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on the development
experience of emerging
and industrialised
economies

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*A long-term perspective on the development experience of
emerging and developed countries*

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Abstract / Résumé

This paper describes development patterns beyond GDP in a long-term historical perspective. It revisits the discussion on the goals of development in light of the current work on ‘Beyond GDP’, provides evidence on GDP and well-being outcomes since 1820 in a broad range of developing and emerging countries, and compares the experience of early industrialising countries and more recently emerging ones.

Keywords: well-being, beyond GDP, economic history

JEL Classification: I31, N00

Nous décrivons dans ce document les modes de développement de différents pays dans une perspective historique qui va au-delà du PIB. Nous revisitons la question des objectifs du développement à la lumière des débats actuels sur la nécessité d’aller « au-delà du PIB », nous apportons des éléments d’information sur l’évolution du PIB et de différentes mesures du bien-être depuis 1820 dans un large éventail de pays en développement et émergents, et nous comparons l’expérience des premiers pays industrialisés avec celle des économies émergentes d’industrialisation plus récente.

Mots-clés : Bien-être, au-delà du PIB, histoire économique

Classification JEL: I31, N00

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1. Introduction

1. The world economy is currently characterised by a radical process of shifting wealth (OECD, 2010), as a result of the strong economic growth experienced by a range of emerging and developing countries. While many of the patterns associated with shifting wealth were already evident in the 1990s, they became more pronounced during the 2000s and again following the financial crisis of 2008, due to the anaemic recovery and concerns about a permanently lower pace of economic growth in many OECD countries.

2. Shifting wealth has moved the centre of economic gravity of the planet eastward, blurred the distinction between developing and developed countries, and deepened South-South linkages and cooperation, with consequences for individual countries and international relations. Economic growth in the South has not solved all problems however, as development is an inherently more complex and multidimensional concept than gross domestic product (GDP) can summarise alone.

3. Some old problems have persisted, and new ones have emerged. This paper takes a look at the development experience of countries undergoing the process of economic convergence by analysing a broad range of development outcomes, such as income, inequality, health, education, environmental quality and personal security. It also compares the development experiences of these countries since the 1950s with that of countries in the “old world” that experienced economic take-off in the nineteenth and early twentieth century, highlighting similarities and differences in their development paths. How did the relationship between growth in gross domestic product (GDP) and other measures of economic, social, political and environmental development evolve over time? Did economic growth and industrialisation in the nineteenth century have the same impact on people’s well-being as it did in the more recently emerging economies?

4. The findings in this paper suggest that growth in the nineteenth century was very different from that in the late twentieth century. The catch-up growth that is occurring in China and India, for example, with GDP growth rates of 5% to 10% per year, has a different impact on well-being than it did during the early industrialisation of countries such as Sweden and Germany, which experienced GDP growth of at most 2% per annum at the time in the nineteenth century. While higher GDP growth provides the means for well-being to grow faster as well, substantial variation exists in the degree to which GDP growth is translated into better well-being outcomes – with sometimes no translation occurring at all.

5. The paper is based on a broad set of GDP and well-being measures developed by a team of economic historians and included in the OECD’s *How Was Life?* report (van Zanden, J. et al., 2014).² The paper is organised as follows. Section 2 briefly revisits the discussion on the meaning of “development” in light of current development outcomes and several initiatives on measuring performance ‘Beyond GDP’ launched in the aftermath of the Stiglitz-Sen-Fitoussi report in 2009. Section 3 presents evidence on how the relation between GDP and various well-being dimensions has changed since 1820 when looking across all countries in the world. This evidence shows that the relationship between the levels of real GDP per capita and well-being measures has altered fundamentally over time. Section 4 takes an in depth view of trends since the 1950s in a range of dimensions of people’s life for a group of 23 emerging countries,³ based on the Clio-Infra database, identifying similarities and differences among countries across different periods. Section 5

identifies a number of key patterns in the experiences of nine countries in the developed world that industrialised earlier (1820-1950),⁴ and compares the experience of “early” and “late” industrialisers, showing how gains in well-being lagged behind GDP growth in the early industrialisers over this earlier period. Section 6 concludes, summarising key findings from the analysis, highlighting the need to rethink development paradigms in light of evolving relationships between economic and non-economic outcomes, and suggesting future paths for analysis on long-term development patterns.

2. “Development” of what?

6. In 1969, Dudley Seers argued that the nature of the main challenge confronting the developing world in the post-war period had been fundamentally misconceived:

“This (challenge) has been seen as achieving an increase in the national incomes of the ‘developing countries’, formalised in the target of 9% growth rates set for the first development decade. Of course, we have all been aware that development consists of much else besides economic growth. [...] Yet little more than lip service is paid to it [...] [T]he experience of the past decade makes this belief look rather naïve [...] Now that the complexity of development problems is becoming increasingly obvious, this continued addiction to the use of a single aggregative yardstick in the face of the evidence takes on a rather different appearance, it begins to look like a preference for avoiding the real problems of development.”
(Seers, 1969)

7. While Seers’ challenge has not yet been met with an adequate response 50 years after he made such remarks, a range of recent developments makes it possible to address it in a more systematic way than was possible before. In 2009, the seminal report by the Commission on the Measurement of Economic Performance and Social Progress (CMEPSP), convened by former French President Nicolas Sarkozy and led by Joseph Stiglitz, Amartya Sen and Jean-Paul Fitoussi, stressed the limits of GDP as a metric of welfare, calling for a re-orientation away from measuring solely economic production and more towards measuring outcomes for people, stressing the importance of combining GDP with broader metrics of household economic well-being, quality of life, inequality as well as the sustainability of these outcomes over time (Stiglitz, Sen and Fitoussi, 2009). Since then, the OECD has played a central role in moving this agenda forward, by regularly monitoring a range of well-being indicators for its member countries.

8. The notion of well-being is very close to that of human development promoted by Amartya Sen (1999), amongst others, which underpins the work of many United Nations (UN) agencies. It focuses on outcomes and opportunities that are intrinsically important to people in themselves (an end) rather than only as an instrument to achieve something else (a mean), on the diversity of these outcomes, and on their irreducibility to a single aspect or metric. This implies that no amount of income can offset the lack of basic freedom, for instance.

9. While Sen’s concept of ‘capabilities’ stresses the importance of understanding development as a process that enlarges one’s choices, from a measurement perspective focusing on outcomes is often the best that can be done, and this is the approach used in the OECD’s *How’s Life?* report. This work is informed by a number of key principles. First, it is concerned with people rather than with aggregate economic conditions. Second, it focuses on well-being outcomes rather than inputs or outputs, as the former may be poorly correlated with the resources devoted to achieve well-being outcomes, and because a different combination of inputs and outputs may be equally effective in delivering the same result. Third, it emphasises the importance of inequality in each well-being outcome. Fourth, it considers both objective and subjective aspects of life, as people’s evaluations and feelings matter as much as the objective conditions in which people live. Lastly, it considers the sustainability of such outcomes. This approach does not imply ignoring the

importance of GDP and economic growth, but recognises rather that these are means to an end rather than ends in themselves.

10. These principles have informed the framework shown in Figure 2.1 for OECD member countries (OECD, 2017). Current well-being is described through eleven dimensions belonging to the broader domains of quality of life and material conditions. The assessment of future well-being is based on changes in a range of resources whose benefits extend to tomorrow but are affected by today's actions; these resources are grouped under the categories of economic, natural, human and social capital. The framework is operationalised through a set of headline indicators pertaining to average well-being outcomes and inequalities, as well as resources to ensure its sustainability.

Figure 2.1. The OECD well-being framework

Source: OECD (2017), *How's Life? 2017: Measuring Well-being*, OECD Publishing, Paris, https://doi.org/10.1787/how_life-2017-en.

11. How well does this approach lend itself to use for describing the development experience of poorer countries? Analysis of the literature on developing countries suggests that none of the dimensions listed in Figure 1 can be deemed as irrelevant in less developed countries (Table 2.1). In addition, while there are differences in the relative importance of various aspects of life depending on national circumstances, most dimensions are also common across countries and differ more in the way they are labelled than in terms of what they regard as most salient. While the framework shown in Figure 2.1 would need to be adapted to better fit the realities and concerns of poorer countries,⁵ its approach suggests that differences across countries are more likely to manifest themselves in terms of the importance attributed to the different dimensions by people living in the country themselves (Boarini, Kolev and McGregor, 2014). This conclusion is also in line with a range of studies undertaken by the World Bank in the late 1990s on the *Voices of the poor*, which highlighted the importance of complex needs, that is, the needs of voice and recognition

and of avoiding shame and isolation, as opposed to simple needs for food and shelter (Narayan et al., 1999). This is true even among the poorest people, in the poorest countries – a finding that runs contrary to the view of a rigid hierarchy of needs shaped by different stages of economic development of countries.

