The Haves and the Have-Nots in Latin America in the 20th Century

Los de Arriba y los de Abajo en América Latina en el Siglo Veinte

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Abstract

This paper offers for the first time income shares of the top 10% and the bottom 40% of the labour force for Argentina, Brazil, Chile, Colombia, Mexico and Venezuela in the period 1900-2011. The main findings are: i) over this period the top 10% share is, on average, 51.3% and the bottom 40% share 13.2%; ii) in the last thirty years the gap between both tails widened (54.6% vs. 11.9%), despite narrowing inequality in the 2000s; iii) there is no inequality levelling in the middle decades of the last century as experienced in the rich economies. This new long-term evidence confirms that the recent shared decline in inequality has no precedent in the 20th century; but it also shows that, as in the past, high concentration at the top 10% and a relatively low-income share of the bottom 40% continues to be the region's inequality trademark.[1]

Keywords: Economic History; Economic Development; Income Inequality; Latin America.

Resumen

Este trabajo ofrece por primera vez estimaciones para las participaciones del ingreso del 10% superior y el 40% inferior de la fuerza de trabajo en Argentina, Brasil, Chile, Colombia, México y Venezuela durante el período de 1900-2011. Los principales hallazgos son: i) en este período el 10% superior recibió, en promedio, el 51,3% del ingreso y el 40% inferior el 13,2%; ii) en los últimos treinta años la brecha entre los dos grupos se amplió (54,6% vs. 11,9%), a pesar de una menor desigualdad en la primera década de este siglo; iii) no hay una tendencia a la igualdad en las décadas intermedias del siglo veinte como la experimentada en las economías ricas. Esta nueva evidencia sobre el largo plazo confirma que la reciente tendencia compartida de reducción en la desigualdad no tiene precedentes en el siglo veinte; pero también muestra que, como en el pasado, una alta concentración del ingreso en los de arriba y una participación relativamente baja de los de abajo continúa siendo un rasgo distintivo de la región.

Keywords: Historia económica; Desarrollo económico; Desigualdad del ingreso, América Latina.

Clasificación JEL: N36, O15, O54, J31.

1. Introduction

The study of the concentration of income at the top of the distribution is gaining ground in the inequality literature. Recent outcomes are placed in a historical perspective by the construction of distribution tables based on tax records (Atkinson *et al.*, 2011; Piketty, 2014). A key finding of this research is that concentration at the top in the rich economies at the start of the 21st century is approaching those levels seen in the Belle Epoch, reversing the "Great Leveling" of the period 1913-1970 (Lindert and Williamson, 2016). In Latin America the focus of the discussion has been on the, largely shared, narrowing inequality trend in the 2000s or so (e.g., Gasparini *et al.*, 2011; López Calva and Lustig, 2010); the sustainability of which is in doubt after the end of the latest commodity boom. But there has also been increasing attention focused on top incomes from an historical perspective at a country level (Alvaredo, 2010; Souza and Medeiros, 2015; Rodríguez Weber, 2015). These studies point to a relatively high historical income concentration at the top, as well as to the dominance of a rising or constant trend since 2000 or so – in contrast to the downward trend in the household Ginis.[2]

Following this line of inquiry, this paper offers for the first time income shares for the top 10% and the bottom 40% of the labour force for Argentina, Brazil, Chile, Colombia, Mexico and Venezuela (LA-6) for the period 1900-2011.[3] These countries accounted for about three-quarters of the population of Latin America over the last century and thus are representative of the region as a whole. To that purpose, income estimates for fixed shares of the economically active population (EAP) are derived from dynamic occupational tables based on four occupational skills groups constructed in Astorga (2015, 2016). The estimation of income largely relies on wage data, but it also makes allowances for non-labour income. Because of data and methodology limitations,

[2] For instance, top 1% shares of above 25% in Chile 1913-1938, and around 20% in 1938-1970 (Rodríguez-Weber, 2015 – based on dynamic social tables); and 15%, on average, in Argentina in 1932-1972 (Alvaredo, 2010 –3, based on income tax records). For a more recent period, Alvaredo and Londoño (2013) report a rising trend in the top 1% share in Argentina in 1997-2004; and in Colombia in 2000-2010, reaching 20% by 2010 – a similar order of magnitude as in the US. And Souza and Medeiros (2015) find that the Gini coefficient in Brazil remains stable in the period 2006-2012 after correcting for the underestimation of top incomes.

[3] My data do not allow for the estimation of the top 1% income share with any level of accuracy; nor do they inform about the split between labour and property income in the top 10% share, nor examine the rural-urban divide.

income shares reported here are necessarily crude approximations of their true values, but they can inform about secular trends on both tails of the distribution. They also have the advantage of offering a consistent multi-country view spanning decades with no official household surveys and where income tax records, if available at all, are of limited use owing to pervasive tax avoidance and evasion.[4]

Focusing on the top 10% is justified as this decile usually shows a contrasting behaviour when compared to the D9 decile; a contrast that is especially acute in Latin America.[5] The bottom 40% income share – dominated by the unskilled – has been overlooked in the long-term inequality literature largely because of data limitations (the poor do not file tax returns). This is unfortunate, as the income take of this group is of paramount importance for assessing the distributional impact of development. Indeed, the World Bank is now focusing officially on the outcome of the bottom 40% of the population in its assessment of welfare and inequality.

