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Latin America: stalled catching-up¹

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Introduction

Latin America made considerable progress in their living standards between 1870 and 2010 amid rapid modernisation and structural change. The average income in a representative sample of countries including Argentina, Brazil, Chile, Colombia, Mexico, Uruguay and Venezuela (LA-7) around 2010 is estimated to be more than 775% higher than in 1870; while the average life expectancy at birth rose from 33 years in 1900 to 76 years in 2010; and the average literacy rate went from 33% of the population in 1900 to about 95% by the start of this century (MOXLAD). However, despite these remarkable advances, the income gap between the region and the industrial leaders by the start of the 21st century is still significant. The reasons for this are still subject of heated debate. This chapter assesses the long-term performance of Latin America relative to the developed world in order to identify secular changes in the process of convergence. It also discusses the key transformations in Latin America during the period and developments in the proximate sources of economic growth.

We follow the tradition of economic historians of the region (Bértola and Ocampo 2012; Bulmer-Thomas 2013; Thorp 1998) and adopt a periodisation based on three historical epochs: 1870-1929 covering the age of export-led growth to 1914 plus the transition years up to the Great Depression; 1929-1979 including State-led industrialisation; 1980 onwards with the debt crisis and the second globalisation. This division is also supported by coinciding turning points in the proximate forces of growth and the timing of structural change and the demographic transition (Astorga *et al.* 2005 and 2011).

One salient feature of Latin American development is the coincidence in the periodisation of the cycles of international integration, the processes of industrialisation (capital accumulation) and internal migration (hand in hand with urbanisation), and the pace of human capital formation. Broadly speaking the first period is one dominated by relatively open economies to international trade and factors movements, with export sectors based on primary products and relatively rural populations – growing at moderate rates - with limited educational

¹ We are grateful to Leandro Prados de la Escosura for sharing his relative income data set and to Leticia Arroyo Abad for sharing her wage data for the 19th century.

coverage. The second period is characterised by close economies embarking on an industrialisation effort led by the state, high population growth in increasingly urban societies and important strides in education coverage. The third period is defined by lower barriers to trade and capital, now in more diversified economies, although many of them still dependent on commodity exports, and largely urban societies experiencing a reduction in population growth rates.

In the next section, we review the record of Latin American catching up – or lagging behind – with the rich economies since 1870. Then, we provide a summary description of developments in the region that underpinned the comparative growth outcome. The final section concludes.

Catching up revisited

Marginal diminishing returns to capital and advantages of backwardness are two strong arguments for expecting catching up in GDP per head. In the first case, the more capital per worker is accumulated, the smaller are its returns and the advances in income per capita. Therefore, economies with lower levels of capital per worker have the potential to grow faster than the more capital-intensive ones. In the second case, the further away an economy is from the technological frontier, the greater the impact of technical progress made possible from the diffusion of knowledge from the leading economies to the more backward ones. However, income convergence and catching up with the leaders is far from guaranteed, as there are also factors, such as increasing returns to scale, disparities in human capital formation, and barriers to technology transmission, that can support divergence. Differences in institutions are equally likely to result in disparity in prosperity across countries, with the lingering effects of exclusive institutions being a major obstacle for economic growth and advances in living standards. As a consequence, throughout history convergence has been the exception rather than the rule (Rodrik 2014).

The commonly used metrics in empirical studies on growth convergence are Gross Domestic Product (GDP) per capita and GDP per worker (or labour productivity). In the long-run quantitative literature in the region, the former is the focus of attention in Astorga et al. (2005), whereas Prados de la Escosura (2007) considers both metrics. However, there are also good reasons to pay attention to real wages, as they are a better measure of the welfare of ordinary workers, which constitute the vast majority of the population (Williamson 1999; Bértola et al. 1999; Astorga 2017a). Comparisons made with these three measures allows for a

more nuanced account of convergence. Firstly, by including the impact of the demographic transition, which may explain differences between convergence in GDP per capita vs. GDP per worker. And, secondly, by capturing distributional dynamics, which may result in different evolution of GDP per worker and real wages. A relatively late demographic transition and high levels of income inequality are two defining features of the process of economic development in Latin America that must be accounted for when explaining the region's convergence record. Moreover, the region's long-term performance has been characterised by excess volatility in GDP, largely associated to recurrent external debt and currency crises. These were at the root of political instability and inflationary episodes the impact of which also undermined the region's potential for catching up (Bértola and Ocampo, 2012).

In order to cover the whole timeframe with a consistent group of countries, this section focuses on LA-7, or on LA-6 (which excludes Uruguay). LA-7 accounted regularly for about three-quarters of Latin America's population and GDP during the period. Therefore, when discussing developments over the whole period we rely on the average behaviour of this group as a proxy for the region as a whole.²

Historically, Latin Americans have tended to compare their living standards with those of the US. But this comparison is the most demanding, as even western Europeans economies fell behind the US during the second half of the 19th century. Also, Southern Europe has been a traditional basis for comparisons with Latin America. In this review of the evidence, we use three yardsticks to assess the region's relative performance: US (the industrial leader after 1900), UK (the industrial leader before 1900) and Spain (the colonial master and a late converging economy). Concentrating on a selected number of representative countries in both Latin America and the developed world allows us to provide a richer coverage of the metrics of interest in a consistent way over the whole period.

