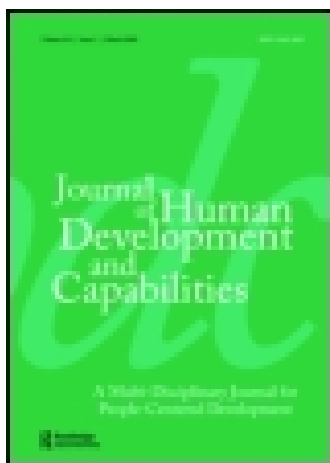


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Human Development as Positive Freedom: Latin America in Historical Perspective

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Human Development as Positive Freedom: Latin America in Historical Perspective

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ABSTRACT *How has Latin America's well-being evolved over time? How does Latin America compare to today's developed countries (OECD, for short)? What explains their differences? These questions are addressed using an historical index of human development. A sustained improvement in well-being can be observed since 1870. The absolute gap between OECD and Latin America widened over time, but an incomplete catching-up—largely explained by education—occurred since 1900, but faded away after 1980, as Latin America fell behind the OECD in terms of longevity. Once the first health transition was exhausted, the contribution of life expectancy to human development declined.*

KEYWORDS: Latin America, Human development, Positive freedom, Life expectancy, Education

JEL CLASSIFICATIONS: O15, O54, I00, N36

How much has well-being improved in Latin America during the last one-and-a-half centuries? How does Latin America compare to the advanced nations? Have their differences widened? Why? There are no easy answers to these questions, but the policy implications are far-reaching.

Trends in well-being have been drawn on the basis of GDP per head (Bulmer-Thomas 2003; Coatsworth 2005; Prados de la Escosura 2007). However, as development is a multi-dimensional process, a more comprehensive approach to living standards has been put forward in recent years (Astorga et al. 2005; Salvatore et al. 2010; Bértola and Ocampo 2012).

This paper favours the capabilities approach, in which development is seen as a process of expanding freedom and in which objective measures are used. Human development, a concept deep-rooted in the capabilities approach, was originally defined as “a process of enlarging people’s choices” (UNDP 1990): enjoying a healthy life, acquiring knowledge and achieving a decent standard of living. These achievements provide individuals with

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freedom to choose and the opportunity “to lead lives they have reasons to value” (Sen 1997). Human development can thus be depicted as positive freedom (Desai 1991).

In this paper, answers to the questions raised here are based on a new historical index of human development (HIHD) that covers nearly one-and-a-half centuries, between 1870, when large-scale improvements in health, helped by the diffusion of the germ theory of disease (Preston 1975; Riley 2001) and in primary education (Benavot and Riddle 1988; Lindert 2004) were initiated, and 2007, which marks the eve of the Great Recession.¹ I start by proposing an alternative *HIHD* as an alternative to the index proposed by the United Nations Development Programme (UNDP), Human Development Index (*HDI*) and briefly examining the sources and computation procedures used to derive it.² Next, the main results for Latin America, both a continental and country level, are discussed and Latin America’s evolution placed into a world perspective. I address, then, how its dimensions contributed to the aggregate performance of the *HIHD* over time and to what extent explain the observed differences between Latin America and the developed countries, defined as the countries that composed the OECD prior to 1994 (*OECD*, hereafter).³ Last section concludes.

The new *HIHD* shows substantial gains in Latin American human development since 1870—and especially over 1900–1980. A major advance in human development, which resulted from substantial gains in longevity and education, took place between 1938 and 1950, at the time of an economic globalization backlash. Although the gap between *OECD* and Latin America widened in absolute terms, an incomplete catching-up took place in Latin America between 1900 and 1980, as part of a wider but shorter process that embraced all developing regions. Education and, to less extent, life expectancy at birth drive Latin America’s limited catching-up. In Latin America, the epidemiological or *first* health transition—that is, the phase in which persistent gains in lower mortality and higher survival are achieved as infectious disease gives way to chronic disease (Riley 2005a)—is the only period in which substantial gains in longevity were achieved. Afterwards, the region fell behind the *OECD* in terms of the longevity index, which largely explains Latin America’s failure to catch up despite the educational expansion.

Assessing Human Development

The UNDP *HDI* includes three dimensions: a healthy life, access to knowledge, and other aspects of well-being. Reduced forms of these dimensions are used as a short-cut, namely, life expectancy at birth as a proxy for a healthy life, education measures for access to knowledge, and discounted per capita income (its log) as a surrogate for all other aspects of well-being (Anand and Sen 2000; UNDP 2001).⁴ These are combined into a synthetic measure using a geometric average (UNDP 2010).⁵ Since all dimensions are considered indispensable, they are assigned equal weights.

A linear transformation was introduced for the dimensions in the *HDI* (UNDP 1990), which, by reducing the denominator, widens the index’s range. Thus, the original values of each dimension (I) are transformed into index form according to the following formula,

$$I = (x - M_0)/(M - M_0), \quad (1)$$

where x is the observed value of a given dimension of welfare, and M_0 and M are the maximum and minimum values, or goalposts—which facilitate comparisons over time.⁶ Each dimension ranges, thus, between 0 and 1.

It matters how progress in the dimensions of human development is measured. Often social variables (life expectancy, height or literacy) are used, either raw (Lindert 2004;

Acemoglu and Johnson 2007; Hatton and Brey 2010) or linearly transformed (UNDP 2010). This causes measurement problems when a social variable has asymptotic limits. An example would be life expectancy. Consider two improvements, one from 30 to 40 years and another from 70 to 80 years. These increases are identical in absolute terms, but the second is smaller in proportion to the initial starting level. When original (or linearly transformed, as happens in the case of the UNDP's *HDI*) values are employed, identical changes in absolute terms result in a smaller measured improvement for the country with the higher starting point, favouring the country with the lower initial level (Sen 1981; Kakwani 1993).

The limitations of linear measures become more evident when quality is taken into account. Life expectancy at birth and education measures are just crude proxies for the actual goals of human development: a long and healthy life and access to knowledge. Research over the last two decades concludes that healthy life expectancy increases in line with total life expectancy, and as life expectancy rises, disability for the same age-cohort falls (Salomon et al. 2012). Similarly, the quality of education, measured in terms of cognitive skills, grows as the quantity of education increases (Hanushek and Kimko 2000; Altinok et al. 2014). The bottom line is that more years of life and education imply higher quality of health and education during childhood and adolescence in both the time series and the cross-section.

In this paper, as an alternative to the UNDP's conventional *HDI*, a *HIHD* is used in which non-income variables are transformed nonlinearly, rather than linearly as in the *HDI*, in order to allow for two main facts: increases of the same absolute size represent greater achievements the higher the level at which they take place; and quality improvements are associated with increases in quantity (see Prados de la Escosura 2015 for further details).

In the *HIHD* as a social indicator reaches higher levels, its increases represent higher achievements than had the same increase taken place at a lower level, while, in both the UNDP "old" and "hybrid" *HDI*, they reflect the same change regardless of its starting level.

Following Kakwani's (1993) proposal, the original values of the social, non-income dimensions of the index have been transformed using a convex achievement function,

$$I = f(x, M_0, M) = (\log(M - M_0) - \log(M - x)) / \log(M - M_0), \quad (2)$$

where x is an indicator of a country's standard of living, M and M_0 are the maximum and minimum values, or goalposts, and \log stands for the natural logarithm.

In the case of the income dimension, I have accepted the linear transformation (expression (1)) using log values, that is, diminishing returns are introduced to successive additions of income per head.

In the *HIHD* for Latin America, the variables and goalposts of the UNDP "hybrid" index are adopted. Also following the UNDP new approach, the historical index has been derived as a multiplicative combination of the transformed values of each dimension. If we denote the nonlinearly transformed values of life expectancy and education as *LEB* and *EDU*, and the adjusted per capita income as *UNY*, the *HIHD* can be expressed as

$$\text{HIHD} = \text{LEB}^{1/3} \text{EDU}^{1/3} \text{UNY}^{1/3}. \quad (3)$$

An important objection to any index of human development derives from the fact that, in the capabilities approach, functionings are directly related to whatever life people actually lead (i.e. achievements), while capabilities (or ability to achieve) are connected with the freedom people have in the choice of life or functionings (Sen 1999). This means that

while the HDI includes achievements (in health, access to knowledge, etc.), it does not comprise the freedom to choose functionings. However, without agency—that is, the ability to pursue and realize goals a person has reasons to value—and freedom, any index captures only “basic needs” and falls short of even a reduced form of the concept of human development (Ivanov and Peleah 2010).

The Data

The sources and procedures used to construct indices for each dimension of human development are briefly described in this section (see the [appendix](#) for details).

Life expectancy data for most countries during the period 1980–2007 come from the 2010 Human Development Report (UNDP 2010), while the MOxLAD database (Astorga et al. 2003) and Arriaga (1968) provide the rest of the data, which were completed with national sources.⁷ Dearth of data forced me occasionally to introduce some assumptions for the period before the epidemiological or health transition (Riley 2005b, 2005c).⁸ Thus, in those (mostly pre-1913) cases, for which data on life expectancy or, in its absence, on infant mortality and heights do not exist, a “floor” of 25 years has been accepted as the minimum historical value for life expectancy at birth.⁹ Furthermore, given the UNDP minimum goalpost (M_0) of 20 years, the 25 years “floor” precludes a zero value for the transformed life expectancy index and, consequently, for the *HIHD*.¹⁰

Adult literacy is a far from uniform concept.¹¹ Reading and writing do not necessarily coincide in developing countries (Markussen 1990; Nilsson 1999) so the estimated literacy rate varies depending on whether a wide or a narrow definition (just reading or reading and writing skills) is used. The 2009 Human Development Report (UNDP 2009) provides most of the data on literacy for 1980–2007 MOxLAD database and Newland (1991), plus national sources, provide data for the pre-1980 era.

Enrolment rates capture the expansion of formal education without informing completion or quality of education (Benavot and Riddle 1988). Historical evidence allows one to estimate the percentage of population aged 5–24 enrolled in primary, secondary, and tertiary education, that is, the unadjusted rate of total enrolment. As practically no country’s education was extended to those aged 24 years in Latin America’s past, in order to avoid underestimation, the denominator needs to be adjusted to the age bracket for each type of schooling (primary, secondary, etc.). Gross enrolment rates, that is, adjusted rates, are only available for the recent past. Thus, for the historical (pre-1980) estimates using the ratio between gross enrolment rates (GER) and unadjusted enrolment rates (UER) for each country (i) in 1980, and assuming the relationship between GER and UER was stable over time, I corrected the downward bias in previous benchmark years (j). That is,

$$GER_{ij} = (GER_{i1980}/UER_{i1980}) * UER_{ij}. \quad (4)$$

Enrolment data for 1980–2007 come from the 2009 Human Development Report (UNDP 2009), completed with UNESCO (2010). For the pre-1980 period, enrolment figures come mostly from the MOxLAD database and Newland (1991), supplemented with national sources. With regard to the relevant population, see the [appendix](#).

In the case of education indicators (literacy and enrolment rates), UNDP goalposts [$M = 100$, $M_0 = 0$] have been kept, but the highest and lowest historical values were set at 99% and 1%, respectively.¹²

In the case of the per capita income dimension, I have accepted the UNHDI assumption that its marginal utility declines as it reaches higher levels. The UNDP assumption is justified on the basis that this transformed measure proxies any dimension of well-being not

directly related to health and education. Were the assumption of diminishing returns to income relaxed, per capita GDP—as it does not have an asymptotic upper bound—would drive the HDI, rendering it redundant.¹³ Thus, in order to get the income index, I have used expression (1) with GDP per head in logs.

I have set a lower bound for per capita GDP at Geary–Khamis (G–K) 1990 \$300, which represents a basic level of physiological subsistence (Sagar and Najam 1998, 254; Milanovic et al. 2011), and remains below the World Bank’s extreme poverty threshold of G–K 1990 \$1 a day per person and Maddison’s (2006) G–K 1990 \$400 per head.¹⁴ GDP per head is expressed in G–K 1990 dollars and data come from CEPAL and MOxLAD supplemented with historical national accounts (see the appendix).¹⁵

Later, the indices for each dimension of human development were combined with a geometric average (see expression (3)) in order to derive the historical index (*HIHD*). World human development has been computed on the basis of four different country samples for which time and spatial coverage are inversely related. Thus, over the entire time span, 1870–2007, 12 countries are considered, and its number rises up to 17, 27, and 29 countries for the samples starting in 1913, 1950, and 1990, respectively.¹⁶ These samples represent around 85% of Latin American population prior to 1913, above 90% in the interwar years, and practically all after 1950. As it can be observed from Figure 1, their population-weighted averages for Latin America are highly coincidental. Therefore, I have not spliced them.