A key finding is that over the period 1900-2011 the top 10% income share averaged 51.3% and the bottom 40% share 13.2%, and that in the last thirty years the gap between both tails has widened (54.6% vs. 11.9%) despite narrowing trends in the 2000s. But both shares are far from constant and present important differences across countries. The underlying trend of the occupational structure is one of substantial social mobility and educational advances – in line with rising living standards – with a significant reduction in the labour share of the unskilled. However, skills upgrading has not been enough to alter significantly concentration at the top, or the income share of those at the bottom of the distribution in the LA-6. The combination of social mobility with a persistently high gap between both tails is largely the result of increases in the wage of the unskilled lagging behind advances in the overall average income.

The remainder of the paper is structured as follows. Section 2 summarises the methodology used to construct the distribution tables and briefly discusses underlying trends in the EAP and income ratios. Section 3 examines the trajectories of the top 10% and the bottom 40% income shares based on summary statistics and country charts. Section 4 offers concluding remarks. An Appendix includes tables with labour shares and income ratios by decades as well as details on estimation procedure and sources.

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[4] Owing to word limitations, here I offer a partial account of the distribution outcome based on fixed-EAP shares. A more detailed and extensive paper is forthcoming, including more attention to developments in the middle group and the role played by fundamental variables.
[5] According to Palma (2011) the Latin American average D10 in 2005 was 41.8%, compared to the average D9 of 15.8%. And the range on the income share of D9 in a sample of 135 countries in that year only expanded across 4.5 percentage points (from 13.2% to 17.7%), whereas D10 had a range ten times larger (20.8% to 65%). Also, the D10 tends to be highly correlated with overall personal income Ginis (Leigh, 2007; Székely and Hilgert, 1999).

2. Occupation-Based Income Groups

The starting point is the construction of dynamic distribution tables for the LA-6 based on estimates of income for four occupational groups, following the methodology in FitzGerald (2008).[6] For each country the EAP is divided into four groups: Group 1 (employers, managers, and professionals), Group 2 (technicians and administrators), Group 3 (semi-skilled blue collars workers, other urban workers in relatively low productivity sectors such as retailing and transport, and artisans), and Group 4 (rural workers and personal services – including domestic servants – plus unskilled urban workers). To ensure consistency with the overall EAP series, the labour force in Group 3 is calculated as a residual.[7] The groups' sizes change over time in response to developments in skills formation, demography, and living standards (Astorga *et al.*, 2005). The distribution of income per occupational category is defined as:

$$\sum_{i=1}^{4} e_i\, r_i = 1 \,, \tag{1}$$

where e_i is the EAP share of group *i* and r_i is the ratio of the mean income of group *i* to the mean income for the EAP as a whole (i.e., income per person engaged). The income share of each group (s_i) is obtained as $e_i r_i$.

The overall measure of income per person engaged reflects, where possible, the personal income concept of the national accounts (see Appendix). For the last thirty years or so there is enough data to account for net taxes. This is more problematic for the previous years, but in any case there was limited redistribution via direct transfers in the region during most of the 20th century (Goñi *et al.*, 2011). I am not considering the distributive impact of social spending (e.g., health and education). It has risen throughout the region since the 1980s, though exhibiting high volatility and following the swings in economic activity (Arroyo Abad and Lindert, 2016).

Ideally, income estimates should make allowances for the subsistence economy. However, there is little systematic and consistent evidence of the size of the subsistence economy (particularly important in the early decades of the 20th century), which could be used to make an adjustment (Berg, 1970). To the extent that the population in the subsistence sector is included in the population census, I am assigning them an income equal to the unskilled wage.

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[6] This method is akin to the construction of dynamic social tables (combining benchmark years from census data with annual data on income from other sources) used for Uruguay (Bértola, 2005), Chile (Rodríguez Weber, 2014), Brazil (Gómez León, 2016), and pre-industrial societies (Milanovic *et al.*, 2010; Lindert and Williamson, 1982).

[7] The labour shares of the four groups during the period 1950-2011 are estimated by aggregating categories for the distribution of the EAP by occupational categories sourced from the International Labor Organization (ILO). To complete the shares back from 1950 to 1900 I rely on changes in three indicators constructed by FitzGerald (2008). See Astorga (2015, Annex C) for more details.

Also difficult to obtain for most of the period are differences in employment levels across occupational groups. My calculation in each category assumes full-time pay rates and that unemployment was affecting all categories equally.

The income share for Group 1 (s_1) is calculated as a residual by subtracting the income shares for the other three groups:

$$s_1 = e_1 r_1 = \left\{ 1 - \sum_{i=2}^{4} e_i r_i \right\} \tag{2}$$

This share is likely to capture distributed property income and rents for all the EAP, together with earnings from highly paid workers.[8] Because of the way it is calculated, s_1 may be subject to a significant margin of error. However, in general, my estimates for the mean income of this group in the first half of the 20th century are consistent with data available on top earners (Astorga, 2015). To estimate mean income of the remaining three occupational groups I rely on wage series assembled to reflect differences in skills (see Appendix). No allowances are made for fringe earnings (e.g., overtime pay and productivity bonuses). However, Eriksson (1966) found that in Chile, Colombia and Venezuela in the middle decades of the last century skills differentials measured by total remuneration were either close to or greater than those measured in basic wages.