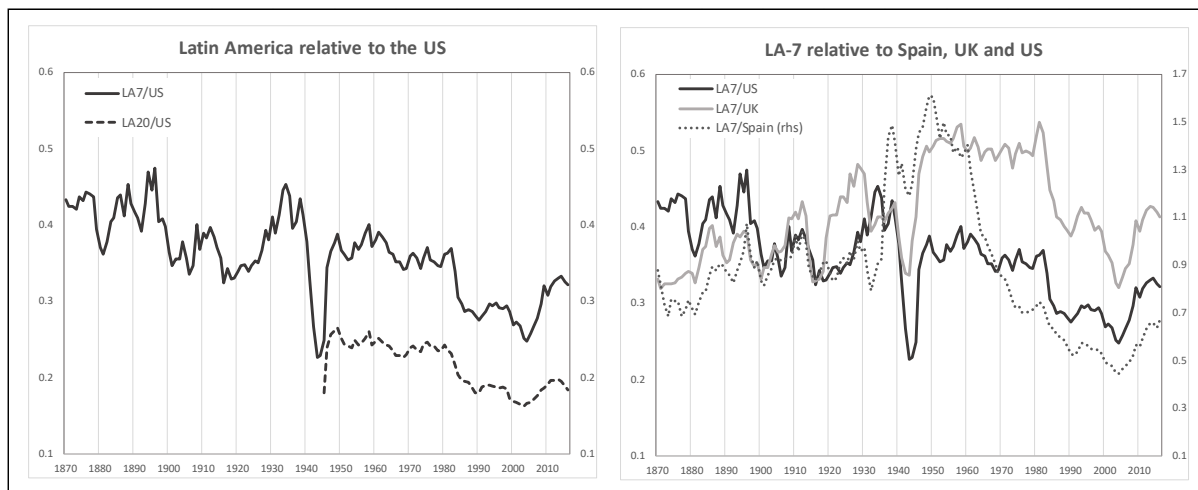
GDP per capita

Figure 1 (chart on the left) presents the relative performance in GDP per capita of LA-7 versus the US. Overall, the ratio fluctuates around a secular divergence trend. It falls from 0.43 in 1870 (an income gap of 57%) to 0.31 (69%) in 2010. The best years for catching up were the last three decades of the 19th century and the late 1920s and early 1930s. The latter was a one-off gain largely reflecting the fact that the Great Depression was felt stronger in the US. From

² For comparisons with a larger number of Latin American and OECD countries see Prados de la Escosura (2007). On average, countries not included in LA-7 were poorer than those in the sample. Thus, as shown in Figure 1 below, our indicators provide an upper bound of the full regional average.

1945 onwards the Latin American coverage can be extended to 20 countries (LA-20). The comparison based on this wider aggregate results in a significantly lower ratio (an average of 0.24 between 1950 and 1982 compared to 0.36 in LA-7), but with a similar trend. The third period was particularly bad for the region's relative performance, despite a recovery in the 2000s driven by a China-led commodity boom.

Figure 1: Catching up in GDP per capita



Sources: For Spain, UK and US we use the Maddison Project Database (2013 release); and MOXLAD for LA-7 and LA-20 (simple averages in both cases).

However, if the comparators are taken from Europe (see chart on the right), the LA-7 performance is cast in a more positive light. Between 1870 and 1929, LA-7 managed to reduce the gap with the UK from a ratio of 0.33 (a 67% gap) to one of 0.48 (52%). Then, they experienced a moderate divergent trend up to c.1980, which was followed by two decades with a rapid widening of the income gap, as Latin America was hit by the debt crisis. In the case of Spain, there was a rapid catching-up from the 1930s to the 1950s, thanks to high economic growth in LA-7 and war, autarky and stagnation in Spain. But this episode came to an end in the early 1960s, when Spain started to converge with the more advanced northern European economies.

The LA-7 average in Figure 1 ignores important differences in country performance. As shown in Table 1, the group's rather disappointing convergence outcome during most of the 20th century with the US is partly explained by the unfulfilled promise of Argentina and, to a lesser extent, Uruguay. Both were strong candidates for catching up at the turn of the 19th century but started a rapid relative decline after 1940. A contrasting image is Venezuela, with a modest record up to the mid-1920s followed by a sustained catching up driven by oil richness

which came to an end with the debt crisis of the 1980s. The largest dispersion within the group was in the years prior to the outbreak of World War One, as Argentina was pulling away from the group; whereas the highest convergence was reached in 1990, at the end of the “lost decade” – a very effective income leveller across all seven countries.

	1870	1900	1910	1940	1980	1990	2010
Argentina	0.60	0.74	0.78	0.66	0.44	0.29	0.37
Brazil	0.28	0.14	0.14	0.18	0.26	0.22	0.21
Chile	0.50	0.50	0.54	0.49	0.30	0.28	0.42
Colombia	0.27	0.16	0.16	0.28	0.23	0.21	0.22
Mexico	0.27	0.32	0.33	0.27	0.33	0.26	0.26
Uruguay	0.85	0.52	0.58	0.54	0.35	0.28	0.36
Venezuela	0.23	0.19	0.17	0.49	0.55	0.37	0.32
LA-7	0.43	0.37	0.38	0.42	0.35	0.27	0.31
dispersion	0.56	0.46	0.52	0.36	0.32	0.21	0.27
South Korea	0.14	n.a.	0.09	0.12	0.23	0.38	0.72
Taiwan	0.24	0.16	0.16	0.18	0.28	0.44	0.77

All ratios (three-years moving averages). LA-7: simple average. Dispersion is measured by the coefficient of variation. *Sources:* MOXLAD for LA-7, and Maddison Project Database (2013 release) for South Korea, Taiwan and the US.

Table 1 also includes information about South Korea and Taiwan, two East Asian economies that also adopted a State-led industrialisation model since the 1950s. The LA-7 ratio was well above those in South Korea and Taiwan from 1870 up to c.1980, with the relative advantage rising in the 1940s due to sustained growth in Latin America and the impact of World War Two in East Asia. The advantage was declining but still significant up to 1980. But the combination of the Asian ‘miracle’ and low growth in Latin America erased it, and by 1990 the per-capita income in South Korea and Taiwan overtook the LA-7 average, being well ahead by 2010 – despite the setback of the 1997 Asian Crisis. We expand on the reasons for this change in fortunes in the next Section.

