

***Capitalism and Human Development, 1870-2007***

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How has wellbeing evolved in the world during the last one and a half centuries? How do advanced, capitalist nations, that is, Western Europe and the regions of European background plus Japan (pre-1994 *OECD*, for short) compare to the *Rest* of the world? Has the welfare state contributed to human development advancement in the *OECD*? How do capitalist and socialist societies compare in terms of wellbeing at early stages of economic development?

The ambiguity of the concept *capitalism*, while complicates any assessment of its impact on welfare, has not prevented an endless debate (Engerman 1997, chapter 16 in this volume). The use of the market as the main way of allocating goods and factors of production and the predominance of the private property of resources seem elements of a minimal definition of capitalism (Hartwell and Engerman 2003).<sup>1</sup> The spread of capitalism has been associated with free markets and freedom of contract, that is, to the absence of interference in agents' decisions ('negative' economic freedom). However, increasing government intervention during the twentieth century and the emergence of the welfare state contradict such a depiction, adding complexity to any evaluation of capitalism's long-term impact on wellbeing (Pryor 2010a, Frieden 2006, Frieden and Rogowski chapter 12 in this volume). The emergence of *command* economic regimes after World War I (socialism, fascism) provides a yardstick for the achievements and shortcomings of capitalism in its different forms.

For a long time, when assessing the impact of capitalism on wellbeing, economic historians looked at living standards during the British Industrial Revolution. A negative appraisal of this early experience of modern economic growth (the so-called 'pessimistic hypothesis'), largely rooted in Marx's immiseration hypothesis, dominates the historical literature (Hartwell and Engerman 1975, Feinstein 1998, Allen 2007). Even the most benign of economic historians' assessments stresses that, despite sustained economic growth since the late eighteenth century, workers' living standards only improved significantly from the 1820s onwards (Lindert and Williamson 1983). Systematic research on real wages has lent support to this pessimistic assessment on a larger geographical scale. Living standards in pre-industrial Europe,

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<sup>1</sup> According to Pryor (2010a: 8), "Capitalism is an economic system in which goods, labor, land, and financial services are transferred through relatively competitive markets and in which the means of production are primarily owned privately".

with the exception of England and the Low Countries, would have remained stagnant until a sustained improvement took place in the early nineteenth-century industrialization leaving the *Rest* -and China in particular- way behind (Pomeranz 2000, Allen 2001, Allen et al. 2010, Li and van Zanden 2010). However, this view is not shared by all, see Broadberry and Gupta 2006 and Maddison 2006).

Along with industrialization, the impact on wellbeing of the integration of commodity and factor markets (namely, globalization) deserves to be considered. Globalization not only increased economic activity in those countries or regions involved, bringing with it higher per capita income, but also improved the relative returns of abundant factors that when was raw labor, as in the cases of nineteenth-century Europe and East Asia, resulted in a decline of income inequality, a trend reinforced in the presence of mass migration (Lindert and Williamson 2003, O'Rourke and Williamson 1999). The comparison between pre-industrial and industrial eras shows a significant improvement in welfare across the board, in terms of both average incomes and equity, as a result of globalization and economic growth (O'Rourke and Williamson 2005).

From the early nineteenth century onwards evidence on wellbeing and economic progress is available for an increasing number of countries. Real wage rates, for example, have exhibited sustained gains in Western Europe and its offshoots over the last two hundred years (Williamson 1995). Expanding trends in wellbeing can also be drawn for the modern era on the basis of often crude estimates of real GDP per head (Maddison 2010), which despite its recurrent questioning as a measure of welfare, continues being widely used (Engerman 1997).

Contradictions between alternative measures of wellbeing have been highlighted. For example, trends in real wages –that accrue, in principle, to those at the bottom of the income distribution- do not match trends in average real incomes per head.<sup>2</sup> In fact, there is nothing unusual in a low correlation between these two indicators, as they address different aspects of income: the returns to all factors of production (in the case of GDP) and those to a single factor, raw labor (in the case of

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<sup>2</sup> Beyond conceptual disqualifications of real wage rates (Maddison 2001) and of guesstimates of GDP per head (Williamson 1995) as measures of wellbeing, attempts have been made at reconciling these indicators (Angeles 2008, van Zanden 2001).

real wages), and, unless the distribution of income remains unaltered over time, no reason exists for them evolving alongside (Williamson 2002).<sup>3</sup> In fact, long run trends in income inequality can be crudely measured on the basis of the ratio of real GDP per head or, ideally, per worker, to real wage rates, the so-called Williamson Index. The Williamson Index provides a reasonable proxy for the functional distribution of income and, in so far the dispersion of returns per head within each factor (labor, capital, land) remains basically unaltered, also for interpersonal income distribution. Scattered evidence suggests that the functional distribution of income captures trends in personal income distribution up to the early twentieth century in Western European countries (Dumke 1988, Prados de la Escosura 2008, Waldenström 2009).

A welfare adjustment of per capita income, that incorporates income distribution, defined as GDP per head times the degree of equality, was postulated by Amartya Sen (1973) and adopted in early Human Development Reports (UNDP 1993). Given the dearth of historical estimates of personal income distribution across countries, splicing available estimates of personal income distribution (for example, the Gini coefficient) with the Williamson Index (and, alternatively, with inequality measures derived from data on heights) provides long-run trends in inequality. Thus, on the basis of Maddison's (2010) real per capita GDP and the Gini and pseudo-Gini coefficients (Baten et al. 2011), historical estimates of Sen-welfare or inequality-adjusted income per head (GDP per head times 1 less the Gini) can be computed for world regions. Figure 1 provides long-run trends for inequality-adjusted GDP per head across world regions. Although Sen-welfare levels increased across the board, they grew less than GDP per head (1.2 vs. 1.5 per cent per year between 1870 and 2007), a difference largely originated in the pre-1950 era. Moreover, when measured with the inequality-adjusted GDP per head, the gap between advanced and developing regions widens further, due to the fact that while inequality declined in OECD countries since the early or mid-twentieth century until late in the century, it remained high in developing regions. In fact, while in terms of Sen-welfare Western Europe closes the gap with the Western offshoots, Latin America and Africa fall further back. As regards

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<sup>3</sup> The comparison between Holland and Java carried out by van Zanden (2001) shows that differences in terms of unskilled wages were closer than in per capita income terms pointing out to higher income inequality in the metropolis.

Eastern Europe, a deterioration of its relative position occurred after the demise of communism as a combined effect of economic stagnation and increasing inequality.

If a longer run comparison, encompassing the last half a millennium, is chosen, the evidence suggests that industrialization and globalization had long-term positive effects on wellbeing, not only because higher income levels were achieved, but because inequality declined. During the early modern period, at least, in Europe, inequality increased and only declined during the modern era, particularly, during the twentieth century (Hoffman et al. 2002, O'Rourke and Williamson 2005, Álvarez-Nogal and Prados del a Escosura 2013). The recent research on top income shares for a large sample of both developed and developing countries confirms a sustained declining trend in inequality throughout the last hundred years, even though a partial reversal was experienced since 1990 (Atkinson, Piketty and Saez 2011). These findings provide a positive answer to the question of whether living standards were higher after the Industrial Revolution. However, they do not provide an answer to whether living standards could have been better under alternative regimes.

So far, trends in wellbeing have been discussed in terms of real wages or real GDP per head. Human welfare, however, is widely viewed as a multidimensional phenomenon, in which per capita income (and its distribution) is only one facet. In fact, attempts at providing more comprehensive measures of living standards go back to the origins of modern national accounts (Engerman 1997). Non-income dimensions such as infant mortality rates, life expectancy at birth, heights, adult literacy, school enrolment, etc. have been used either individually or combined (physical quality of life, basic needs and, more recently, human development) to provide measures of wellbeing beyond the straight jacket of GDP. Thus, in the rest of the chapter, a multidimensional approach will be used in which human development and its health and knowledge dimensions will be examined. Human development has been defined as “a process of enlarging people’s choices”(UNDP 1990: 10), namely, enjoying a healthy life, acquiring knowledge and achieving a decent standard of living, that allow them to leading ‘lives they have reasons to value’ (Sen 1997).

I will start the chapter by presenting trends in human development for the world and its main regions. I will explore, then, the differences observed in terms of human development between laissez faire and regulated capitalism and between

market (capitalist) and command (socialist) societies in their early stages of economic development. Lastly, I will investigate the contribution of each dimension of human development to its overall performance and the extent to which they help understand the observed differences between the *West* and the *Rest*.

As regards the time span considered, the 1870s represent an appropriate starting point because, the previous decades' dearth of data aside, it is when large scale improvements in health -to which the diffusion of the germ theory of disease since the 1880s contributed significantly- (Preston 1975, Easterlin 1999), and education (Benavot and Riddle 1988, Lindert 2004) began in Western Europe and the European Offshoots. It is also in the late nineteenth century when, along the advance in medical knowledge, social spending started expanding in Western Europe and its offshoots (Riley 2001, Lindert 2004).