There is a potential bias when estimating s_1 according to (2). Since the average wage is taken as a proxy for average earnings of the three lower income groups (without discriminating between the employed and the unemployed in each group's EAP), at times of high unemployment, my series will overestimate r_2, r_3, r_4 and underestimate r_1 (as this is calculated as a residual) and thus underestimate the top-group share. This problem can be especially relevant during the early years of the Great Depression or during the outbreak of the Debt Crisis in the 1980s. In order to minimise the potential impact of this bias, I calculate deviations of the unemployment rate (when available) from an assumed long-term rate (as a proxy for the natural rate of unemployment) and then adjust my overall income per person engaged series accordingly.

Tables A1 and A2 in the Appendix presents a summary of the EAP shares and relative income ratios by decades. Differences among the countries' EAP shares are largely driven by variations in the urbanisation process, the timing of the structural change, and improvements in the education level of the labour

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[8] The long-term evidence in developed economies (Piketty, 2014) shows that income from property tends to be concentrated in the top group, which means that the understatement of property income of the middle and bottom groups is small. Natural resource rents – particularly important in Chile and Venezuela – are included to the extent that they are reflected in personal income, but not when they were used to finance publicly provided services.

force.[9] Broadly speaking, Argentina and Chile already had significant urban populations by 1900 reflected in relatively lower values for the economically active persons in Group 4 dominated by low paid workers in rural areas; whereas, according to these estimates, Brazil, Colombia, Mexico and Venezuela started the 20th century with shares for that group between 65% and 75%. All six countries had inflection points (preceding acceleration) in population growth in the 1930s and in urbanisation in the 1940s (earlier in Argentina).[10]

The relative income ratios for the top group tend to show high and rising values during the first half of the last century (especially in Brazil, Colombia, Mexico and Venezuela) and then a decline in the second half. The rising trend suggests a growing share of property income as a proportion of total income (though I lack the data to confirm this) and slow increases in the number of top earners. The falling trend reflects an increase in the numbers of EAP in that group after 1960 or so in line with better access to education and a rapid increase in income per person engaged between 1950 and 1970 in most countries (raising the denominator of the ratio).

Meanwhile, the ratios of the bottom group are dominated by a steady decline over the century. This is largely the result of increases in the wage of the unskilled lagging behind advances in the overall average income. Trends in the ratios of the two middle categories show mixed results. In most cases, the mean income of skilled workers (r_2) kept pace with the average income for the whole labour force, resulting in stable ratios. By contrast, the relative ratios of semi-skilled labour are dominated by a moderate falling long-term trend.

3. Fixed-EAP Income Shares

The next task is to derive an income distribution with fixed EAP shares for the top 10% (T10), the middle 50% (M50), and the bottom 40% (B40) from the above distribution structure with changing occupational shares. When $e_1 = 0.1$ (Group 1's EAP share) and $e_4 = 0.4$ (Group 4's) there is no need to reallocate EAP between the original occupational categories to obtain the three income shares. When this is not the case, an adjustment is needed involving two steps: first, identifying the part of the EAP that needs to be reallocated; second, assigning an appropriate income ratio to calculate its corresponding income contribution.

[9] According to Barro and Lee (2011) the average years of schooling in Argentina was 4.9 years in 1950, 7.3 years in 1980 and 9.5 years in 2010. The same figures in Brazil are 2.1, 3 and 7.9; in Chile 3.7, 7 and 9.8; in Colombia 2.3, 4.9 and 9; in Mexico 2.2, 4.9 and 8.8; in Venezuela 1.6, 5.3 and 8.4.
[10] The urbanisation rates in the 1920s and the 1970s are respectively: 38% and 81% in Argentina, 15% and 62% in Brazil, 38% and 79% in Chile, 15% and 61% in Colombia; 15% and 63% in Mexico, 24% and 76% in Venezuela (Astorga *et al.*, 2005).

For T10:

(3) $s_{10} = e_1{}^*r_1 + (0.1 - e_1){}^*r_{1under}$,   if $e_1 \geq 0.1$;
   $s_{10} = e_1{}^*r_1 + e_2{}^*r_2 + (0.1 - e_1 - e_2){}^*r_{2under}$, if $e_1 < 0.1$;

where r_{1under} and r_{2under} are the average relative income ratios of those individuals who are outside the top decile of the labour force in Group 1 and Group 2 respectively. When $e_1 > 0.1$ part of Group1´s EAP needs to be moved to the middle 50% and its corresponding income contribution calculated as $(0.1 - e_1){}^*r_{1under}$. And when $e_1 < 0.1$ part of e_2 needs to be reallocated so as to complete the top10% of the EAP, and its corresponding income contribution calculated as $e_2{}^*r_2 + (0.1 - e_1 - e_2){}^*r_{2under}$.

For B40:

(4) $s_{40} = e_4{}^*r_4 + (0.4 - e_4){}^*r_{3under}$, if $e_4 \leq 0.4$;
   $s_{40} = e_4{}^*r_4 + (0.4 - e_4){}^*r_{4over}$, if $e_4 > 0.4$;

where r_{3under} is the average relative income ratio of those in Group 3 who are included in the bottom four deciles of the labour force, and r_{4over} is the average relative income ratio of those in Group 4 who are outside the bottom four deciles.