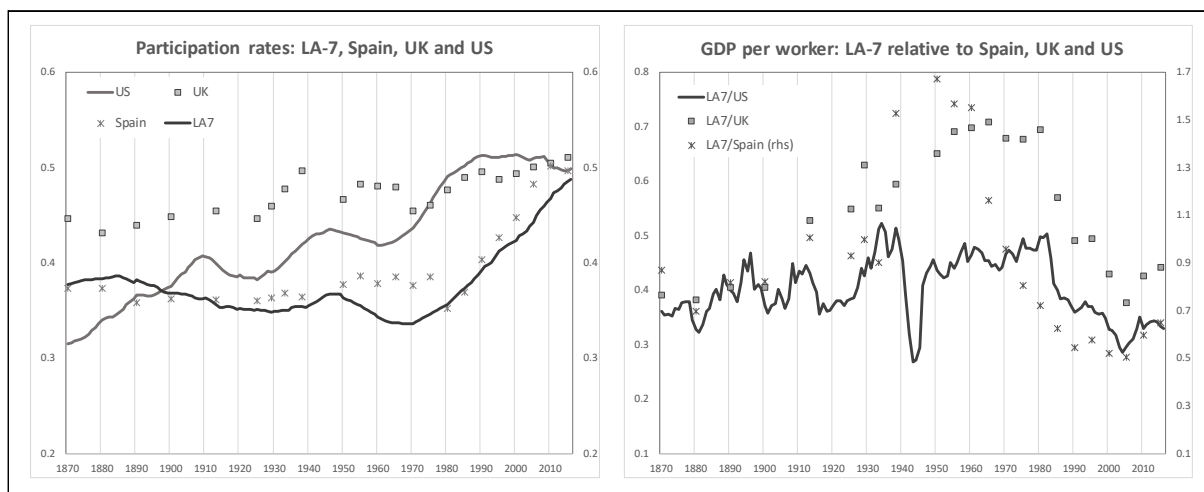
GDP per worker

Although comparisons based on GDP per capita are the norm, their use hides the potential effects on the convergence process of differences in the timing of the demographic transition. Thus, high population growth can undermine temporarily advances in GDP per capita by reducing both the participation rate (the proportion of the labour force out of the working-age population) and by increasing the dependency ratio (the non-working age to the working-age

population). Contrarily, a more mature population with a higher participation rate and a lower dependency ratio is in a better position to benefit from capital accumulation and technology transmission.

As can be seen in Figure 2 (chart on the left), there are significant differences in the timing of the demographic transition between the first industrialisers and Latin America. The schedules are calculated as the ratio of the economically active population (EAP) to total population, which is a gross measure of the participation rate. In LA-7, after the 1870s and 1880s when the labour force was growing at a faster rate than the overall population (driven by high migration inflows to Argentina and Uruguay), there was a steady decline in the average participation rate, which was only reversed in the early 1970s as a result of the deceleration in population growth. And by the 1990s the region was collecting a demographic gift that created the conditions for higher levels of income per capita. This demographic pattern in the LA-7 contrasts with that of the UK, a country that had already completed its demographic transition by the turn of the 19th century. The US exhibits a secular rise in its participation rate up to the 1990s, with a growing gap relative to the LA-7 values – even at times of falling rates such as 1910-1930 and the 1950s. Spain displays a similar profile as LA-7 but did not experience a decline in its participation rate between 1950 and 1970.

Figure 2: Catching up in GDP per worker



Participation rate = EAP divided by population. GDP per worker is calculated as GDP per capita (Figure 1) times population/EAP.

Sources: For EAP and population, Bértola (2016) for Uruguay, MOXLAD for the remaining LA-7; Prados de la Escosura (2007) for UK and Spain up to 2000; US Census Bureau (1975) for the US to 1970. Official sources thereafter.

During times where the region’s participation rate was above that of the comparators, the “demographic factor” affecting GDP per capita catching-up was moving in its favour. But this

only occurred between 1870 and 1900 in the comparisons with the US and Spain. For the whole 20th century the demographic factor was against LA-7, especially between 1950 and 1980. This means that, despite high productivity growth, it was particularly challenging for the region to catch up in per capita terms. To neutralise the effect of differences in the participation rates in the catching up outcome, we show the evolution of the relative performance in GDP per worker in the right chart of Figure 2.

Overall, comparisons based on this metric shows a more sustained convergence over time than in per-capita GDP, although with a final pronounced reversal in both cases. Now, the comparison with the US shows a rising secular trend between 1880 and the end of the 1930s (an increase in the ratio from 0.33 to 0.49), which was interrupted in the first half of the 1940s as the US was embarking in its war effort. Then a more modest second catching-up episode developed from 1950 up to 1980 (a rise in the ratio from 0.44 to 0.49). However, the last two decades brought absolute dispersion and by 2010 the labour productivity gap with the US was larger than in 1870 (0.34 versus 0.36). All relative growth gains were lost. The comparison with the UK shows a broadly uninterrupted process of catching up until 1970. During the 1960s LA-7 had managed to close the gap in GDP per worker to 30%. But, again, the last period saw the region lagging behind rapidly.