Some findings can be highlighted. Substantial gains in world human development are observed since 1870 –and especially over 1913-1970. Although the gap between advanced capitalist countries (*OECD*) and the *Rest* widened in absolute terms, an incomplete catching up to the *OECD* took place across the board in developing regions between 1913 and 1970. During the last forty years, the variance in world regions has been large. Asia, driven by China and India, and, to less extent, Latin America and North Africa managed to catch up, while Central and Eastern Europe (including Russia) and Sub-Saharan Africa fell behind.

Major gains in human development were achieved in the *West* during the regulated phase of capitalism, when the public provision of health and education appears to have played a distinctive role in human development advance. In socialist societies, gains in human development matched those of capitalist economies until the late 1960s, which, in some cases, shows socialism's success in raising health and education from initial low levels. This was particularly the case of the Soviet Union and Central and Eastern European socialist experiences, and helps explain its appeal to new independent nations in mid-twentieth century Africa and Asia. However, a dramatic divergence appeared since the late 1960s as relative gains in life expectancy and income per head stopped and catching-up gave way to falling behind. Cuba's success in raising longevity and education provides a counterpoint. Is there, then, any conflict between freedom and the delivery of public goods at least in the early phases

of development? The concept of human development precludes, however, this conflict, as agency and freedom are its final goals. Thus, a rigorous definition of human development reduces the achievements in socialist (or any other totalitarian) countries to 'basic needs'.

Education and, to less extent, life expectancy at birth appears to lie behind the Periphery's limited catching-up in terms of human development up to 1970. Since then, all world regions in the *Rest* have fallen behind the *OECD* in terms of the longevity index, as life expectancy at birth increased faster in the *West* and the proportion of healthy years out of the total life span rose. In the *Rest*, the health or epidemiological transition is the only period in which substantial gains in longevity were achieved. This largely explains the *Rest's* failure to catch up with the *West* despite the educational expansion and the recovery, at the turn of the twentieth century, of per capita income growth.

### **Measuring Human Development**

The different dimensions of human development are combined into an index in a reduced form: life expectancy at birth as a proxy for a healthy life, education measures (schooling, literacy) for access to knowledge, and discounted *per capita* income as a surrogate for other wellbeing dimensions other than education and health (Anand and Sen 2000, UNDP, 2001: 240).

How progress in human development dimensions is measured matters. Usually, the original values of social variables (life expectancy, schooling) are used untransformed (see, for example, Becker et al. 2005, Acemoglu and Johnson 2007, Lindert 2004). However, in the human development index (UNDP 1990), since social variables have usually asymptotic limits, a linear transformation was employed to convert its dimensions into index form. Thus, by reducing the denominator the index's range widens. For each dimension, the original values ( $x$ ) are transformed as indices ( $I$ ),

$$I = (x - Mo) / (M - Mo), \quad [1]$$

Where  $Mo$  and  $M$  are the maximum and minimum values, or goalposts. Each dimension ranges, thus, between 0 and 1.<sup>4</sup>

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<sup>4</sup> Goalposts in the so-called 'hybrid' HDI (Gidwitz et al. 2010: 3) are employed here (all the data come from Prados de la Escosura 2012). Upper and lower bounds for life expectancy are fixed at 83.2 and 20

The human development index is, then, derived as a multiplicative combination of the transformed values of each dimension that receives equal weights, as all are considered indispensable. By denoting the non-linearly transformed values of life expectancy and education as  $L$  and  $E$ , and the adjusted *per capita* income as  $UNY$ , it can be expressed as,

$$HIHD = L^{1/3} E^{1/3} UNY^{1/3} \quad [2]$$

The linear transformation of the social, non-income dimensions employed in the conventional HDI (UNDP 2010) remains, however, a serious obstacle for the comparison of human development levels over space and time. In the linear transformation, a given absolute change in a dimension reflects the same change regardless of its starting level and, thus, its corresponding increase would be larger the lower the initial level, favoring the country with the lower initial level of human development. In fact, it should be the other way because, to put it in Sen's words (1981: 292), "as ... longevity becomes high, it becomes more of an achievement to raise it further".

The limitations of the linear transformation become clearer when quality is taken into account. Life expectancy at birth and literacy and schooling rates are just crude proxies for a 'long and healthy life' and for access to knowledge, the actual goals of human development. Unfortunately, information on health-adjusted life expectancy or quality-adjusted education is only available for recent years. Research for the last decades concludes that healthy life expectancy increases at a faster rate than total life expectancy, so the proportion of years lived in good health increases with the length of life (Murray and López 1997, Mathers et al .2001). Similarly, the quality of education, measured in terms of cognitive skills, grows more than proportionally as the quantity of education (gross rates of literacy and enrolment) increases (Hanushek and Kimko

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years, respectively. For education (adult literacy and gross primary, secondary, and tertiary enrolment rates), maximum and minimum values of 100 and 0 were combined using two-thirds and one-third weights, respectively. In the case of per capita GDP, the observed maximum and minimum over 1870-2007 were, expressed in Geary-Khamis [G-K] 1990 dollars, \$42,916 and \$206 (Maddison 2010), respectively, transformed into logarithms.



2000). The bottom line is that more years of life and education imply higher quality of health and education in childhood and adolescence.

A practical solution to the problem derived from the linear transformation is provided by Kakwani (1993) who constructed a normalized index from an achievement function in which an increase in the standard of living of a country at a higher level implies a greater achievement than would have been the case had it occurred at a lower level,

$$= f(x, Mo, M) = (\log(M - Mo) - \log(M - x)) / \log(M - Mo), \quad \text{for } \varepsilon = 1 \quad [3]$$

Where  $x$  is an indicator of a country's standard of living,  $M$  and  $Mo$  are the maximum and minimum values, respectively, and  $\log$  stands for the natural logarithm.

Thus, following Kakwani, the original values of the social, non-income dimensions of the index have been transformed, rather than using a linear transformation (expression 1), with a convex achievement function (expression 3). This way, I can allow for the more than proportionally increase in the quality of non-income dimensions as its quantity rises.<sup>5</sup>

### **Trends in Human Development**

A long-run upward trend in world human development is observed which raised six fold between 1870 and 2007, implying a yearly growth rate of 1.3 per cent. Nonetheless, significant room exists for improvement in world human development. Using the Human Development Report's distinction between 'low' (< 0.5), 'medium' (0.5-0.8), and 'high' (>0.8) levels, the world would be still below the 'medium' level in 2007. Three main phases can be distinguished: a first one, up to 1913, of steady and moderate progress; a second one of acceleration, (but for World War II), during the period 1913-1970, and a third one, since 1970, in which the deceleration of the 1970s and 1980s gave way to a mild expansion from 1990 onwards (Figure 2).

Trends in human development do not match closely those observed in real GDP per head (Figure 3). More specifically, unlike per capita income, human development

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<sup>5</sup> A more detailed explanation of the methodology used and of the sources and procedures employed to construct the indices of human development and its main dimensions is provided in Prados de la Escosura (2012).

does not exhibit dramatic changes in pace as a result of globalization phases (Lindert and Williamson 2003). A counterintuitive lack of association is observed between human development and per capita income prior to World War I. Although it is widely accepted that the initial large-scale progress in health can be traced back to the late nineteenth century with the diffusion of the germ theory of disease (Riley 2001) and that primary education experienced a significant advance (Benavot and Riddle 1988), in the era of liberal capitalism the progress in human development dimensions fell short of the economic advancement resulting from globalization and industrialization. The negative impact on life expectancy of late nineteenth century urbanization as well as the lack of public policies with regard to education and health may account for human development's slower progress (Easterlin 1999, Lindert 2004). During the Interwar years, human development progressed steadily, while real GDP per head stagnated or declined. Health and education practices became increasingly globalized during the economic backlash of the period 1914-1950 so could a delayed impact on economic globalization on human development be, perhaps, hypothesized? Since 1950, advancement in human development has been hand-in-hand with growth in the world economy, although at a lower pace during the Golden Age (1950-73) and, again, since 2000.

A deeper perception of world human development derives from comparing the performance of different regions in absolute terms and relative to *OECD* (Figures 4a and 4b). Did the gap in human development between the *OECD* and the *Rest* deepen over time? The answer is negative. Relative to the *OECD*, the *Rest*, on average, showed stability up to 1913 and catching up thereafter, more intense up to 1970 –with the exception of the World War II years-, and weaker afterwards. Then, catching-up to *OECD* slowed down dramatically after 1970, and, by 2007, its level only represented 50 percent of that of the *OECD* countries.

However, a glance at long-run behavior of human development in developing regions shows a wide variance. Latin America caught up to the *OECD* until 1980, although more intensively during the first half of the twentieth century. In Africa a sustained improvement and catching-up took place between the 1920s and the 1970s, which, since 1980, slowed down in North Africa and ceased altogether in Sub-Saharan Africa. In Asia, starting from low levels -similar to those of Africa up to the early 1920s-,

human development improved significantly until 1970 and, again, at the turn of the century.

Since the 1970s due to Central and Eastern Europe's falling behind *OECD* and Asia's (especially China's) and North Africa's catching up, a process of convergence between these regions with Latin America has taken place, while Sub-Saharan Africa fell behind.