Trends in Human Development

A long-run upward trend in world human development is observed, with *HIHD* in 2007 ninefold the level in 1870. Lower but still significant gains are also found for UNDP indices, “hybrid” and pre-2010 HDI (“old”), whose levels in 2007 were a fourfold and a fivefold of that in 1870, respectively (Figure 2). The *HIHD* exhibits a systematically lower level than UNDP indices.¹⁷ A widening absolute gap opens up between them over

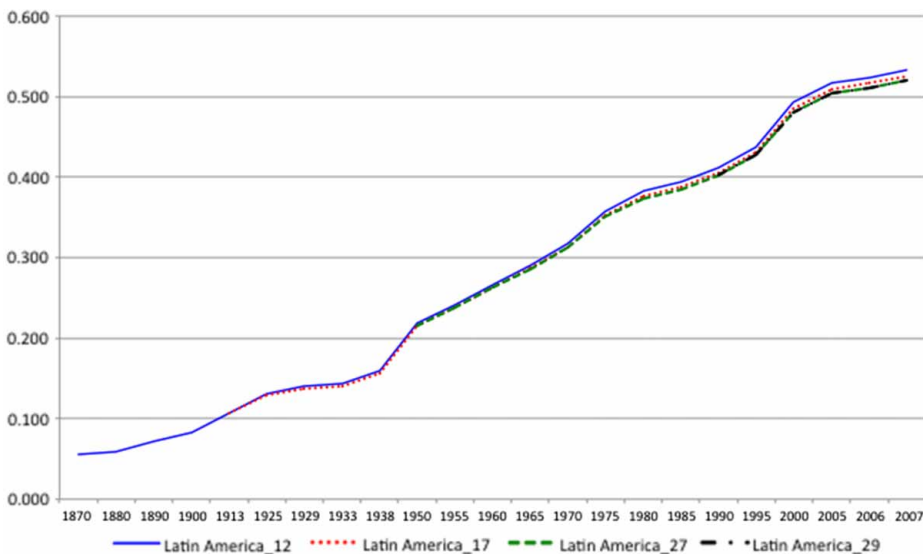


Figure 1. *HIHD* in Latin America, 1870–2007: alternative country samples (population-weighted averages).

Source: See the text.

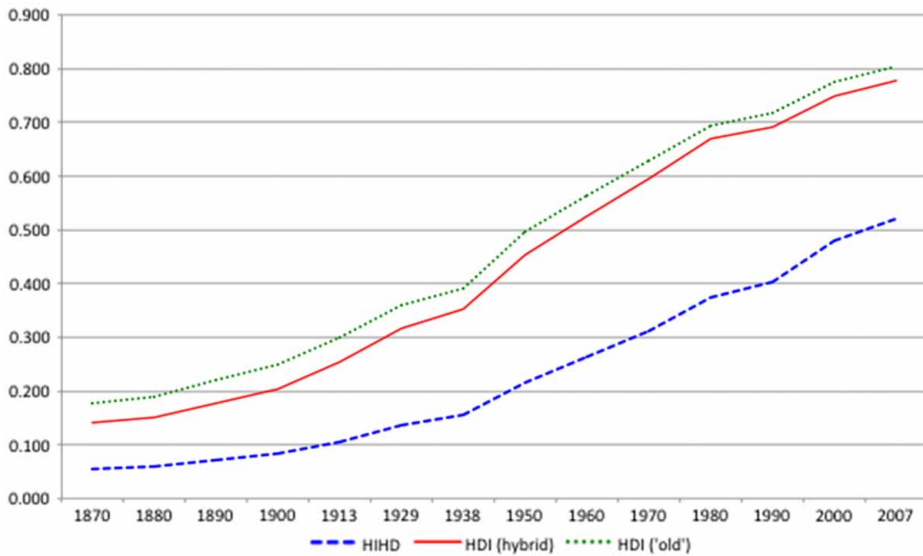


Figure 2. Human development measures: HIHD and HDI (*hybrid* and *old*).

Source: See the text.

time, but not in relative terms, as the *HIHD* grows at a faster pace: 1.6% annually against 1.1% and 1.3% for “old” and the “hybrid” HDI, respectively (Table 1).

Since the income index is the same for all indices (the *HIHD* and both UNDP indices), their differences derive from the way in which the original values of the social variables (life expectancy at birth and education) are transformed and whether an arithmetic or geometric average is used to aggregate them. Thus, if the income dimension is excluded from the index, the absolute gap between the *HIHD** and the UNDP “old” and “hybrid” HDI* indices broadens (Figure 3).

The pace of improvement in human development shown by the new historical index (*HIHD*) seems to be steady between 1880 and 1980 but for a slowdown in the 1930s and a phase of acceleration in the 1940s. The 1980s represent a major discontinuity with the pace of improvement in human development falling sharply. Although gradual, steady improvement is, perhaps, the best depiction of human development evolution in Latin America since 1870, four main phases could be distinguished: a first one, up to 1913, of increasing progress; a second one of deceleration during the interwar years; a third phase of sustained and faster improvement over 1938–1980, in which the 1940s and 1950s deserve to be highlighted; and, finally, a contraction in the pace of growth from 1980 to the eve of the Great Recession but for a short-lived recovery in the 1990s (Table 1).

Trends in well-being, as those captured by the *HIHD* do not match closely those observed for real GDP per head (Figure 4). In fact, when the income per head dimension is excluded, the progress of human development appears steady as opposed to GDP per head that presents a more volatile and cyclical pattern, including episodes of stagnation in the 1930s and contraction in the 1980s. Overall, human development (excluding income) grew faster than real GDP per head over the four main phases previously established and, consequently, over the entire time span considered, 1870–2007.

It is during the globalization backlash of the 1930s and 1940s when clear discrepancies emerged. Most significantly, while real GDP per head declined or slowed down as world commodity and factor markets disintegrated, health and education practices became

Table 1. Human development in Latin America, 1870–2007: alternative indices

	HIHD	Hybrid HDI	'Old' HDI
Panel A: Levels			
1870	0.055	0.140	0.177
1880	0.060	0.151	0.189
1890	0.071	0.177	0.221
1900	0.083	0.203	0.250
1913	0.106	0.253	0.301
1929	0.137	0.316	0.359
1938	0.156	0.352	0.391
1950	0.215	0.453	0.496
1960	0.263	0.526	0.565
1970	0.313	0.594	0.629
1980	0.374	0.670	0.694
1990	0.403	0.691	0.718
2000	0.481	0.749	0.776
2007	0.520	0.778	0.804
Panel B: Average growth rates (%)			
1870–1880	0.8	0.7	0.7
1880–1890	1.7	1.6	1.6
1890–1900	1.6	1.4	1.2
1900–1913	1.9	1.7	1.4
1913–1929	1.6	1.4	1.1
1929–1938	1.4	1.2	0.9
1938–1950	2.7	2.1	2.0
1950–1960	2.0	1.5	1.3
1960–1970	1.7	1.2	1.1
1970–1980	1.8	1.2	1.0
1980–1990	0.7	0.3	0.3
1990–2000	1.8	0.8	0.8
2000–2007	1.1	0.6	0.5
1870–1913	1.5	1.4	1.2
1913–1938	1.5	1.3	1.1
1938–1980	2.1	1.5	1.4
1980–2007	1.2	0.6	0.5
1870–2007	1.6	1.3	1.1

increasingly globalized and human development progressed steadily. Since 1970, the pace of advancement in human development has not matched that of economic growth, with a dramatic contrast in the 1980s when the collapse in per capita incomes paralleled moderate gains in well-being.

A better understanding of the evolution of human development is obtained by looking at the role played by its dimensions. The growth of human development (*HIHD*) can be distributed into the contribution of its different components—life expectancy at birth (*LEB*), education (*EDU*) and truncated income (*UNY*)—on the basis of expression (3). Using lower case to denote rates of variation,

$$hihd = 1/3leb + 1/3edu + 1/3uny. \quad (5)$$

It appears that social dimensions drove Latin America's human development gains over the long run, with balanced contributions of life expectancy and education. Longevity accounts for the larger share during the first half of the twentieth century, and was

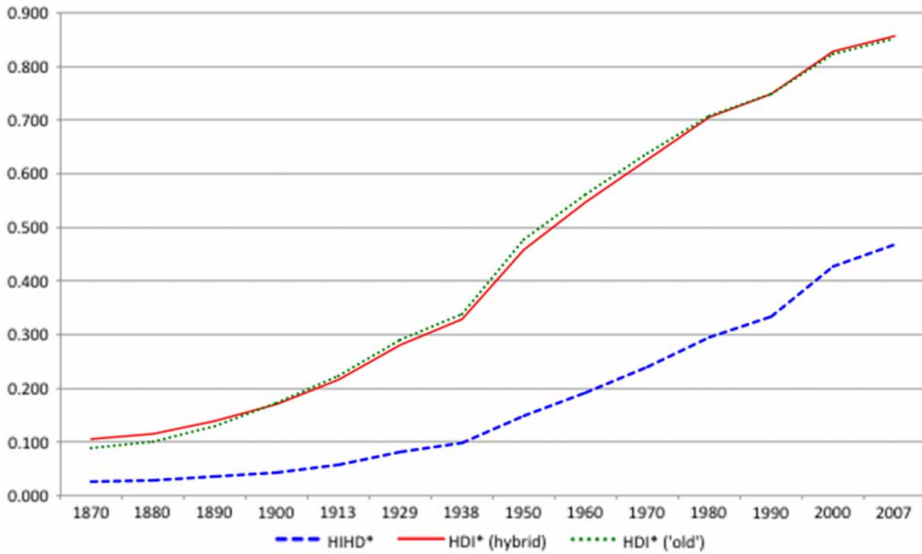


Figure 3. Human development (excluding income): HIHD* and HDI* (*hybrid* and *old*).
 Source: See the text.

clearly the driving force between 1938 and 1950. Access to knowledge had, instead, a leading role in the late nineteenth century and during the second half of the twentieth century, but for the 1980s (Table 2 and Figure 5).

Major gains in longevity up to mid-twentieth century were associated with advances in medical science and technology, such as the diffusion of the germ theory of disease (1880s) (Preston 1975), new vaccines (1890s), and sulpha drugs to cure infectious diseases (late 1930s) and antibiotics (1950s) (Easterlin 1999; Jayachandran et al. 2010), that facilitated

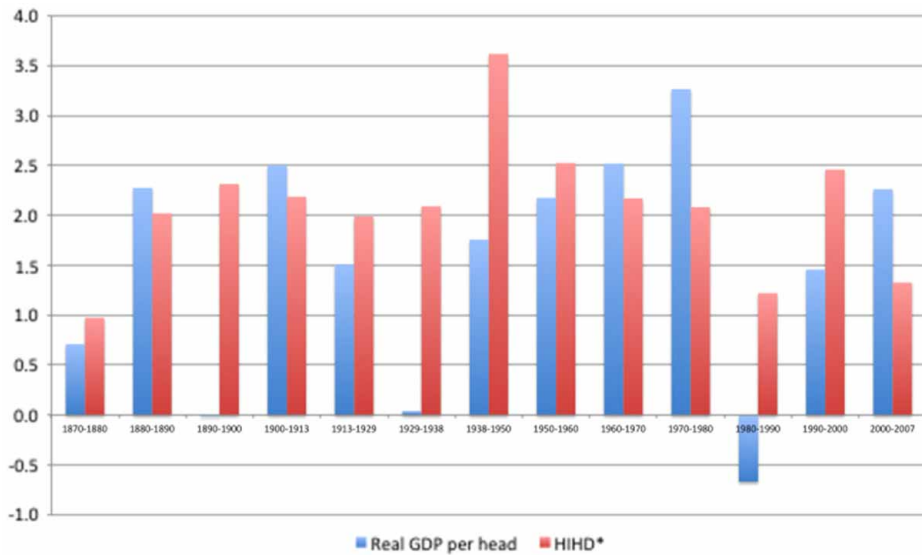


Figure 4. Real GDP per head and human development (excluding income) Growth (%).
 Source: See the text.

Table 2. Latin America's human development and its dimensions, 1870–2007

Panel A: Levels				
	HIHD	Life expectancy	Education	Adjusted income
1870	0.055	0.026	0.026	0.249
1880	0.060	0.028	0.029	0.260
1890	0.071	0.032	0.038	0.291
1900	0.083	0.038	0.051	0.292
1913	0.106	0.052	0.065	0.349
1929	0.137	0.074	0.088	0.398
1938	0.156	0.090	0.105	0.404
1950	0.215	0.175	0.128	0.443
1960	0.263	0.221	0.168	0.488
1970	0.313	0.262	0.219	0.534
1980	0.374	0.300	0.290	0.602
1990	0.403	0.354	0.314	0.589
2000	0.481	0.417	0.435	0.614
2007	0.520	0.459	0.476	0.642

Panel B: HIHD growth and its drivers (%)				
	HIHD	Contribution of life expectancy	Contribution of education	Contribution of adjusted income
1870–1880	0.8	0.2	0.4	0.1
1880–1890	1.7	0.4	0.9	0.4
1890–1900	1.6	0.6	0.9	0.0
1900–1913	1.9	0.8	0.6	0.5
1913–1929	1.6	0.7	0.6	0.3
1929–1938	1.4	0.7	0.6	0.1
1938–1950	2.7	1.9	0.6	0.3
1950–1960	2.0	0.8	0.9	0.3
1960–1970	1.7	0.6	0.9	0.3
1970–1980	1.8	0.5	0.9	0.4
1980–1990	0.7	0.6	0.3	–0.1
1990–2000	1.8	0.5	1.1	0.1
2000–2007	1.1	0.5	0.4	0.2
1870–1913	1.5	0.5	0.7	0.3
1913–1938	1.5	0.7	0.6	0.2
1938–1980	2.1	1.0	0.8	0.3
1980–2007	1.2	0.5	0.6	0.1
1870–2007	1.6	0.7	0.7	0.2

a first health or epidemiological transition in which infectious disease gave way to chronic disease (Riley 2005b, 2005c). Economic growth also contributed to expanding longevity through nutrition improvements—that strengthen the immune system and reduce morbidity (Stolnitz 1955; McKeown and Record 1962; McKeown, Record, and Turner 1975; Fogel 2004)—and public provision of health (Loudon 2000; Cutler and Miller 2005).

