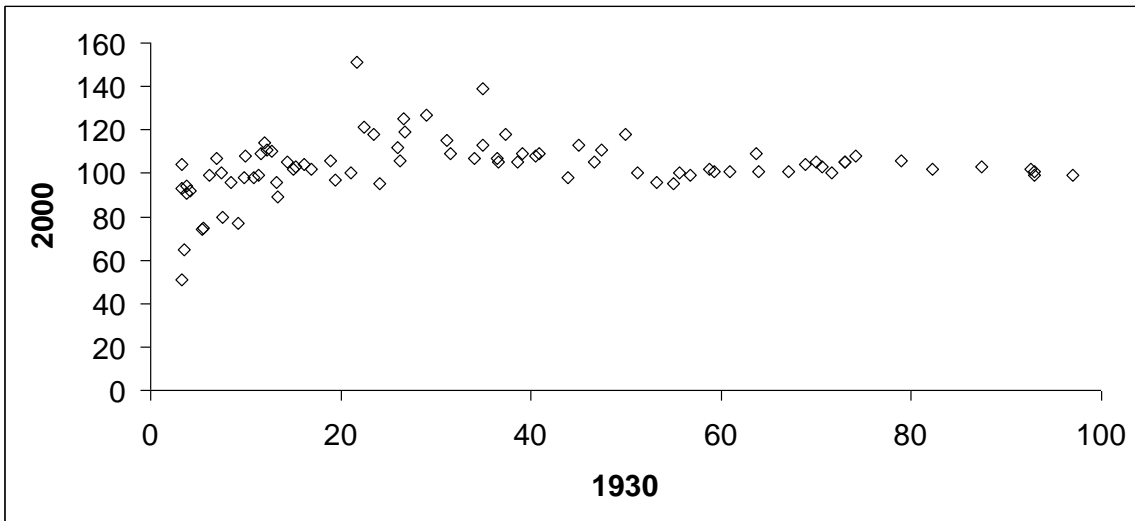


enough to allow for countries even at the very start of the process of expanding access to education to go from limited to close to universal primary enrollment.

**Figure 5.5: Correlation of Primary Enrollments, 1870–1930**



**Figure 5.6: Correlation of Primary Enrollments, 1930–2000**



## VI. The Great News: The Best Things in Life Are Cheap

As suggested by the global reach of improvements in the quality of life, income growth has not been a requirement for improvements in health or education or civil rights. Even most countries that have seen per capita income decline over the past 30 years have seen health, education, and civil-rights observance considerably improve. This is the greatest success of development. The last century has seen a dramatic (and literal) decline in the cost of living.

Take child health, for example. No country in the world saw much more than 90 percent of children survive their first year of life in 1900. The United States saw an infant mortality rate of nearly 15 percent. This was despite an income per capita that was one of the highest in the world at the time, a little above \$4,000 measured in today's dollars. It did not matter how rich a child's parents, the state of health technology placed a significant upper limit on an infant's chance of survival. Today, the country with the highest recorded infant mortality in the world is Sierra Leone. That mortality rate is 17 percent, only 2 percent higher than the rate in the U.S. a century earlier. Yet income per person in Sierra Leone has dipped as low as \$404 in the recent past, or one-tenth the level of the United States a century ago. Countries as poor and wretched as Haiti, Burma, and the Congo have infant mortality rates today that are lower than any country in the world achieved in 1900.

The flipside of this good news is that rapid income growth doesn't guarantee faster progress. Two things that do increase in line with GDP per capita are consumption and pollution. But across countries, there is little or no relationship between rates of GDP per capita growth and progress in health, education, or human rights.

Figure 6.1 displays the cross-country relationship in 2000 between income per capita and infant mortality.<sup>19</sup> As the figure makes abundantly clear, richer countries had lower infant mortalities. No country with an income per capita above \$1,500 has an infant mortality rate above 10 percent. No country with an income per capita above \$10,000 sees an infant mortality rate above 2 percent.

Figure 6.2 compares Vietnam in 2000 to the United Kingdom in the early 19th century on various dimensions of development. It suggests that Vietnam has done considerably better at delivering on the quality of life at the same income.<sup>20</sup> As can be seen, the United Kingdom reached Vietnam's current GDP per capita in the early 1800s. But Vietnam's literacy rate in 2000 is 95 percent compared to 69 percent in the UK in the early 1800s, its current life expectancy is 69 compared to 41 in the UK when it had the same income, and its infant mortality is less than one-quarter the UK's in the early 1800s.<sup>21</sup>

### Figure 6.1: The Relationship Between Income and Infant Mortality in 2000

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<sup>19</sup> Source: World Bank 2010.

<sup>20</sup> Source: Kenny and Kenny 2006.

<sup>21</sup> Kenny and Kenny 2006.