In general, relative to *the Core*, the *Periphery* performed better in human development than in terms of income per head (Prados de la Escosura 2012). Thus, on average, by 2007, the *Rest's* human development had reached the level of *OECD* in 1950, but only that of 1938 in terms of real per capita GDP.

What does explain the superior human development performance of rich capitalist economies? It has been argued that systematic market failure required public intervention, as markets would not have contributed to control disease transmission, encourage immunization, nor stimulate medical research (Easterlin 1999). Does growing Government intervention and, in particular, the introduction of the welfare state, play a crucial role in OECD wellbeing achievements? Lindert (2004: 20-21, 188, chapter 13 in this volume) associates the increase in the relative size of social spending to globalization, economic growth, democratization, and longevity. The association between globalization and social spending is predicated on the fact that international markets integration increases external risks and, hence, the demand of government-led social protection (Rodrik 1997). During the first globalization (1870-1913), increasing exposition to international trade and, thus, uncertainty among European workers, led to demands of social protection and governments' introduction of 'labor compacts' (Huberman and Lewchuk 2003). Thus, to a large extent, globalization and social protection seem to go hand-in-hand and (Huberman 2012, chapter 13 in this volume) and the expansion of free markets correlates with economic prosperity and democracy.

Did countries with higher level of social spending achieve higher longevity and education and, hence, human development? An impressionistic test is presented in Figure 5 by plotting levels of human development against social transfers (that is, all social spending but that in education) expressed in proportion of GDP for a group of

OECD countries.<sup>6</sup> The results suggest that there exists a positive non-linear association between the expansion of social protection and the improvement in human development that stabilizes above a low threshold of social transfers (as a share of GDP). On the left of the graph, small changes in social transfers are associated with large increases in human development. Then, as we move to the right, we observe that increases in social transfers are associated with smaller, but still positive, increases in human development. As social transfer reach 25 per cent of GDP the curve tends to flatten, suggesting a reversal for levels above 30 per cent.

How do socialist societies compare with capitalist ones?<sup>7</sup> It has been frequently argued that it is at low levels of economic development when socialist societies have an advantage over capitalist ones in lifting human wellbeing and, in particular, its non-income dimensions. Actually, substantial gains in human development were obtained in the Soviet Union between the 1920s and the 1960s resulting in an impressive catching-up to the *OECD*. Since the 1960s, however, it gave way to stagnation and to a dramatic decline relative to *OECD* up to 2000, especially during the 1990s. The significant achievements in health and education behind human development advance and catching-up in the Soviet Union up to the mid-1960s can be also observed in socialist Central and Eastern Europe since 1950.

In fact, the success of the Soviet Union in raising longevity and education during the central decades of the twentieth century provided an appealing model for newly independent nations in Asia and Africa after World War II as they were facing the challenge of meeting basic needs (Collier and O'Connell 2008, Ivanov and Peleah 2010). Cuba, the only socialist experience in the Americas, achieved remarkable success since the 1959 Revolution, driven exclusively by its non-income dimensions. In

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<sup>6</sup> The data on social transfers as a share of GDP for OECD countries (Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Sweden, Switzerland, UK, and USA) at decadal intervals from 1880 to 2000 (except from 1960 when data are for 5-year intervals) comes from Lindert (1994) and the Allard-Lindert OECD 1950-2001 Dataset in Peter Lindert's website, <http://lindert.econ.ucdavis.edu>, accessed on August 18, 2012).

<sup>7</sup> I have chosen to use the term 'socialist' rather than 'communist' as in the Marxist thought the latter was the goal to be reached and socialism was the means to reach it. See Ivanov and Peleah (2010) for a discussion.

Asia, China's human developments improved significantly in the first half of the twentieth century, accelerating under socialism up to the 1960s, and, again, in the 1990s after reforms were introduced. Social engineering experiences during China's Cultural Revolution and Cambodia's Khmer Rouge era proved disastrous in terms of human development. In Indochina, socialist experiences only were comparatively successful in the late twentieth century, once institutional reforms liberalizing their economies were introduced. Thus, Vietnam, Lao, and Cambodia caught up to East Asian average after 1990. Socialist experiences in Sub-Saharan Africa did not succeed in terms of human development as the cases of Benin, Ethiopia, Congo, Angola, and Mozambique evidenced. Political-economic distortions, particularly those associated to moves away from market resource allocation, appear inversely related to human development progress in Sub-Saharan Africa (Prados de la Escosura 2011). A preliminary evaluation suggests that but for Russia during the central decades of the twentieth century and Cuba, socialism has not delivered higher human development for developing countries than capitalism.

The short-cut approach to 'measure' human development that has been used here so far leaves aside agency and freedom. Without agency—that is, the ability to pursue and realize goals a person has reasons to value- and freedom the human development index becomes a 'basic needs' index (Ivanov and Peleah 2010). Thus, in order to achieve a comprehensive depiction of human development the opportunities individuals have of exercising their political capabilities *and* influencing public decisions need also to be taken into account (Dasgupta and Weale 1992, Cheibub 2010). This is a particularly relevant issue when capitalism and socialism are compared.

Strictly speaking, however, since restrictions of individual choice in socialist countries -as collectivization, forced industrialization, and political repression exemplify-, as also occurred under fascism, affected negatively agency and freedom, their achievements in health and education could be better depicted as 'basic needs' rather than as human development progress (Ivanov and Peleah 2010). From this perspective, the demise of socialism after 1989 would have represented an advance in terms of human development (Brainerd 2010a).

Human development and democratization are, nonetheless, correlated since 1950 and its association grows stronger as their respective levels are higher (as implied by the positive sign of the quadratic term in the regression). It can be observed that the correlation coefficient is higher for world regions with both higher level of human development and democracy. Thus, Europe appears on top with Africa at the bottom (Figure 6).<sup>8</sup>

### **Decomposing Human Development Growth**

Long run gains in human development mainly result from the progress of its non-income dimensions, longevity and education. A sustained progress in Kakwani indices of life expectancy at birth and education is observed in different world regions (Figures 7 and 8). Exceptions are the practical stagnation of life expectancy indices in Central and Eastern Europe from the 1960s onwards and in Sub-Saharan Africa since the 1980s. Nonetheless, the improvement falls short from that of *OECD* and catching up in the Rest either stops, as in it did the case of life expectancy after 1970, or falls short to be complete as it happened in the case of education.

The growth of human development (*HIHD*) can be decomposed into the contribution of its different dimensions -life expectancy at birth (*L*), education (*E*) and truncated income (*UNY*)- on the basis of expression [2]. Using low case to denote rates of variation,

$$hihd = 1/3 l + 1/3 e + 1/3 uny \quad [5]$$

It appears that social dimensions drove world human development gains over time, with life expectancy representing the leading force during the first half of the twentieth century while education dominated in its second half (Figure 9).

Gains in life expectancy resulted from the diffusion of preventive methods of disease transmission (Preston 1975, Riley 2005), improvements in nutrition (Fogel 2004), the introduction of vaccines since the 1890s and drugs to cure infectious diseases, sulpha drugs from the late 1930s and antibiotics from the 1950s (Easterlin 1999, Jayachandran et al. 2010), and the public provision of health (Loudon 2000,

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<sup>8</sup> The index of democratization comes from Vanhanen (2011), normalized by dividing its value by its potential maximum so it ranges between 0 and 1, and becomes comparable to the HIHD (See Prados de la Escosura 2012).

Cutler and Miller 2005). These elements were crucial in the epidemiological or health transition in which persistent gains in lower mortality and higher survival are achieved as infectious disease gives way to chronic disease that becomes the prevalent form of morbidity and main cause of death (Omran 1971, Riley 2005).

Why does the longevity's drive fade away by mid-twentieth century? The contrast between the experiences of the *OECD* and the *Rest* are illuminating. In the case of developed countries, improvements in life expectancy have driven human development advance since 1880 (except for the 1960s) (Figure 10). The sustained progress in life expectancy during the late twentieth and early twenty-first century is associated to gains in healthy life years that represent 90 percent of the years lived in *OECD* countries at the turn of the new century.<sup>9</sup> Thus, a second health transition has taken place in *OECD* in which mortality falls among the elderly as a result of a better treatment of cardiovascular disease and of better nutrition in their early years (Eggleston and Fuchs 2012). These health improvements not only resulted in a longer life but also in longer healthy life years that increased more than proportionally as life became lengthier (Mathers et al. 2001, Murray and Lopez 1997).

In the *Rest*, the role of life expectancy in human development advance is, despite its very impressive gains during 1913-1970, less decisive, especially after 1970, as life expectancy gains in the *Rest* appear to slow down as the health transition takes place and education constitutes the driving force of human development in the long run (Figure 11).