12. The OECD's *How was Life?* report uses a similar methodology as done in the *How's Life?* report on current conditions in OECD member countries, to the extent possible, to describe long-term development patterns in a broader range of countries and in a longer perspective, starting in the 1820s (van Zanden et al., 2014; Box 1).⁶ Naturally, historical analysis of this type has to contend with a range of practical problems. Historical data are simply not available for some of the dimensions included in Figure 2.1⁷, while in other cases the available data may refer to concepts that are only crude approximations of the variable of interest. Data limitations also make the conceptual distinction between well-being today and well-being tomorrow less applicable to historical analysis. However, decades of historical research have also generated a wealth of measures for various aspects of people's lives that can be systematically gathered and, to some extent, compared across countries and time-periods. The ambition of this undertaking is to be approximately right rather than exactly wrong, which is what happens when summarising the development experience of countries through changes in their GDP per capita.

Table 2.1. Overview of the well-being dimensions or domains identified in the some of the key contributions to the development literature

Studies assessing development outcomes	Dimension of the OECD well-being framework covered by selected development studies								
	Income and housing	Health	Work-life balance	Personal security	Subjective well-being	Education	Social connections	Civic engagement and governance	Others
Nussbaum (2001)		Bodily health	Play	Health, Bodily integrity	Emotions	Senses, Imagination, Thought Practical reason	Affiliation	Control over one's environment	Concerns for other species
Finnis (1980)			Play	Life	Religion or spirituality	Knowledge & Aesthetic experience	Friendship	Self-integration	Some degree of excellence in work
Max-Neef (1989)	Subsistence		Leisure	Protection		Creation	Affection, Understanding	Participation Freedom Identity	
Nayaran (2000)	Material well-being	Bodily well-being		Security	Psychological well-being Self-respect & dignity Freedom of choice & action		Social well, Peace, Harmony Good relations in family/ community	Freedom of choice & action	
Cummins (1996)	Material well-being	Health		Safety	Emotional well-being		Intimacy, Friendship, Community		Productivity
Ramsay (1992)	Physical survival			Security	Esteem & Identity Self-realisation		Love and relatedness		Sexual needs
Doyal and Gough (1991)	Adequate nutritional food & water Adequate protective housing, Economic security	Appropriate health care, Safe birth control & child bearing	Non-hazardous working environment Non-hazardous physical environment Security in childhood, Physical security		Basic education	Significant primary relationship			
Skidelsky and Skidelsky (2012)		Health	Leisure	Security	Respect personality		Friendship	Harmony with nature	

Source: Boarini, R., A. Kolev and A. McGregor (2014), “Measuring well-being and progress in countries at different stages of development: Towards a more universal conceptual framework”, *OECD Development Centre Working Papers*, No. 325, OECD Publishing, Paris, <https://doi.org/10.1787/5jxss4hv2d8n-en>.

14. The *How Was Life?* report presented evidence on the multidimensionality of development in a long-term historical perspective. A sub-set of these variables (Table 2.2) is used in this chapter to bring light on the relation between GDP per capita and various well-being variables, and to compare the development experiences of countries around the world and in different time periods. This analysis shows that, while there are strong correlations between GDP per capita and most dimensions of people's life across countries

and over time, the relation is not always linear, with different patterns of ‘leads and lags’ and with shifts in the relation between GDP and well-being variables.

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Table 2.2. Overview of the well-being dimensions or domains identified in the some of the key contributions to the development literature

Well-being outcome	Variable name	Max	Min
Health status	Life expectancy at birth	83.1 years (+)	14.5 years (-)
Political institutions	Composite measure of political regimes (Polity2)	10 (+) fully democratic	-10 (-) fully authoritarian
Education	Average years of completed education	13.6 years (+)	0.01 years (-)
Human height	Average height of different birth cohorts	183 cm (+)	152 cm (-)
Income inequality	Gini coefficient	0.74 (+)	0.21 (-)
Earnings	Number of consumption baskets purchased with the real wages of a male unskilled worker in building industry	355 subsistence baskets (+)	0.5 subsistence baskets (-)
Personal security	Homicide rate	82 homicides per 100 000 inhabitants (-)	0 homicide per 100 000 inhabitants (+)
Environmental quality	Sulphur dioxide emissions per capita	425 (-) kg SO ₂ per capita	0 (+)
Global well-being	Composite indicator of well-being	3.7 (+)	-1.6 (-)

Note: (+) indicates that higher values of the variable (e.g. education) are increase well-being, while (-) indicates that higher values of the variable (e.g. income inequality) lower well-being. Subsistence baskets are a measure of goods based on a standard amount of caloric and protein intake (van Zanden, J. et al., 2014). The composite indicator of well-being is linear measure consisting of nine variables: GDP per capita, real wages, height, life expectancy, average years of education, income inequality, governance, species abundance and homicide rate. *Source:* Clio-Infra database (www.clio-infra.eu/).

Box 1. The Clio-Infra project and *How was Life?* Report

Clio-Infra is an international inter-disciplinary effort by a team of economic historians to chart the various dimensions of development in the period 1500-2010 in a systematic way. Clio-Infra builds on the pioneering undertaking of Angus Maddison to compile a set of comparable indicators of economic development for the world economy stretching back 1 000 years (Maddison, 2001).

The *How Was Life?* report (van Zanden, J. et al., 2014) was the culmination of Clio-infra. The report included data for 6 (population weighted) world regions (Western Europe; East Europe and former Soviet Union; Western Offshoots; Latin American and Caribbean; Sub-Saharan Africa; Middle East and North Africa), based on all countries in the Clio-Infra data with sufficient data, and separate series for 25 of the largest countries in the world (Argentina, Australia, Brazil, Canada, People's Republic of China, Germany, Egypt, France, Indonesia, India, Italy, Japan, Kenya, Mexico, Nigeria, the Netherlands, Poland, the Russian Federation, Spain, South Africa, Sweden, Thailand, Turkey, the United Kingdom and the United States). Data generally refer to national states based on existing borders, implying that (when possible) the dataset took the most recent borders as reference and corrected earlier data for changes in borders whenever they occurred; in cases where the same approach could not be adopted in the past, data refer to countries based on their historical borders.

The data included in *How Was Life?* and used for this paper are state-of-the-art estimates by economic historians for various countries, harmonized to the extent possible by project participants. These estimates pertain to GDP and GDP per capita; real wages of unskilled labourers, educational attainment, life expectancy, population height, casualties from homicides, political institutions, emissions of carbon oxide and nitrates as well as biodiversity loss. Data on income inequality and gender inequalities, as well as a composite index of well-being, were also included in the report.

Data in *How Was Life?* were presented as decadal averages. As data coverage increases for more recent periods, imputations were used for missing countries in earlier periods. For all series, data quality (for individual countries and decades) was assessed based on of three criteria, i.e. credibility (the degree to which the sources of the data can be confidently relied upon), accuracy (the extent to which the data are deemed to be valid and to reliably represent what they purport to measure) and comparability (the extent to which data from different sources measure the same concept and are collected based on the same methodology). Based on these criteria, four types of data were distinguished: i) high quality data, i.e. the product of an official statistical agency (national or international) or produced by researchers using techniques that ensure equivalent credibility; ii) moderate quality data, i.e. the product of historical research using sources and methods comparable with (but not necessarily identical to) those applied by official statistical agencies; iii) low quality data, resulting from historical research in a data scarce environment and making use of indirect data and estimates; and iv) estimates based on guesses, conjectures and interpolation between benchmark years, where there may be significant inconsistencies between countries or gaps in coverage.

3. A global view of the long-term relation between GDP per capita and well-being outcomes

16. What was the link between people's well-being and GDP per capita, and how has it changed since 1820? Globally, well-being indicators have been closely correlated with GDP per capita. Countries with higher per capita GDP have also displayed higher education, real wages, average height and life expectancy as well as lower homicides, and more democratic institutions.⁸ Some indicators, such as income inequality and homicides, have had, however, a much weaker relation with GDP per capita, correlations which became negative (i.e. countries with higher GDP per capita having lower income inequality and homicides) only in the mid-nineteenth century and in the early twentieth century, respectively. Conversely, emissions of sulphur dioxide, a major contributor of air pollution, have consistently been higher in countries with higher GDP per capita, a correlation that has remained broadly stable over time.