Real wages

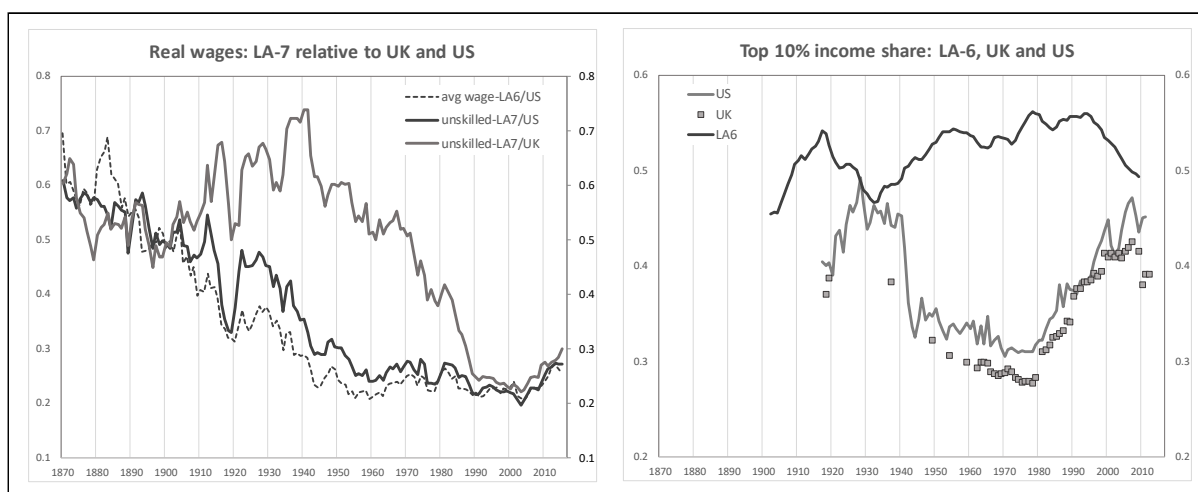
The use of real wages allows us to explore the role played by income distribution in the comparative growth performance. GDP per head includes the remuneration of all factors of production (profits, rents and wages) and it may not reflect well the median income level in the presence of a skewed distribution (with property income concentrated in the top declines of the distribution). Figure 3 (chart of the left) depicts LA-7's unskilled wages relative to the UK and the US. Also, it includes the LA-6 average wage (we do not have equivalent wage series for Uruguay) relative to the US.

The comparison based on this evidence offers a contrasting view that challenges the conventional wisdom based on the previous two metrics. The ratios relative to the US show a secular process of lagging behind in real wages from 1870 to about 1960, which was only interrupted by a modest catching up during the 1960s and 1970s. This is despite a sustained growth in real wages in Latin America, particularly between 1920 and 1980 (a 240% increase in the average wage in LA-6; see Astorga 2017a). This means that catching-up episodes in GDP per head during the 20th century were likely to have been driven by a better comparative performance of non-wage incomes. The comparison made with the unskilled wages in the UK

shows a more favourable picture during the first four decades of the 20th century, when the relative advances in GDP per worker were accompanied by a closing of the gap between relative unskilled wages. However, overall, those experiencing any catching up in income in the region relative to their counterparts in the industrial leaders were most likely to have belong to the upper deciles of the distribution.

Figure 3 (chart on the right) shows available estimates of the income share of the top decile of the population. It clearly highlights a crucial difference between the distribution dynamics in LA-6 (also true in all probability for the region as a whole) and the industrial leaders: the absence in the former of the “Great Leveling” (Lindert and Williamson 2016) experienced by the latter between the end of World War Two and the end of the 1970s. Whilst in the US and the UK (as in other north Europeans countries) there were significant policy efforts to rebalance the distribution of income, in LA-6 centrifugal forces dominated, resulting in rising inequality and a high concentration of income at the top.³

Figure 3: Catching up in real wages



Sources: LA-6’s real wages 1870-1900 from Arroyo and Astorga (2017), and 1900-2011 from Astorga (2017a), completed to 2015 using ECLAC; Uruguay 1870-2015 from Bértola et al. (1999) completed with official sources. For the US we use “production workers hourly compensation” for the average wage and “cost of unskilled labor” for the unskilled wage both from Officer and Williamson (2017). UK’s unskilled wage 1870-1988 from Williamson (1995), and retailing weakly earnings from the Office of National Statistics thereafter. Top 10% income shares from the World Top Income Database for the US and the UK; Astorga (2019) for LA-6.

As we will see in the following section, high income inequality in the region is to a large extent the reflection of concentration of assets (e.g., land), a late arrival of a democratic – more

³ Although the methods and data used to estimate the top 10% shares are different in each case (wage and overall income data in the LA6 and fiscal data in the US and the UK), the picture they show is clear enough to support the point.

inclusive – institutions, significant delays in the introduction of mass education (and a more skilful workforce) and, more generally, in the provision of public goods. The main reason for the region’s poor schooling record was the failure to supply tax support (Lindert, 2010); a clear example of one key area in which the necessary policies were not adopted to create the conditions for convergence.

The stages of Latin America’s economic development

The age of export-led growth

In the second half of the 19th century, after decades of widespread economic stagnation and political turmoil, Latin America started to grow thanks to the pull of the international economy (Kuntz-Ficker 2017). As shown in the previous section, average growth was high enough to allow a moderate convergence with some of the industrial leaders, such as the UK. The region became well integrated within the global economy, mainly as a provider of a very diverse range of primary products: temperate agrarian commodities such as grain, wool or meat; products of the tropical agriculture including coffee, sugar or tobacco; or minerals (copper, tin, nitrates or precious metals). Transport cost reductions and economic growth in the industrial world translated into a boom in international demand for Latin American commodities. Between 1870 and 1929, total and per capita exports grew at a yearly rate of 4.2% and 2.4% respectively in the region (Bértola and Ocampo 2012: 86).