Catching up in the *Rest* to *OECD* is measured here as the difference in human development rate of variation between the *Rest* and *OECD*, and it concentrates between 1913 and 1970, and more intensely in the Interwar and, then, in the 1950s, interestingly, years in which a large proportion of the *Rest* was still under colonial rule. In the *Rest*'s sluggish catching-up since 1970, life expectancy plays a crucial role, providing support for the view that health inequalities across countries increase as new health technology and knowledge is introduced at a faster pace (Cutler *et al.*

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<sup>9</sup> Cf. <http://www.conferenceboard.ca/hcp/details/health/life-expectancy.aspx#quality>.

2006: 117). Only after 2000, income per head constituted the main element behind the *Rest's* catching up.

A glance at the main regions of the Periphery is illuminating. In Eastern and Central Europe (Russia included) most improvement in human development took place up to 1970, and it was more intensely in the 1890s and between the 1920s and 1950s, when catching up to the Core took place. Human development progress collapsed after 1970, falling behind *OECD*, only to recover mildly after 2000. Education was the driving force, but for the 1920s and, especially the 1940s, when life expectancy dramatic advances took the lead. Since 2000 income has become the main dimension of human development advancement. A glance at Russia's performance, the dominating country in the region, confirms and accentuates this depiction, although most of its catching-up was restricted to the 1890s and to the period 1913-1950.

In the Soviet Union, the expansion of health care to the whole population was particularly successful in fighting infectious disease and child mortality (Brainerd and Cutler 2005, Brainerd 2010b). Infant mortality fell rapidly between 1940 and 1965. By the mid-1960s life expectancy at birth had practically converged to Western Europe after a dramatic improvement over the previous four decades, especially during the 1950s (Mazur 1969). However, life expectancy fell since 1965 as a result of the decline in adult (male) longevity, which Dutton (1979) attributes to diseases of the circulatory system, increasing death rates by accident, suicide, and poisoning, and alcoholism. Increasing infant mortality since 1970 reinforced this declining trend. In the rest of socialist countries in Eastern Europe life expectancy also presented stagnation since the mid-1960s.

The collapse of socialism in Central and Eastern Europe and the disintegration of the Soviet Union brought with it a decline in life expectancy, more severe and persistent in the former Soviet Union, in which there has been no recovery (Brainerd and Cutler 2005, Brainerd 2010a). In Central and Eastern Europe, however, life expectancy in the former socialist countries recovered quickly and expanded after the mid-1990s, especially in Czechoslovakia, Poland and Hungary (Stillman 2006, Brainerd 2010a). The collapse of life expectancy in Russia is associated with an increase in middle age and infant mortality. Alcohol consumption and stress from the transition to



market (unemployment uncertainty for mid-age workers, rising inequality), along with worsening of diets and health and material deprivation, appear to be largely responsible for the increase in mortality (Shkolnikov et al. 2001, Cutler and Brainerd 2005, Brainerd 2010a). As regards agency, advances in civil and political liberties have been quite uneven in former socialist Europe, with serious restrictions in the countries of the former Soviet Union and indisputable progress in Central Europe and the Baltic republics.

In Latin America, human development experienced moderate and steady progress and catching-up between 1880 and 1980. In this region too education is the leading dimension in human development, especially, during the second half of the twentieth century (but for the 1980s). Life expectancy had a distinguished role during the early twentieth century, especially in the 1940s, when the strongest catching-up to OECD of the entire period considered took place. Interestingly, such an advance did not take place as a result of the diffusion of treatment of infectious diseases by sulpha drugs and antibiotics and vaccination against tuberculosis because, although available, they were not accessible to low income population, but as from the diffusion of hygienic practices among the population, sometimes in periods of economic stagnation as the cases of British Guiana and Jamaica during the early twentieth century evidence (Mandle 1970, Riley 2005). In Jamaica, for example, mortality declined sharply during 1920-1965, but more intensively during the late 1920s and 1930s while real per capita GDP was relatively stagnant. Low-cost public health measures and diffusion of health knowledge played a major role in eradicating communicable diseases (diarrheal diseases, malaria, and tuberculosis), prior to the introduction of antibiotics (Riley 2005). Latin America's weak convergence to developed countries deserves investigation. In particular, the role inequality played in restricting access to health and education in the late twentieth century.

Cuba, an exceptional case in the Americas, provides an interesting counterpoint to other socialist experiences. In striking contrast with Cuba's poor economic performance since the 1959 Revolution, an impressive improvement in life expectancy has taken place (Devereux 2010, Ward and Devereux 2010, 2012). Such a tendency did continue existing trends during the first half of the twentieth century, initiated after

the U.S. occupation, linked to sanitary and public health innovation that resulted in good health services especially for the urban poor (Díaz-Briquets 1981, McGuire and Frankel 2005). Advancement in health care during the early twentieth century implied that by the eve of the 1959 Revolution was above the average Latin American and Southern European countries. From 1959 onwards, the success in fighting and eradicating infant mortality is largely the result of the socialist state commitment (Devereux 2010). Paradoxically an inflexible and inefficient system, with poor infrastructure, lack of medicines, and high corruption has been able to succeed in eradicating infant mortality and increasing life expectancy by political imposition of state control over medical professionals and patients. Thus, the case of Cuba provides an extreme case of contrast between the success in achieving 'basic needs' and the failure to enlarge people's choices –the core of human development- as agency and freedom are severely curtailed by the political regime.

Significant progress of human development has taken place in Asia during the last century although it varied widely across its regions. China has experienced an impressive advancement and catching up in human development during the last hundred years, with special intensity in the Interwar (1913-1938) and the Golden Age (1950-1970), in which education, between 1929 and 1960, and life expectancy from 1913 to 1929 and in the 1960s, made the main contribution. During the last forty years the income dimension has dominated progress in human development, largely a consequence of the post-1979 economic reforms, while its social components (life expectancy, in particular) played a minor role. The slowdown in health improvements has been regarded as a direct consequence of the new economic policies (Dréze and Sen 2002, Cutler et al. 2006).

India experienced a steady advance in human development since the late nineteenth century, catching up to OECD over the last century, especially between 1913 and 1929 and during the 1940s and 1950s. Education appears as the main contributor to such advancement in the long run, although life expectancy at birth drove it during the early twentieth century (1913-1950). Improvements in sanitation, medical care, and famine prevention -based upon the new transport network, the economy's diversification, and government relief- successfully contributed to reduce

the impact of infectious disease (malaria, smallpox, cholera) (McAlpin 1983, Roy 2006: 311-312). These achievements are especially remarkable because they took place during a period of stagnation in real incomes per head (Roy 2006: 78, Maddison 2010). Interestingly, significant gains in wellbeing were achieved before independence, despite claims of under-investment and poor health infrastructure (Amrith 2009), raising the issue of how colonial rule affected wellbeing. In the last three decades, the income dimension played a major role, along education, in human development progress, a feature associated, as in the case of China, to the economic impact of pro-market reforms, which has contributed to reduce the absolute extreme poverty rate by half since the early 1970s (Kotwal et al. 2011). As for China, the slowdown in infant mortality reduction occurred at the time the new economic policies were implemented (Dréze and Sen 2002).

In the rest of Asia (excluding Japan), sustained progress in human development has taken place since 1870 and catching up to OECD can be observed since 1913, especially up to 1938 and during the Golden Age (1950s and 1960s). Education and health improvements jointly contributed in the advancement of human development. As in the case of India, health improvements were achieved before colonial independence: mortality from smallpox, cholera and plague was reduced through specific public health measures in Indonesia, the Philippines, and Taiwan during the 1920s (Preston 1975)

In Africa, a very distinctive performance is observed between its north and sub-Saharan regions. In North Africa, a steady improvement has taken place in human development, on the basis of both longevity, which experienced a major improvement in the 1940s, and education gains, that allowed the region's catching-up to OECD over the twentieth century, especially in its central decades and in the 1970s. South of the Sahara the period 1913-1980 is also the one of human development advancement and catching-up. However, the leading role played by life expectancy is restricted to the 1930s and 1940s, and education provided the main source of progress, especially as economic growth per head collapsed during the last quarter of the twentieth century. The stagnation of life expectancy, due to the spread of HIV/AIDS and the resilience of malaria, together with arrested growth and the deceleration in the education

expansion, largely resulting from economic mismanagement, political turmoil and civil wars, explain the weak advance in human development and the region's falling behind. The surge in human development during the 2000s has been helped by the recovery in economic activity and, to less extent, in life expectancy, but education has remained the main force behind its advance.

## **Conclusions**

Human development provides a multidimensional approach to wellbeing. Reconstructing its trends since 1870 allows us to establish the extent to which progress took place, how differences between the *West* and the *Rest*, and across developing regions, emerged and developed, and what were its leading dimensions. A substantial but incomplete improvement in world human development has taken place during the last one and a half centuries, although it was the period between World War I and the oil shocks of the 1970s the one in which wellbeing expanded intensively and across the board.

Interestingly, a major phase of health and education globalization took place between 1920 and 1950, just at the time of an economic globalization backlash, which resulted in substantial gains in human development.

The last four decades have witnessed a deceleration in human development advancement and a widening of the absolute gap between *OECD* and the *Rest*. Nonetheless, a large variance in regional behavior is concealed behind the *Rest*. Progress and catching up in large areas of Asia, North Africa and, to less extent, in Latin America, coexisted with the collapse and falling behind of former socialist Europe and Sub-Saharan Africa.