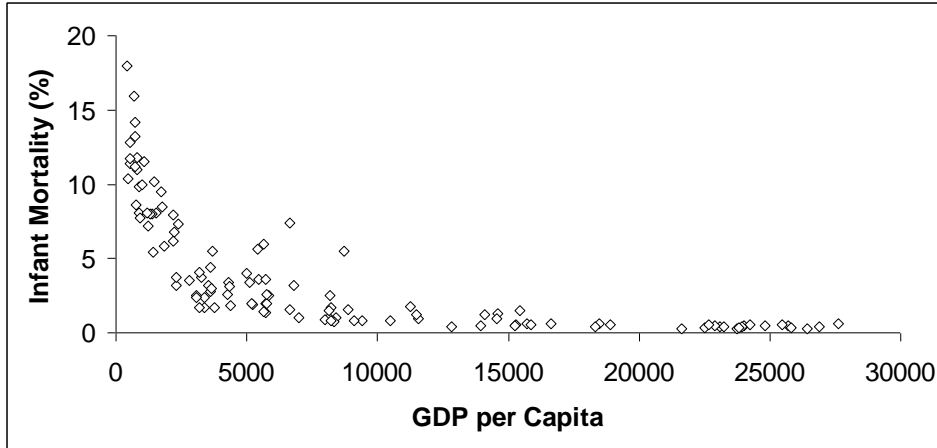


Figure 6.2: Comparing Modern Vietnam and 1800s Britain

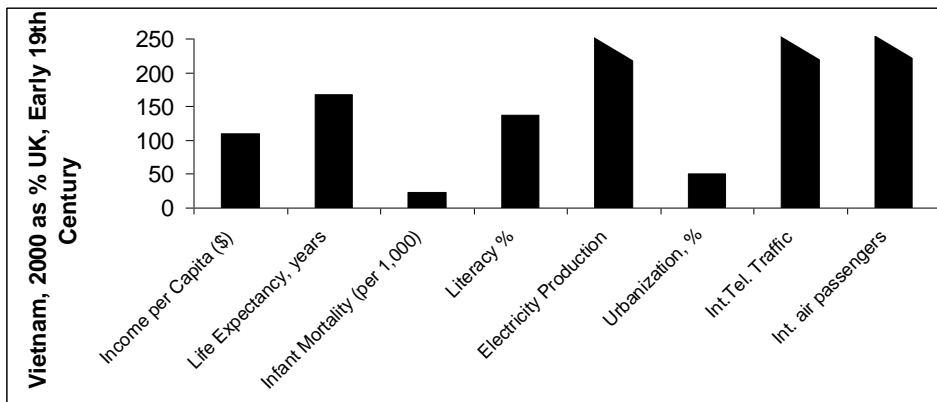


Figure 6.3 displays the changing relation between income levels and infant mortality for a global sample of countries over the course of the 20th century. The highest curve in the area between \$1,000 and \$5,000 on the x-axis is the curve for 1900, the lowest is for 2000 and the curves in between are for 1920, 1940, 1960 and 1980. At an income of \$1,000, the expected mortality fell from 199 per thousand births in 1900 to 140 in 1940 and 73 in 2000.<sup>22</sup>

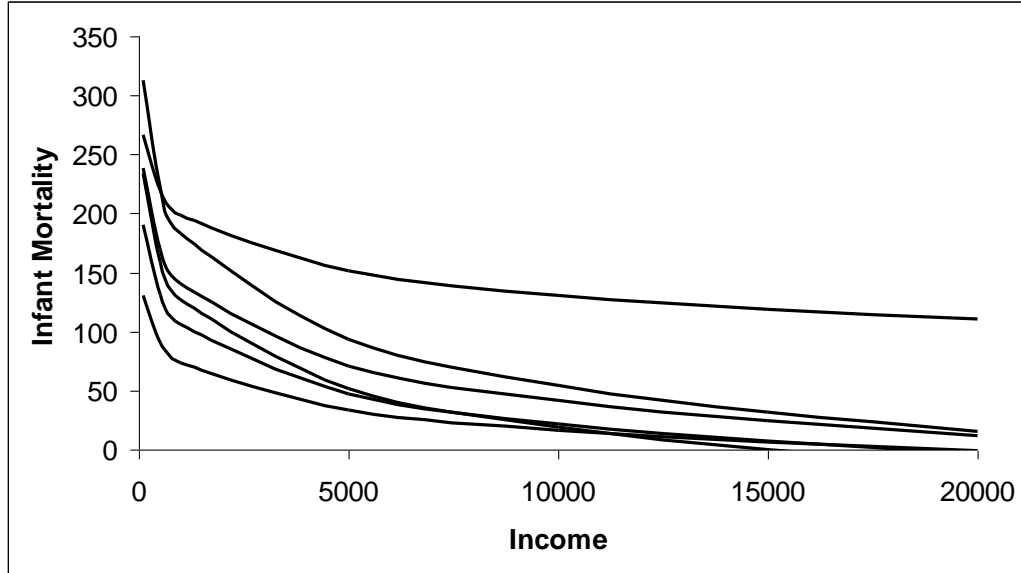
Figure 6.4 displays life expectancy Preston curves with data for 1870, 1950, and 1999.<sup>23</sup> Beyond showing global progress in life expectancy, the figure displays how much more egalitarian the distribution of life expectancy has become. In 1870, the predicted life expectancy for a person living in a country with an income of \$300 per capita was one-third that for a person living in a country

<sup>22</sup> Kenny 2008a. It should be repeated here that with greater coverage of the countries suffering severe AIDS epidemics, the figure would look less positive but with higher quality data, change over time might look even more dramatic.

<sup>23</sup> Data Source: Kenny 2005

with an income of \$30,000 per capita. By 1999, the person in a country with a \$300 income per capita saw a life expectancy more than half as long as a country 100 times as rich.

**Figure 6.3: Infant Mortality Preston Curves for 1900, '20, '40, '60, '80, and 2000**



**Figure 6.4: Life Expectancy Preston Curves**

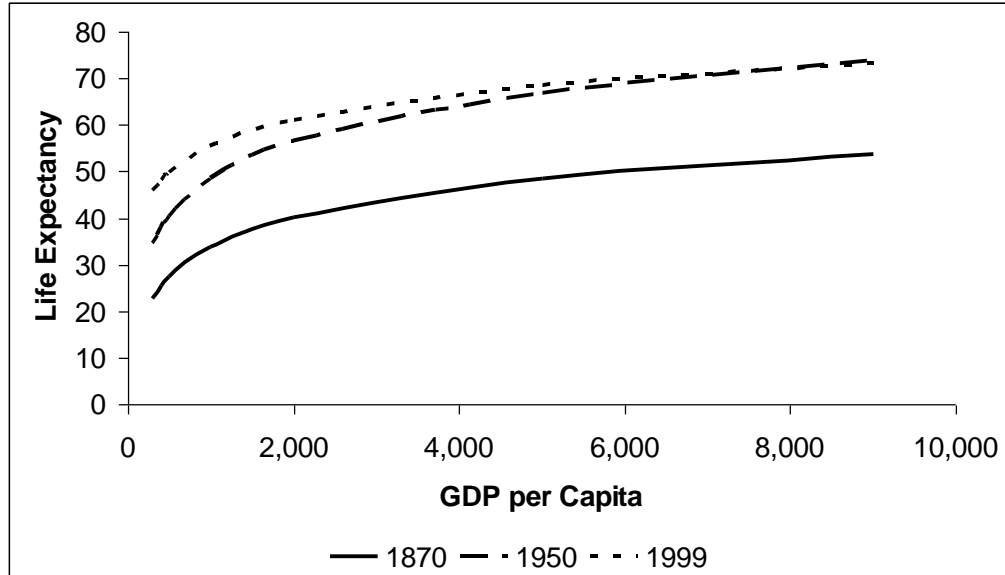


Figure 6.5 plots primary enrollment versus income for a global sample of countries looking at numbers for 1930 and 2000.<sup>24</sup> As can be seen from the figure, in 1930, richer countries saw

<sup>24</sup> See Kenny 2008b.

significantly higher enrollment rates, and the link between wealth and enrollment was strong. By 2000, even very poor countries were seeing high enrollments at low income levels, and the explanatory power of income to predict low or high enrollment had fallen considerably. An analysis of the data suggests that a country with a GDP per capita of \$800 in 1930 would typically have a 9 percent enrollment rate while a country with the same GDP per capita in 2000 would expect an 84 percent enrollment rate. The data suggests effectively no relationship between income and enrollment at a GDP per capita of \$1,000 or above.