The increase in commodity production and exports was possible thanks to factor accumulation. The region received massive flows of foreign capital and labour, which allowed the exploitation of its natural resources and the expansion of the land frontier. Foreign capital arrived mainly from European countries (specially from the UK), although US investment gradually took off and would become the main source of foreign capital since World War One. Foreign capital was an essential channel of technology transfer and allowed infrastructure expansion (especially railways) throughout the period. Capital was accompanied by mass migration from Europe and Asia, particularly in Argentina, Brazil, Cuba and Uruguay. As a consequence, population grew at a 1.7% yearly rate (Table 2). The railway fostered the expansion of the frontier and made resource extraction possible in the inner areas of each country, while the accumulation of foreign labour helped to compensate the region’s relative labour scarcity.

Table 2: Population growth (yearly rate, %)

	1870-1913	1913-1929	1929-1950	1950-1980	1980-2010
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Argentina	3.4	2.6	1.9	1.7	1.2
Brazil	2.1	2.1	2.3	2.7	1.7
Chile	1.3	1.3	1.8	2.0	1.4
Colombia	1.8	2.6	1.9	2.7	1.8
Mexico	1.1	0.8	2.5	3.1	1.6
Uruguay	2.9	2.3	1.2	0.9	0.5
Venezuela	1.3	0.8	2.1	3.7	2.2
<i>Latin America</i>	<i>1.7</i>	<i>1.8</i>	<i>2.2</i>	<i>2.7</i>	<i>1.7</i>

Source: Bértola and Ocampo (2012).

Although capital and labour accumulation largely explains the growth in aggregate exports and output, the capital-labour ratio hardly increased during this period. The pace of technical change was also extremely slow, as shown by the available estimates of total factor productivity (TFP), which grew at 0.13% per year in LA-6 between 1900 and 1936 (Astorga et al. 2011). Thus, labour productivity increases were mainly based on the exploitation of additional reserves of natural resources.

Beyond the average rates of economic growth there was a substantial diversity of national experiences. The highest levels of exports per capita during the period were reached by Argentina, Uruguay, Chile, Cuba, Costa Rica and Dominican Republic.⁴ With the exception of Chile, these countries were also those that, together with Brazil, had highest immigration rates. And they were also (with the exception of Dominican Republic) the main recipients of foreign capital, and the countries in which investment per capita was highest (Bértola and Ocampo, 2012). The economic dynamism of the Southern Cone and Cuba is confirmed by other indicators, such as energy consumption (Rubio et al. 2010) and railway construction (e.g. Bignon et al. 2015) and appears in stark contrast with sluggish growth in most economies specialised in mining or tropical agriculture. Export-led growth was not only diverse across countries but also very unstable over time. High dependence on foreign capital inflows made Latin American countries very sensitive to international financial crises. Booms and busts alternated in the region, with major sudden stops affecting most countries in 1873, 1890, 1914 and 1929. Crises often led to defaults and the abandonment of the gold or silver standard.

Despite the specialisation in commodity exports, manufacturing industry, encouraged by the needs of commodity processing and increasing consumer demand, expanded in some countries, especially in the Southern Cone, Brazil and Mexico, where it accounted for 13% to 20% of GDP by 1929 (Table 3). Kuntz-Ficker (2017) has highlighted the positive impact of export-led growth on some economies' industrialisation thanks to income growth,

⁴ Venezuela would join this group in the 1920s thanks to the take-off of oil exports.

protectionism and the forward linkages of certain export activities. Gómez Galvarriato and Williamson (2008) have described the industrialisation experience of these countries as impressive, compared with the rest of the poor periphery at the time.

Table 3: Industrial share of GDP (%)

	c. 1929	1950	1980
Argentina	20	24	28
Brazil	13	22	30
Chile	13	26	22
Colombia	6	16	22
Mexico	12	17	24
Uruguay	16	19	22
Venezuela	11	12	18
<i>Latin America</i>	<i>10</i>	<i>20</i>	<i>27</i>

Source: Bértola and Ocampo (2012).

As a result of sustained economic growth, urban wages tended to increase almost everywhere in the region. However, they fell behind wages in the industrial economies and grew substantially less than GDP per capita (Williamson 1999; Frankema 2009a). Thus, the first globalisation was a period of inequality increase, as is also shown by the rise of top income shares (Figure 3). Growing inequality was consistent with movements in factor prices associated to globalisation and, more specifically, with the increase in the ratio between land rents and wages that took place in migrant recipient countries (Williamson 1999; Arroyo and Astorga 2017).

Moreover, in Latin America the disequalising effects of a rising rent-wage ratio were compounded by very high inequality in land ownership (Frankema 2009a), which was probably the highest among world regions and worsened in many countries due to the expropriation of peasants' smallholdings by governments and large landowners. High wealth inequality was the outcome of the gradual consolidation, after the post-independence struggles, of an extractive institutional setting based on a very high concentration of power among the elites. The interests of elites and foreign investors colluded, allowing economic dynamism in a context of generalised political exclusion (Coatsworth, 2008). Meanwhile, the region lagged behind in social and labour policies. Tax systems remained undeveloped thanks to the rents coming from a booming external trade, and fiscal resources were mainly spent in the military and infrastructure (railway subsidies). The consolidation of very high inequality rates by the eve of World War One set strict limits to the extent to which the average worker could benefit from

economic growth. As is shown below, it also probably constrained the region’s growth and convergence prospects during the rest of the 20th century.

State-led industrialisation

The period of export-led growth came to an end with the Crash of 1929. Difficulties had started before, when World War One seriously hindered European imports of Latin American commodities. Then, demand from the US became the main engine of Latin American growth during the 1920s until it gradually collapsed during the Great Depression. The dramatic reduction of world demand was accompanied by the almost total interruption of foreign capital inflows. The consequence was a generalised balance of payment crisis in the region, which brought Latin American real imports down by 62% between 1929 and 1932 (Bértola and Ocampo 2012). The gradual recovery of the US and some European economies gave some relief to the region since 1932, but balance of payment problems returned in 1937, spreading across all Latin American countries full awareness that the previous growth model was exhausted. The 1930s crisis marked the transition to a completely different growth model, usually known as state-led industrialisation, which lasted until a new shared external debt crisis hit the region around 1980. This was the period in which Latin American economic growth was at its highest and systematically higher than the world average.