17. The relation between various aspects of well-being and GDP per capita has not been static however, and has changed over time. Two periods can be identified (Figure 3.1). In the first period, from the middle decades of the nineteenth century until around 1870, countries with higher GDP per capita did not always report better well-being outcomes; on average, they experienced lower life expectancy and higher homicides, as well as institutions that were no more democratic than in other countries. This suggests that, in this phase, economic growth and industrialisation did not translate into higher well-being of the population. During the first 50 years of economic growth among early industrialisers, gains in well-being were relatively small and sometimes even negative.

18. The second stage, which began in about 1870, the correlation between GDP per capita and well-being measures became stronger. This convergence reflected a number of developments. First, the import of cheaper American foodstuffs to Europe resulted in a dramatic decline in food prices, which helped raise real wages and consumption levels (O'Rourke, 1997). Second, while the early stages of industrialisation took place in non-democratic regimes, by the end of the nineteenth century many of the industrialising countries had become democratic. Third, breakthroughs in medical knowledge – such as the germ theory of diseases developed by Pasteur – created the right conditions for much more effective health care, often in combination with the growing attention paid to public health issues by governments: as a result, life expectancy started to rise in Europe and its overseas offshoots after 1870, driven by declines in child mortality. Fourth, the first policy measures to address social concerns, such as bans on child labour and legislation concerning maximum working hours, were introduced in Europe, driven by the extension of voting rights to working classes: as a result, whereas in the mid-nineteenth century there was no correlation on a global scale between GDP per capita and life expectancy, human height, or democratic institutions, such a link emerged around 1870 (Figure 3.1). Similar developments can be identified for other well-being indicators.

19. The nineteenth century, therefore, first saw a divergence, with well-being lagging behind progress in GDP per capita, followed later by a certain convergence between per capita GDP and various measures of well-being. This is confirmed through a cross-sectional correlation between GDP per capita and measures of well-being at different periods. Figure 3.1 shows how these correlation coefficients changed over time at the global level. While they were often low, sometimes even negative, in the first half of the

nineteenth century, they increased and became positive from the late nineteenth century onwards. While the panel includes the full set of (Clio-infra) countries, the fact that economic growth was limited to the early industrialisers means that their experience drives most of the correlation results at the global level observed in the nineteenth century.

Figure 3.1. Stronger correlations between GDP per capita and various well-being outcomes

Note: Pearson's correlation coefficient between various well-being indicators and log GDP per capita for each 5-year period, as well as 80 percent confidence intervals. The global sample includes up to 159 countries, but varies by year and indicator depending on coverage.

Source: Clio-Infra database (www.clio-infra.eu/).

20. Cross-country correlations between GDP per capita and various well-being measures do not tell the whole story, however. For many indicators in the nineteenth century, there was no additional well-being accrued beyond that explained by increases in per capita GDP. This changed, however, in the course of the twentieth century, when some indicators began delinking from GDP per capita. Figure 3.2 investigates the relationship between per capita GDP and well-being by charting levels in well-being that are unexplained by GDP per capita.⁹ An unchanged relationship between GDP per capita and well-being would translate in coefficients equal to zero.

Figure 3.2. GDP and well-being outcomes gradually delinked in the twentieth century

Change in various well-being variables not explained by GDP per capita (1820-2010)

Note: Values of the coefficients of time dummies from a regression of different well-being outcomes against (log) GDP per capita, and 80% confidence intervals. The global sample includes up to 159 countries, but varies by year and indicator depending on coverage.

Source: Clio-Infra database (www.clio-infra.eu/), based on authors' calculations.

21. This figure also suggests a new era in the relationship between GDP per capita and well-being, during which well-being often increased more rapidly than implied by GDP growth alone. This delinking is most pronounced for life expectancy, which by the end of the twentieth century increased by more than 15 years (one standard deviation) than would be expected from per capita GDP alone. Similar patterns apply to height and education. In the case of real wages, where per capita GDP levels explain most of the difference between countries, a decoupling does occur in the last two decades. An unexplained effect on democracy (Polity2) came into being in the second half of the nineteenth century which, with the exception of movements in the other direction during the Second World War and the 1960s and 1970s, has stayed largely in place.¹⁰ In the case of sulphur dioxide (SO₂) emissions (hazardous to human health as well as flora and fauna), evidence of a drop relative to what could be expected based on per capita GDP alone can only be observed after 2000.

22. The one well-being dimension that deviates from the pattern of delinking from GDP per capita is personal safety. In the second half of the twentieth century, homicide rates were higher than could be expected from countries' per capita GDP. It should be noted, however, that homicide data do not go far back in time for many developing countries, relative to the other variables. Lastly, the unexplained effects for income inequality is somewhat declining, i.e. countries become more equal than expected from changes in per capita GDP levels. However, the pattern is very erratic, due to data quality issues.

23. What explains this delinking between GDP growth and well-being during the twentieth century? The answer lies in autonomous changes in the regimes, policies and technology that produce well-being outcomes. Delinking is particularly clear in the case of health status, where the relationship between life expectancy and GDP per capita shows a constant upward shift starting in 1870, when the first great breakthroughs in medical sciences were realised. The fact that the health system and the technologies and policies that shape it, such as public sanitation, improved health outcomes without increases in GDP per capita is known as the shifting Preston curve (Preston, 1975; Bloom and Canning, 2007).

24. A similar evolution also occurred in terms of the average years of education. In several countries, since the 1960s, educational attainment increased by more than could be explained by higher levels of GDP per capita. This result may reflect the impact of government policies but also of structural changes in the economy and individual preferences. This 'delinking' points to a virtuous effect. On the one hand, parents seem to prefer to invest more in the education of their children, or adults want to invest more in upgrading their own skills. On the other hand, increasing skills helps achieve higher GDP per capita.

25. Overall, however, the extent to which improvements in various measures of well-being are explained by across-the-board shifts in the relation between well-being and GDP per capita is limited. As described above, this effect is important for life expectancy, and for educational attainment since 1960s. However, in the case of environmental variables, such as sulphur emissions, the absence of an autonomous shift in their relation with GDP per capita implies that degradation of the environment increased with economic production. Technological change seemed to have played only a small effect in delinking (i.e. improving), environmental degradation due to economic growth.

4. Well-being outcomes in recently emerging and developing countries

26. How has well-being evolved in more recently emerging and developing countries, along the eight measures discussed above? Below, we look more specifically at development since the 1950s for four key regions, focusing on countries that are either large in terms of population, or characterised by contrasting developments within the region. As in Figure 3.2, we look in this section at both actual developments in different well-being variables and at levels predicted by GDP per capita.¹¹

27. What distinguishes late-developers, which began to industrialise and grow rapidly only in recent decades, from the early developers, is the phenomenon of “catching up” or GDP per capita convergence. In the nineteenth century the difference in GDP per capita between the most advanced countries and the rest of the world was relatively small and the rate of economic growth of the fastest growing countries was no higher than 2%. This changed dramatically during the twentieth century, as the gap between the more productive countries and the rest of the world widened, creating a large potential for catching up. The former Soviet Union during the first stages of central planning, Japan after 1950, and other Southeast Asian countries that industrialised more recently, achieved rates of economic growth ranging from 5 to 10% annually, much higher rates than the early industrialisers in the nineteenth century experienced. This also had an impact on well-being outcomes in these countries, which could also increase much faster. However, not all countries in the global South were equally successful in this respect.

Latin America: Mixed progress in well-being compared to GDP

28. Latin America has historically been a fascinating laboratory of experiments, with alternative policy measures adopted by both left- and right-wing governments. The long term trend of increasing well-being outcomes in education and health is quite robust for the continent as a whole, while income inequality has remained high and personal security has decreased sharply. In some dimensions, well-being gains since the 1950s are stronger than for GDP per capita.

29. Based on Clio-Infra data for Latin America, the region’s performance in terms of well-being was poor prior to 1950, despite the fact that average GDP per capita in the region was above the global average. In 1930, for example, the global average was USD 1 673, while the average for Latin America was USD 1 795 (van Zanden et al., 2014).¹² The region was particularly characterised by high income inequality, with the highest Gini coefficient worldwide in 1929, and by the lowest democracy scores in the world. Other key metrics were also below world averages. These include educational attainment (2.0 vs. 2.5), the share of population having attained at least basic education (36% vs. 41%) and average life expectancy (37.8 vs. 40; van Zanden et al., 2014).

30. This pattern was partly reversed in the second half of the twentieth century, despite much slower GDP growth than the global average. In 1950, GDP per capita in Latin America was about 20% higher than that of the rest of the world, a margin that remained more or less unchanged until the 1980s. This changed in 2000 and 2010, when GDP per capita in Latin America was 90% of the global average. Strong GDP growth in East Asia, combined with the ‘lost decade’ of poor growth in Latin America in the 1980s, were the main driver of this reversal. In 1980, Latin American GDP per capita was more than twice the level of East Asia, it now lags behind by about 30%.