Differences in the behavior of human development dimensions help to explain the gap between *OECD* and the *Rest*. Longevity is the key element in the advanced countries forging ahead, not only because of the longer life span enjoyed by its population, but because of the higher quality of life associated with it. Conversely, in the *Rest*, life expectancy only played a major role in human development progress and catching up until the central decades of the twentieth century, at the time of the demographic and epidemiological transition. Henceforth, its dynamic role diminished. A second wave of longevity expansion comparable to that of the *West* has not taken

place in the *Rest* yet. Thus, education carried most of the weight in human development progress during the last four decades, with the income dimension playing a decisive role in catching up to *OECD*: positive in China and India, negative in Sub-Saharan Africa and Russia and former European socialist countries.

The choice of economic and social system had a far from negligible influence in human development across countries. Socialist and capitalist models implied different health and education policies, as well as different economic policies. The results presented in the chapter suggest that, despite its initial success as providers of 'basic needs', socialist experiences failed to sustain the momentum and, but for Cuba, stagnated and fell behind before the demise of communism. Furthermore, its suppression of agency and freedom prevented real achievements in human development.

A research agenda emerges from the review of the evidence. Why do we observe big regime changes in the drivers of human development? In particular, why life expectancy stopped being its driving force in the world since mid-twentieth century? It has been pointed out in the chapter that as the 'first' health transition was completed, its leading role faded away, but why a 'second' transition, like the one undergoing in the *OECD* has not been triggered off? Is it due to a lack of public policies, or to the inequalizing nature of the new technologies? Or is it because health and education are high income elastic goods that are only increasingly demanded as people get richer?

Why are trends in GDP per head and human development not correlated over time when increases in per capita income would surely contribute to better nutrition, health and education? Why was there was catching-up to the *OECD* in the *Rest* in terms of human development, life expectancy and education, but not in GDP per capita? Is the different behavior related to public policy (e.g. public schooling, public health, the rise of the welfare state), or to the fact that medical technology is a public good?

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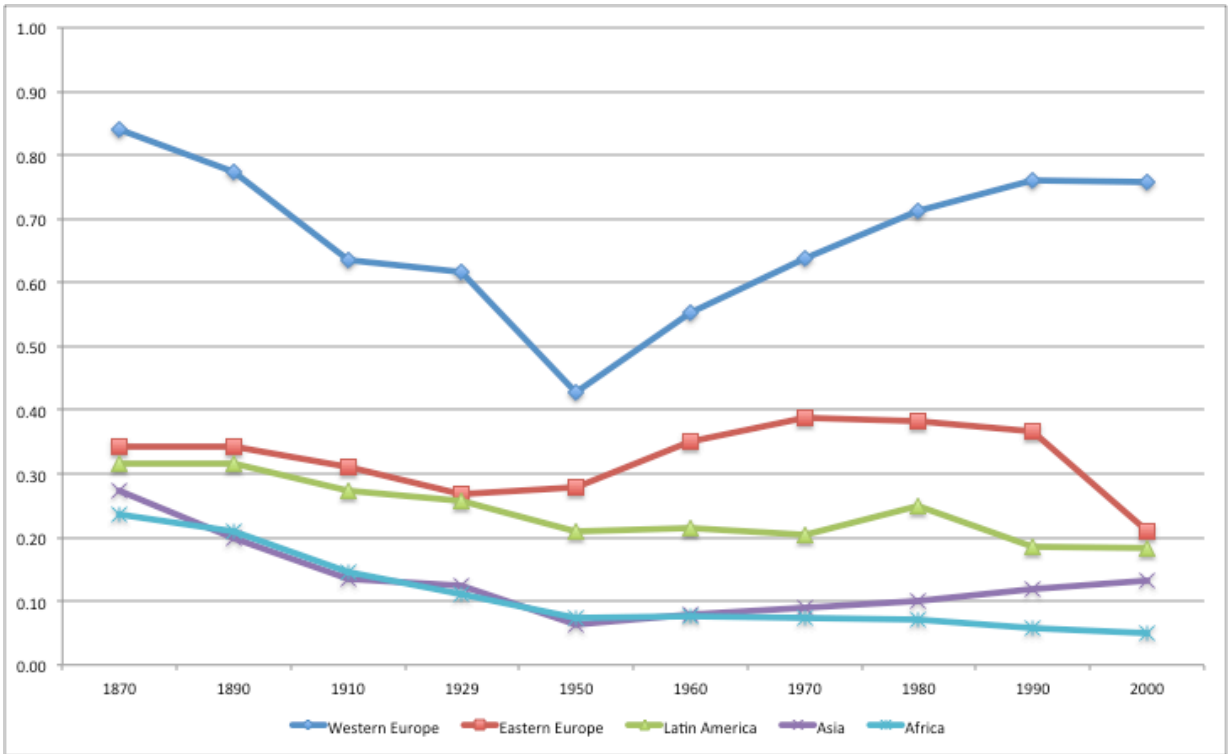


Figure 1. Inequality-adjusted real GDP per head across world regions (European Offshoots = 1)

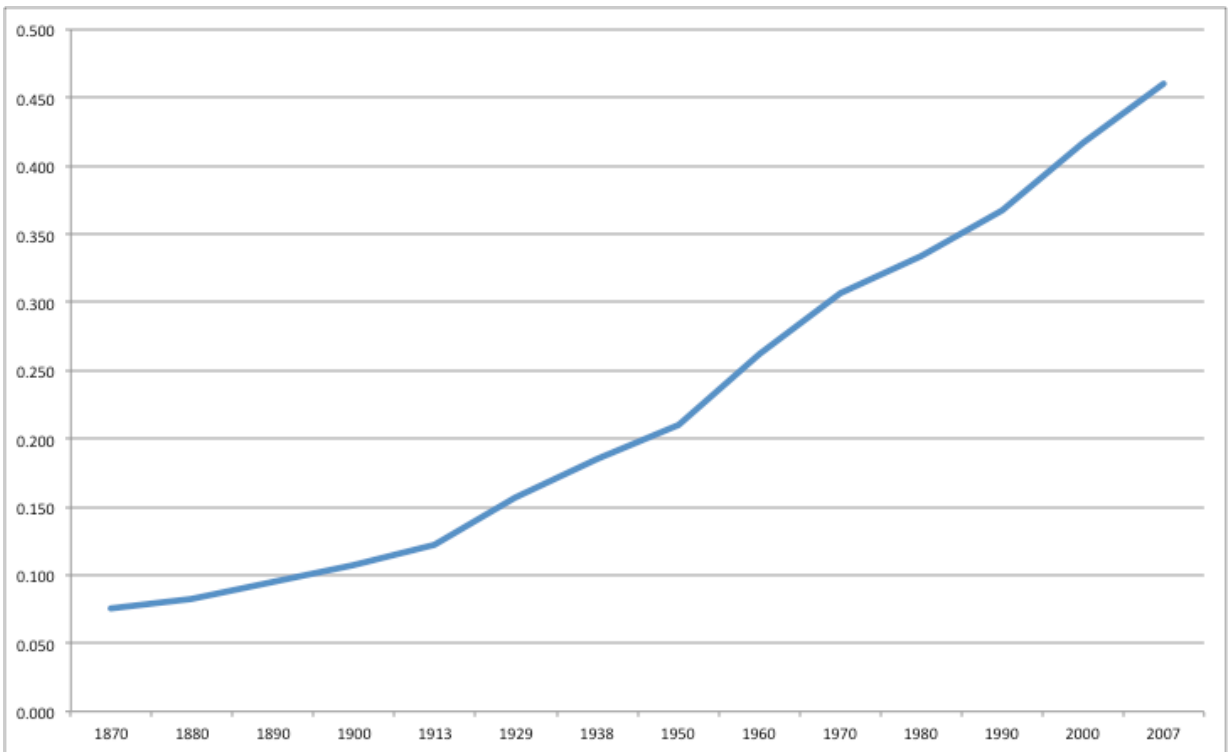


Figure 2. World Human Development, 1870-2007



Figure 3. World Human Development and GDP per Head Growth Rates, 1870-2007 (%)