M50 is calculated as a residual:

(5) $s_{50} = 1 - s_{10} - s_{40}$.

Ideally, the estimation of the *over* and *under* average relative ratios requires the income distribution within groups. In the absence of such information, r_{4over} and r_{3under} are calculated as the simple average of r_3 and r_4 (which in effect is the average of the semi and unskilled wage). Equally, r_{2under} is proxied by the simple average of r_2 and r_3 (skilled and semi-skilled wage). For r_{1under} – only needed, if at all, in the last two decades or so – the ratio of D9/D10 from household surveys is used (where typical values for the LA-6 are around 0.4).[11] Because of relatively low wage premiums between groups 2 and group 3 (average of 1.6 for the LA-6 over the whole period) and groups 3 and 4 (an average of 2), the additional margin of error introduced by using the single averages of adjacent income ratios is small. The potential distortions could be larger when estimating r_{1under}, but in this case there is good quality data to make the adjustment.[12]

3.1. Top 10% and bottom 40% income shares

Table 1 summarises results for T10, M50, and B40, as well as the ratio T10/B40 (equivalent to the Palma ratio) for the six countries and the LA-6 in the whole

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[11] The periods when $e_1 \geq 0.1$ are: Argentina after 1988, Chile after 1975, Colombia after 2002, Mexico after 2004, and Venezuela after 1973. The periods when $e_4 \leq 0.4$ are: Brazil after 1986, Chile after 1943, Colombia after 1980, Mexico after 1981, and Venezuela after 1956.

[12] For instance, a sensitivity analysis shows that a 10% reduction in the D9/D10 ratio (i.e., wider gap between both deciles) results in an extra 0.1 percentage points for LA-6 average of s_{10} over the whole period, and 0.2pp in 1980-2011; whereas a 10% rise in the average r_3 and r_4 ratios (i.e., increasing dispersion in low skilled wages) results in a cut of 0.3pp in LA-6 average of s_{40} over the whole period, and a 0.5pp rise in 1980-2011.

period and the sub-periods 1900-1940, 1940-1980, and 1980-2011. The circa years of 1940 and 1980 correspond to inflexion points (preceding an acceleration in the first date, and levelling off in the second) in the series of GDP per capita, literacy, and urbanisation in the LA-6 (Astorga *et al.*, 2005). This periodisation also reflects the adoption of particular growth strategies, and follows a tradition of economic historians studying the region (e.g., Bulmer-Thomas, 2005; Thorp, 1998).[13] The table also includes the coefficient of variation to measure dispersion by country in the three share series over the four periods, and in the LA-6 average.

In general, over the long run the region has exhibited high inequality, both in terms of high concentration at the top and a relatively low share of the bottom 40%. The average shares for the LA-6 over the whole period are 51.3% for T10 and 13.2% for B40 (and a Palma ratio of 3.9). The region's T10 long-term average is above the 50% "high inequality" outcome estimated by Piketty in US around 2010 and in Europe around 1910 (Piketty, 2014, Table 7.3). But a crucial difference is that the LA-6 as a group did not experience the inequality levelling seen in the rich economies, particularly in the period 1940-1970. At the bottom end of the distribution, the LA-6's B40 long-term average (13.2%) is below the average 16.6% reported in Palma (2011) for a sample of 133 countries in 2005.

Table 1: Fixed-EAP Income Shares, 1900-2011

	T10	M50	B40	T10/B40	T10	M50	B40	T10	M50	B40	T10/B40	T10	M50	B40
	(share %)			(ratio)	(coefficient of var.)			(share %)			(ratio)	(coefficient of var.)		
	1900-2011							**1900-1940**						
Argentina	51.8	33.2	15.0	3.5	0.08	0.12	0.13	52.9	31.9	15.2	3.5	0.08	0.12	0.11
Brazil	49.2	38.9	11.9	4.1	0.14	0.15	0.34	42.7	45.2	12.1	3.5	0.09	0.10	0.30
Chile	55.1	32.1	12.8	4.3	0.11	0.13	0.24	52.8	31.6	15.6	3.4	0.08	0.13	0.14
Colombia	53.6	34.3	12.2	4.4	0.10	0.15	0.15	49.6	39.2	11.2	4.4	0.09	0.11	0.19
Mexico	51.8	33.5	14.7	3.5	0.12	0.12	0.24	44.8	35.3	19.9	2.2	0.10	0.11	0.08
Venezuela	46.5	41.7	11.8	3.9	0.11	0.15	0.25	44.1	46.2	9.7	4.6	0.08	0.07	0.07
LA-6	51.3	35.5	13.2	3.9	0.11	0.14	0.22	48.3	37.9	13.8	3.5	0.09	0.11	0.15
coeff. variation	0.06	0.11	0.11					0.09	0.17	0.27				
	1940-1980							**1980-2011**						
Argentina	51.2	32.9	15.9	3.2	0.08	0.08	0.14	51.0	35.4	13.7	3.7	0.09	0.11	0.08
Brazil	51.4	34.6	13.9	3.7	0.10	0.08	0.31	54.5	36.7	8.7	6.2	0.08	0.08	0.19
Chile	53.4	34.0	12.5	4.3	0.13	0.14	0.19	60.2	30.1	9.7	6.2	0.04	0.07	0.07
Colombia	56.0	31.7	12.3	4.6	0.08	0.12	0.11	55.5	31.2	13.3	4.2	0.06	0.08	0.07
Mexico	52.7	33.3	14.1	3.7	0.10	0.12	0.14	55.5	32.6	11.9	4.7	0.06	0.11	0.20
Venezuela	45.7	42.2	12.1	3.8	0.10	0.14	0.28	50.7	35.0	14.3	3.5	0.12	0.12	0.14
LA-6	51.7	34.8	13.5	3.8	0.10	0.11	0.19	54.6	33.5	11.9	4.6	0.07	0.10	0.12
coeff. variation	0.07	0.11	0.11					0.06	0.08	0.19				