**Figure 6.5: Education Preston Curves**

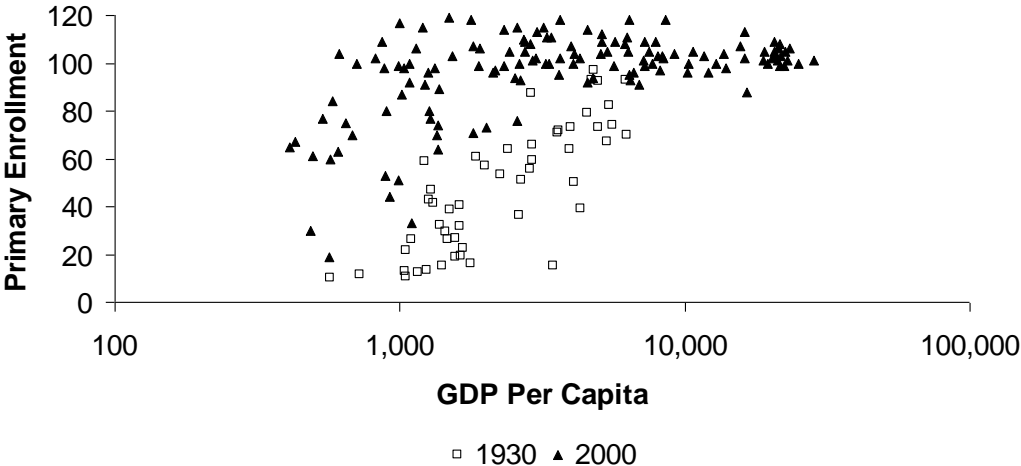


Figure 6.6 and figure 6.7 observe the relationship between income and the polity measure of civil and political rights. They show the relationship in 1900 and 2000 respectively.<sup>25</sup> Wealthier countries are more likely to have higher polity scores in both periods. At the same time, looking at the scales on the x-axis (which reach \$5,000 in 1900 compared to \$30,000 in 2000), it also appears that the relationship between the two has changed, with higher polity scores associated with lower incomes over time. An income of \$1,000 was associated with a polity score of -2.2 in 1900, compared to -0.1 in 2000.

Figure 6.8 displays evidence on the relationship between income and health over the last 50 years from an economically benighted country. In Haiti, income fell from \$1,051 to \$752 per capita between 1950 and 2002, while infant mortality more than halved, dropping from 22 percent to 7.8 percent of children under the age of one.<sup>26</sup>

**Figure 6.6: Polity and Income, 1900**

<sup>25</sup> Source Kenny 2008c.

<sup>26</sup> Data sources Maddison 2001, updated, and Abuharb and Kimball 2007.

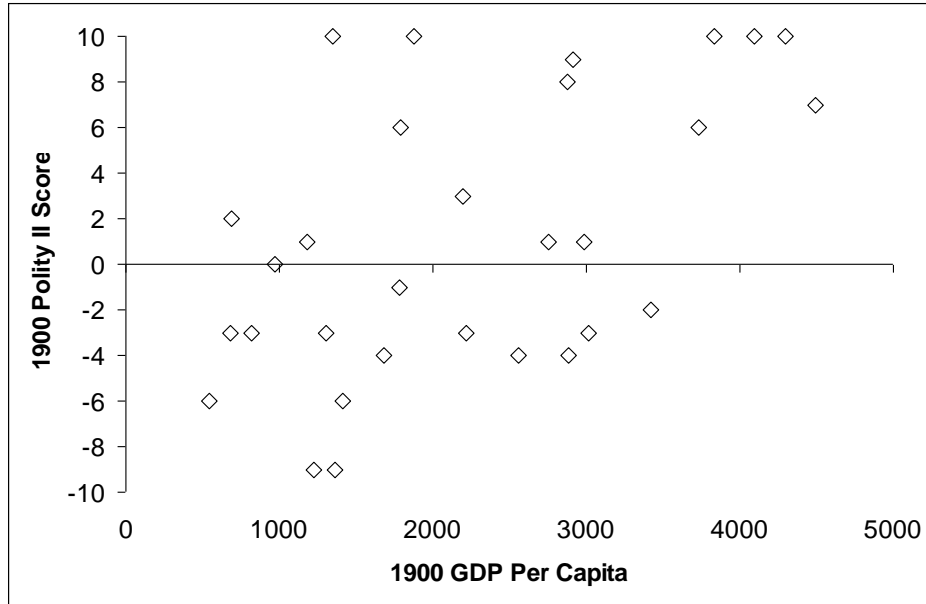
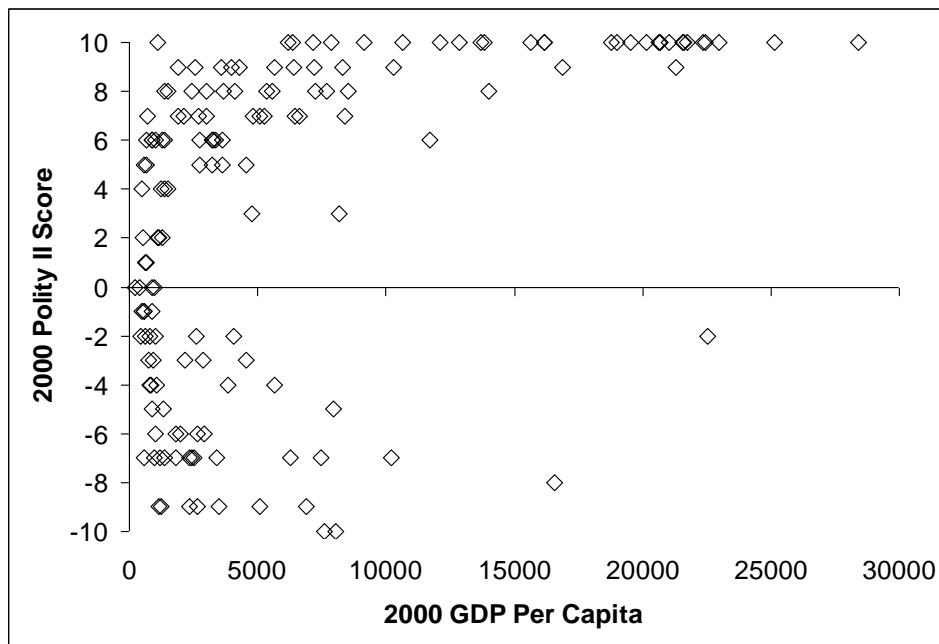