Did the gap between *OECD* and Latin America deepen over time? Latin America experienced moderate and steady catching-up to *OECD* between 1880 and 1980 that intensified during 1900–1913, the 1940s and, again, in the 1970s (Figure 6). Relative to *OECD*, Latin America presents comparatively lower levels when measured by *HIHD* than with UNDP indices, for which catching-up continued although at slower pace until 2007. Thus, Latin

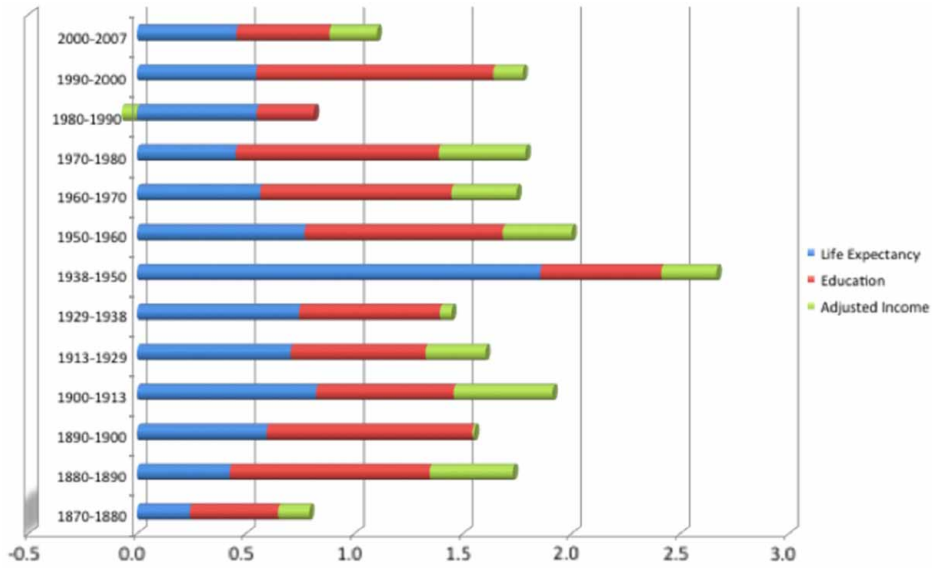


Figure 5. Drivers of HIHD growth in Latin America, 1870–2007 (%).
 Source: See the text.

America represented below two-thirds of the *OECD* level in 2007, according to the *HIHD*, and reached over four-fifths with the *UNDP* indices.

In comparison to other developing regions, Latin America’s catching-up was stronger during the 1940s and extended beyond the 1970 boundaries reaching 1980 (Figure 7). As a result, by 2007, levels of human development in Latin America matched those of the *OECD* in the late 1960s; while, on average, human development in developing regions only reached the *OECD* level in 1950.

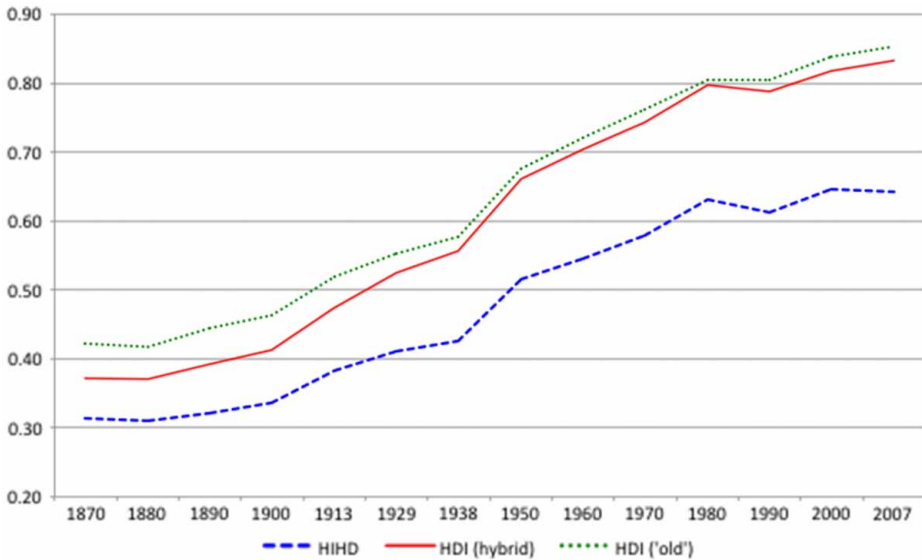


Figure 6. Relative human development in Latin America: HIHD and HDI (*OECD* = 1).
 Source: text and Prados de la Escosura (2015).

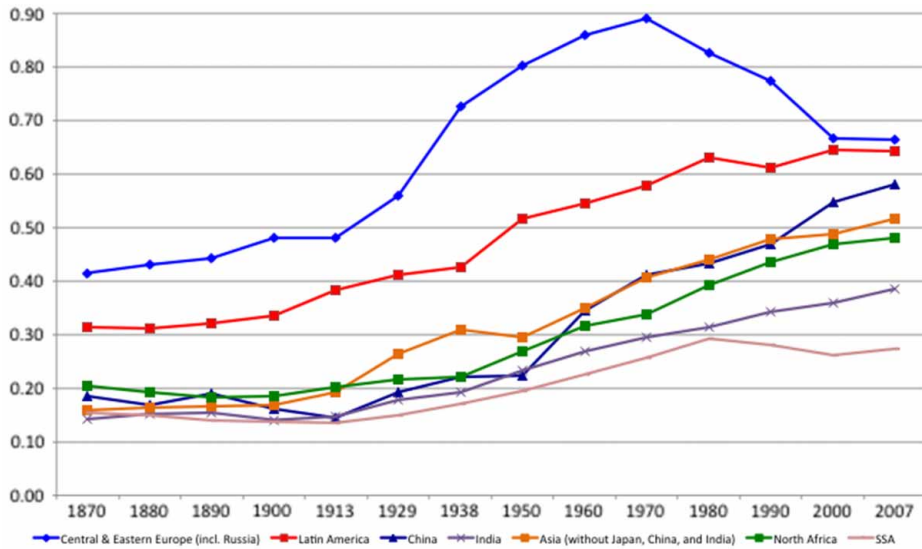


Figure 7. Relative HIHD: Latin America in world perspective 1870–2007 (OECD = 1).
 Source: text and Prados de la Escosura (2015).

Latin America’s position relative to the *OECD* differs significantly in terms of human development (excluding its income dimension) and GDP per head. While sustained catching-up over the twentieth century achieved Latin America almost two-thirds of *OECD* human development (excluding income), after a long phase of stability Latin America’s GDP per head declined since 1950, representing only one-fourth of *OECD*’s by 2000 (Figure 8). On the whole, Latin America performed better in human development than in income per head terms. Thus, in 2007, real per capita GDP in Latin America reached the

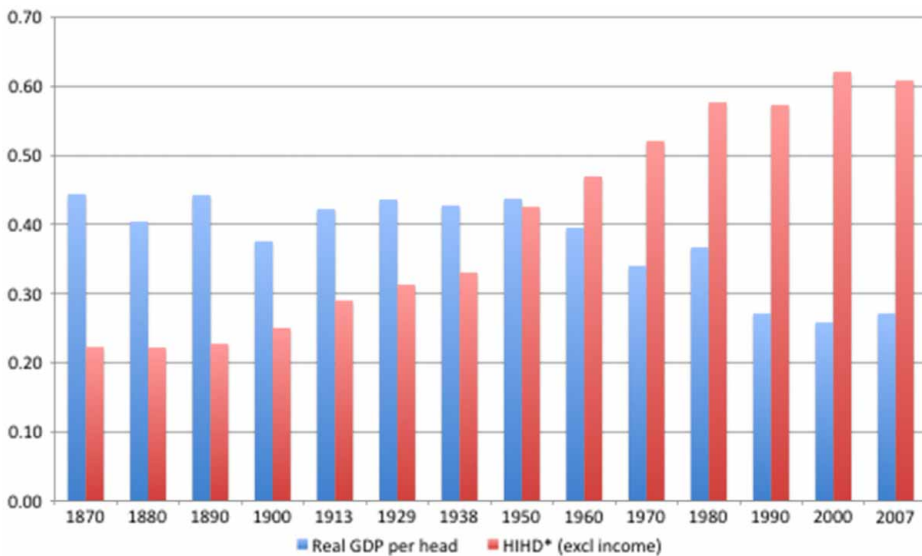


Figure 8. Relative Latin America’s GDP per Head and HIHD* (excl. income) (OECD = 1).
 Source: text and Prados de la Escosura (2015).

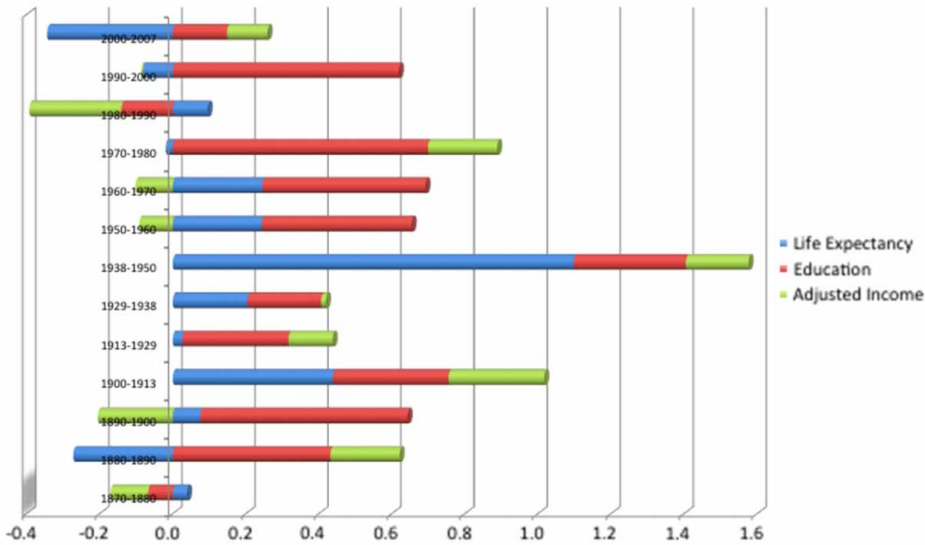


Figure 9. Latin America's HIHD catching-up with OECD, 1870–2007 (%).
Source: text and Prados de la Escosura (2015).

late 1950s *OECD* level while for developing regions, as a whole, only that of 1938 (Prados de la Escosura 2015).

Latin America catching-up to *OECD*, as measured by their difference in human development growth rates, shows that education has been the leading dimension, especially, during the second half of the twentieth century (but for the 1980s) (Figure 9). Life expectancy only made a substantial contribution to catching-up during the 1938–1950, the fastest period of shortening differences with *OECD*. It is worth highlighting that such an advance often did not result of widespread treatment of infectious diseases with sulphur drugs and antibiotics and vaccination against tuberculosis, largely inaccessible to its low-income population, but was achieved through low-cost public health measures and the diffusion of hygienic practices, often during periods of economic stagnation (Riley 2001).¹⁸

In Latin America, longevity gains slowed down as the early-life, *first* health transition was exhausted. In the late twentieth century, a *second* health transition has taken place in the developed world, with mortality falling among the elderly—as respiratory and cardiovascular diseases were fought more efficiently and their health and nutrition in childhood had been better (Cutler et al. 2006; Eggleston and Fuchs 2012). Latin America's absence in this second health transition helps to explain why the region has fallen behind.

A Closer Look at Countries' Performance

Were the fruits of human development progress in Latin America evenly distributed or country differences widen? The dispersion of human development across Latin American countries fell between 1913 and 2000 (Figure 10). However, since the coefficient of variation remained above one-fourth up to 1970, a closer look at countries' performance is needed. Human development ranking reveals high stability over time, particularly between 1870 and 1950 (Table 3). Uruguay, Argentina and Cuba, Jamaica, and Chile stayed at the top of the league, to which Costa Rica incorporated from 1913 onwards

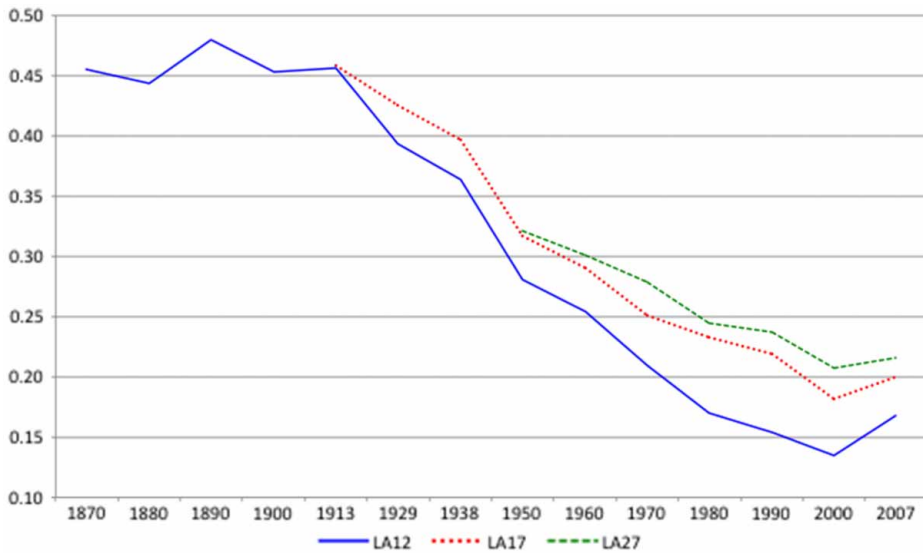


Figure 10. HIHD inequality, 1870–2007: alternative country samples (unweighted c.v.).
Source: See the text.