31. Since the 1950s, the development of the well-being dimensions of education, health and political stability in Latin America has followed a different pattern to that observed for GDP per capita. First, average years of education grew more rapidly than the global average. In 1980 it was equal to the global average, but by 2010 it was 5% above that level. Life expectancy at birth already exceeded the global average in the 1950s, and since the 1980s the difference widened to 3.5 years (van Zanden et al., 2014). The continent's democracy scores have risen dramatically since the 1970s. They are now among the highest in the global south, far outperforming Africa and Asia. However personal security (homicide rates), real wages and inequality are the region's lagging well-being outcome compared to the rest of the world.

32. Figure 4.1 provides well-being outcomes for the eight previously discussed measures and their predictions based on what could be expected given their per capita GDP between 1950 and 2010. The figure confirms that economic growth in these six countries – Argentina, Brazil, Chile, Mexico, Peru and Venezuela – has been generally unstable. Declines in predicted well-being are frequent, reflecting episodes of lower GDP per capita. Conversely, the evolution of well-being has been much more stable. Furthermore, its growth curve was hardly affected by large swings in GDP per capita, which illustrates the delinking between GDP and well-being discussed in the previous section.

Figure 4.1. Well-being outcomes have been better than predicted by GDP in Latin America

Note: Well-being outcomes for each country are predicted based their GDP per capita and coefficients from a regression of each well-being measure against GDP per capita (log) estimated for the global set of countries.
Source: van Zanden et al. 2014 and Clio-Infra database (www.clio-infra.eu/), based on authors' calculations.

33. Well-being in terms of life expectancy and education years has been steadily increasing. Democracy has also strongly improved. In 1950, the variable measuring the quality of democratic institutions was in general lower than would be expected on the basis

of GDP per capita, while by 2005 it is much ahead. However, notable temporary setbacks can be observed in all six countries. Brazil, Mexico and Venezuela experienced dramatic increases in homicides, whereas one would expect a slow decline linked to higher GDP per capita. Another setback was experienced in income inequality, which is generally higher than would be expected, although less so in Argentina and Venezuela. However, data on income inequality end in 2000, thereby missing much of the more recent decline.

34. Chile is the most successful country in the region in terms of GDP growth, more than doubling its GDP per capita since the 1990s (144%). Only Peru comes close to matching this performance (132%). Brazil and Argentina also grew rapidly in the 2000s, but both countries experienced political crises in the 2010s that undid some of the earlier gains. Chile's GDP performance was much more stable, which may be related to the tradition of coalition governments and the absence of the more extreme political tensions that were experienced by Brazil and Argentina.

35. Chile's record in improving well-being outcomes is even stronger than that recorded by GDP. Both average years of education and life expectancy have increased by more than what would have been expected based on per capita GDP alone. Only for real wages and income inequality does Chile do worse than would be expected based on GDP. Well-being outcomes have performed considerably better in Chile since the 1970s, including education and life expectancy, and for homicide rates throughout the period. For both Chile and Peru, improvements in a number of well-being dimensions, namely life expectancy and education, preceded stronger GDP.

36. Venezuela is an outlier in many ways. As an oil-producing country, its per capita GDP levels have been high, but this has not translated into better well-being measures such as higher education and life expectancy, or lower homicide rates. Only income inequality has been relatively low and real wages high relative to its per capita GDP and to other Latin-American countries. In recent decades, well-being measures in Venezuela deteriorated strongly. Homicide rates are now very high, both real wages and democracy have declined, and income inequality has risen strongly.

37. After spiking in the twentieth century. Income inequality decreased in the past two decades, although Latin America remain the most unequal region. Since about 2000 policy makers in several countries in the region gave priority to reducing income inequality and poverty, and increasing the well-being of the (poor) population in general. This can be seen as an attempt to correct the high level of income inequality that has been a dominant feature of Latin America throughout the decades, and which has its roots in Spanish and Portuguese conquest and colonisation, if not even earlier. Amidst the global boom in commodity prices in the 2000s, including for oil, there is also evidence that Latin American governments were successful in reducing income inequality and poverty due to the boom in international commodity prices, including oil - particularly in Bolivia, Ecuador, Argentina, and to a lesser extent Brazil and Chile (Lustig, Pessino and Scott, 2013).

38. The reduction of extreme poverty achieved in the region in the first decades of the 21st century has been remarkable. Today only 3.7% of the population lives under the international poverty threshold of USD 1.90 per day (2011 PPPs), compared to 11.5% in 1999. Three countries more than halved extreme poverty over the period. (from 12.7% in 2003 to 5.5% in 2011 in the case of Brazil; from 18% and to 7% in 2015 in Bolivia; from 10% to less than 5% in Ecuador). But other countries – Peru, Colombia, Paraguay – did equally well. The only exception to this pattern is Venezuela, which experienced a dramatic increase in extreme poverty up to 2005 (the latest year with data available).

39. There are two reasons for the decline in income inequality and poverty. First, an increase in government spending on social programmes. Second, a fall in the premium of skilled wages, due to the expansion of education and the compression of the wage distribution (Lustig, Pessino and Scott, 2013).

40. Therefore, in the past 50 years Latin America has been much more successful in increasing the well-being of its population than in generating GDP growth. It is perhaps the best (regional) case of the de-linking between GDP and well-being outcomes.

Sub-Saharan Africa: Great diversity in development trajectories as well as in the relation between GDP and well-being outcomes

41. Until recently, the GDP-growth record of Sub-Saharan Africa was poor. In 1950 the average GDP per capita of the countries for which data are available was about 40% of the global average, a level that fell to 20% by 2010. The 1960s and 1970s showed positive GDP growth in Sub-Saharan Africa, and the gap with the global average increased only marginally. However, between 1970 and 2000 no GDP growth was achieved (GDP per capita was USD 1 282 in 1970 and USD 1 099 in 2000). Only since 2000 did economic growth become positive again (with GDP per capita increasing to USD 1 481 in 2010).¹³ Overall, the continent achieved average real annual GDP growth of 5.4% between 2000 and 2010. Economic growth, however, slowed down recently, reflecting a sharp drop in commodity prices.¹⁴

42. Improvements in well-being in the period since the 1950s were somewhat better than for GDP per capita, but were also characterised by a constant and sometimes growing gap with the rest of the world. Average years of education in Sub-Saharan Africa (as estimated in the *How was Life?* report) increased strongly – from 0.8 in 1950 to 4.2 in 2010 – but all other regions did (much) better, and the absolute gap with the global average increased. Similarly, life expectancy in the region also increased from 38 in the 1950s to 52 in the 2000s, but was still lower than elsewhere in the world, and the gap with the global average remained constant at around 25%. Income inequality was and remained relatively high. Only the democracy index shows consistent progress in the region. Democratic rights were poorly protected in the 1970s and 1980s, but improved considerably since then. Overall, the Clio-Infra composite well-being index suggests a considerable improvement for the region from about 1950 – after a long period of little change between 1850 and 1950 (van Zanden et al., 2014). That said, there is substantial variation within the region, both between countries and when comparing actual well-being and the level predicted by per capita GDP.

43. Developments in eight well-being indicators among six countries in the region – Burkina Faso, Ghana, Kenya, Nigeria, Uganda and South Africa – as well as changes predicted based on GDP per capita are depicted in Figure 4.2.

Figure 4.2. There is a wide diversity in well-being trajectories across Africa

Note: Well-being outcomes for each country are predicted based their GDP per capita and coefficients from a regression of each well-being measure against GDP per capita (log) estimated for the global set of countries.

Source: Clio-Infra database (www.clio-infra.eu/), based on authors' calculations.

44. South Africa has always been one of the more prosperous countries of Sub-Saharan Africa, with average levels of GDP per capita 3 to 4 times higher than the Sub-Saharan African average. Economic growth has however been modest in recent years, and since the

start of the millennium, GDP per capita has increased by only 1% annually. Income inequality declined somewhat, though South Africa remains one of the most unequal countries in the world, with a Gini coefficient far higher than would be expected based on per capita GDP alone (Figure 4.2, column 6). Personal safety in South Africa has also improved, though homicide rates are still more than 5 times higher than would be expected based on its economic record. Since the end of Apartheid, South Africa has exceeded its expected performance in education and democracy. However, these positive developments were overshadowed by the decline in life expectancy due to the spread of the human immunodeficiency virus (HIV) and the acquired immune deficiency syndrome (AIDS), which reduced life expectancy from 62 in 1990 to 52 in 2005. A recent study concluded that in 2015 life expectancy in South Africa was the lowest in the world: 50.7 for men and 48.7 for women – a notable gender difference given that typically women live longer than men elsewhere in the world (He, Goodkind and Kowal, 2016).