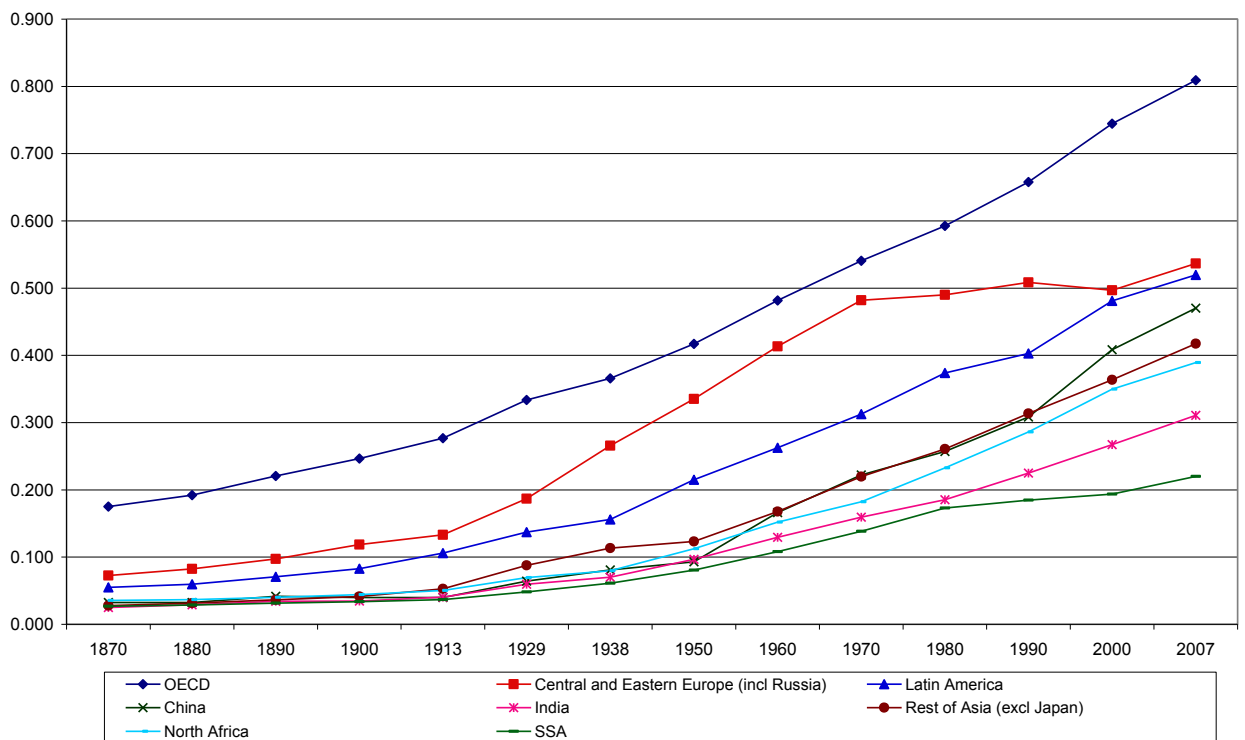


Figure 4a. Human Development across World Regions, 1870-2007

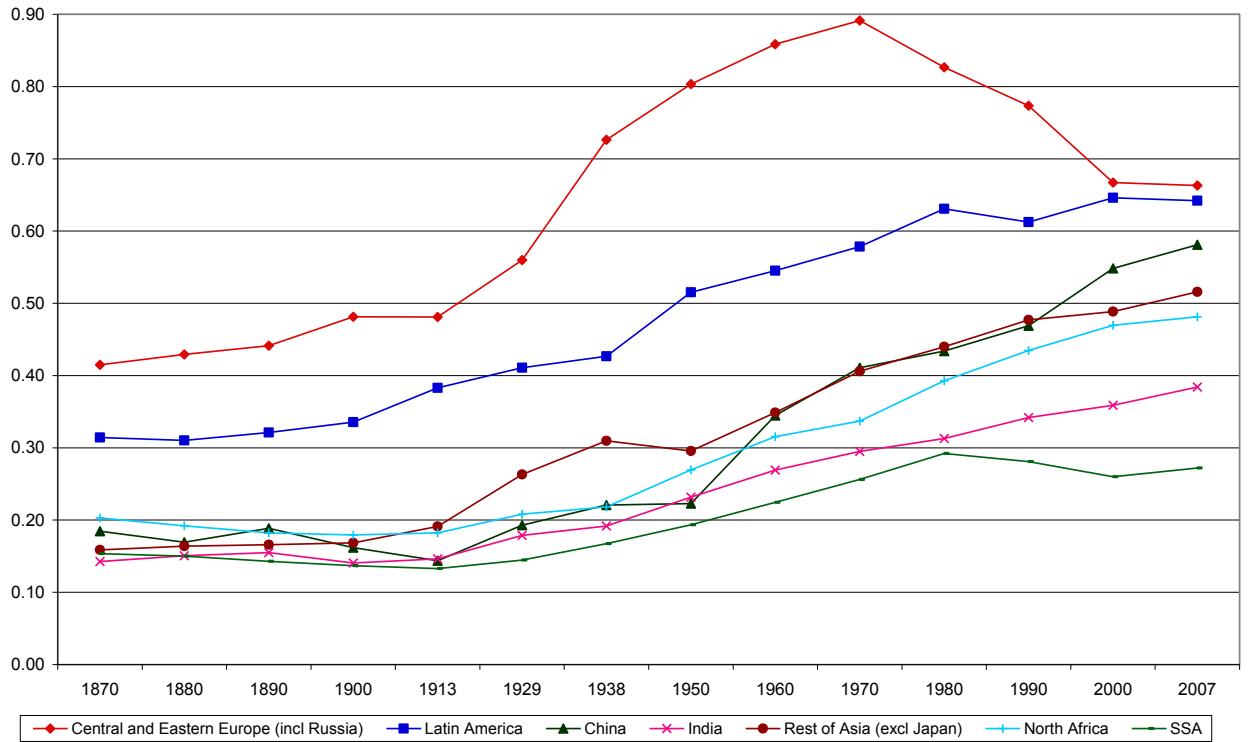


Figure 4b. Relative Human Development across Developing Regions, 1870-2007 (OECD= 1)

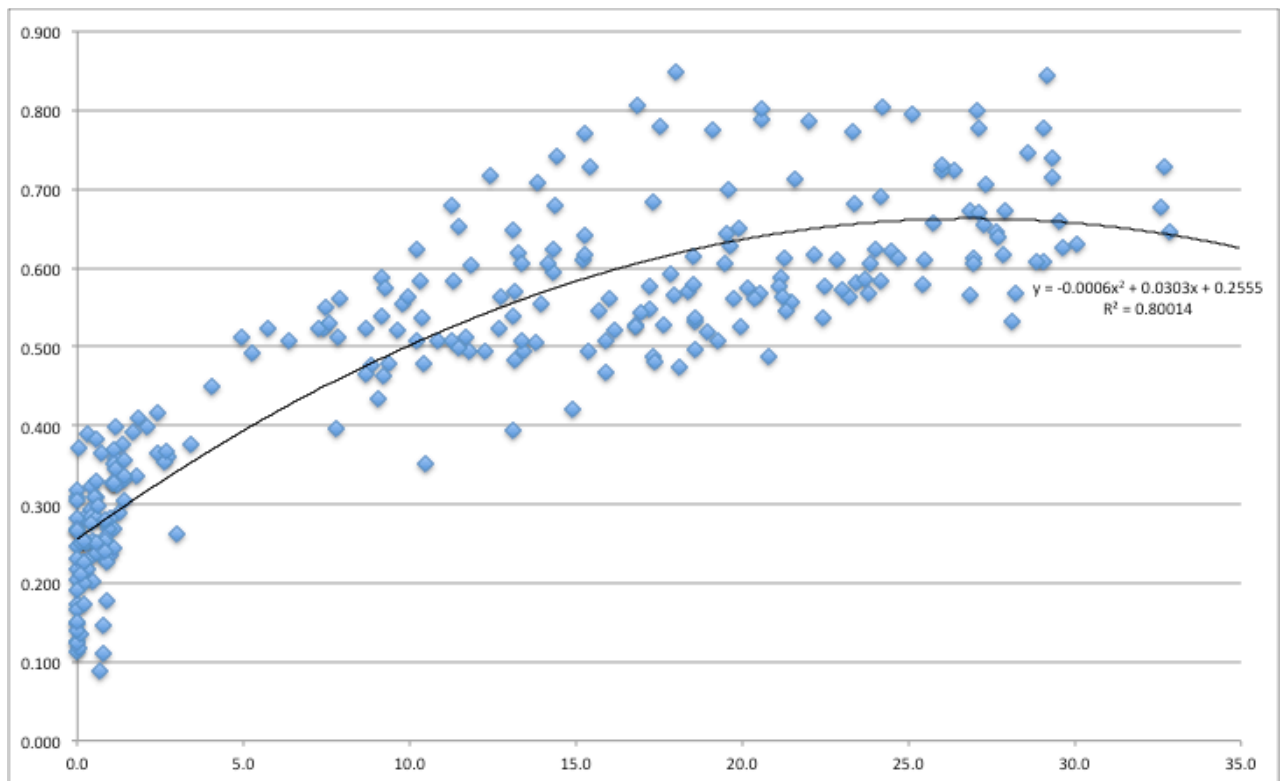


Figure 5. Human Development (vertical axis) and Social Transfers (% GDP) (horizontal axis) for a group of OECD countries, 1880-2000