In LA-7, labour productivity grew at a 2.3% yearly rate between 1937 and 1977, and growth was much less volatile than in the previous period. In contrast to the decades of export-led growth, in this period productivity growth was mainly the result of capital accumulation and technological change. The capital-labour ratio increased very quickly, specially between 1950 and 1980, thanks to high and stable investment rates. Non-residential capital stock grew at unprecedented rates between 1946 and 1981 in the main economies of the region (Table 4) and Latin American investment ratios were comparable to those in the fast-growing East Asian economies during the same period (21% in LA-6 vs. 22% in East Asia; see Astorga et al. 2011).

Table 4: Non-residential capital stock yearly growth rates in several countries (%)

	1900-1920	1930-1945	1946-1981	1982-2008	<i>1900-2008</i>
Argentina	2.5	1.7	4.9	1.0	<i>3.1</i>
Brazil	3.1	1.7	7.1	2.3	<i>4.6</i>
Chile	2.8	0.4	3.7	7.1	<i>3.3</i>
Mexico	2.4	3.8	6.7	3.3	<i>5.1</i>

Source: Tafunell and Ducoing (2016).

Human capital stock also increased substantially thanks to public investment in health and education and rapid urbanisation. According to Astorga et al. (2005), the greatest improvement in literacy rates and life expectancy in LA-6 took place between 1940 and 1980). Progress in primary enrolment rates was also substantial, and full enrolment was reached in the largest economies by 1980, although those advances were hindered by the relatively poor quality of education systems in many countries (Frankema 2009b). TFP dynamism was also remarkable; its yearly growth rate in LA-6 was 1% between 1937 and 1977, and it was largely associated to embodied technical change, with imports of foreign physical capital growing at high rates at least since 1945 (Astorga et al. 2011).

Given the importance of the agrarian sector, a large share of labour productivity growth took place in agriculture. Agricultural productivity grew steadily thanks to labour shedding, the spread of irrigation and the green revolution (Astorga et al. 2011). But labour productivity growth was also partly the result of structural change, since industry and modern services increased its importance within GDP in almost all Latin American economies at the expense of the primary sector. The industrial GDP share increased nearly everywhere (see Table 3), although the highest percentages were reached in the largest economies, and only Argentina, Mexico and, specially, Brazil, managed to develop a really diversified industry. Industrialisation was accompanied by the diffusion of modern services and high rates of urbanisation; urban population in the region grew at 4.4% yearly between 1950 and 1970, which was an unprecedented rate in world history. Only in the small economies (with the exception of Costa Rica) did commodity exports remain as the main engine of growth.

To a great extent, human development and structural change were associated to a new policy model, which entailed a much more active role of the government in the economy. The earliest policy changes were largely reactive, since the collapse of the international economy forced the countries in the region into devaluation, multiple exchange rates, increasing protection and exchange controls. All these established an early set of incentives to import substitution and industrialisation, which gradually developed into a much more complex structure of policy instruments, including, among others, development banks, nationalisation of key industries and utilities, infrastructure and attraction of foreign direct investment. Protection of domestic markets reduced the region's exposure to external shocks and GDP growth volatility and, together with increasing urbanisation, was the basis for high private investment, aimed at meeting an increasing domestic demand for consumption of industrial goods. Investment rates were also supported by the significant expansion of public capital formation in infrastructure and human capital-related services (health and education).

As highlighted by Bértola and Ocampo (2012), this policy setting was not just about import substitution and industrialisation. Policies oriented to the modernisation of agriculture were very important everywhere and help to explain the substantial productivity increases in the sector and the rural-urban exodus. In addition, most countries developed efforts to promote exports, although with moderate success. This included the earliest attempts of regional economic integration: the Central American Common Market and the Latin American Free Trade Association (ALALC), both established in 1960, and the Andean Pact, founded in 1969. In a period in which most of the developing world was applying inward-oriented state-led industrialisation programs, economic policy in Latin America may be characterised as being more, and not less, market oriented than in other developing regions.

Productivity increases translated into very high rates of income per capita growth, especially since 1945 although, as in previous decades, with significant differences among countries. It was actually in those countries that grew faster before 1914, such as the Southern Cone and Cuba, where economic growth was slowest in this period. By contrast, in a number of large economies whose previous performance had been rather disappointing, such as Brazil, Mexico, Colombia, Peru and Venezuela, growth rates were very high in these decades, and they managed to catch-up with the former leading economies.

Fast economic growth translated into rapid decrease in mortality rates, which were only joined by birth rates with a substantial lag. In fact, fertility rates increased substantially between World War Two and the 1960s or 1970s in most countries (Reher and Requena 2014). The result was one of the highest population growth rates in history, amounting to a yearly 2.7% between 1950 and 1980 (Table 2). Unlike the previous period, this was mostly natural growth, since migration inflows were very low, with the exception of Venezuela. As a consequence of the demographic transition, the age structure of the population changed substantially, dependency ratios increased, and female activity rates remained low. Population grew therefore much faster than the workforce throughout the region, putting a check on convergence in per capita GDP and standards of living.