Figure 6.7: Polity and Income, 2000



**Figure 6.8 Infant Mortality and Income Change in Haiti, 1950–2003**

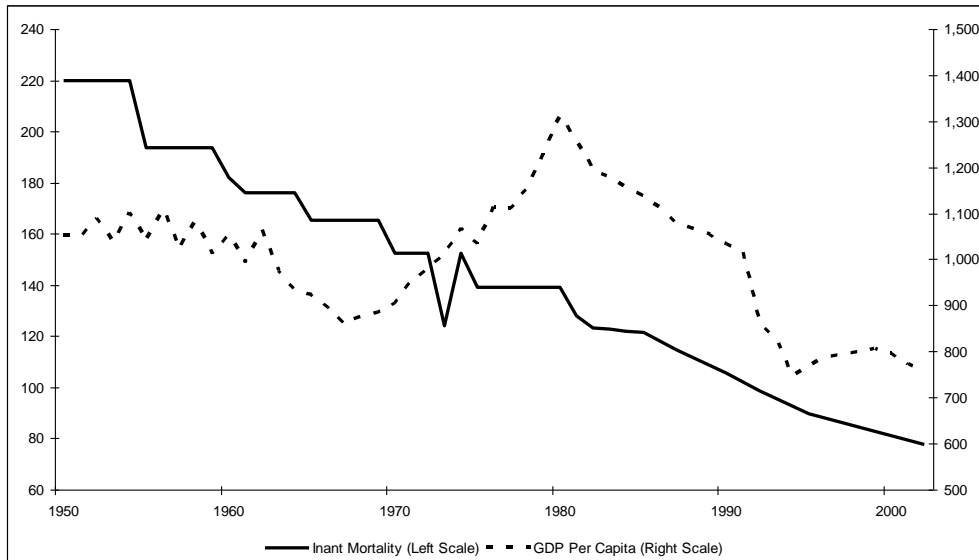


Figure 6.9 through figure 6.12 explore cases of quality-of-life change during negative growth in more detail. They cover all twelve countries where income per capita in 2005 was lower than in 1960 according to World Bank data.<sup>27</sup> Alongside Haiti, these countries are the Central African Republic, Côte d'Ivoire, Liberia, Madagascar, Nicaragua, Niger, Senegal, Sierra Leone, Venezuela, Zambia, and Zimbabwe. Incomes in these 12 countries fell by an average of 27 percent over 45 years. Over the same period, however, life expectancy in these countries *increased*, by an average of over 10 years. Only Zambia and Zimbabwe, both near the epicenter of the global AIDS crisis, saw life expectancies fall. And over the period 1970 to 2000, adult literacy rates increased in every country—close to doubling on average.<sup>28</sup> For the nine countries that have polity scores regarding civil and political rights for 1960 and 2001, these scores increased in seven out of nine, stayed level in one country and declined in only one.

<sup>27</sup> This using constant local currency GDP per capita.

<sup>28</sup> Data for Sierra Leone is lacking.

Figure 6.9: Twelve Countries Poorer in 2005 than in 1960...

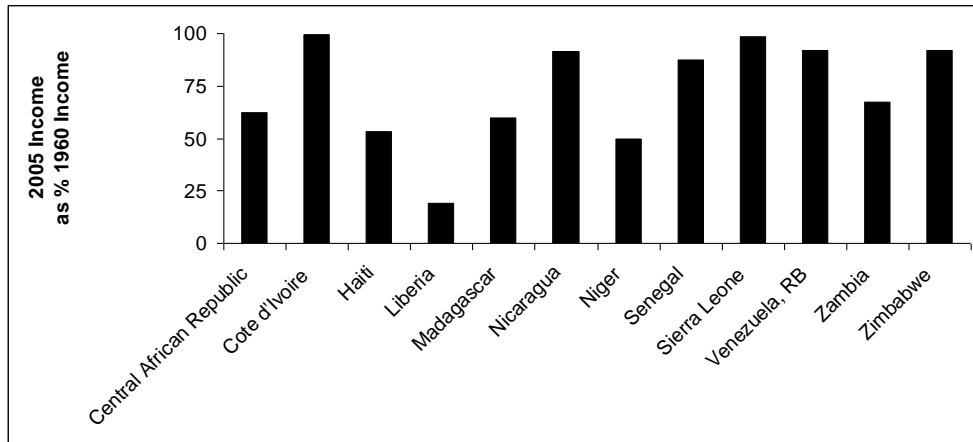


Figure 6.10: ... Their Life Expectancy in 1960 and 2006...