45. South Africa's record in terms of reducing extreme poverty is also rather poor, although the share of the population living below the poverty line fell somewhat according to official World Bank estimates, from 29% in 1993, to 26% in 2006 and 19% in 2014. However, the Moatsos (2017) estimates, which refer to the costs of a "bare bone" consumption basket and are available on an annual basis, show an even smaller decline, from 46% in 1994, to 50% in 2004 and 36% in 2014. Social transfers went up since the end of Apartheid, but structural problems on the labour market continue to plague the South African economy.

46. In most of the six Sub-Saharan African countries included in Figure 4.2, the trend in well-being has been upward, usually due to improvements in years of education and life expectancy (rows one and four). In this respect, developments in Sub-Saharan Africa within the global context of strong increases in educational attainment and health status appear to be independent of economic growth. The development of democratic institutions is much less consistent, and is in fact characterised by huge swings due to alternations of periods of dictatorship with more democratic phases. However, the trend is upward in most cases and certainly since the 1990s (row 5). Real wages, when data is available, have largely been flat and differences between the six countries are small. For Ghana, Kenya, and Nigeria, real wages are what would be expected given per capita GDP in these countries. Real wages are higher than expected in Burkina Faso and Uganda, but much lower than expected in South Africa, a reflection of the country's high inequality.

47. The HIV-AIDS crisis has strongly affected the well-being of large parts of the continent beyond just South Africa. Civil wars (for example in Uganda in the 1970s) and political instability in general may have contributed to stagnation in life expectancy observed since the 1970s. Instead of profiting from the autonomous outwards shifts suggested by the Preston curve, countries such as Kenya, Uganda and Nigeria showed a strong stagnation or even decline in life expectancy, though it was followed by a recovery in the 2000s

48. Looking at the record of the six Sub-Saharan African countries in reducing extreme poverty, a mixed picture also emerges. Some countries were quite successful – Botswana, Burkina Faso and Uganda are cases in point, combining moderate to fast GDP growth with a strong reduction of extreme poverty. Angola, on the other hand, was very dynamic in terms of GDP growth, thanks mainly to growing revenues from oil production (and the end of a civil war) but extreme poverty remained very high (more than 80% of the population was living below the USD 1.90 per day poverty line). Nigeria, an even more important oil exporter, saw its GDP per capita double since 2000, but its level of extreme poverty

remained almost unchanged (at about 70%). Kenya and Tanzania, two countries that are often compared to each other – the first being the more successful market oriented economy of the two – experienced a convergence in their poverty rates, with Tanzania’s level of poverty falling to the much lower level prevailing in Kenya.

49. The overall picture for Sub-Saharan Africa that emerges from Figure 4.2 is one of many different development trajectories. These depend on economic starting points, rates of GDP growth, and types of growth achieved, in particular the importance of strategic exports such as oil. Extreme poverty is declining substantially in only a few countries. Poverty rates are, in most African countries, still very high, and do not show the same systematic decline that was observed in Latin America.

Asia: High but declining well-being benefits from economic growth

50. Asia, and in particular the area stretching from the Eastern Mediterranean Sea to South China, has been the core of the world economy for a long time, until it was overtaken by Western Europe in the early modern period (late fifteenth and early sixteenth century) (Maddison, 2001). At the start of the nineteenth century, GDP per capita in Western Europe was two to three times the level of China, India or Indonesia. This divergence rapidly increased in the nineteenth century, when Europe industrialised, while large parts of Asia lagged behind and saw their share in manufacturing output decline rapidly due to European competition. In the second half of the nineteenth century, only Japan successfully emulated the European model of labour-intensive and export-oriented industrialisation. After 1950, other Asian countries – Chinese Taipei, South Korea and Singapore – developed similar outward oriented development strategies aimed at profiting from the opportunities offered by international markets. This strategy then spread to other parts of the region: Thailand, Malaysia, Indonesia and, more recently, Viet Nam are cases in point. Since the 1980s, India and China developed their own versions of such open door policies, with great success, and account for much of the rise of the BRICS (Brazil, Russia, India, China, and South Africa).

51. In 1900, GDP per capita in East and South East Asia was about USD 600 on average, only 20% of the level of the most advanced countries in Western Europe, and 50% of the global average. In 1950, levels of real GDP per capita of the region increased only marginally to about USD 660, whereas the global average had gone up by 70%. Until the 1970s, with the exception of Japan and a few of the other ‘flying geese’ who took off in the slipstream of Japan’s success (through an economic strategy based on technological leadership, regional hierarchy and international trade), the gap between Asia and Europe did not show any signs of closing. It was the market-oriented reforms of the 1980s and 1990s, and their impact on China and India, that triggered GDP convergence. The most dramatic change was the switch to markets and international openness that occurred during the years of Deng Xiaoping’s leadership (1978-89). For India, the turning point was 1991, when the economic liberalisation of the country really started. In Indonesia, the third largest country in the region, fast GDP growth was associated with the Suharto regime’s New Order economic policies and started already in about 1970. The economic success of all these changes is well-known. Since 1990, GDP per capita increased by more than 5 times in China, and by 3.5 times in India – a pace unmatched in history. However, India and Indonesia still display large gaps in GDP per capita with Europe, while China is making much faster progress and its GDP per capita is now attaining a level of about half the Western European average.

52. Gains in some, although not all dimensions of well-being have been spectacular as well. Figure 4.3 shows various well-being measures for the six largest Asian countries

(China, Indonesia, India, the Philippines, Thailand and Viet Nam). For China there was hardly any increase in well-being before 1940, but this changed after the communist takeover of 1949. After the catastrophic Great Leap Forward, a large economic and social programme in China to rapidly propel the country towards socialism, had come to an end in 1962, life expectancy began a spectacular growth (from 33.7 years in the 1930s to 65.4 years in the 1970s). Since then, the increase has been slower, up to 73.9 years in 2000. Educational attainment has been the second source of rapid increases in well-being in China, not only because the Chinese state invested heavily in it, but primarily because Chinese parents invested heavily in the education of their children. Perhaps the most effective instrument to enhance this was the one-child policy introduced in 1979. Average years of education began a strong rise, growing faster than per capita GDP in the 1950s and 1960s, with average years of schooling increasing from 1.7 years in 1950 to 6.9 years in 2000.

53. There were no gains in terms of political rights, however, when looking at the measure of the quality of democratic institutions included in Figure 4.3. While income inequality in China was already low in the 1950s, given the country's per capita GDP, it dropped further during the first decades of communism (1950s-1960s). However, from the 1970s onwards income inequality has increased dramatically, with the Gini coefficient increasing from 0.28 in 1970 to 0.44 in 2000 – roughly the same level observed in other countries with similar level of GDP per capita.

54. Improvements in India's well-being were much more gradual (Figure 4.3, column 3). There was hardly any GDP growth before 1948, but since then the trend has been upward, with a decisive acceleration in the 1980s. In the colonial period, life expectancy already began rising from very low levels, from 23.7 years in the 1900s to 32.6 years in the 1940s. At independence, life expectancy was still lower than what would be expected given India's (low) per capita GDP; but after independence a steady rise took place, especially from the 1950s to the 1970s. India today has a higher life expectancy than could be expected based on its per capita GDP.

55. India, however, has not done as well as other Asian countries in other well-being indicators. Average years of education stood at a very low level of 2 years in 1890 and this further declined to 1.2 years in 1950. The colonial state failed to enhance the general education of India's growing population, and the demand for human capital remained low. After 1950 average years of education increased steadily, but at no time it was higher than what would be expected based on per capita GDP. By 2000, it is clear that gains in average years of education have not kept pace with India's recent increase of GDP growth. Furthermore, the overall trend in income inequality is upward, and unskilled labourers' real wages were essentially flat. Both of these developments contradict what we would expect from India's per capita GDP growth. Conversely, India's strong record as a democracy stands out compared to both its Asian peers and to what is expected on the basis of its per capita GDP levels. This diversity of well-being developments, some of them countering GDP growth, show again that the two are not always correlated.

Figure 4.3. There have been positive returns on well-being outcomes in Asia

Note: Well-being outcomes for each country are predicted based their GDP per capita and coefficients from a regression of each well-being measure against GDP per capita (log) estimated for the global set of countries.

Source: van Zanden et al. (2014) and Clio-Infra database (www.clio-infra.eu/), based on authors' calculations.

56. Generally, however, well-being in Asia has shown tremendous progress, particularly with respect to extreme poverty. China achieved the most spectacular increases in well-being in the last 50 years or so (see Figure 4.3, first column), with an equally

dramatic decline in extreme poverty, despite a strong increase in income inequality. India's poor population as a share of the total declined according to World Bank data from 54% in 1983 to 46% in 1993, 38% in 2004 and 21% in 2011.