Improvements in average welfare were also constrained by the high inequality levels inherited from the past. There were some equalising forces during the period, such as the end of the previous sustained tendency to increasing rent-wage ratios, or the decline in rural underemployment associated to massive rural-urban migration. However, these forces were too weak to make a difference, especially because demographic transition generated labour surpluses which prevented increases in unskilled wages, while prevailing educational shortages drove skilled wages up. Moreover, the region remained largely unaffected by the policy

changes that reduced inequality in industrialised countries. Governments tried to reform tax systems to make them both more progressive and efficient, but those attempts generally failed, largely due to persistent resistance by vested interests. Most countries also developed labour compacts, including wage regulation and welfare policies. However, those new benefits mainly covered high-income workers and the urban middle classes, leaving aside most of the population working in an expanding informal sector, and giving rise to segmented or truncated welfare states, where redistribution took place only among the better-off (Ferreira and Robalino 2011). Similarly, widespread agrarian reforms were expected to bring some redistribution to the rural areas but, except for Cuba and, to a lesser extent, Mexico and Bolivia, they only affected relatively small minorities of landowners.

Only in Cuba the revolution brought with it a radical social levelling, while in the Southern Cone, where the expansion of the labour movement and welfare policies were more developed and formal employment more extended, there was a moderate reduction in inequality. For other countries, the available inequality indicators, including the ratio between unskilled wages and per capita GDP, the labour income share, top incomes or earning inequality stagnated or worsened between 1940 and 1980 (Frankema 2009a; Arroyo and Astorga 2017). The region therefore did not participate in the global trend of inequality levelling of the central decades of the 20th century, and this had a significant negative impact on average welfare.

The Debt Crisis of the 1980s and the second globalisation

The limits of the model of state-led growth were reached in the 1970s. Despite widespread industrialisation and technology adoption, the region's ability to close the gap with the developed countries and to transition towards industrial exports was limited by insufficient technology and educational policies, particularly when compared with the East Asian fast-growing countries. In that context, several tensions and imbalances jeopardised the persistence of economic growth. The difficulties to expand exports, together with a booming investment and international credit facilities, generated during the 1970s considerable external deficits which were financed with foreign capital. In parallel, governments' growing involvement in the economy and society boosted public spending and provoked large public deficits and increasing inflation rates.

The final outcome of those imbalances was a growing dependence of Latin American economies and governments on external finance and a high vulnerability to movements in the

international credit markets. Under these circumstances, the end of state-led industrialisation was associated to a cycle of foreign capital inflows, which started in some countries in the 1960s, spread to the whole region in the 1970s and collapsed in the 1980s. Between 1973 and 1981, Latin America would absorb more than 50% of all debt flows received by the developing world, and would also be the region with the largest share of FDI.

The collapse of the system arrived with the sudden increase of US interest rates in 1980, which provoked an abrupt rise in the region's debt burden (largely contracted at floating interest rates), and was accompanied by a reduction in commodity prices that made the situation even more difficult. Unlike what had happened in the 1930s, no unilateral defaults took place in the 1980s, and insufficient rescue funds and long-lasting negotiations made recovery much slower than 50 years before, despite the initial shock being less serious. The external finance dried up, giving way to a "lost decade", with significant reductions in the region's GDP per capita. The crisis brought about a substantial setback in the region's industrialisation process, and inequality and poverty deteriorated, largely due to the decrease in real wages and formal employment. Growth was only resumed in the early 1990s, although it was interrupted again by the financial shocks of 1997-2001 and - to a lesser extent - by the Great Recession of 2007-08. Those decades of recurrent crises were marked by rapid divergence from the industrial core and also from the rapidly growing East Asian economies. Thus, Korea and Taiwan, that had a similar GDP per capita to LA-7 in 1980, were 4 times richer 20 years later.

The Debt Crisis of the 1980s was not an automatic consequence of the state-led development model which, in some of the largest countries, had been gradually shifting towards export promotion. However, such pro-export policies had had limited success, largely due to the governments' inability to raise enough fiscal resources to support the necessary infrastructure, research and development (R+D) and human capital investment. This represented a crucial difference with the East Asian industrial leaders. Countries like Korea and Taiwan were much more successful in technology adoption thanks to substantial investment efforts in those areas during state-led industrialisation. This raised their competitiveness and allowed a substantial increase in their participation in world exports. In that context, the relative failure of Latin American regional integration initiatives set another limit to export growth and also contrasts with the dynamism of East Asian regional trade.

As had happened half a century before, in Latin America the debt crisis provoked another change in the economic policy model. State-led industrialisation was replaced by pro-market reforms. These had three main components: liberalisation of markets (e.g., tariff reduction, deregulation of financial systems, etc.), reduction in public sector economic activity

(involving large scale privatisations), and macroeconomic stabilisation, including a substantial decrease in public spending and inflation control. While these reforms were initially a side effect of the short-term reactions to the crisis, as well as part of the conditionality of International Monetary Fund (IMF) rescue programs, they were gradually consolidated in the 1990s to form the new dominant paradigm of economic policy. This new model would remain in place thereafter despite the introduction of some partial changes (especially since the 2000s).

The new policy model radically transformed the Latin American economies. Macroeconomic stability, with the reduction of fiscal imbalances and inflation, was largely restored in the 1990s, and the region became much more open to trade and foreign capital. Exports were more diversified than a hundred years before, with a gradual reduction in the share of commodities and a moderate increase in medium and high-technology products, at least until the boom in commodity prices of 2003-13. Natural resource-based exports, however, still accounted for more than 50% of all exports until at least 2010.

Foreign Direct Investment (FDI) rose substantially over the period. The destination sectors of foreign investment were often linked to the new export specialisation: assembly production (specially in Mexico and Central America), tourism and other services, and natural resource-based products. Nevertheless, the highest boom in FDI, which took place in the 1990s, was mainly associated to the privatisation of public companies and the purchase of private firms. The region also participated in international labour flows, but now as a net sender of migrants. Latin American workers moved in huge numbers to the US and, to a lesser extent, to other countries such as Spain, Canada or Japan, helping to balance their economies' foreign sector with massive remittances, at least until the Great Recession. Such growing openness to the international economy and widespread liberalisation policies had some clearly negative effects, as they increased the vulnerability of the region to financial crises. As a consequence, growth since 1980 has not only been much slower but also much more volatile than before.