LA-6: simple averages; 1900-2011 and 1900-1940 exclude Mexico prior to 1920. Mexico 1900-2011 and 1900-40 start in 1920.

[13] Roughly speaking, 1900-1940 includes the end of the first globalization wave (about 1860-1915) and the transition years of the 1920s and 1930s; 1940-1980 the core years of state-led industrialisation years under protection (ISIS); and 1980-2011 the second wave of export-led growth accompanied with a trade liberalisation and market-friendly reforms (in some countries such as Chile and Argentina starting in the 1970s). Alternative cut-off points in 1935 and 1975 do not alter significantly the results shown in Table 1.

   Other outcomes to highlight are that the average top-bottom ratio widens across the three sub-periods, from 3.5 to 3.8 and, then to 4.6;[14] and that inequality worsens between the start and the end of the 20th century (not shown in Table 1): the average in the LA-6 for T10 and B40 around 1900 were 46.3% and 13.8% respectively; by 2000 they were 54.4% and 11.7%. The information provided by the coefficient of variation by country and period shows a contrast between a more volatile trajectory for B40 than T10 or M50 in all four periods.[15] But, in all six countries and in the three shares the period 1980-2011 tend to have the lowest volatility. It is also interesting to notice that, when compared with the whole period, the distribution in the last 30 years is both more polarised within countries (i.e., higher T10/B40 ratios) and homogeneous across countries (lower LA-6 coefficients of variation for the three shares).

   Additional statistics indicate that fluctuations in T10 are negatively correlated with those in M50 (an average -0.87 pair correlation for the LA-6 over the whole period) and in B40 (-0.41). This indicates that relative gains/losses at the top were at the expense/benefit of, first, the middle group, and then, the bottom group. The LA-6 correlation between M50 and B40 over the whole period is low (-0.04) but with mixed signs by country: positive in Chile (0.34), and Mexico (0.32); close to zero in Argentina; and negative in Brazil (-0.11), Colombia (-0.23), and Venezuela (-0.57).

3.2. By-country outcome and comparison with alternative estimates

   Figure 1 presents annual T10 and B40 series for the six countries. For the more recent decades it includes both the top 10% and the bottom 40% shares of the population based on official household surveys (D10 and D1-D4 respectively). In addition, it shows alternative historical estimates with more detailed information than mine: Bértola *et al.* (2010) in 1920 for Brazil and Chile based on population census, and Argentina (under some assumptions); Rodríguez Weber (2015) for Chile circa 1902, 1934 and 1968 using dynamic social tables; Londoño (1995) for Colombia in 1938, 1950, 1964, 1971, and1988 using a combination of national accounts data and employment and household surveys; Mexico in various years between 1950 and 1977 using data from official surveys (not always fully compatible) reported in Hernández and Córdoba (1979); Baptista (1997) between 1975 and 1989 for Venezuela based on official surveys covering only labour income.

   There are important differences across countries and over time to highlight. Argentina and Colombia exhibit relatively more stable trajectories for B40; whilst Chile shows a more gradual decline of B40 and rising trend in T10 over the whole period. Brazil and Mexico are cases in which B40 switches from a

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[14] The LA-6 averages for 1980-2000 are 55.8% for T10 and 11.8% for B40, and a Palma ratio of 4.7.
[15] However, the average standard deviation (absolute dispersion) for LA-6 over the whole period is 0.06 in T10 and 0.03 in B40.

high to a lower level during the second half of the last century. A relatively low T10 and high B40 share in Brazil up to 1950 are likely to reflect a distributional structure of a largely rural society – although, already by 1920, there was a significant presence of blue collar workers in Rio de Janeiro and São Paulo (Owensby, 1999, 29) – dominated by unskilled labour and with a low mean income per capita.[16]

Mexico shows an exceptional rise in B40 over the two decades following the Revolution.[17] This was followed by a sudden drop in this share in the 1940s and a peak in T10. This outcome is associated with the surge of business opportunities in the country created by the war effort in the US amid subdued wages, boosting T10 partly at the expense of B40. In the 1950s and 1960s, favourable minimum wage policies and high unionisation rates contributed to a long spell of wage compression (Márquez Padilla, 1981) resulting in a rising B40.