(once data permitted to produce estimates). After 1950, when information on them is available, Caribbean countries (Bahamas, Barbados, Trinidad–Tobago, and Puerto Rico) joined the top group but, since 1980, Jamaica, Trinidad–Tobago, and Bahamas gradually lost ground. The bottom’s composition also exhibits high persistence including the Andean countries (Bolivia, Ecuador, and Peru) plus Venezuela and, from 1913 onwards—once information is available for them—Central American countries (Costa Rica excluded) joined them with even lower levels of human development. Haiti, for which information only exists after 1950, held the last position over 1950–2007.

Was, then, no catching-up and convergence within Latin America over the one-and-a-half centuries considered? A glance at country growth ranking shows that the countries that exhibit the largest gains in human development are not necessarily those occupying the top positions (Table 4), so a certain degree of convergence can be conjectured. Simple regressions between growth rates over initial levels for each of the main phases established indicate beta-convergence over the long run (Figure 11). A closer look shows that it was only over 1938–1980 when catching-up did actually happen (Figure 12(a)–(d)). Furthermore, even though convergence remained weak over the long run, the variance among countries declined (Figure 10). It can be argued, therefore, that across-countries differences in the level of human development diminished despite the fact that the country ranking remained largely unaltered.

Why such a weak convergence occurred and catching-up was restricted to the 1938–1980 period can be understood better by looking at the immediate sources of human development improvement (Table 5). Thus, improvements in education help to explain why Argentina, Chile, and Cuba stayed at the top over 1870–1913. In the interwar, substantial improvements in life expectancy in Ecuador, Peru, and Mexico and Costa Rica, while Venezuela also did it on the basis of a more balanced combination of longevity and education gains, help to explain very weak beta-convergence. Then, major achievements in longevity and education account for stronger and more widespread catching-up during

Table 3. Latin American country ranking in human development: HIHD estimates

1870		1880		1890		1900	
Uruguay	0.130	Uruguay	0.139	Uruguay	0.158	Uruguay	0.172
Argentina	0.088	Argentina	0.098	Argentina	0.136	Argentina	0.159
Cuba	0.081	Cuba	0.095	Cuba	0.119	Cuba	0.128
Jamaica	0.070	Jamaica	0.084	Jamaica	0.104	Jamaica	0.117
Chile	0.065	Chile	0.071	Chile	0.090	Chile	0.109
Colombia	0.054	Colombia	0.058	Venezuela	0.062	Colombia	0.072
Brazil	0.050	Brazil	0.051	Brazil	0.060	Brazil	0.069
Mexico	0.048	Mexico	0.051	Mexico	0.059	Venezuela	0.064
Peru	0.047	Venezuela	0.050	Colombia	0.057	Mexico	0.064
Bolivia	0.036	Peru	0.042	Bolivia	0.046	Ecuador	0.058
Venezuela	0.035	Bolivia	0.041	Peru	0.045	Bolivia	0.054
Ecuador	0.034	Ecuador	0.041	Ecuador	0.044	Peru	0.053
		1913		1929		1938	
		Uruguay	0.213	Uruguay	0.256	Uruguay	0.287
		Argentina	0.207	Argentina	0.251	Argentina	0.279
		Cuba	0.165	Cuba	0.190	Cuba	0.202
		Chile	0.142	Chile	0.179	<i>Costa Rica</i>	0.200
		<i>Costa Rica</i>	0.128	<i>Costa Rica</i>	0.167	Chile	0.192
		Jamaica	0.119	Jamaica	0.152	Jamaica	0.183
		Colombia	0.092	Colombia	0.122	Mexico	0.140
		<i>Honduras</i>	0.087	Mexico	0.115	Colombia	0.137
		Mexico	0.086	Peru	0.111	Peru	0.132
		Brazil	0.084	Brazil	0.107	Venezuela	0.130
		Peru	0.077	<i>Honduras</i>	0.104	Brazil	0.122
		Bolivia	0.076	Venezuela	0.101	Ecuador	0.114
		Venezuela	0.074	Bolivia	0.098	Bolivia	0.108
		<i>El Salvador</i>	0.070	Ecuador	0.094	<i>Nicaragua</i>	0.101
		<i>Nicaragua</i>	0.066	<i>Nicaragua</i>	0.087	<i>Honduras</i>	0.101
		Ecuador	0.063	<i>El Salvador</i>	0.073	<i>El Salvador</i>	0.101
		<i>Guatemala</i>	0.062	<i>Guatemala</i>	0.069	<i>Guatemala</i>	0.085

	1950		1960		1970
Uruguay	0.351	Barbados	0.407	Puerto Rico	0.486
Bahamas	0.348	Puerto Rico	0.396	Barbados	0.477
Argentina	0.337	Uruguay	0.394	Bahamas	0.442
Trinidad–Tobago	0.311	Trinidad–Tobago	0.385	Trinidad–Tobago	0.439
Puerto Rico	0.305	Argentina	0.380	Uruguay	0.439
Barbados	0.299	Bahamas	0.378	Argentina	0.428
Chile	0.276	Cuba	0.331	Cuba	0.407
Cuba	0.273	Chile	0.324	Chile	0.395
Belize	0.259	Jamaica	0.324	Jamaica	0.386
<i>Costa Rica</i>	0.256	<i>Costa Rica</i>	0.315	<i>Costa Rica</i>	0.384
Paraguay	0.248	Venezuela	0.305	Venezuela	0.366
Jamaica	0.244	Guyana	0.293	Panama	0.356
Panama	0.240	Panama	0.290	Mexico	0.323
Venezuela	0.230	Paraguay	0.277	Guyana	0.321
Guyana	0.228	Belize	0.269	Paraguay	0.311
Mexico	0.208	Mexico	0.265	Belize	0.308
Colombia	0.190	Colombia	0.243	Colombia	0.303
Peru	0.187	Ecuador	0.233	Peru	0.293
Ecuador	0.186	Peru	0.229	Ecuador	0.284
Brazil	0.179	Brazil	0.226	Brazil	0.268
<i>El Salvador</i>	0.155	Dominican R.	0.222	Dominican R.	0.264
Dominican R.	0.153	<i>El Salvador</i>	0.203	<i>El Salvador</i>	0.246
<i>Nicaragua</i>	0.146	<i>Nicaragua</i>	0.186	<i>Nicaragua</i>	0.243
<i>Honduras</i>	0.141	<i>Honduras</i>	0.175	<i>Honduras</i>	0.213
Bolivia	0.137	<i>Guatemala</i>	0.163	Bolivia	0.213
<i>Guatemala</i>	0.134	Bolivia	0.146	<i>Guatemala</i>	0.208
Haiti	0.084	Haiti	0.113	Haiti	0.131

(Continued)

Table 3. Continued.

1980	1990	2000	2007
Barbados	0.517	Barbados	0.557
Puerto Rico	0.509	Puerto Rico	0.546
Cuba	0.507	Cuba	0.508
Bahamas	0.473	Bahamas	0.507
Argentina	0.465	Argentina	0.506
Trinidad–Tobago	0.455	Uruguay	0.505
Uruguay	0.454	Chile	0.493
Chile	0.433	Trinidad–Tobago	0.479
Costa Rica	0.429	Costa Rica	0.474
Panama	0.425	Venezuela	0.463
Venezuela	0.421	Panama	0.434
Mexico	0.405	Mexico	0.431
Jamaica	0.405	Jamaica	0.422
Belize	0.388	Ecuador	0.410
Ecuador	0.375	Belize	0.389
Peru	0.351	Peru	0.378
Colombia	0.351	Paraguay	0.377
Guyana	0.347	Colombia	0.375
Brazil	0.342	Brazil	0.369
Paraguay	0.340	Guyana	0.346
Dominican R.	0.315	Dominican R.	0.338
Nicaragua	0.263	<i>El Salvador</i>	0.314
Honduras	0.260	Bolivia	0.304
Bolivia	0.255	<i>Honduras</i>	0.292
<i>El Salvador</i>	0.253	Nicaragua	0.266
Guatemala	0.240	<i>Guatemala</i>	0.260
Haiti	0.175	Haiti	0.187
		Puerto Rico	0.636
		Barbados	0.606
		Argentina	0.580
		Chile	0.575
		Uruguay	0.567
		Cuba	0.552
		<i>Costa Rica</i>	0.527
		Bahamas	0.503
		Panama	0.498
		Trinidad–Tobago	0.494
		Mexico	0.490
		Venezuela	0.480
		Brazil	0.478
		Peru	0.458
		Ecuador	0.454
		Colombia	0.449
		Dominican R.	0.421
		Paraguay	0.417
		Belize	0.416
		Jamaica	0.416
		Guyana	0.412
		Bolivia	0.377
		<i>El Salvador</i>	0.358
		<i>Honduras</i>	0.356
		<i>Guatemala</i>	0.345
		Nicaragua	0.343
		Haiti	0.215
		Cuba	0.732
		Barbados	0.674
		Puerto Rico	0.659
		Chile	0.633
		Uruguay	0.631
		Argentina	0.609
		<i>Costa Rica</i>	0.578
		Venezuela	0.559
		Mexico	0.544
		Bahamas	0.543
		Panama	0.539
		Trinidad–Tobago	0.519
		Brazil	0.503
		Peru	0.501
		Colombia	0.498
		Ecuador	0.494
		Belize	0.467
		Guyana	0.462
		Dominican R.	0.454
		Paraguay	0.449
		Jamaica	0.441
		Bolivia	0.411
		<i>Honduras</i>	0.405
		<i>El Salvador</i>	0.404
		<i>Guatemala</i>	0.389
		Nicaragua	0.378
		Haiti	0.225

Notes: Coverage, **bold**, 1870–2007; **bold italics**, 1913–2007; versalitas, 1950–2007.

Sources: See the text.

Table 4. Human development growth in Latin America (%): country ranking

1870–1880		1880–1890		1890–1900		1900–1913		1913–1929	
Chile	3.0	Argentina	6.1	Ecuador	2.7	Cuba	3.3	Venezuela	6.8
Venezuela	2.4	Mexico	4.3	Peru	2.7	Uruguay	3.1	Colombia	3.9
Colombia	1.8	Cuba	3.2	Chile	1.2	Peru	2.7	Peru	3.5
Cuba	1.7	Venezuela	2.8	Uruguay	0.8	Venezuela	2.6	<i>Nicaragua</i>	3.3
Ecuador	1.1	Chile	1.1	Bolivia	0.8	Argentina	2.5	Ecuador	2.2
Mexico	1.1	Uruguay	0.8	Jamaica	0.5	Chile	2.3	Bolivia	1.8
Argentina	0.8	Bolivia	0.4	Mexico	0.4	Colombia	2.3	<i>Honduras</i>	1.4
Brazil	0.4	Jamaica	0.2	Colombia	−0.1	Brazil	2.2	Brazil	1.4
Bolivia	0.3	Brazil	0.0	Argentina	−0.8	Bolivia	1.9	Uruguay	0.9
Jamaica	0.2	Ecuador	−0.2	Brazil	−0.9	Mexico	1.6	Argentina	0.9
Uruguay	0.0	Peru	−0.2	Venezuela	−1.5	Ecuador	1.6	Chile	0.9
Peru	−6.7	Colombia	−2.1	Cuba	−2.8	Jamaica	0.4	Jamaica	0.9
								<i>Guatemala</i>	0.7
								<i>El Salvador</i>	0.6
								Mexico	0.6
								<i>Costa Rica</i>	0.1
								Cuba	−0.4

(Continued)

Table 4. Continued.