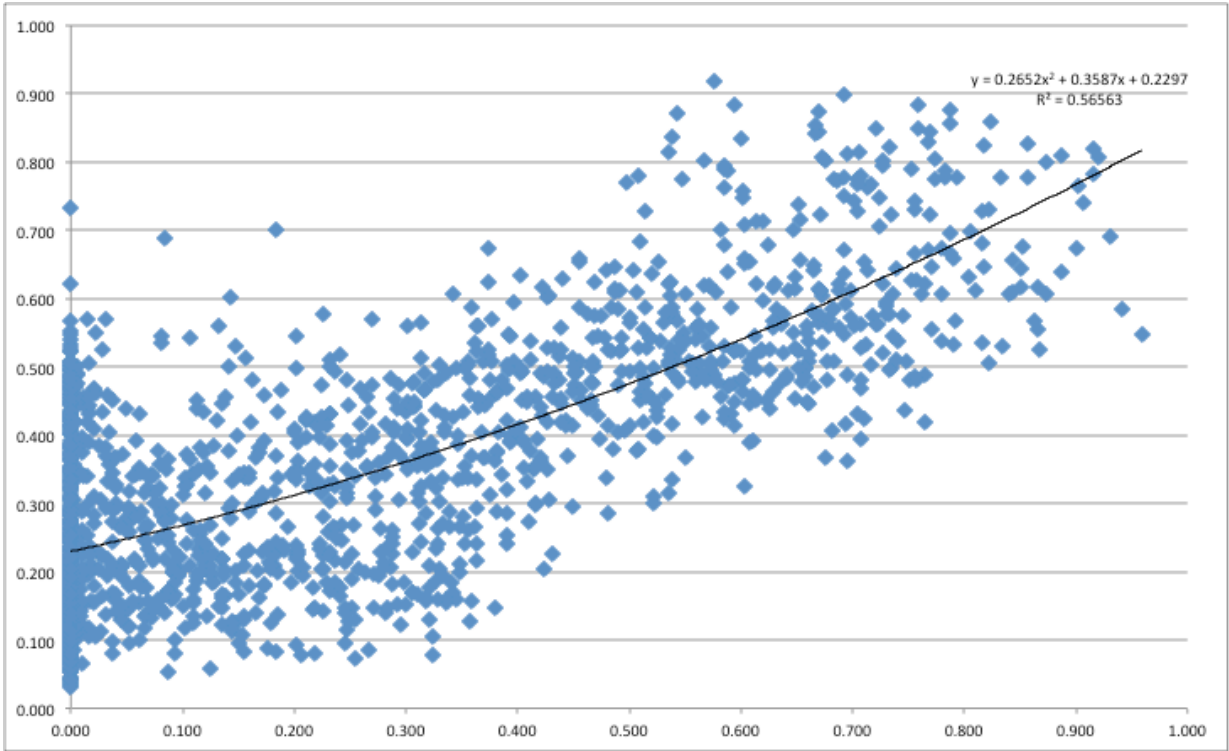


Figure 6. Human Development (vertical axis) and Democratization (horizontal axis) in the World, 1950-2007