In general, the 1950s (later in Mexico) mark the beginning of a secular rise in the T10s that extends up to the 1990s (late in the 1970s in Argentina). This, together with a tendency for constant or declining trends in B40, resulted in a widening of the gap between both tails. Such an outcome can be associated with an acceleration of urbanisation and industrialisation generating downward pressures on unskilled wages (of increasingly urban workers), whilst relative skills scarcity boosted skill premiums. Institutional and demographic changes are also likely to have played their part in explaining the widening distributional gap in the closing decades of the last century.

The military regimes in Argentina (1976-1983), Chile (1973-1990), and Brazil (1963-1980) effectively restricted – or banned – the action of unions, increased flexibility in the labour market, and reduced the coverage of the minimum wage as part of the reform agenda (Morley, 2000).[18] More generally, unionisation plummeted across the region averaging only 10.7% of the workforce by 2005 compared to a peak of 23% in the 1970s (Roberts, 2012). ECLAC (2016) shows a 5.9% decline in the average real minimum wage for the LA-6 during the 1980s, followed by a moderate recovery of 1.7% annual increase in the 1990s. In addition, the delayed impact on the labour force of high population growth rates in the 1950s and 1960s (Argentina is the exception), together with increasing participations rates – particularly female rates

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[16] According to the 1920 population census, about 80% of the labour force in Brazil was rural, illiterate, and low skilled (Bértola *et al.*, 2009). Brazil's income per capita around 1920 is estimated as a third of Argentina's (Astorga *et al.*, 2005). Recent outcomes in India and Sub-Saharan Africa (excluding Southern Africa), may offer a parallel to Brazil a century ago. In India T10 and B40 in 2005 are about 32% and 19% respectively; and in Sub-Saharan Africa 34% and 15% (Palma, 2011). My shares for Brazil around 1920 are 44% for T10 and 12% for B40, whilst those of Bértola *et al.* (2010) are 48% and 7% respectively.

[17] The 1917 Constitution set new minimum wage levels as well as profit sharing. Higher real wages and living standards were priorities for the post-Revolution government (Bortz, 2005).

[18] Indeed, in those periods under military juntas the Palma ratios reached extreme values: 4.6 in Argentina; 5.7 in Brazil; and 6.3 in Chile.

– also undermined the unskilled wages and the share of the bottom 40%.[19] The effects of these underlying trends in the labour market were compounded by a wave of deregulation and privatisations that shifted a proportion of formal employment to an already large informal sector (PREALC, 1982).

Regarding a comparison with alternative historical estimates, Argentina in 1920 shows similar gaps between both tails, but my shares are higher for T10 (53% vs. 46%) and B40 (14% vs. 8%), implying a lower income weight for the middle groups in my estimates. Chile shows a matching rising trends in T10 to mid-1930s with the T10/B40 ratios relatively close to those estimated by Rodríguez Weber. In Colombia, there is a dominance of a constant trend between 1938 and 1988 for B40 in both estimates (also with similar levels). And there is coincidence in trends in the top tail, but my shares are consistently higher compared to Londoño´s in the period of 1938-1988 (on average, 55% vs. 40%). In Venezuela, there is a coincidence in trends in T10 after 1980; whilst my B40 estimates show higher fluctuations. Baptista´s top-tail shares are consistently lower (on average, 30.5% vs. 51%), which is to be expected, as his estimates are based on surveys covering only labour income.

Finally, the comparison of my shares and equivalent figures calculated from official household surveys shows two regularities. First, a coincidence in trends at both tails which gives some reassurances that the new historical estimates can be reasonably good proxies of distributional outcomes in decades without household surveys. In particular, the narrowing of the gap between both tails captures the impact of recent redistribution policies (largely in the 2000s) and developments in the labour market (e.g., lower unemployment and narrower skills premiums).[20] Secondly, while B40 and D1-D4 show similar levels, T10 is consistently above D10 in four of the six countries, suggesting a structural underestimation of the D10 in household surveys; a feature documented by Székely and Hilgert (1999) in a large sample of Latin American countries in the 1990s.

[19] According to my calculations based on official figures, the population in the LA-6 (simple averages) grew 74% between 1950 and 1970, and 56% between 1970 and 1990. The corresponding growth rates for the EAP are 64% and 85%. The same calculations for the 1930-1950 period shows a more even process with population and EAP growth both at 57%. As to female participation rates, there were few changes in 1940-1970, and an explosive growth in participation from 1970 to 2000 (Camou and Maubrigades, 2016).
[20] Azevedo *et al.* (2013) looks at the factors behind the recent decline in income inequality in fourteen countries in the region (Venezuela is excluded). The key factor has been relatively strong growth in labour income for low-income workers. On average, 45% of the reduction in the Gini coefficient is attributed to this factor; whereas changes in government transfers contributed, on average, 14% and changes in pensions 7%.