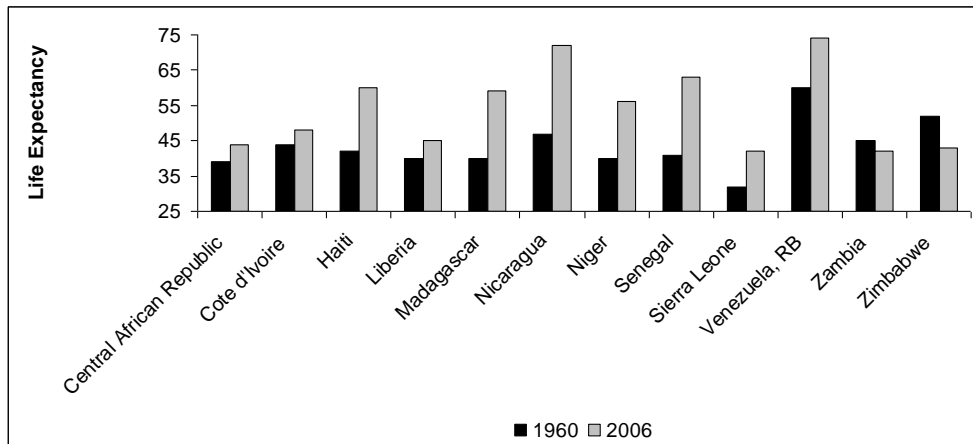
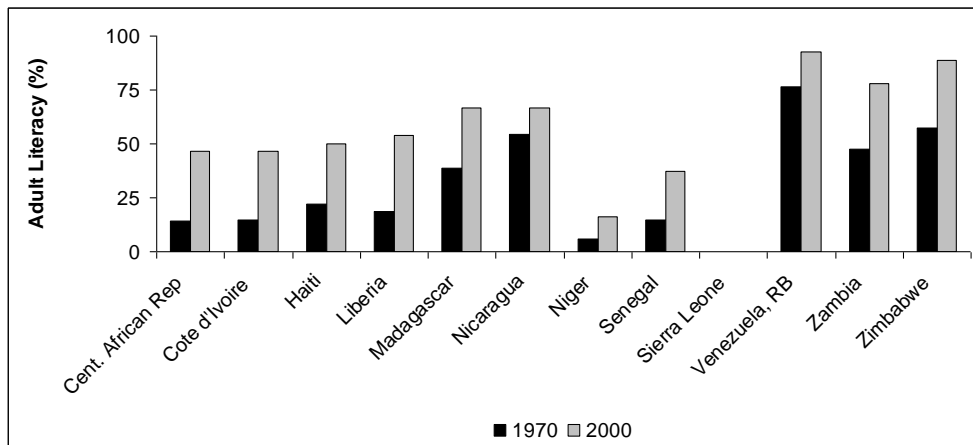


Figure 6.11: ... Their Literacy Rates in 1970 and 2000...





**Figure 6.12: ... And Their Polity Scores in 1960 and 2001...**

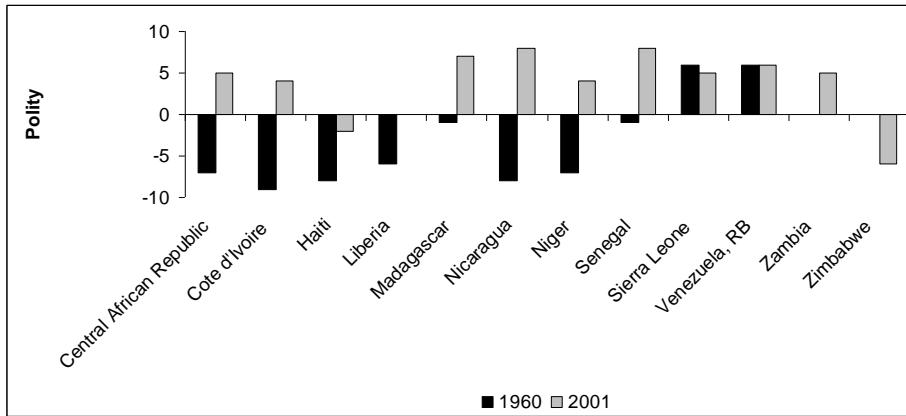
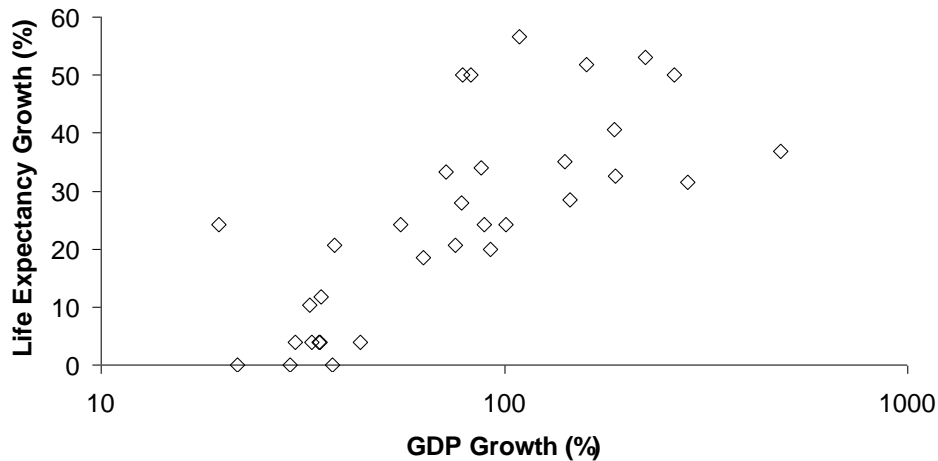


Figure 6.13 and figure 6.14 illustrate the relationship between income and life expectancy in the 19th and 20th centuries using data for 33 countries and regions from Francois Bourguignon and Christian Morriison.<sup>29</sup> In the 1800s (and despite considerable concerns with data quality), there does appear to be a robust relationship between increased income and life expectancy. In the 20th century, this relationship completely breaks down.<sup>30</sup>

**Figure 6.13: Health and GDP Change, 1820–1910**



<sup>29</sup> Bourguignon and Morriison, 2002.

<sup>30</sup> This is a finding reasonably robust to data quality issues given the fivefold increase in average incomes that occurred over the period, the 69 percent average increase in life expectancy, and the considerable standard deviation in outcomes (268 percent for income and 36 percent for life expectancy).