1929–1938		1938–1950		1950–1960		1960–1970		1970–1980	
Jamaica	3.7	Venezuela	4.3	Jamaica	6.9	Puerto Rico	6.2	Brazil	6.0
<i>Guatemala</i>	2.6	<i>El Salvador</i>	3.8	Trinidad–Tobago	5.3	Barbados	5.2	Paraguay	5.9
<i>Costa Rica</i>	1.9	<i>Nicaragua</i>	3.7	Puerto Rico	4.7	Panama	4.8	Ecuador	5.7
Colombia	1.4	Mexico	3.5	Barbados	4.6	Jamaica	3.7	Belize	5.4
Brazil	1.0	Ecuador	3.4	Guyana	3.9	<i>Nicaragua</i>	3.6	Dominican R.	4.3
Ecuador	0.8	Cuba	2.8	<i>Costa Rica</i>	3.7	Mexico	3.6	Trinidad–Tobago	4.1
Venezuela	0.5	Jamaica	2.6	Venezuela	3.6	Bahamas	3.5	Barbados	3.6
Mexico	0.4	Bolivia	1.7	Brazil	3.5	Bolivia	3.1	Mexico	3.5
Uruguay	0.1	Argentina	1.7	Peru	2.9	Trinidad–Tobago	2.8	Cuba	3.2
Peru	0.1	Peru	1.6	Mexico	2.8	Argentina	2.7	Haiti	3.2
Bolivia	–0.6	Brazil	1.6	Ecuador	2.3	<i>Costa Rica</i>	2.7	Colombia	3.1
<i>El Salvador</i>	–0.7	Colombia	1.5	<i>Nicaragua</i>	2.0	<i>Guatemala</i>	2.7	<i>Costa Rica</i>	2.9
Argentina	–0.8	Uruguay	1.5	Panama	2.0	Brazil	2.6	<i>Guatemala</i>	2.9
Chile	–0.8	<i>Honduras</i>	1.4	Dominican R.	2.0	Venezuela	2.3	Panama	2.8
Cuba	–1.2	Chile	1.3	Colombia	1.6	Peru	2.3	Uruguay	2.6
<i>Honduras</i>	–3.4	<i>Costa Rica</i>	0.4	<i>El Salvador</i>	1.5	Belize	2.2	Puerto Rico	2.5
<i>Nicaragua</i>	–5.4	<i>Guatemala</i>	–0.1	Chile	1.2	<i>El Salvador</i>	2.2	<i>Honduras</i>	2.3
				Argentina	1.1	Colombia	2.1	Bolivia	1.4
				<i>Guatemala</i>	1.0	Paraguay	2.0	Guyana	1.3
				Uruguay	0.7	Chile	1.9	Peru	1.0
				Paraguay	0.3	Dominican R.	1.8	Chile	1.0
				<i>Honduras</i>	0.0	<i>Honduras</i>	1.5	Argentina	0.9
				Haiti	–0.2	Ecuador	1.4	Venezuela	0.6
				Cuba	–0.4	Guyana	1.2	Bahamas	0.6
				Belize	–1.7	Uruguay	0.5	<i>El Salvador</i>	–0.2
				Bolivia	–1.7	Cuba	–0.7	Jamaica	–2.1
				Bahamas	–2.4	Haiti	–1.2	<i>Nicaragua</i>	–2.7

1980–1990		1990–2000		2000–2007	
Puerto Rico	2.5	Guyana	4.8	Trinidad–Tobago	7.6
Belize	2.3	Chile	4.6	Cuba	6.0
Jamaica	2.2	Dominican R.	4.1	Peru	4.0
Bahamas	1.8	Trinidad–Tobago	3.7	Panama	4.0
Colombia	1.3	Panama	2.9	Dominican R.	3.5
Chile	1.2	Puerto Rico	2.9	Colombia	3.3
Cuba	1.1	Argentina	2.8	<i>Costa Rica</i>	3.3
Dominican R.	0.3	<i>Costa Rica</i>	2.6	Ecuador	3.2
Paraguay	0.2	<i>El Salvador</i>	2.4	Chile	3.2
Barbados	0.1	Uruguay	2.3	<i>Honduras</i>	3.0
Mexico	–0.1	Peru	2.3	Argentina	2.8
Uruguay	–0.3	Belize	1.8	Venezuela	2.6
<i>Costa Rica</i>	–0.3	<i>Guatemala</i>	1.7	Uruguay	2.6
Brazil	–0.5	Mexico	1.7	Belize	2.3
Ecuador	–0.5	Bolivia	1.4	Brazil	1.9
<i>Honduras</i>	–0.6	<i>Nicaragua</i>	1.2	<i>Nicaragua</i>	1.9
Panama	–0.8	Brazil	1.0	Guyana	1.6
<i>El Salvador</i>	–1.5	Colombia	0.9	Mexico	1.5
<i>Guatemala</i>	–1.5	<i>Honduras</i>	0.8	Barbados	1.5
Bolivia	–2.0	Barbados	0.7	Paraguay	1.4
Venezuela	–2.1	Bahamas	0.6	Bolivia	1.3
Argentina	–2.6	Ecuador	0.0	<i>Guatemala</i>	1.3
Guyana	–2.8	Venezuela	0.0	Puerto Rico	1.2
Haiti	–3.0	Jamaica	–0.2	Jamaica	1.1
Peru	–3.5	Paraguay	–0.5	<i>El Salvador</i>	1.1
Trinidad–Tobago	–3.7	Haiti	–1.9	Bahamas	0.7
<i>Nicaragua</i>	–3.8	Cuba	–1.9	Haiti	–1.2

Notes: Coverage, **bold**, 1870–2007; **bold italics**, 1913–2007; versalitas, 1950–2007.

Sources: See the text.

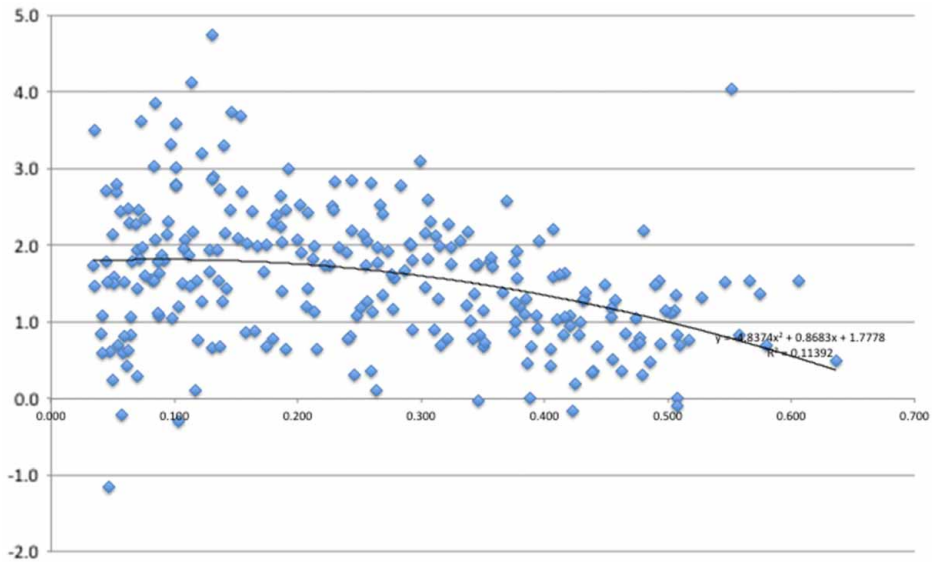


Figure 11. Beta-convergence in human development, 1870–2007.

Source: See the text.

1938–1980, while weak progress in life expectancy help to explain sluggish catching-up after 1980.

Human Development, Freedom, and Agency

Free markets, it has been argued, would not have contributed to control disease transmission, encourage immunization, nor stimulate medical research, so public intervention was required (Easterlin 1999). As socialism provides the framework for an active role of government, do socialist societies have an advantage over capitalist ones at lifting human well-being, at least, in early stages of development?

Does the evidence on human development support this view in Latin America? Cuba, the only long-term socialist experience in the Americas, achieved remarkable success since the 1959 Revolution, driven exclusively by its non-income dimensions.¹⁹ The origins of the improvement pre-date, however, the 1959 Revolution. In fact, a sustained improvement in life expectancy took place during the first half of the twentieth century, so by eve of the 1959 Revolution, Cuba was above the average Latin American and Southern European countries (McGuire and Frankel 2005; Devereux 2010; Ward and Devereux 2010, 2012). The mortality decline, initiated after the US occupation, was associated with sanitary and public health innovation, and largely independent from Cuba’s level of economic development (Díaz-Briquets 1981). After the Revolution, a further and impressive improvement in life expectancy has taken place, as a result of the success in fighting and eradicating infant mortality. Interestingly, there is continuity in the post-1959 era, as human development success has occurred in striking contrast with its poor economic performance. Such an achievement has been attributed to the coercive power of the socialist state (Mesa-Lago 2005; Devereux 2010).

Does the evidence suggest a positive answer to the initial question? Before providing an answer, an important caveat is necessary. In the short-cut approach to “measure” human development used here, agency and freedom are left aside. Without agency and

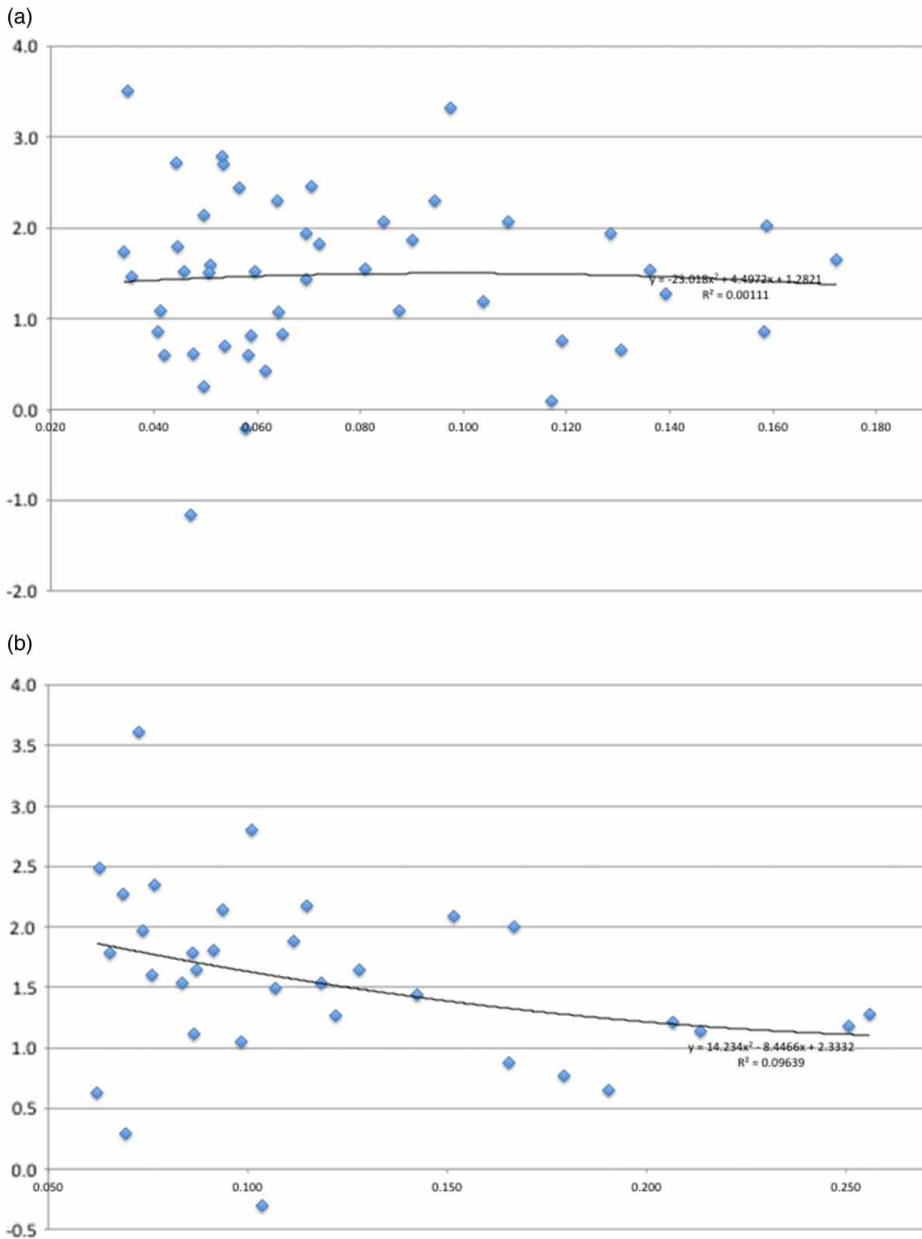


Figure 12. (a) Beta-convergence in human development, 1870–1913. (b) Beta-convergence in human development, 1913–1938. (c) Beta-convergence in human development, 1938–1980. (d) Beta-convergence in human development, 1980–2007.