Figure 1: Top 10% and Bottom 40% Income Shares by Country, 1900-2011
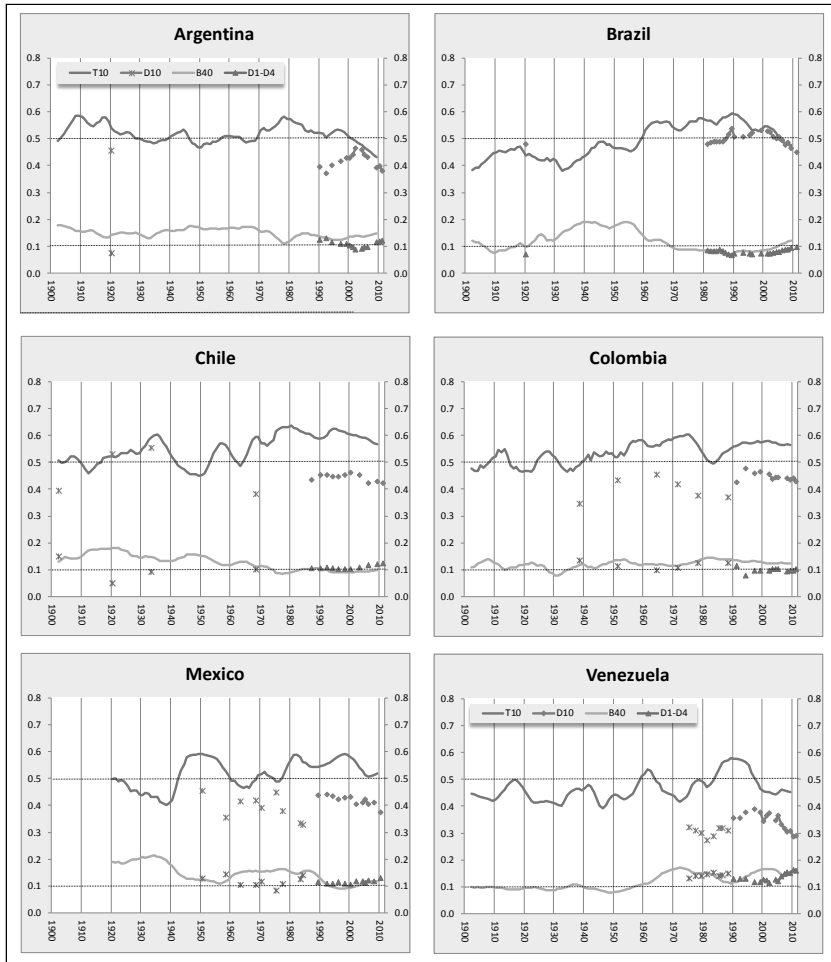
All five-years moving average shares.

Sources: for T10 and B40, Bértola *et al.* (2010) for Argentina, Brazil, and Chile in 1920; Rodríguez Weber (2014) for Chile in 1902 (1900-05 average), 1934 (1929-35 average), 1968 (1965-71 average); Londoño (1995) for Colombia in 1938, 50, 64, 71, 78, 88. Hernández & Córdoba (1979) for Mexico 1950, 58, 63, 68, 70, 77. Baptista (1997) for Venezuela in 1976-1989. For D10 and D1-D4 compatible official household surveys: CEDLAS (2016) for Brazil 1981-1990 and Chile 1987. Otherwise, ECLAC (2016).

4. Conclusions

This paper offers for the first time a long-run account of Latin American inequality based on estimates for the top 10% and the bottom 40% income shares. The methodology and data have limitations, particularly the use of few occupational categories to calculate labour shares and lack of direct estimates on non-labour income. But, given the difficulties of using income tax records and the reduced availability of household surveys prior to 1970 or so, it is a valid option to shed light on long-run inequality in the region. I hope that future research, particularly at a country level, will improve these crude estimates and confirm – or reject as the case may be – the findings of this work.

There are two historical regularities to highlight: a persistent high income concentration at the top 10% EAP share (receiving an average income share of 51.3%) and a low share of income going to the bottom 40% (13.2%), with the gap between both income shares experiencing a gradual increase since the 1950s. Concentration at the top in the LA-6 is similar to that estimated in the Belle Epoch in rich countries. This evidence also shows the absence of a shared inequality levelling in the middle decades of 20th century (coinciding with the ISIS in the LA-6) as experienced in the rich economies.

Skills upgrading and labour mobility were significant, picking up from the 1950s in response to important efforts to expand public education. Those able to acquire more skills and move upwards in the distribution did rather better than the unskilled. However, at least until 2000, this process of skills upgrading was not enough to drive a secular decline in top 10% shares; nor a sustained improvement of the income share of those at the bottom. High concentration at the top is also a feature of recent studies based on tax records, whereas relatively low income shares of the bottom 40% are consistently reported in official household surveys since the 1980s.

The new long-term evidence confirms that the recent shared decline in inequality has no precedent in the 20th century; but it also shows that, as in the past, high concentration at the top and a relatively low-income share of the bottom 40% continue to be the region's inequality trademark. With the end of the commodity boom – which undermines the funding of recent progressive social policies and employment creation – preserving recent equality gains calls for greater redistribution efforts.

References

Alvaredo, F. (2010): "*The rich in Argentina over the twentieth century 1932-2004*". In Atkinson, A. and Piketty, T. (eds.) *Top Incomes vol. II: A Global Perspective*, Oxford University Press.

Alvaredo, F. and Londoño Vélez, J. (2013): "*High income and personal taxation in a developing economy: Colombia 1993-2010*", CEQ wp 12.

Arroyo Abad, L. and Lindert, P.H. (2016): "*Fiscal redistribution in Latin America since the nineteenth century*", GPIH wp 19.