Despite generalised policy reforms, which were partially aimed at restart productivity dynamism, the evolution of TFP and labour productivity has been rather disappointing since the 1990s, compared with industrial countries' performance. TFP growth in LA-6 was actually negative between 1978 and 2000 (Astorga et al. 2011), and this explains most of the reduction in the rate of labour productivity and GDP per capita growth, compared to the previous period. Even though some sectors (like certain manufactures and modern services) have undertaken substantial productivity increases based on technology acquisition, this has been more than compensated by the expansion of the informal economy. Slow productivity growth is also consistent with the de-industrialisation of the region, and with relatively low rates of

investment and low capacity to generate new technology. Investment rates did not keep up pace with high growing East Asian economies; for instance, in LA-6 between 1978 and 2000 investment was on average 20% of GDP vs. ca. 30% in East Asia (Astorga et al. 2011). In the largest economies of the region, except for Chile, the rates of growth of non-residential capital stock plummeted in 1981-2008 (Table 4).

The disappointing evolution of productivity is consistent with the prevailing deficiencies in accumulation of human capital and R+D. Educational policies have been relatively inefficient, with the region performing very badly in PISA tests or university rankings (Lindert 2010). Similarly, despite some efforts to develop new technology policies, Latin American rates of investment in R+D, with the partial exception of Brazil, are very low. Actually, public support for R+D investment weakened between the 1980s and 2000s, compared with the previous period (Castellacci and Natera 2016). Differences in R+D with the fast-growing Asian economies, which were already sizeable in 1980, have significantly widened thereafter. Moreover, private involvement in R&D, which has been predominant in Korea or Taiwan, has remained very low in Latin America, and patents, which have experienced an impressive growth in East Asian economies, have remained stagnant in the region. In the three decades since 1980, Latin American inability to undertake a process of structural change towards innovation and more knowledge-intensive production has prevented convergence and condemned the region to remain stuck in a typical middle-income trap.

In this context, poverty and inequality substantially worsened during the lost decade and through the early 2000s, reaching extremely high levels, even in the Southern Cone countries, where they had remained relatively low until the 1970s. In addition to the impact of the crisis and liberalisation policies, the military regimes of the 1970s and 1980s contributed to increasing inequality through regressive labour policies and repression of unions, while the delayed impact of the demographic transition on the labour market boosted the supply of unskilled labour. Inequality rates only started to decrease in most countries during the commodity export boom of 2003-13 that supported employment creation and higher wages (particularly of unskilled workers). Also, governments across the region – largely of left-wing orientation – implemented more progressive social spending, adopted educational reforms and favoured pro-labour policies. However, inequality levels have remained comparatively high until the present.

Concluding remarks

Despite significant advances in living standards, Latin America has not been able to catch up with the advanced economies in GDP per head in the last 150 years or so. It is true that between 1870 and 1980 the region managed to close some of its income gap with the leaders (particularly in GDP per worker), but these relative gains were not sustained, and by the start of the second decade of the 21st century the income disparity was wider than in 1870. In recent years Chile has been the region's most dynamic economy, but even here, GDP per capita today is only around 60% of the US value. And when using real unskilled wages as the comparative metric the LA-7 outcome is much worse, with a divergent trend that resulted in a widening of the gap relative to the US from about 40% in 1870 to around 80% in 2010. The comparison with the East Asian leading economies, whose GDP per capita were below those of Latin America until 1980 - but which have since rapidly converged with the industrial economies - offers further evidence of the region's lacklustre relative performance.

The conditions for catching up were most favourable in the period of state-led industrialisation because of the superior record of capital accumulation, advances in mass education, positive total factor productivity and structural change, and relatively low GDP volatility. But convergence in GDP per capita with the US and the UK was stalled during these decades. The causes of this outcome are to be found in a significantly lower growth in total factor productivity compared to the industrial leaders (Wolff, 1991) – though with similar growth in labour productivity, poor educational quality, and the timing of the demographic transition. In addition, in contrast with the significant distributional improvement that took place in industrialised countries during those decades, Latin American inequality during the period remained high. But if the comparative performance was modest in the middle period, the early 1980s marked a dismal downturn in the region's living standards. All gains in terms of productivity convergence accumulated over the previous 100 years or so were lost, and the alternation of stagnation with sluggish growth prevented the region from capitalising on the demographic dividend.

There were also serious shortcomings in the areas of public goods provision (particularly in primary and secondary education), the model of integration to the international economy and the adoption of technology. These areas clearly stand out in the comparison with East Asia in the closing decades of the last century. The failure to supply tax support for human capital formation and to address income and group-based inequalities meant that the necessary policies were not adopted to foster productivity and create the conditions for catching up. Latin America's international integration was largely based on the export of natural resources and had a broad exposure to international financial markets – which tended to have a pro-cyclical

effect. This has exacerbated macroeconomic volatility and has undermined investment and technological upgrading into sectors that could have favoured growth and convergence.

Although the reasons for the absence of catching up are complex and various, excess volatility, poor productivity and high inequality remain essential to explain why the region has been unable to follow the East Asian path of convergence with the developed countries through advances in human capital, R+D and infrastructure investment. To improve future prospects in standards of living and catching up the region will need to adopt a development model that delivers sustained and inclusive economic growth. Key elements of this model are a higher rate of investment, a proactive industrial policy (including technology policies), as well as a more diversified export sector and greater intra-regional integration. On the social front, it should include radical fiscal reform and greater redistribution efforts in order to finance a better quality of education and inclusive social services.

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