Source: See the text.

freedom, the HDI becomes simply a “basic needs” index (Ivanov and Peleah 2010). A comprehensive depiction of human development needs incorporate the opportunities individuals have of exercising their political capabilities and influencing public decisions (Dasgupta and Weale 1992; Cheibub 2010). The case of Cuba presents an extreme contrast between the success in achieving “basic needs” and the failure to enlarging people’s choices—the core of human development—as agency and freedom are curtailed by the

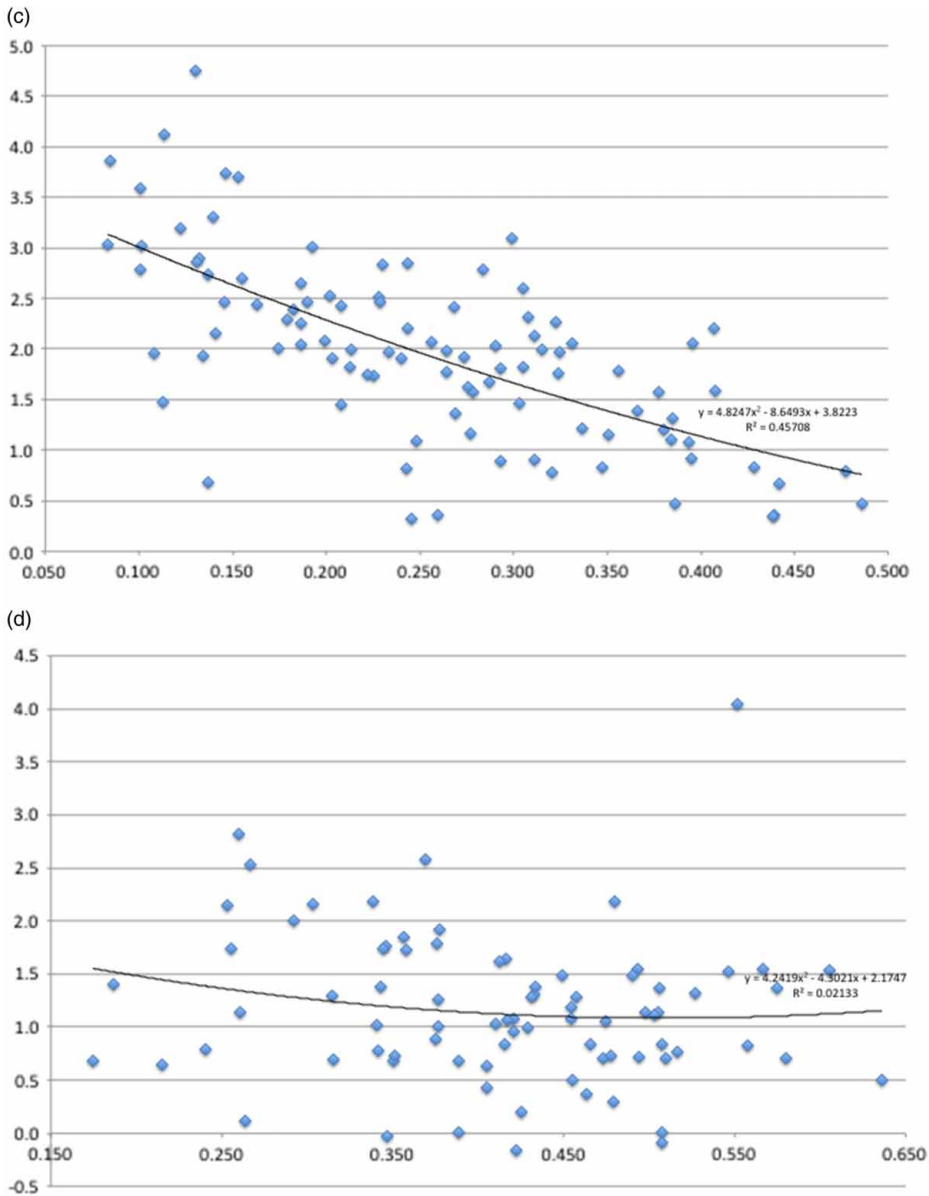


Figure 12. Continued.

political regime. Restrictions of individual choice in Cuba—as collectivization, forced industrialization, and political repression exemplify—suggest that achievements in health and education could be, strictly speaking, depicted as “basic needs” rather than as human development (Ivanov and Peleah 2010). The same caveat applies to fascism and other totalitarian regimes under capitalism that suppressed freedom and agency across Latin America.

It is, nonetheless, reassuring that, since 1950, human development and democratization are correlated and their association grows stronger as their levels get higher (positive sign of the quadratic term in the regression) (Figure 13).²⁰

Table 5. Human development growth and its drivers: country ranking

1870–1913				1913–1938					
	HIHD	Contribution of life expectancy	Contribution of education	Contribution of adjusted income		HIHD	Contribution of life expectancy	Contribution of education	Contribution of adjusted income
Argentina	2.0	0.7	1.0	0.3	Ecuador	2.4	1.2	0.8	0.4
Chile	1.8	0.6	0.9	0.3	Venezuela	2.3	0.7	0.8	0.7
Bolivia	1.8	0.5	1.1	0.2	Peru	2.2	1.1	0.7	0.4
Venezuela	1.7	0.5	0.8	0.5	Mexico	1.9	1.0	0.9	0.1
Cuba	1.7	0.6	0.8	0.2	Costa Rica	1.8	1.1	0.6	0.1
Ecuador	1.4	0.0	0.9	0.5	Nicaragua	1.7	1.3	0.4	0.0
Mexico	1.4	0.5	0.5	0.4	Jamaica	1.7	0.6	0.6	0.5
Jamaica	1.2	0.3	0.9	0.1	Colombia	1.6	0.6	0.4	0.6
Colombia	1.2	0.6	0.5	0.1	Brazil	1.5	0.6	0.7	0.3
Brazil	1.2	0.3	0.7	0.1	El Salvador	1.5	1.1	0.3	0.0
Uruguay	1.1	0.4	0.5	0.2	Bolivia	1.4	1.0	0.2	0.2
Peru	1.1	0.4	0.8	0.0	Guatemala	1.2	0.6	0.4	0.2
					Chile	1.2	0.8	0.4	0.0
					Argentina	1.2	0.6	0.6	0.0
					Uruguay	1.2	0.5	0.6	0.1
					Cuba	0.8	0.6	0.3	−0.1
					Honduras	0.6	0.9	−0.3	−0.1
		1938–1980				1980–2007			
Ecuador	2.8	1.4	1.0	0.5	Guatemala	1.8	0.7	1.0	0.0
Venezuela	2.8	1.3	1.2	0.3	Bolivia	1.8	0.7	1.0	0.0
Mexico	2.5	1.1	1.0	0.4	El Salvador	1.7	0.8	0.8	0.1
Guatemala	2.5	1.6	0.7	0.2	Honduras	1.6	0.7	0.8	0.1
Brazil	2.4	1.1	0.9	0.5	Brazil	1.4	0.6	0.8	0.1
Peru	2.3	1.0	1.1	0.2	Chile	1.4	0.7	0.5	0.3
Nicaragua	2.3	1.2	0.8	0.3	Cuba	1.4	0.4	0.9	0.1
Honduras	2.3	1.0	1.1	0.2	Dominican R.	1.3	0.6	0.5	0.3
Colombia	2.2	1.2	0.8	0.3	Nicaragua	1.3	0.8	0.6	−0.1
El Salvador	2.2	0.9	0.9	0.3	Peru	1.3	0.7	0.5	0.1
Cuba	2.2	1.1	0.9	0.2	Colombia	1.3	0.4	0.7	0.2
Bolivia	2.0	0.6	1.3	0.2	Uruguay	1.2	0.4	0.7	0.1
Chile	1.9	1.2	0.6	0.1	Costa Rica	1.1	0.5	0.4	0.2
Jamaica	1.9	0.9	0.6	0.5	Mexico	1.1	0.6	0.4	0.1

(Continued)

Table 5. Continued.

	HIHD	Contribution of life expectancy	Contribution of education	Contribution of adjusted income		HIHD	Contribution of life expectancy	Contribution of education	Contribution of adjusted income
<i>Costa Rica</i>	1.8	0.9	0.6	0.3	Guyana	1.1	0.3	0.6	0.2
Argentina	1.2	0.5	0.5	0.2	Venezuela	1.1	0.3	0.7	0.0
Uruguay	1.1	0.4	0.5	0.1	Paraguay	1.0	0.3	0.7	0.0
					Ecuador	1.0	0.7	0.2	0.1
					Argentina	1.0	0.4	0.6	0.1
					Barbados	1.0	0.4	0.6	0.1
					Puerto Rico	1.0	0.4	0.4	0.2
					Haiti	0.9	0.6	0.8	-0.4
					Panama	0.9	0.4	0.3	0.2
					Belize	0.7	0.4	0.1	0.2
					Bahamas	0.5	0.3	0.1	0.1
					Trinidad-Tobago	0.5	0.1	0.2	0.2
					Jamaica	0.3	0.1	0.1	0.1
		1870-2007				1913-2007			
Venezuela	2.0	0.8	0.9	0.4	Ecuador	2.2	1.1	0.7	0.3
Ecuador	1.9	0.8	0.8	0.4	Venezuela	2.2	0.9	1.0	0.3
Bolivia	1.8	0.7	1.0	0.1	Peru	2.0	0.9	0.8	0.2
Mexico	1.8	0.8	0.7	0.3	Mexico	2.0	0.9	0.8	0.2
Peru	1.7	0.8	0.8	0.2	<i>Guatemala</i>	1.9	1.0	0.7	0.2
Brazil	1.7	0.7	0.8	0.2	Brazil	1.9	0.8	0.8	0.3
Chile	1.7	0.8	0.6	0.2	<i>El Salvador</i>	1.9	1.0	0.7	0.2
Colombia	1.6	0.7	0.6	0.3	<i>Nicaragua</i>	1.9	1.1	0.6	0.1
Cuba	1.6	0.7	0.8	0.1	Colombia	1.8	0.8	0.7	0.3
Argentina	1.4	0.6	0.7	0.2	Bolivia	1.8	0.8	0.9	0.1
Jamaica	1.3	0.5	0.6	0.3	<i>Honduras</i>	1.6	0.9	0.6	0.1
Uruguay	1.2	0.4	0.6	0.1	<i>Costa Rica</i>	1.6	0.8	0.6	0.2
					Chile	1.6	0.9	0.5	0.2
					Cuba	1.6	0.8	0.7	0.1
					Jamaica	1.4	0.6	0.4	0.4
					Uruguay	1.2	0.4	0.6	0.1
					Argentina	1.2	0.5	0.6	0.1

Notes: Coverage, **bold**, 1870-2007; **bold italics**, 1913-2007; versalitas, 1950-2007.

Sources: See the text.

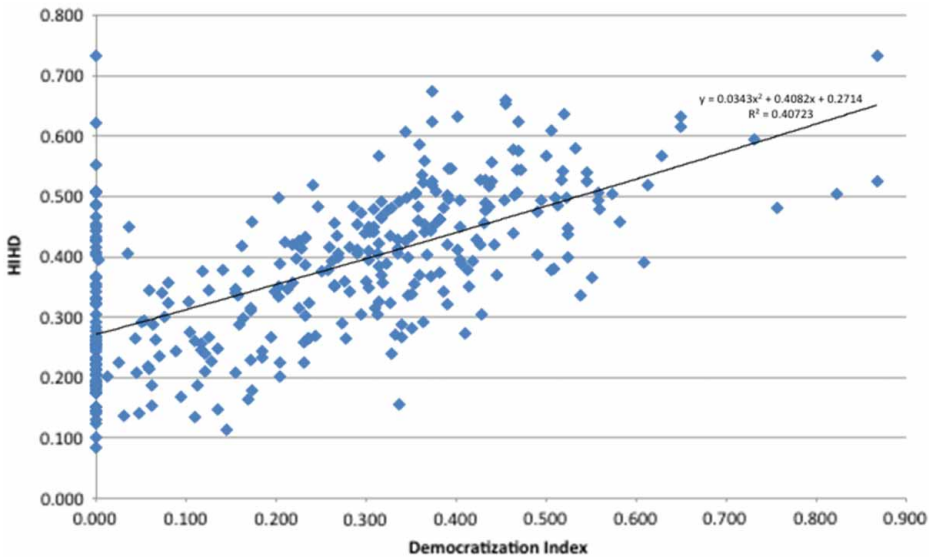


Figure 13. Human development and democratization in Latin America, 1950–2007.
 Source: Democratization index, Vanhanen (2011), normalized; *HIHD*, see the text.

Conclusions

Human development improved in Latin America during the last century and a half, especially between 1900 and 1980, when gains were significant and across the board. Remarkable progress in life expectancy and education occurred between 1938 and 1950, precisely at the time of an economic globalization backlash.

This points to a development puzzle. Why are trends in GDP per capita and human development uncorrelated over long periods of time when increases in per capita income would surely contribute to better nutrition, health, and education? Does the explanation lie more with public policy (e.g. public schooling, public health, the rise of the welfare state), or with the fact that medical technology is a public good?

The last three decades have witnessed a widening in the absolute gap between developed countries and Latin America. Differences in the behaviour of human development dimensions help to explain it. In Latin America, life expectancy played a major role in human development gains and catching-up, but only until the mid-twentieth century. With completion of the *first* health transition, its dynamic role faded. A second wave of life expectancy gains comparable with those of developed countries has yet to take place. Instead, education was mainly responsible for long run progress and catching-up in human development.

This development puzzle raises a number of key questions. For example, why did life expectancy stop being the driving force of world human development as the *first* health transition was concluded? Why Latin America has been left aside from the *second* health transition? Is there a lack of public policies, or a polarizing effect of new medical technologies? Is it that health and education are highly income-elastic? To what extent did restricted access to health and education, as a result of income inequality, play a role? These questions deserve further investigation, as the answers are likely to have far-reaching policy ramifications for future generations.