57. The continued high level of extreme poverty in India has been the subject of debate (Drèze and Sen, 2013), but seems beyond dispute. Bangladesh and Pakistan, which grew much less strongly in terms of GDP per capita, managed to lower extreme poverty in a much more significant way. Pakistan, for which data seem to be best, lowered its poverty rate from 62% in 1983 to 6% in 2013.¹⁵ Indonesia, the other giant in this region, experienced a spectacular decline of extreme poverty based on World Bank estimates, from 70% in 1987 to 7.5% in 2015, but Moatsos (2017) only finds a halving between 1983 (57%) and 2014 (29%). Other countries in the region – Thailand, Malaysia, Philippines and Viet Nam – lowered poverty levels into single digits (less than 10% of the population) although no data are available for Cambodia and Burma/Myanmar.

58. Amartya Sen (1999) stressed the relative success of the Chinese state-led model in terms of well-being¹⁶, concluding that “those who are fearful that India's growth performance would suffer if it paid more attention to social objectives such as education and health care should seriously consider that notwithstanding these social activities and achievements, China's rate of gross national product (GNP) growth is still clearly higher than India's”. Sen's main argument for explaining why China outperformed India in well-being terms was that investments in health care and education were the engine of China's economic growth. India was also lagging behind other countries in the region in this respect. Indonesia, for example, has now overtaken India in terms of educational attainment and was already ahead of India in the 1950s in terms of life expectancy.

59. Evidence from the well-being measures presented in this section supports Sen's argument. First, Figure 4.3 shows that China's progress in life expectancy began in earnest in the 1960s, and even earlier for other measures. Only later did strong GDP growth begin; as a result, Figure 4.3 shows that actual well-being was higher than what would be predicted by per capita GDP alone through most of the period. The governance indicator is the one exception to this pattern. Only in the last decade has this gap diminished, as well-being gains slowed while GDP growth continued. Second, well-being measures in India are consistently lower than those in China, with the exception of democracy, and the gap has been widening since 1950. Furthermore, higher GDP growth in the last decades, combined with comparatively sluggish progress in well-being measures, means that India's well-being predicted from per capita GDP is now higher than its actual score. Such slowing down of well-being gains compared to per capita GDP growth is also observed in a number of Asian countries, both in countries where predicted well-being is now higher than actual well-being (India, Indonesia) and in countries where GDP growth is catching up to earlier progress in well-being (China, Viet Nam, Bangladesh).

Eastern Europe and the former Soviet Union: High GDP and well-being performance until the 1980s, followed by collapse and recovery

60. The final group of countries discussed in this Section are those from Eastern Europe or belonging to the former Soviet Union. This section presents evidence for the Russian Federation, Bulgaria, Estonia, Hungary, Poland and Romania.

61. Between 1820 and 1930, GDP growth in Eastern Europe and the former Soviet Union closely followed the global average. GDP per capita doubled between 1820 and 1910, with most of this increase realised after 1870. The First World War and the Russian

Revolution of 1917 led to a sharp decline in GDP, but Russia recovered dramatically in the 1930s, due to central planning and forced industrialisation (at the expense of agriculture).

62. As an instrument to modernise the economy and increase GDP per capita, central planning proved successful. In the 1930s, the Soviet Union was, among the major countries in the world, the one that grew most rapidly (from USD 575 in 1920 to USD 1 448 in 1930 and USD 2 144 in 1940). During the 1950s and 1960s, the model still seemed to work well in generating GDP growth (USD 3 945 in 1960 and USD 5 575 in 1970; van Zanden et al., 2014). GDP per capita in the Soviet Union, which had been below the global average until 1930, from the 1960s onwards exceeded the global average by a sizable margin (by 37% in 1950 and by 55% in 1970). GDP growth in Eastern European economies accelerated as the same central planning model was introduced in these countries in the late 1940s. It is however less clear if this acceleration can be attributed to the forced industrialisation that central planning induced, or to the general favourable conditions of the world economy in the post-WWII economic boom.

63. The well-being consequences of the introduction of central planning and forced industrialisation can only be sketched here. The core idea of the economic model used in the region was to transfer surplus production from agriculture and consumption to large-scale investment in capital-intensive industry. A sharp reduction of living standards was therefore inevitable, and is confirmed by the massive famine of 1931-1932 (which was especially severe in Ukraine). Data on population height also show declines in the 1920s and 1930s. However, there were also countervailing forces (Allen, 2003). Large numbers of farmers migrated to cities, where incomes were much higher than in the countryside. Levels of education rose rapidly (from 2.5 years of education on average in 1930 to 5 years in 1950), income inequality fell to extremely low levels, and life expectancy rose sharply (after a severe dip in 1931-1932), as the quality of public health services improved. On the other hand, political rights were at an extremely low level during the Stalin years.

64. The assessment of the long-term consequences of these policies is even more complicated. In particular, the development of life expectancy in the former Soviet Union is at odds with developments in other countries. After a strong increase between the 1920s (when it was 32.6 years) and the 1960s (when it was 69 years), life expectancy began to stagnate at around that same level (Figure 4.4). Infant mortality may even have increased in the 1970s. These developments led to some debate among western specialists about a possible crisis in the Soviet health care system in the 1970s and 1980s (Kingkade and Arriaga, 1997). Estimates of population height, however, contradict this pessimistic picture. From the 1950s onwards, Russians continued to become taller (from 169 cm in the 1940s to 177 cm in the 1990s). Conversely, after the disintegration of the Soviet Union in the early 1990s, there are clear signs of an acute health crisis. Life expectancy fell to 66 years in the 2000s, a decline that is almost entirely attributable to lower health status of men, linked to higher alcohol consumption, suicides and other mental-health-related causes. This was the one of the largest reductions of life expectancy on record that cannot be attributed to war or infectious disease. Homicides also increased sharply after the fall of communism, further contributing to the decline of well-being in these years (Figure 4.4).

Figure 4.4. Strong well-being gains since the 1950s followed by declines in the former Soviet Union and its satellite

Changes in actual and predicted well-being in selected countries in Eastern Europe and former Soviet Union, 1950-2010

Note: Well-being outcomes for each country are predicted based their GDP per capita and coefficients from a regression of each well-being measure against GDP per capita (log) estimated for the global set of countries.

Source: Clio-Infra database (www.clio-infra.eu/), based on authors' calculations.

65. Stagnation in life expectancy also occurred in other Eastern European countries during the 1970s and 1980s (Figure 4.4, row 4). However, other dimensions of well-being

increased rapidly during the years of central planning. Human capital was higher than predicted on the basis of GDP per capita. Income inequality was low – until the 1990s, when it started to increase rapidly – while political rights were extremely low during communist rule. In many dimensions (democracy being the exception), Eastern Europe remained throughout the twentieth century the region with the third highest level of well-being, on average, following Western Europe and Western offshoots (van Zanden et al., 2014).

5. The development experience of the “old world”

Well-being lagging GDP growth among the early industrialisers

66. The *How Was Life?* report analysed the long term trends of GDP growth and many well-being dimensions in the world economy since the start of industrialisation in the early nineteenth century. It is therefore possible to compare, for a large sample of industrialised countries (the United Kingdom, the United States, Belgium, Sweden, Italy, France, Germany, the Netherlands, and Japan), economic growth and well-being in the early stages of industrialisation, and try to draw lessons for those emerging and developing countries that are industrialising today. In Western Europe, the break with the pre-industrial period occurred around 1820, when economic growth was either very slow, like in the United Kingdom and the Netherlands, or absent, as in the other countries,

67. A brief summary of the experience of these industrialised countries (Western Europe and Western offshoots in the classification of Maddison [2001]) is that during the first 50 years of industrialisation, between the 1820s and 1870s, the rate of GDP growth was still relatively low, certainly in comparison to the high growth rates experienced today in China. GDP per capita in Western Europe increased by about 1% annually between 1820 and 1910. The Western Offshoots did somewhat better, with an average growth rate of 1.5%. This implied that real GDP increased by 160% over this period of 90 years. When compared with the near stagnation prior to 1820, it was a remarkable achievement.

68. Although relatively slow, GDP growth was underway, but it initially had almost no positive impact on well-being. This is especially evident from data on real wages and body height, which closely reflect the income position and consumption patterns of the population. The average height in the United States declined by more than 4 cm between the 1830s (174 cm) and the 1890s (169 cm). Western Europeans, at the start of the century already much shorter than Americans, also shrank from 166 cm in the 1820s to 165 cm in the 1850s. The inhabitants of Great Britain in the 1890s were still shorter than those living in the 1820s.