**Figure 6.14: Health and GDP Change, 1910–1992**

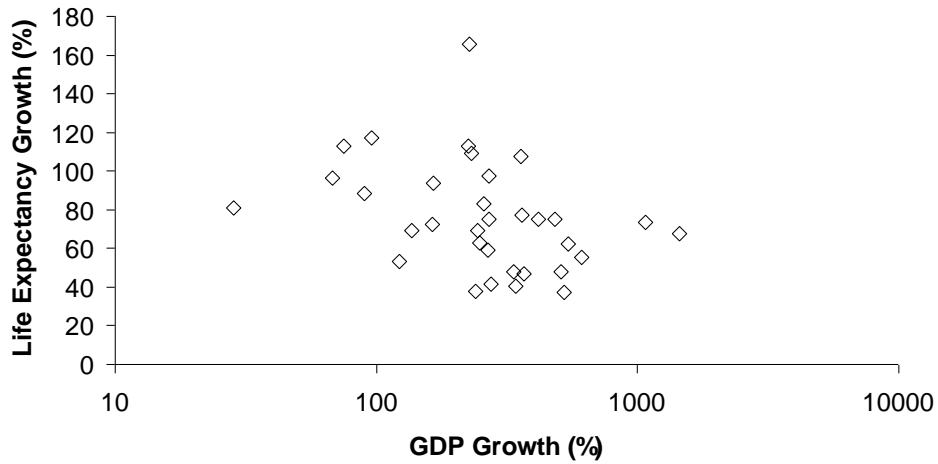
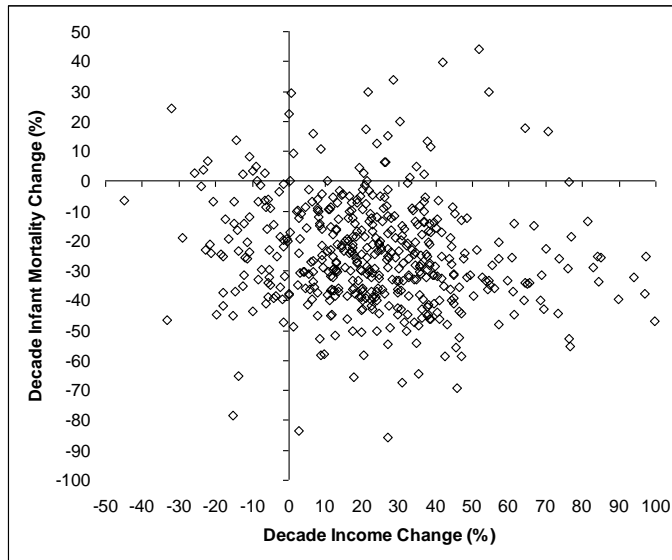


Figure 6.15 suggests that over decades, most countries get richer, and most countries see falling infant mortality, but the speed of income growth is very weakly correlated with the speed of income change. While rich countries were healthier, countries which grew faster did not become healthier faster.<sup>31</sup>

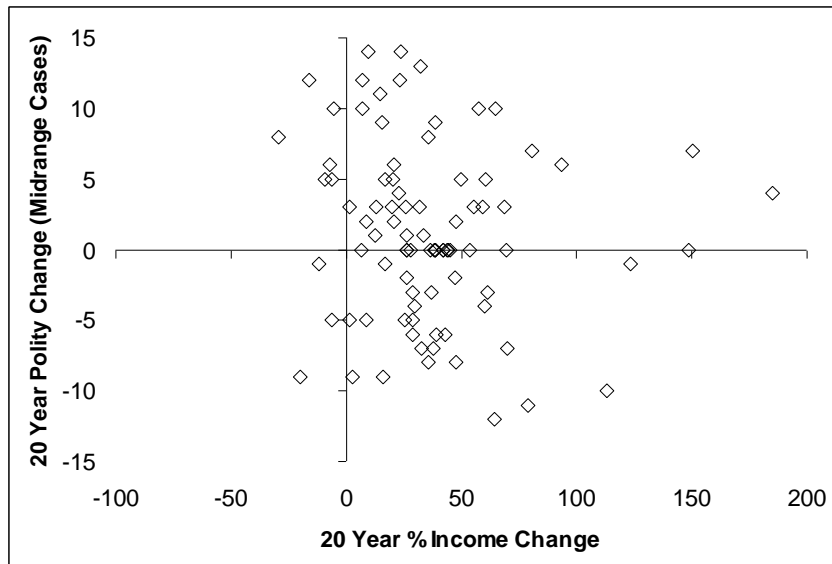
**Figure 6.15: Decade Income and Infant Mortality Change over the 20th Century**



<sup>31</sup> Data sources Maddison 2001, updated, and Abuharb and Kimball 2007.

Figure 6.16 illustrates a lack of a strong positive relationship between income growth and changes in a country's polity score.<sup>32</sup> It plots changes in the two variables over 20-year periods, taking cases where the initial polity score was between -5 and +5 (so that cases where income growth was high but the polity score was already at a maximum, or growth was low but the polity score was at a minimum, do not cloud any relationship).

**Figure 6.16: Polity Change and Income Change**



## VII. Drivers of the Better Life: Innovation, Ideas, and Institutions

If not money, then what? Global improvements in quality of life have been fostered by the spread of technology and ideas. Very cheap health technologies that can dramatically reduce mortality have spread rapidly across the world. The proportion of the world's infants vaccinated against diphtheria, pertussis, and tetanus—the DPT shot—climbed from one-fifth to nearly four-fifths between 1970 and 2006. And ideas that save lives—wash your hands, don't defecate in the fields you eat from—are increasingly accepted.

People around the world are also more “informed consumers” than they used to be. They not only demand soap to wash their hands, they want schools to educate their girls, and they want governments that respect their rights. The increasing demand for education in particular is an important part of the story behind climbing primary enrollments. Less than half of primary-age kids worldwide were enrolled in school in 1950, but by the end of the century the figure was closer to 9

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<sup>32</sup> See Kenny 2008c.

out of 10. Valuing ABCs and getting DPTs—these are the forces behind global improvements in quality of life.

The spread of technologies and ideas explain a strong global pattern to quality of life improvements with countries rich and poor, tropical and temperate, seeing similar rates of progress over time. The shocks of AIDS and state collapse explain most of the (limited) variation from that global pattern in the case of health. And a similar story applies to measures of education, if less so to human rights.

At the same time, a country's relative standing in terms of quality of life appears to be connected to the same historical factors that explain present-day relative income performance. Even if global inequality in quality of life has fallen, countries that started earlier in the provision of health and education services, or began with a greater respect for human rights, remain ahead to this day.