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Notes

1. This paper is part of a broad research project on negative and positive freedom in a historical perspective. See Prados de la Escosura (2013, 2015, forthcoming).
2. I will not examine the UNDP *HDI* as a measure of well-being here, since it has recently been discussed elsewhere (Prados de la Escosura 2010; Klugman et al. 2011).
3. Pre-1994 OECD members were as follows: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxemburg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the UK, and the USA. No human development estimates have been computed for Iceland and Luxemburg so these two countries were excluded from my own version of *OECD*. Turkey, although an OECD member, has been excluded from the *OECD* group in order to make the group more homogeneous.
4. In 2010 the Human Development Report (UNDP 2010) introduced major changes in the indicators used to represent human development dimensions. Thus, for education, the expected years of schooling for a school-age child and the mean years of schooling for population aged 25 and above substituted for adult literacy and gross enrolment (primary, secondary, and tertiary) rates. Also, purchasing power parity (PPP)-adjusted per capita Gross National Income (GNI) replaced purchasing-power-adjusted GDP per head. Data requirements are highly demanding so, when long-run trends are needed, old indicators (namely literacy and school enrolment for education, and real GDP per head) have been recovered in the so-called hybrid HDI. Nonetheless, indices for each dimension are derived with the new goalposts and combined through a geometric average to derive the “hybrid” HDI (Gidwitz et al. 2010, 3).
5. Since 2010, in an attempt to mitigate the substitutability between its different dimensions, the indices for each dimension are combined using a geometric average, no longer using an arithmetic average. The geometric average had been previously proposed by Desai (1991) and Sagar and Najam (1998) and used in historical estimates by Prados de la Escosura (2010). There are serious discrepancies about the choice between arithmetic and geometric averages to combine the dimensions’ indices. See, for example, the harsh critique of the new index in Ravallion (2012) and the response in Zambrano (2011).
6. The 2010 new HDI also altered its goalposts for each dimension with upper and lower bounds corresponding to the maximum values observed during the period 1980–2010 and to discretionally fix minimum values, respectively. Goalposts for life expectancy are 83.2 and 20 years. The expected years of schooling and the mean years of schooling were assigned maxima of 20.6 and 13.2 years, respectively, and minima of zero, while previously literacy and enrolment ranged between 0 and 100. In the case of per capita income, the upper bound is the maximum observed (108, 211 PPP \$2008). The minimum was set at 163 PPP \$US 2008.
7. Life expectancy has been defined as “the average number of years of life which would remain for males and females reaching the ages specified if they continued to be subjected to the same mortality experienced in the year(s) to which these life expectancies refer” (United Nations 2000).

8. Omran (1971, 736) defines the epidemiological transition as a long-term shift in mortality “whereby pandemics of infection are gradually displaced by degenerative and man-made diseases as the chief form of morbidity and primary cause of death.”
9. Nonetheless, Arriaga (1968) reports lower values for Central, America (Nicaragua and Guatemala), Mexico, and Paraguay in the late nineteenth and early twentieth centuries.
10. Truncating the lower part of the distribution by assuming a life expectancy “floor” of 25 years has the advantage of allowing the inclusion of countries for which no data are available.
11. Defined as the percentage of the population aged 15 years or over who is able to read and write.
12. The assumption of 1% as the lowest historical value for literacy and enrolment seems historically more reasonable than accepting zero. A consequence of assuming a historical lower bound of 1% is preventing zero values for the transformed variables.
13. Zambrano (2011) provides a theoretical justification for the introduction of diminishing returns to income per head within the conceptual framework of the HDI.
14. This lower bound for per capita income, which, no doubt, truncates the data set at the bottom, allows one to consider countries in earlier periods for which no data exist.
15. In the 2010 Human Development Report (UNDP 2010), the lowest level observed since 1980 has been established in 2008 international \$163, which is equivalent to \$108 in 1990 G–K dollars. The highest per capita income level reached over the same time span, \$108 211 international dollars of 2008, corresponds to \$72 020 G–K dollars of 1990. Such a figure has never been achieved in G–K 1990 dollars (Maddison 2010) estimates, so I have chosen the observed maximum and minimum values over 1870–2007 in Maddison (2010) estimates.
16. Previously, Astorga et al. (2005) studied human development for 6 countries since 1900 and 20 from 1950 to 2000, and Bértola and Ocampo (2012) investigated 7 countries from 1900 and 19 from 1960 to 2010.
17. When the alternative UNDP indices are compared, the “hybrid” index remains systematically below the “old” HDI.
18. 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 2005a). In Jamaica, mortality declined sharply during the late 1920s and 1930s while real per capita GDP was relatively stagnant. A similar experience is found in British Guiana (Mandle 1970).
19. 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 a discussion in Ivanov and Peleah (2010).
20. 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.

References

- Acemoglu, D., and S. Johnson. 2007. “Disease and Development: The Effects of Life Expectancy on Economic Growth.” *Journal of Political Economy* 115 (6): 925–985.
- Altinok, N., C. Diebolt, and J.-L. Demeulemeester. 2014. “A New International Database on Education Quality: 1965–2010.” *Applied Economics* 46 (11): 1212–1247.
- Anand, S., and A. Sen. 2000. “The Income Component of the Human Development Index.” *Journal of Human Development* 1 (1): 83–106.
- Arriaga, E. E. 1968. *New Life Tables for Latin American Populations in the Nineteenth and Twentieth Centuries*. Population Monographs Series No. 3, Institute of International Studies, University of California Berkeley.
- Astorga, P., A. R. Bergés, and E. V. K. FitzGerald. 2003. *The Oxford Latin American Economic History Database [OxLAD, now MOXLAD]*. Oxford: Latin American Centre, Oxford University. Formerly <http://oxlad.qeh.ox.ac.uk/>, now <http://moxlad.fcs.edu.uy/>.
- Astorga, P., A. R. Bergés, and E. V. K. FitzGerald. 2005. “The Standard of Living in Latin America During the Twentieth Century.” *The Economic History Review* 58 (4): 765–796.
- Astorga, P., and E. V. K. Fitzgerald. 1998. “Statistical Appendix.” In *Progress, Poverty and Exclusion An Economic History of Latin America in the 20th Century*, edited by R. Thorp, 307–365. Washington, DC: Inter-American Development Bank.
- Baptista, A. 1997. *Bases cuantitativas de la economía venezolana, 1830–1995*. Caracas: Fundación Polar.
- Benavot, A. and P. Riddle. 1988. “The Expansion of Primary Education, 1870–1940: Trends and Issues.” *Sociology of Education* 61 (3): 191–210.
- Bértola, L. 1998. *El PBI de Uruguay, 1870–1936 y otras estimaciones*. Montevideo: Universidad de la República.
- Bértola, L., and J. A. Ocampo. 2012. *The Economic Development of Latin America since Independence*. Oxford: Oxford University Press.

- Braun, J., M. Braun, I. Briones, and J. Díaz. 2000. *Economía chilena, 1810–1995. Estadísticas históricas*. Pontificia Universidad Católica de Chile, Instituto de Economía, Documento de Trabajo no. 187.
- Brundenius, C., and A. Zimbalist. 1989. *The Cuban Economy: Measurement and Analysis of Socialist Performance*. Baltimore, MD: Johns Hopkins.
- Bulmer-Thomas, V. 2003. *The Economic History of Latin America since Independence* (Vol. 2, 2nd ed.). Cambridge, MA: Cambridge University Press.
- CEPAL (Comisión Económica para América Latina y el Caribe). 2009. “América Latina y el Caribe. Series históricas de estadísticas económicas 1950–2008.” *Cuadernos Estadísticos* 37. <http://www.eclac.cl/deype/cuademo37/index.htm>.
- Cheibub, J. A. 2010. *How to Include Political Capabilities in the HDI? An Evaluation of Alternatives*. UNDP Human Development Reports Research Paper 2010/41.
- Coatsworth, J. H. 1989. “The Decline of the Mexican Economy, 1800–1860.” In *América Latina en la época de Simón Bolívar: La formación de las economías nacionales y los intereses económicos europeos 1800–1850*, edited by R. Liehr, 27–53. Berlin: Colloquium.
- Coatsworth, J. H. 2005. “Structures, Endowments, and Institutions in the Economic History of Latin America.” *Latin American Research Review* 40 (3): 126–144.
- Cortés Conde, R. 1997. *La economía argentina en el largo plazo*. Buenos Aires: Editorial Sudamericana/ Universidad de San Andrés.
- Cutler, D., A. Deaton, and A. Lleras-Muney. 2006. “The Determinants of Mortality.” *Journal of Economic Perspectives* 20 (3): 97–120.
- Cutler, D., and G. Miller. 2005. “The Role of Public Health Improvements in Health Advance: The Twentieth Century United States.” *Demography* 42 (1): 1–22.
- Dasgupta, P., and M. Weale. 1992. “On Measuring the Quality of Life.” *World Development* 20 (1): 119–131.
- Della Paolera, G., A. M. Taylor, and C. G. Bozolli. 2003. “Historical Statistics.” In *A New Economic History of Argentina*, edited by G. Della Paolera and A. M. Taylor, 376–385. New York: Cambridge University Press (with CD-ROM).
- Desai, M. 1991. “Human Development: Concept and Measurement.” *European Economic Review* 35: 350–357.
- Devereux, J. 2010. *The Health of the Revolution: Explaining the Cuban Health Care Paradox* (mimeo).
- Díaz, J., R. Lüders, and G. Wagner. 2007. *Economía Chilena 1810–2000*. Producto total y sectorial. Una nueva mirada. Pontificia Universidad Católica de Chile, Documento de trabajo 315.
- Díaz-Briquets, S. 1981. “Determinants of Mortality Transition in Developing Countries Before and After the Second World War: some Evidence from Cuba.” *Population Studies* 35 (3): 399–411.
- Easterlin, R. A. 1999. “How Beneficent is the Market? A Look at the Modern History of Mortality.” *European Review of Economic History* 3 (3): 257–94.
- Eggleston, K. N. and V. R. Fuchs. 2012. “The New Demographic Transition: Most Gains in Life Expectancy Now Realized Late in Life.” *Journal of Economic Perspectives* 26: 137–156.
- Eisner, G. 1961. *Jamaica, 1830–1930: A Study in Economic Growth*. Manchester: Manchester University Press.
- Fogel, R. W. 2004. *The Escape from Hunger and Premature Death, 1700–2010. Europe, American and the Third World*. New York: Cambridge University Press.
- Gidwitz, Z., M. P. Heger, J. Pineda, and F. Rodríguez. 2010. *Understanding Performance in Human Development: A Cross-national Study*. UNDP Human Development Reports Research Paper 2010/42.
- Goldsmith, R. W. 1986. *Desenvolvimento financeiro sob um século de inflação*. Rio de Janeiro: Harper & Row do Brasil.
- GRECO (Grupo de Estudios de Crecimiento Económico). 2002. *El Crecimiento económico colombiano en el Siglo XX*. Bogotá: Banco de la República–Fondo de Cultura Económica.
- Hanushek, E. A., and D. D. Kimko. 2000. “Schooling, Labor-Force Quality, and the Growth of Nations.” *American Economic Review* 90 (5): 1184–1208.
- Hatton, T. J., and B. E. Brey. 2010. “Long Run Trends in the Heights of European Men, 19th–20th Centuries.” *Economics and Human Biology* 8: 405–413.
- Herranz-Loncán, A., and J. Peres Cajías, forthcoming. “Tracing the Reversal of Fortune in the Americas: Bolivian GDP per Capita Since the Mid-nineteenth Century.” *Cliometrica*. doi:10.1007/s11698-015-0125-2
- INEGI. 1995. *Estadísticas históricas de México*. México, DF: INEGI.
- Ivanov, A., and M. Peleah. 2010. *From Centrally Planned Development to Human Development*. UNDP Human Development Reports Research Paper 2010/38.
- Jayachandran, S., A. Lleras-Muney, and K. V. Smith. 2010. “Modern Medicine and the Twentieth Century Decline in Mortality: Evidence on the Impact of Sulfa Drugs.” *American Economic Journal: Applied Economics* 2 (2): 118–146.
- Kakwani, N. 1993. “Performance in Living Standards. An International Comparison.” *Journal of Development Economics* 41: 307–336.