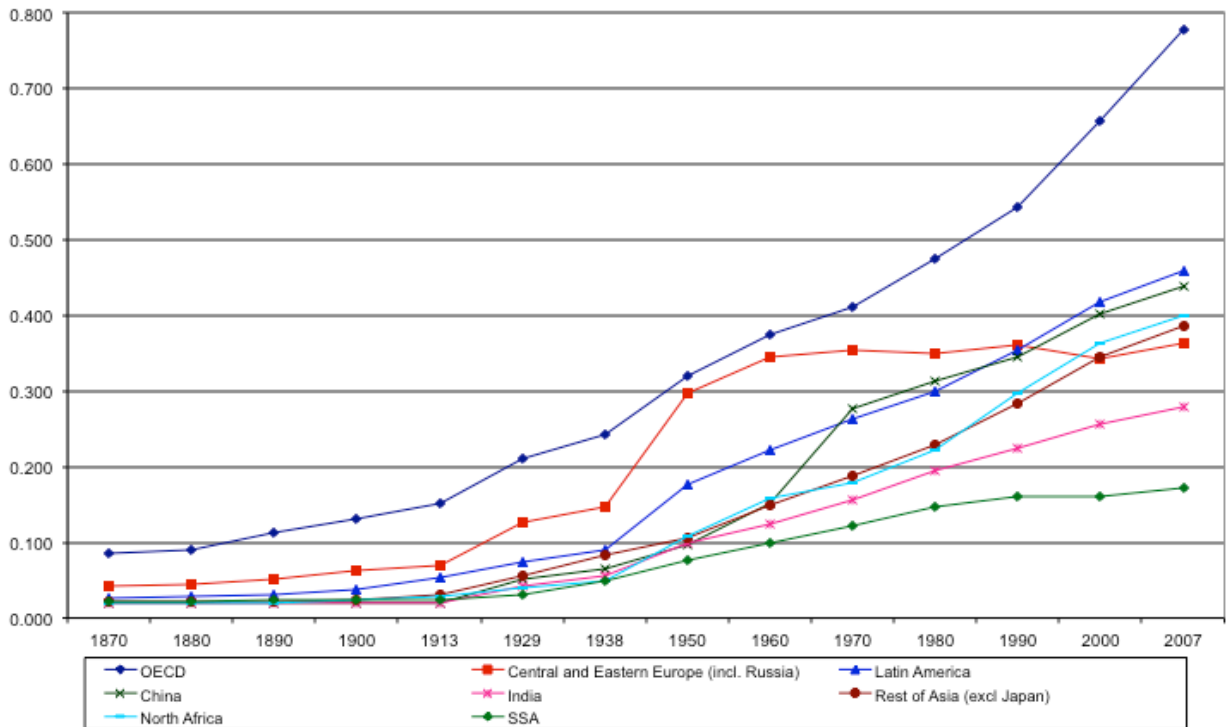


Figure 7. Kakwani Indices of Life Expectancy in World Regions, 1870-2007

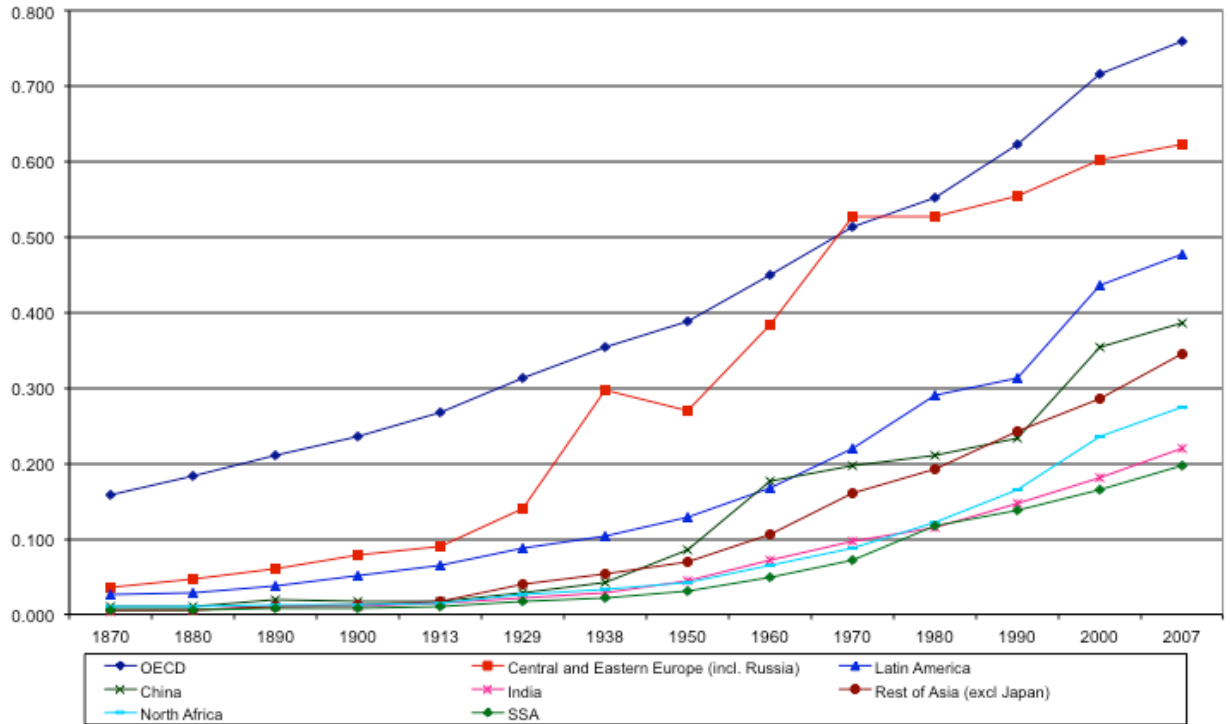


Figure 8. Kakwani Indices of Education in World Regions, 1870-2007

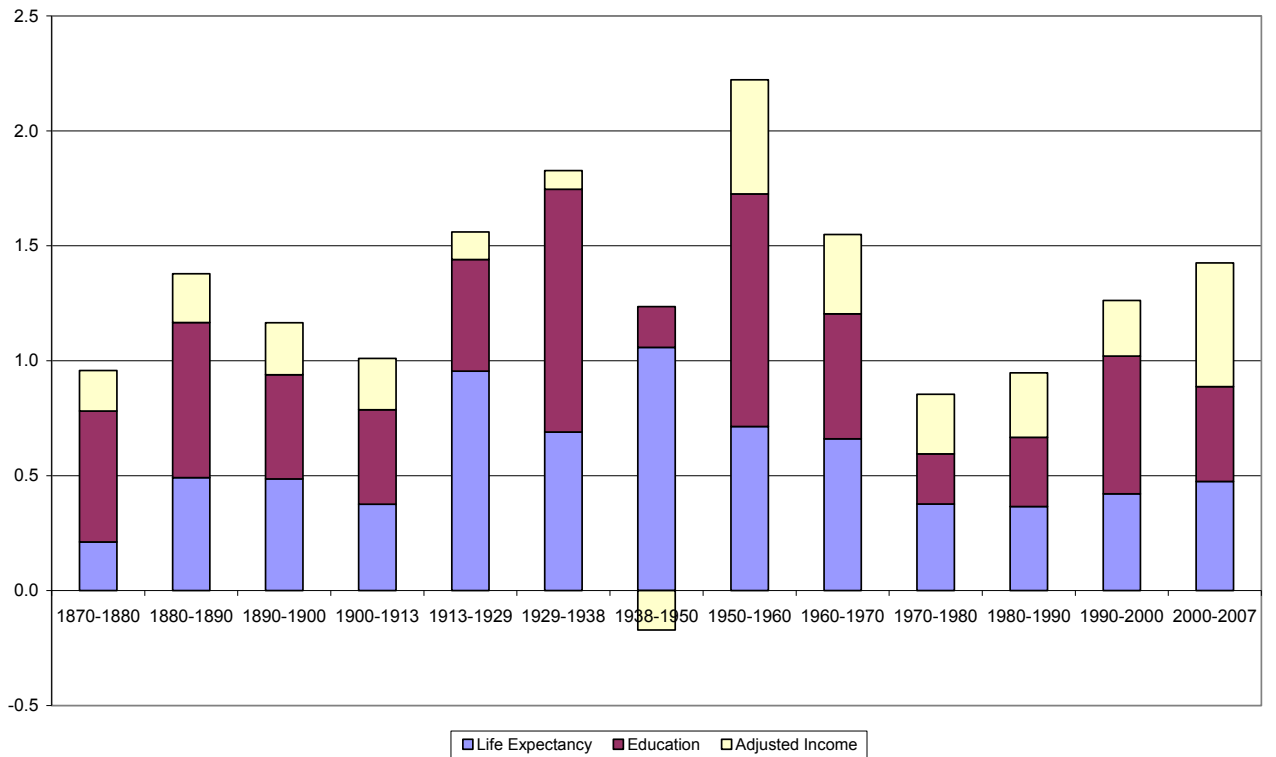


Figure 9. Human Development Growth Decomposition in the World, 1870-2007 (%)



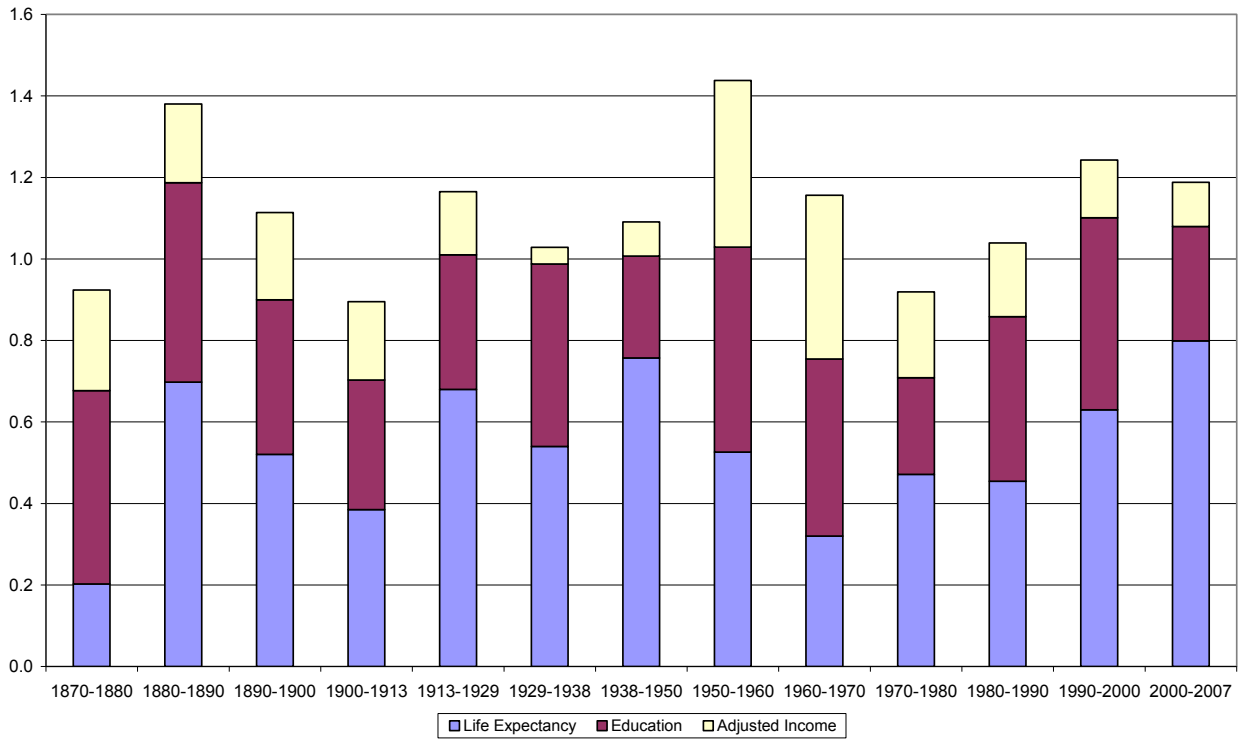


Figure 10. Human Development Growth Decomposition in *OECD*, 1870-2007 (%)

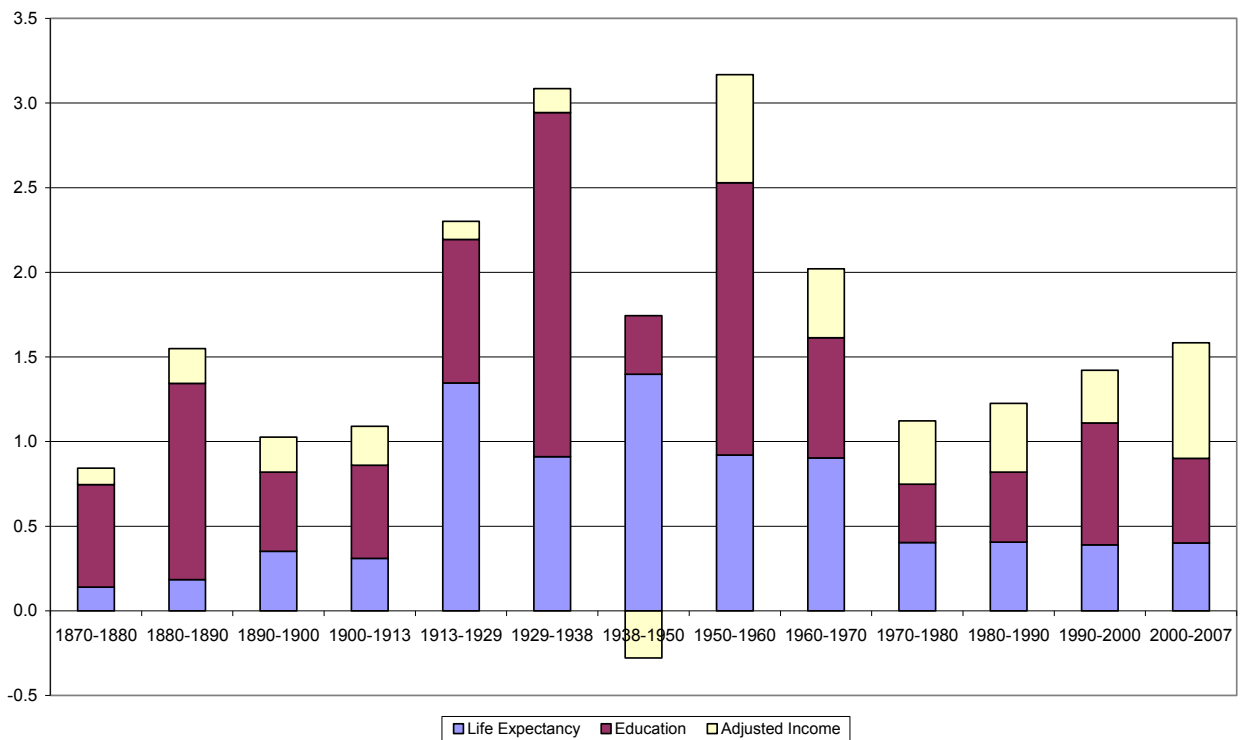


Figure 11. Human Development Growth Decomposition in the *Rest*, 1870-2007 (%)