69. Similarly, real wages in Western Europe in the 1870s were at the same level as in the 1820s – and in the years between they were often below these levels. Health data – life expectancy, infant mortality – tell a similar story. Life expectancy in England was 41 in the 1820s and 41.1 in the 1860s. French and Swedish data show a stronger positive trend. The real break in the trend occurred in 1870, when life expectancy started to rise. Until 1870, the process of democratisation stagnated in large parts of Europe. The average measure for democracy (Polity2 score) in Western Europe is -4.2 in the 1820s and -3.3 in the 1860s, before jumping to -0.4 in the 1870s. Given the growth of GDP and the stagnation of the standard of living of the population, income inequality likely also increased rapidly, although the data are too fragmentary to be confident about this trend.

70. Educational attainment is perhaps the most important exception to this pattern of stagnant well-being, as it increased in almost all early industrialising countries even in the period from the 1820s to the 1870s. Great Britain, however, did relatively poorly. Educational attainment was relatively high at the start of industrialisation, and it increased rather slowly thereafter (from 1.8 years in 1820 to 3.6 years in 1870). Early industrialisation in England was not based on large-scale demand for skilled labour, and large-scale women’s and children’s labour may have crowded out schooling. As a result,

in 1870 the Dutch (5.1 years), Germans (5.4 years), French (4.1 years) and Swedes (4.2 years) had a higher level of educational attainment than the British (3.6 years). Continental countries (with the possible exception of Belgium) followed a development path that was more based on skilled labour than in the home of the industrial revolution.

The early growth paradox: GDP growth without well-being gains

71. These findings confirm the idea in the literature of an ‘early growth paradox’. Economic growth did occur during this period, but it did not translate into improvements in well-being. This paradox is related to a number of developments (Komlos, 1998).¹⁷ First, it was probably the price that early industrialisers paid for rapid urbanisation and proletarianisation. As Engels documented in his classic study about the situation of the working class in England, life in the rapidly growing cities was harsh, the cost of living was much higher than in the countryside, and the commodification of labour increased uncertainty of work and income (Engels, 1845).

72. The supply of social services by the state and by the urban communities also lagged behind. The rise of liberal economic ideas also led to cuts in social expenditure, reform of poor laws, and probably a reduction in social transfers (Lindert, 2004; van Bavel and Rijpma, 2016). The period lasting from 1840 to 1870 also saw a general liberalisation in economic matters, including internationally. In 1846 the Corn Laws, a series of tariffs and trade restrictions on imported food and grain to England, were abolished and free trade became the dominant ideology. The very strong growth of international trade, capital markets and migration flows generated the first wave of globalisation. Different social classes profited differently from these changes (O’Rourke and Williamson, 1999), a notable parallel with globalisation since the 1980s.

73. Levels of education were low in the industrialising districts, and child labour was the norm, strongly competing with education. Health care services also did not keep up with the growth of urban populations, resulting in poor living conditions, bad sanitation, high health risks and stagnant life expectancy (Szreter and Mooney, 1998; Szreter, 1988). The growing tension between the wealth of the new class of industrial and commercial entrepreneurs and the expanding proletariat, gave rise to new ideologies – socialism, anarchism – and new social movements (trade unions, workers and consumer cooperatives, movements for the extension of the franchise). It is no coincidence that Marx and Engels’ Communist Manifesto was published in the middle of this period (Marx and Engels, 1848). It helped put the social question high on the political agenda, and in the long run contributed to the rise of social spending and social transfers that would alleviate the most urgent social problems.

Figure 5.1. Well-being outcomes took off around 1870 in the early industrialising countries

Note: Well-being outcomes for each country are predicted based their GDP per capita and coefficients from a regression of each well-being measure against GDP per capita (log) estimated for the global set of countries.

Source: van Zanden et al. (2014) and Clio-Infra database (www.clio-infra.eu/), based on authors' calculations.

74. The growing divergence between GDP and various dimensions of well-being reversed only after 1870. Greater efficiency of transport and trade, combined with lower tariffs, resulted in rapid growth of exports of American foodstuffs to Europe. Dubbed an ‘agricultural invasion’, it resulted in a dramatic decline in food prices which helped to raise real wages and consumption levels in Europe (O’Rourke, 1997). Breakthroughs in medical knowledge also created conditions for much more effective health care, often in combination with growing attention to health issues by public authorities. Life expectancy started to rise after 1870, and child mortality declined equally dramatically. At the same time, the first policy measures to address social questions were taken and the first experiments with social transfers and social insurance – Otto von Bismarck’s legislation of the 1880s – began. As we saw earlier, whereas in the mid-nineteenth century there was no correlation between GDP per capita and life expectancy or human height on a global scale, these changes and policy reforms led to the emergence of such a link around 1870 (Figure 3.1 and Figure 3.2).

75. Figure 5.1 plots levels of the various indicators of well-being for nine early industrialisers that are more or less representative of the various patterns found in Western Europe and Western Offshoots. As in previous figures, the data show the actual value of these well-being dimensions, and the expected value based on the level of GDP per capita of the country involved.

76. Differences within this group are very large. The figure shows that economic take-off in the nineteenth century, in particular in Great Britain and Italy, was linked to much lower levels of educational attainment than GDP levels would predict. Sweden and the United States, however, were different, and exhibited a relatively high level of human capital from the start. Similarly, income inequality was extremely high in the first fifty years or so of early industrialisation, with Gini coefficients sometimes 10-15 points higher than what we would expect based on GDP per capita alone.

77. Most of the early industrialised countries show a trend towards lower income inequality over the entire 1820-2000 period, though there are upswings as well, notably in the second half of the nineteenth century and the late twentieth century. Homicide rates were very low compared to what GDP would predict in Western Europe – but not in Italy, and certainly not in the United States, where they remained extremely high during the entire period. The differences between the values predicted by per capita GDP and actual homicides are very large, suggesting a relative secure environment in Germany, France and Britain given their GDP per capita (eight per 100 000 inhabitants, as much as one standard deviation in the entire dataset).

78. The panel for life expectancy in Figure 5.1 shows stagnation during the first half-century, and sharp increases after about 1870. The shortfall of life expectancy compared to values predicted from GDP levels is especially large, as much as 20 years. By the second half of the twentieth century, and especially since the 1970s, the situation reversed. Most industrialised countries performed better on life expectancy than predicted by their GDP level, with the exception of the United States, where the increase in life expectancy stagnated relative to per capita GDP levels from 1965 to 2010. High income inequality and high homicides rates also contributed to convergence on well-being between both sides of the Atlantic observed since the 1960s, as measured by a composite indicator of well-being outcomes (van Zanden et. al., 2014).

6. Conclusions

79. A comparison between GDP growth and a range of well-being indicators between the early industrialisers in the nineteenth century and emerging economies in recent decades provides a number of insights.

80. First, economic growth among the early industrialisers was much slower than that achieved by many emerging countries in recent years. Per capita GDP of Western European countries grew on average by 1% annually in the nineteenth century. The Western offshoots (Australia, Canada and the United States) increased their GDP per capita somewhat faster, but the gap with the rate of economic growth of China and India in recent years, and of emerging economies in general, remains very large. An important part of the explanation of that difference is that emerging economies are much further away from the productivity frontier, and can therefore profit from catching up, whereas the early industrialisers were at or close to the productivity frontier and could not profit to the same extent of the advantages of backwardness.

81. Second, such differences in the development process had important consequences for the effect that “early growth” and “catch-up” growth had on well-being. During the first 50 years of early industrialisation, the increase in income inequality meant that the mass of the population did not profit much from higher GDP per capita. The welfare backlash – “dark satanic mills”¹⁸, extremely polluted cities, high food costs – of early industrialisation cancelled out the potential effects of higher GDP per capita in raising well-being. High income inequality led to growing socio-political tensions and to the emergence of socialist ideologies and movements.

82. In contemporary emerging economies, income inequality has also increased fast – often driven by the process of globalisation, although endogenous forces (such as increased scarcities of certain skills) may have played a role as well. But GDP growth in emerging countries is so strong, and autonomous changes in the health system, for example, so effective, that in spite of growing income inequality the well-being of the population has nonetheless increased across the board. An important difference is also that urbanisation in the nineteenth century had negative welfare effects (lower stature, lower life expectancy). Today, despite worse air quality, its overall effects are probably positive due to better nutrition and living conditions in urban centres.

83. Third, as noted in Section 3, the global relationship between GDP growth and well-being has changed over the years. The correlation of various well-being measures with per capita GDP were low in the first decades of the nineteenth century and increased considerably during the second half of the nineteenth century and the first half of the twentieth century. In this period, increases in per capita GDP translated into higher well-being. In the second half of the twentieth century, however, a large part of the gains in well-being is not accounted for by higher per capita GDP. Relatively high well-being outcomes in countries with low GDP per capita in this period are one of the reasons for this pattern, and they partly reflect autonomous changes in the health system – the shift of the Preston curve.