- Kalmanovitz Krauter, S., and E. López Rivera. 2009. *Las cuentas nacionales de Colombia en el siglo XIX*. Bogotá: Universidad de Bogotá Jorge Tadeo Lozano.
- Klugman, J., F. Rodríguez, and H. J. Choi. 2011. *The HDI 2010: New Controversies, Old Critiques*. UNDP Human Development Reports Research Paper 2011/01.
- Lindert, P. H. 2004. *Growing Public. Social Spending and Economic Growth Since the Eighteenth Century*. Cambridge: Cambridge University Press, 2 vols.
- Loudon, I. 2000. "Maternal Mortality in the Past and its Relevance to Developing Countries Today." *American Journal of Clinical Nutrition* 72 1 (supplement): 241S–246S.
- Maddison, A. 1995. *Monitoring the World Economy, 1820–1992*. Paris: OECD Development Centre.
- Maddison, A. 2006. *The World Economy*. Paris: OECD Development Centre.
- Maddison, A. 2010. *Statistics on World Population, GDP and Per Capita GDP, 1–2008 AD*. Last update: March 2010, horizontal file <http://www.ggdc.net/maddison/>.
- Mandle, J. R. 1970. "The Decline of Mortality in British Guiana, 1911–1960." *Demography* 7 (3): 301–315.
- Markussen, I. 1990. "The Development of Writing Ability in the Nordic Countries in the Eighteenth and Nineteenth Centuries." *Scandinavian Journal of History* 15: 37–63.
- McGuire J. W., and L. B. Frankel. 2005. "Mortality Decline in Cuba, 1900–1959: Patterns, Comparisons, and Causes." *Latin American Research Review* 40 (2): 83–116.
- McKeown, T., and R. G. Record. 1962. "Reasons for the Decline of Mortality in England and Wales during the Nineteenth Century." *Population Studies* 16: 94–122.
- McKeown, T., R. G. Record, and R. D. Turner. 1975. "An Interpretation of the Decline of Mortality in England and Wales during the Twentieth Century." *Population Studies* 29 (3): 391–422.
- Mesa-Lago, C. 2005. "Problemas sociales y económicos en Cuba durante la crisis y la recuperación." *Revista de la CEPAL* 86: 183–205.
- Milanovic, B., P. H. Lindert, and J. G. Williamson. 2011. "Measuring Ancient Inequality." *The Economic Journal* 121 (551): 255–272.
- Ministerio de Salud Pública. 2001. *Tablas de Mortalidad del Uruguay por sexo y edad / 1908 – 1999*. Montevideo: Ministerio de Salud Pública, Dirección General de la Salud, Departamento de Estadística.
- Mitchell, B. R. 2003. *International Historical Statistics: The Americas, 1750–2000*. 5th ed. New York: Palgrave Macmillan.
- Morrisson, C., and F. Murtin. 2009. "The Century of Education." *Journal of Human Capital* 3: 1–42 (and data appendix).
- Newland, C. 1991. "La educación elemental en Hispanoamérica: desde la independencia hasta la centralización de los sistemas educativos nacionales." *The Hispanic American Historical Review* 71 (2): 335–364.
- Nilsson, A. 1999. "What Do Literacy Rates in the 19th Century Really Signify? New Light on an Old Problem from Unique Swedish Data." *Paedagogica Historica* 35 (2): 275–296.
- Núñez, J. 2005. "Signed with an X: Methodology and Data Sources for Analyzing the Evolution of Literacy in Latin America and the Caribbean, 1900–1950." *Latin American Research Review* 40 (2): 117–135.
- Omran, A. R. 1971. "The Epidemiological Transition: A Theory of Epidemiology of Population Change." *The Milbank Memorial Fund Quarterly* 49 (4): 509–538.
- Prados de la Escosura, L. 2007. "When Did Latin America Fall Behind?" In *The Decline of Latin American Economies. Growth, Institutions, and Crisis*, edited by S. Edwards, G. Esquivel, and G. Marquez, 15–57. Chicago, IL: NBER/University of Chicago Press.
- Prados de la Escosura, L. 2010. "Improving Human Development: A Long-run View." *Journal of Economic Surveys* 24 (5), 841–894.
- Prados de la Escosura, L. 2013. "Human Development in Africa: A Long-run Perspective." *Explorations in Economic History* 50 (2): 179–204.
- Prados de la Escosura, L. 2015. "World Human Development, 1870–2007." *Review of Income and Wealth* 61 (2): 220–247.
- Prados de la Escosura, L. (forthcoming). "Economic Freedom in the Long Run: Evidence from OECD Countries (1850–2007)." *Economic History Review*.
- Preston, S. H. 1975. "The Changing Relationship between Mortality and Level of Economic Development." *Population Studies* 29 (2): 231–248.
- Ravallion, M. 2012. "Troubling Tradeoffs in the Human Development Index." *Journal of Development Economics* 99: 201–209.
- Recchini de Lattes, Z., and A. E. Lattes, eds. 1975. *La población de Argentina*. Buenos Aires: Instituto Nacional de Estadística y Censos.
- Riley, J. C. 2001. *Rising Life Expectancy. A Global History*. New York: Cambridge University Press.
- Riley, J. C. 2005a. *Poverty and Life Expectancy. The Jamaica Paradox*. New York: Cambridge University Press.
- Riley, J. C. 2005b. "The Timing and Pace of Health Transitions Around the World." *Population and Development Review* 31 (4): 741–764.

- Riley, J. C. 2005c. *Bibliography of Works Providing Estimates of Life Expectancy at Birth and Estimates of the Beginning Period of Health Transitions in Countries with a Population in 2000 of at Least 400,000*. www.lifetable.de/RileyBib.htm.
- Sagar, A. D., and A. Najam. 1998. "The Human Development Index: A Critical Review." *Ecological Economics* 25: 249–264.
- Salomon, J. A., H. Wang, M. K. Freeman, T. Vos, A. D. Flaxman, A. D. Lopez, and C. J. L. Murray. 2012. "Healthy Life Expectancy for 187 Countries, 1990–2010: A Systematic Analysis for the Global Burden Disease Study 2010." *Lancet* 380: 2144–2162.
- Salvatore, R. D., J. H. Coatsworth, and A. E. Challú, eds. 2010. *Living Standards in Latin American History: Height, Welfare and Development, 1750–2000*. Cambridge, MA: Harvard University Press.
- Santamaría, A. 2005. *Las cuentas nacionales de Cuba, 1690–2005*. Centro de Estudios Históricos, Centro Superior de Investigaciones Científicas (mimeo).
- Seminario de Marzi, L. B. 2011. *Las cuentas nacionales del Perú, 1700–2010 (Resultados preliminares)*. Universidad del Pacífico Documento de Discusión 12/11.
- Sen, A. K. 1981. "Public Action and the Quality of Life in Developing Countries." *Oxford Bulletin of Economics and Statistics* 43 (4): 287–319.
- Sen, A. K. 1997. "Editorial: Human Capital and Human Capability." *World Development* 25 (12): 1959–1961.
- Sen, A. K. 1999. *Development as Freedom*. Oxford: Oxford University Press.
- Stolnitz, G. J. 1955. "A Century of International Mortality Trends: I." *Population Studies* 9 (1): 24–55.
- United Nations. 2000. *Demographic Yearbook Historical Supplement 1948–1997*. New York: United Nations.
- UNDP (United Nations Development Program). 1990. *Human Development Report*. New York: Oxford University Press.
- UNDP (United Nations Development Program). 2001. *Human Development Report*. New York: Oxford University Press.
- UNDP (United Nations Development Program). 2009. *Human Development Report*. New York: Oxford University Press.
- UNDP (United Nations Development Program). 2010. *Human Development Report*. New York: Oxford University Press.
- UNESCO. 2010. *Total Enrolment, School Life Expectancy, and Expenditure on Education 1970–2005*. Paris: UNESCO.
- Vanhnen, T. 2011. *Measures of Democracy 1810–2010 [computer file]*. FSD1289, Version 5.0 (2011–07–07). Tampere: Finnish Social Science Data Archive. www.fsd.uta.fi/en/data/catalogue/FSD1289/meF1289e.html (accessed July 23, 2012).
- Ward, M., and J. Devereux. 2010. *The Absolution of History: Cuban Living Standards After Fifty Years of Revolutionary Rule* (mimeo).
- Ward, M., and J. Devereux. 2012. "The Road Not Taken: Pre-Revolutionary Cuban Living Standards in Comparative Perspective." *The Journal of Economic History* 72 (1): 104–132.
- Zambrano, E. 2011. *Functionings, Capabilities and the 2010 Human Development Index*. UNDP Human Development Reports Research Paper 2011/11.

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My research papers can be found at: <http://ideas.repec.org/e/ppr58.html>.

APPENDIX

Sources and Procedures

Life Expectancy at Birth. Most data come from the MOxLAD database for Latin America (Astorga et al. 2003)—(supplemented with the working sheets prepared by Shane and Barbara Hunt and kindly provided by Pablo Astorga)—and Arriaga (1968). In addition, national sources used are as follows:

Argentina, 1870–1890, Recchini de Lattes and Lattes (1975).

Chile, 1890–1900, and Uruguay, 1870–1900, assumed to have evolved along Argentina.

Uruguay, 1900–1938, Ministerio de Salud Pública (2001), Life expectancy in Colombia, 1870–1900, Cuba, 1870–1900, Panama, 1880–1900, Honduras, 1890–1900, Puerto Rico, 1870–1890, and Venezuela, 1880–1900, has been assumed to evolve along Costa Rica's (same trend but different levels).

Peru, 1913–1938, assumed to evolve along Bolivia's.

Puerto Rico, 1870–1890, assumed it evolves along Costa Rica; 1890, Riley (2005b); 1900–1938, UN (1993).

Jamaica, 1880–1938, Riley (2005a, 198); 1870–1880, assumed it evolves along Costa Rica.

Trinidad–Tobago, 1860–1900, assumed to evolve along Jamaica's.

In the absence of life expectancy estimates for early years projecting the available figures with infant survival rates (that is, 400—as the maximum infant mortality rate per thousand—less the country's infant mortality rate) has derived them for Panama, 1900–1929 and Guyana, 1950–1960. Such a procedure was also used to distribute the average life expectancy estimate for Argentina, 1869–1894.

Literacy. MOxLAD database (Astorga et al. 2003) (plus the working sheets prepared by Shane and Barbara Hunt and kindly provided by Pablo Astorga) and Newland (1991) provide most of the data. Otherwise, the sources are as follows:

Chile, 1870, Braun et al. (2000).

Cuba, 1870–1890, Newland (1991).

Nicaragua, 1900, Núñez (2005).

Literacy rates have been backwards projected with the rate of primary enrolment for Bolivia, 1870–1890, and Puerto Rico, 1870–1890.

Literacy rates have been backwards projected with years of primary education for the population above 15 years (Morrisson and Murtin 2009) for Dominican Republic, 1870–1900; El Salvador, 1870–1890; Uruguay, 1870–1890, and Venezuela, 1870–1880.

Enrolment. Most data come from the MOxLAD database (Astorga et al. 2003), supplemented it with the working sheets prepared by Shane and Barbara Hunt. Otherwise, the sources are as follows:

Puerto Rico, 1870–1880, Newland (1991).

Venezuela, 1870–1890, Newland (1991).

All enrolment derived with primary enrolment in Benavot and Riddle (1988), adjusted with the ratio of those aged 5–14 years to those aged 5–24 years, for Dominican Republic, 1870–1913; Ecuador, 1870–1880.

All enrolment rates have been backwards projected with years of primary education for the population above 15 years (Morrisson and Murtin 2009) for Cuba, 1870–1890; Honduras, 1870–1880; Panama, 1870–1890, and Paraguay, 1870–1880.

The relevant population was derived as follows. Firstly, I computed the share of population aged 5–24 (and 5–14) over total population at census years from Mitchell (2003) that was, then, interpolated log-linearly to derive yearly series and, finally, its result multiplied by total population figures.

Per Capita GDP. Data for the twentieth-century—except for Cuba (see below)—come from CEPAL (2009) from 1950 onwards, Astorga and Fitzgerald (1998) and MOxLAD database (Astorga et al. 2003). Otherwise national sources have been used. GDP per head is expressed in 1990 G–K dollars.

Argentina, Della Paolera et al. (2003), 1884–1950, assuming the rate of growth over 1870–1884 was identical to that for 1884–1890. The alternative option of projecting backwards the level for 1884–1875 with Cortés Conde (1997) casts too low a figure. I assumed that the level for 1870 was identical to that of 1875.

Brazil, 1870–1950, Goldsmith (1986).

Bolivia, 1870–1950, Herranz-Loncán and Peres Cajias (Forthcoming). Figures for 1870 and 1880 interpolated from those for 1850 and 1883 (worksheets kindly provided by the authors).

Chile, 1870–1950, Díaz, Lüders and Wagner (2007).

Colombia, 1870–1905, Kalmanovitz Krauter and López Rivera (2009) and data kindly provided by Salomon Kalmanovitz in private communication; 1905–1950, GRECO (2002).

Cuba, up to 1902, Santamaría (2005); 1902–1958, Ward and Devereux (2012); 1958 onwards, Maddison (2010).

An important caveat in the case of Cuba is that Maddison's (2006) level for 1990 has not been accepted. The reason is that, given the lack of PPPs for Cuba in 1990, Maddison (2006, 192) assumed Cuban per capita GDP was 15% below the Latin American average. Since this is an arbitrary assumption, I started from Brundenius and Zimbalist's (1989) estimate of Cuba's GDP per head relative to six major Latin American countries (Argentina, Brazil, Chile, Colombia, Mexico, and Venezuela, LA6) in 1980 (provided in Astorga and Fitzgerald 1998) and applied this ratio to the average per capita income of LA6 in 1980 G–K dollars to derive Cuba's level in 1980. Then, following Maddison (1995, 166), I derived the level for 1990 with the growth rate of real per capita GDP at national prices over 1980–1990 and reflatd the result with the US implicit GDP deflator in order to arrive to an estimate of per capita GDP in 1990 at 1990 G–K dollars. Interestingly, Cuba's position relative to the USA in 1929 and 1955 is very close to the one Ward and Devereux (2012) estimated using a different approach.

Ecuador, 1870–1890, I assumed it evolved as Peru over 1880–1900, yielding \$447 for 1880, and I arbitrarily assumed a per capita GDP of \$400 for 1870.

Mexico, 1870–1900, Coatsworth (1989, 41); 1896–1950, INEGI (1995).

Peru, 1870–1950, Seminario de Marzi (2011).

Uruguay, 1870–1938, Bértola (1998).

Venezuela, 1870–1950, Baptista (1997).

Central America (Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua), I derived the level for 1913 by assuming the growth over 1913–1920 was identical to that of 1920–1925, the latter derived from the OxLAD database (Astorga et al. 2003).

Caribbean. Bahamas, Barbados, Belize, Guyana, 1950–2007, and St. Kitts and Nevis, St. Vincent and the Grenadines, 1990–2007, Maddison (2006, 2010), Conference Board (2010), and Bulmer-Thomas (personal communication).

Trinidad–Tobago, 1950–1970, Maddison (2010).

Jamaica, 1870–1929, Eisner (1961); 1938, Maddison (2010).

Puerto Rico, 1950–2007, Maddison (2010).

Population. All figures are adjusted to refer to mid-year and to take into account the territorial changes and are derived from Maddison (2010) and Mitchell (2003), completed for Latin America and the Caribbean with OxLAD database (Astorga et al. 2003), 1900–1938, and CEPAL (2009), 1950–2007. Otherwise, national sources were used.