Figure 7.1 displays a common global pattern in declining infant mortality. It plots the average country infant mortality for each year after the initial year of passing below an infant mortality level of 100 per 1,000 live births, or 10 percent infant mortality.<sup>33</sup> For the Netherlands, the transition to sub-10 percent mortality occurred in 1909. For Poland, the transition occurred in 1952. So Poland's 1952 infant mortality and the Netherlands' 1909 mortality are used as two data points in the calculation of average first-year mortality in the graph. The chart uses data for 57 countries from Sweden (which transitioned in 1895) to Haiti (which transitioned in 1992). It appears that there is strong evidence of a global pattern of decline after the 10 percent mortality transition point. The lighter lines on the figure measure standard deviation; give or take, two-thirds of countries see infant mortality trends that follow a path between these two lines. Forty years after dropping below 10 percent infant mortality, the average country will see 3.5 percent mortality. About two-thirds of countries are within about 2.2 percentage points of that figure.

Figure 7.2 displays the average actual change in levels of infant mortality for 68 countries over the 50 years 1950 to 2000 compared to the change predicted based solely on a simple model. This model predicts country mortality today based simply on the level of mortality yesterday (or ten years ago, or 50 years ago) and a constant (global) rate of progress. It makes no reference to different rates of economic growth, or health financing, or education rates, or policy choices—or war, famine or plague—across countries. It predicts future mortality purely on the basis of current mortality and the average rate of global change.<sup>34</sup> The average decline in infant mortality over the period 1950–2000 is 73 percent, and pretty much every country saw a dramatic decline. The average *error* on our 2000 predictions based on 1950s mortality data and global change alone is only 11 percent, just a

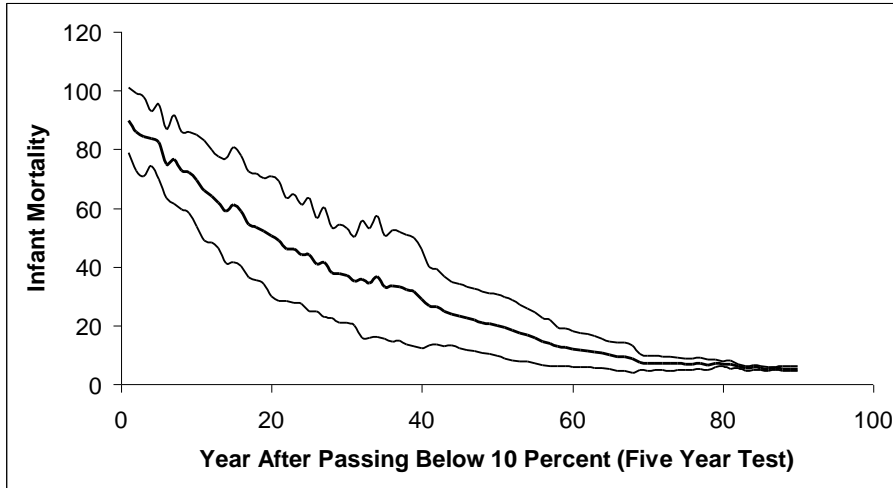
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<sup>33</sup> The figure uses a “five-year test” in that it takes data for countries after they first drop below ten percent infant mortality for five years. This is due to data concerns regarding outlier data points likely due to misrecording. The data is from Abouharb and Kimball 2007. The analysis is described further in Kenny, 2008a.

<sup>34</sup> See Kenny and Casabonne 2008.

little over one-seventh the average change. The other six-sevenths of country-level change appears to be linked with a common pattern of change across countries.

**Figure 7.1: The Course of Infant Mortality after 10 Percent**



**Figure 7.2: Predicting 1950–2000 Infant Mortality Change**

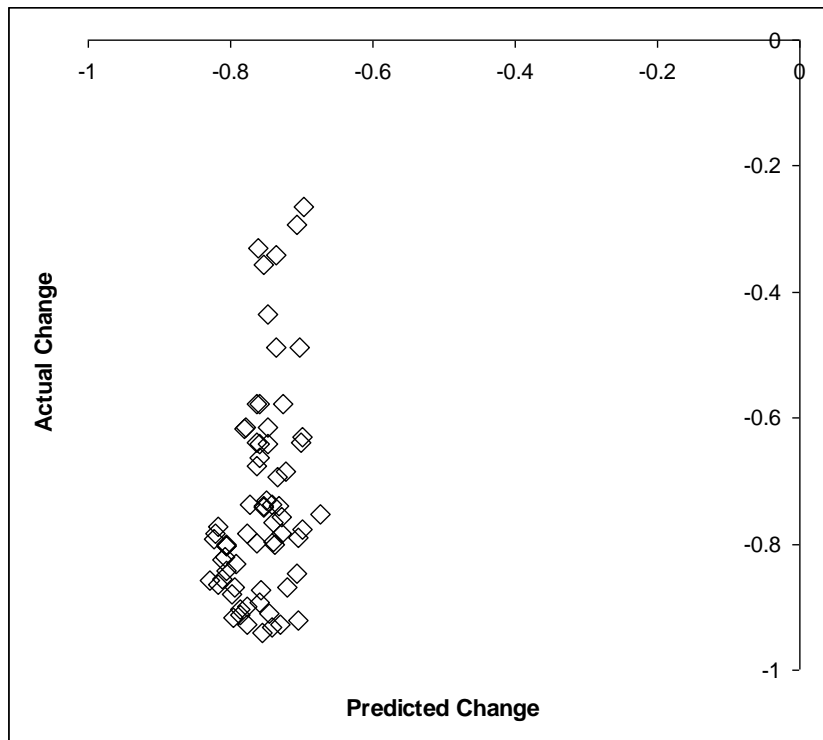


Figure 7.3 compares the rates of improvement in life expectancy over the period 1962–82 to rates of life expectancy improvement over the period 1982–2002 for countries around the world.<sup>35</sup> The diamond at bottom right on the chart is Botswana, where life expectancy grew quite rapidly in the 1960s and 70s before declining by a third over the last 20 years under the influence of AIDS. But Botswana is no exception proving the rule: for a range of countries the link across periods in health improvements is clearly very fragile. If anything, relatively strong performance one decade is associated with somewhat *weaker* performance the next. The data provide evidence of reversion over time toward a rate of change predicted by the rate of global progress.<sup>36</sup>