84. Latin America illustrates these changes most clearly: whereas after 1950 growth in GDP per capita was below the global average, the rise of most dimensions of well-being was clearly faster than the global average. Since about 2000, these positive developments were further enhanced by lower income inequality and poverty, higher education

attainment and life expectancy. The record of Latin America in improving well-being is therefore positive, in spite of its sometimes erratic GDP performance. At the same time, the experience of Chile demonstrates that there is no necessary trade-off between the two. It grew fastest since the 1980s, and also managed to increase well-being most strongly. The polar case is Venezuela, which recently experienced an economic collapse as a result of lower oil prices and of misguided policies, resulting in a dramatic decline in well-being. These declines can be independent of economic growth, as could be seen in the effects of the uncontrolled HIV-AIDS epidemic on life expectancy of men and especially women in parts of Africa, a pattern that was further worsened by inappropriate policies.

85. Last, parallels and differences exist between GDP growth and well-being experiences of early industrialisers and today's emerging economies. In both cases, GDP growth was accompanied by rising income inequality and rapid globalisation (the first wave in 1840-70; the second wave in 1980-2010), which increased income inequality in both episodes. An important difference is that the middle decades of the nineteenth century were not accompanied by higher political rights in the early industrialisers, where a shift towards democracy started only after 1870. Conversely, such a change did occur in emerging economies in Latin America, Sub Saharan Africa, and in parts of Asia (Indonesia, Korea, Thailand, Burma/Myanmar most recently) since the 1980s.

86. The most notable well-being development can perhaps be found in the development model adopted by the planned economies – in particular the Soviet Union after 1928 and China after 1949. In these cases, forced industrialisation led to significant improvements in most well-being dimensions.¹⁹

87. Two limits in analysis included in this paper should be mentioned.

- First, the evidence presented is limited to data on the *average level* of education, life expectancy, personal security and political rights of the countries studied. The implicit assumption made is that the distribution of these dimensions of well-being among the population has not changed dramatically over time, and that it is possible to assess, for example, the level of education of the population on the basis of average measures alone. Given what we know about the evolution of income inequality in the last 40 years, this is a problematic assumption. It is likely that the within-country inequality of life expectancy, education and political rights has increased in this period as well, and that estimates of average well-being do not adequately reflect the experiences of the entire population.
- Second, interpreting the link between GDP and well-being outcomes needs to recognise the limits of the analysis. A positive relationship between GDP per capita and well-being outcomes²⁰ does not necessarily mean that GDP growth *drives* improvement in well-being, or that it is the only important driver at work. Good health, long life expectancy, a high level of education, secure political rights, and high personal security, besides implying higher well-being per se, also contribute to economic growth. In other words, the causality runs in both directions. This implies that investments in education or health, as well as in other well-being dimensions, may be a better way to further GDP growth and well-being than stimulating GDP growth through other means.

Notes

1. The authors wish to thank Jason Gagnon, OECD Development Centre, for his many valuable comments on previous drafts of this paper. The paper fed into Chapter 3 (“Then and Now: Differences in Historical Trajectories”) of *Perspective on Global Development 2019*, an annual publication from the OECD Development Centre.
2. *How's Life* is the bi-annual report released by the OECD Statistics and Data Directorate since 2011 to monitor, benchmark and analyse well-being in OECD members and selected partner countries. The report relies on headline indicators of current well-being, resources for the future (since 2013) and inequalities (since 2017) selected in consultation with statistical offices of OECD member countries.
3. Argentina, Chile, Brazil, Venezuela, Peru, People's Republic of China, Indonesia, India, Viet Nam, the Philippines, Thailand, South Africa, Kenya, Nigeria, Ghana, Uganda, Burkina Faso the Russian Federation, Poland, Hungary, Romania, Bulgaria, and Estonia.
4. The United Kingdom, the United States, France, Germany, Belgium, Sweden, Japan, Italy and the Netherlands.
5. For instance, Boarini, Kolev and McGregor (2014) recommended to refer to ‘consumption possibilities’, rather than ‘income and wealth’, to recognise the prevalence of consumption as metric of economic well-being in developing countries. They also argued for broadening the concept of ‘personal security’ to ‘vulnerability’, to reflect the broader range of risks faced by people in developing countries; and for referring to ‘empowerment and participation’, rather than ‘civic engagement and governance’, to stress the importance of giving political voice and means of expression to individuals, local communities and indigenous populations. Similarly, on the indicators side, they suggested including measures of vulnerable employment (in addition to the standard unemployment rate used in OECD countries) to account for high labour markets informality in these countries.
6. *How was Life?* omitted some of the dimensions included in the *How's Life?* framework because certain dimensions of well-being (such as subjective well-being) cannot be measured in the distant past while for other dimensions (such as work-life balance) no sufficient historical data are available.
7. Self-reporting on life satisfaction and of day-to-day experience did not exist back in time, for instance.
8. Life expectancy and homicide data are only available from 1850.
9. This is done by regressing the well-being measures (standardised to have zero mean and unit standard deviation for comparability) on the logarithm of per capita GDP and a set of time dummies. Time dummies capture the additional well-being compared to 1820 (or the earliest year of observation) that is not explained by the level of per capita GDP in that period.
10. The Polity2 variable is expressed on a 21-point scale, scoring countries between autocracy (low) and democracy (high). This means that there is a ceiling beyond which, according to this indicator, political institutions cannot be improved anymore, so that further developments in countries already categorised as full democracies or full autocracies can only compensate for developments elsewhere in the world to a limited extent.
11. The approach is similar in spirit to that used in Figure 2.5, although without separate time dummies. The model is $wb = b0 + b1 \cdot \log gdp_{pc}$, where wb is again one of the well-being measures. The relationship is estimated using the full global sample of countries from 1820–2010 (or the earliest/latest date for which data is available). This provides us with predicted values for the well-being measures that can be used to evaluate the actual developments in well-being relative to the volume of economic production of a country.

12. Unless stated otherwise, regional averages are always taken from *How Was life?* (van Zanden et al. 2014). They are population-weighted averages based on all countries for which we have data and imputations for the countries for which we do not. If less than 40 % of the regional population is covered by the data, it was set to missing.

13. The growth spurt in the 2000s did not go unnoticed. Sub-Saharan Africa was identified as one of the rising stars of the world economy in 2010 by the McKinsey Global Institute, which described the potential and progress of African economies as “lions on the move”; see www.mckinsey.com/featured-insights/middle-east-and-africa/lions-on-the-move.

14. Cited from www.weforum.org/agenda/2016/05/what-s-the-future-of-economic-growth-in-africa/.

15. According to Moatsos (2017), however, the decline was less steep, from 65% in 1983 to 22% in 2014, which is more similar to the experience of India.

16. As noted by Sen, “Life expectancy at birth in China is 73.5 years; in India it is 64.4 years. The infant mortality rate is fifty per thousand in India, compared with just seventeen in China; the mortality rate for children under five is 66 per thousand for Indians and 19 per thousand for the Chinese; and the maternal mortality rate is 230 per 100 000 live births in India and thirty-eight in China. The mean years of schooling in India were estimated to be 4.4 years, compared with 7.5 years in China. China’s adult literacy rate is 94 percent, compared with India’s 74% according to the preliminary tables of the 2011 census” (www.nybooks.com/articles/2011/05/12/quality-life-india-vs-china/).

17. In the 1960s and 1970s, the “standard of living debate” focused mainly on the development of real wages during industrialisation in England (cf. Feinstein, 1988); since then, this debate has broadened in particular via the systematic analysis of new data made available by the study of population height (see Van Zanden et al. 2014, Ch. 7).

18. “Dark satanic mills” refers to a passage in William Blake’s poem “And did those feet in ancient time”, referring to the industrial revolution and its destruction of nature and human relationships.

19. Of course, it is impossible to compare the loss of well-being due to the famines of 1931-32 and 1958-62 – the latter perhaps the greatest man made tragedy in history – with the long-term consequences of planned economic development.

20. As shown in this paper, while the overall relation between GDP per capita and well-being outcome is generally positive and strong, there are exceptions. In the case of environmental pressures, the higher scale of economic activity leads to higher emissions that lower environmental quality. Similarly, income inequality is only weakly related, if at all, to changes in GDP, while the development of political and social institutions (in particular that of the welfare state) also appears to follow its own pattern, which is only weakly related to the scale of economic activity. Even when the relation is positive (as in the case of longevity), it may shift over time.

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