**Figure 7.3: The Correlation of Health Improvements over Time**

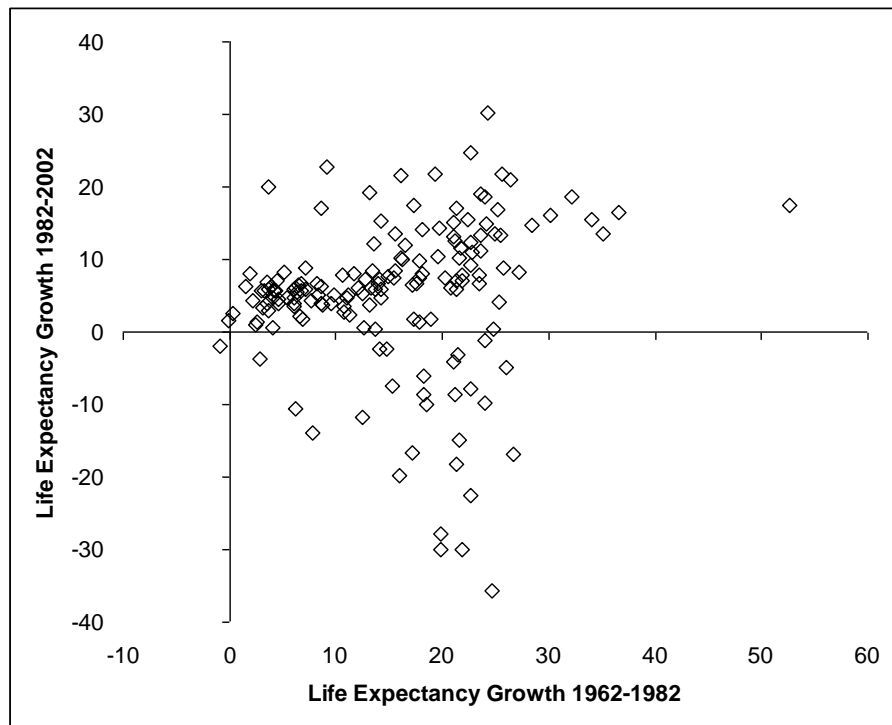


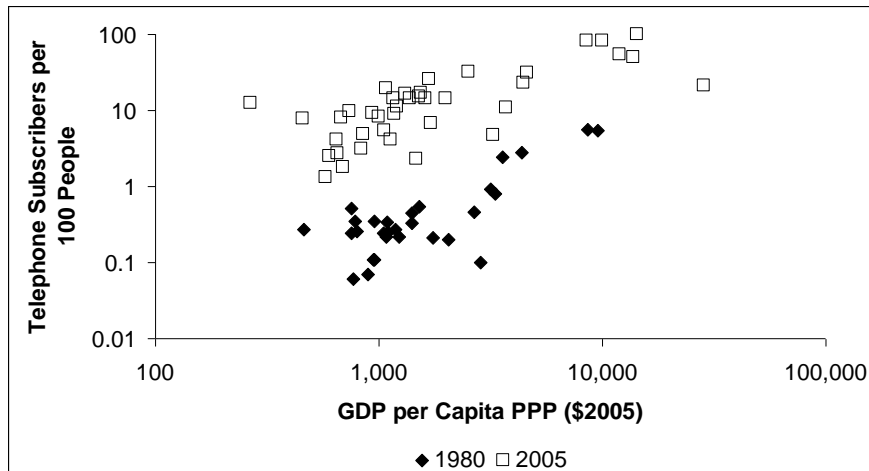
Figure 7.4 shows the relationship between income and telephone subscriber rates in 1980 and 2005 for countries in sub-Saharan Africa as an indication of the global spread of technology.<sup>37</sup> As can be seen, thanks largely to the mobile revolution, for any given income per capita, the number of telephone subscribers per capita has increased by a factor of ten or more over that time.

**Figure 7.4: Telecoms Preston Curves for Africa**

<sup>35</sup> Data from World Bank 2010.

<sup>36</sup> Kenny and Casabonne 2008.

<sup>37</sup> Data from World Bank 2010.



## VIII. Policies for the Quality of Life

The fact that income appears to be a poor proxy for overall changes in the quality of life suggests the need for a broad focus and a broad definition of development for policymakers. Given that it is not clear exactly which policies at which times will promote growth, and the tenuous nature of the connection between income growth and quality of life, the first rule for economic policymaking should be “do no harm.” The grail of economic growth does not justify the degradation of health, education, or civil rights.

Regarding support for improvements in the broader quality of life, policies might include aiding the spread of ideas through approaches that increase demand for good health and education. Communications programs and payments for school attendance or clinic visits have a role here. In addition, with the quality of service provision increasingly important to outcomes, reform of the institutions of health and education should also be a central concern.

## IX. The Global Agenda

There is a moral case for attempting to provide minimum levels of health or education across countries, based on the same principles that push for a minimum quality of life within countries. But that moral principal only applies if rich countries can actually help improve quality of life outcomes in poor countries. This chapter argues that they can.

A range of rich-country policies could help. Not least, more generous immigration quotas focused on the poorest countries and more equitable trading regimes that protect the transfer of the technologies of the quality of life would both have significant impacts. And even if the record of aid in fostering economic growth or the development of institutions is mixed, it has played a part in improving quality of life outcomes. Aid might be an even more powerful tool if it focused more on global technology development and the spread of ideas. One option would be the creation of a

global technology bank that directly funded research or put up prizes for advances in technology that would particularly benefit the world's poor.

## **X. Conclusion: Realistic Optimism**

Realistic optimism is the right attitude with which to face the issue of development. This is based on a recognition of the challenges still facing the world. There is still significant progress to be made, as well as limits to the likely speed of that progress and concerns with sustainability. But we should also acknowledge that the rapid and unprecedented improvement in global quality of life over the past 50 years provides some significant grounds for hope about the future. Understanding the causes of this success, and building on existing progress, is a vital part of ensuring that it is sustained.



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