Astorga, P. (2016): "*Functional inequality in Latin America: news from the twentieth century*". In Bértola, L. and Williamson, J.G. (eds.) *Has Latin American Inequality Changed Direction? Looking over the Long Run*, Forthcoming, Springer Publishing.

Astorga, P. (2015): "*Functional inequality in Latin America: news from the twentieth century*", Discussion Papers in Econ. and Social History, Oxford University, 135.

Astorga, P. Bergés, A.R. and Fitzgerald, E.V.K. (2005): "*The standard of living in Latin America during the twentieth century*", The Economic History Review, 59 (1), 765–796.

Atkinson, A., Piketty, T. and Saez, E. (2011): "*Top incomes in the long run of history*", Journal of Economic Literature 49(1), 3-71.

Azevedo, J.P. Inchauste, G. and Sanfelice, V. (2013): "*Decomposing the recent inequality decline in Latin America*", Policy Research Working Paper 6715. The World Bank.

Banco Central de la República Argentina (BCRA) (1976): *Series Históricas de Cuentas Nacionales de la Argentina*. Publicaciones BCRA.

Baptista, A. (1997): *Bases Cuantitativas de la Economía Venezolana*, 1830–1995, Ediciones Fundación Polar: Caracas.

Barro, R. and Lee, J.W. (2011): International Data on Educational Attainment: Updates and Implications. Available at: www.barrolee.com/

Berg, E.J. (1970): "*Wages and employment in less developed countries. Center for Research on Economic Development*", Discussion Paper 13. University of Michigan.

Bértola, L. (2005): "*A 50 años de la curva de Kuznets: crecimiento y distribución del ingreso en Uruguay y otras economías de nuevo asentamiento desde 1870*", Investigaciones en Historia Económica, 3, 135-176.

Bértola, L. Castelnovo, C. Rodríguez Weber, J. and Willebald, H. (2010): "*Between the colonial heritage and the first globalization boom: on income inequality in the southern cone*", Revista de Historia Económica 20(2), 307-41.

Bértola, L. Castelnovo, C. and Willebald, H. (2009): "*Income distribution in Brazil 1870-1920*", paper presented at the Conference "A Comparative Approach to Inequality and Development: Latin America and Europe", Universidad Carlos III, Madrid, May 8-9.

Bortz, J. (2005): "*Earning a living. A history of real wage studies in twentieth-century Mexico*", Latin American Research Review, 41(2), 112-138.

Bulmer-Thomas, V. (2013): *The Economic History of Latin America since Independence*, Oxford University Press, Oxford

Camou, M. and Maubrigades, S. (2016): "*The lingering face of gender inequality in Latin America*". In Bértola, L and Williamson, J.G. (eds.) *Has Latin American Inequality Changed Direction? Looking over the Long Run*, Forthcoming, Springer Publishing.

CEDLAS (2016): Bases de datos. URL: http://cedlas.econo.unlp.edu.ar/ Data accessed: January 10, 2016.

ECLAC (2016): CEPALSTAT|Database. Data accessed: January 10, 2016.

ECLAC (2000): *Panorama Social in América Latina*. Santiago de Chile.

Ericksson, J.R. (1966): *Wage Structures and Economic Development in Selected Latin American Countries*, Ph.D. Dissertation, University of California, Berkeley.

FitzGerald, V.F.K. (2008): "*Economic development and fluctuations in earnings inequality in the very long run: the evidence from Latin America 1900-2000*", Journal of International Development 20, 1028-1048.

Frankema, E. (2010): "*Reconstructing labor income shares in Argentina, Brazil and Mexico 1870-2000*", Journal of Iberian and Latin American Economic History 28(2): 343-374.

Gasparini, L., Cruces, G. and Tornarolli, L. (2011): "*Recent trends in income inequality in Latin America*", Economía, 10, 147-201.

Gómez León, M. (2016): *Growth, Inequality and the Rise of the Middle Class, Brazil*, Ph.D. Dissertation. Universidad Carlos III, Madrid.

Goñi, E. Lopez, J.H. and Serven, L. (2011): "*Fiscal redistribution and income inequality in Latin America*", World Development 39:1558-1569.

Hernández Laos, E. and Córdoba Chávez, J. (1979): "*Estructura de la distribución del ingreso en México*", Comercio Exterior, 29(5), 505-520.

International Labor Organization (1964-1982): *Yearbook of Labor Statistics*, ILO Publications: Geneva.

Leigh, A. (2007): "*How closely do top incomes shares track other measures of inequality?*", The Economic Journal, 117, 589-603.

Lindert, P. and Williamson, J.G. (2016): *Unequal Gains: American Growth and Inequality since 1700*, Princeton University Press.

Lindert, P. and Williamson, J.G. (1982): "*Revising England's social tables 1688-1812*", Explorations in Economic History 19: 308-402.

Londoño, J.L. (1995): *Distribución del Ingreso y Desarrollo Económico: Colombia en en Siglo XX*, Santafé de Bogotá. Tercer Mundo Editores.

López Calva, L.F. and Lustig, N. (2010): *Declining Inequality in Latin America: A Decade of Progress?*, UNDP and Brookings Institution.

Márquez Padilla, C. (1981): "*Nivel del salario y dispersión de la estructura salarial (1939-1977)*", Economía Mexicana, 3: 53-54.

Milanovic, B. Lindert, P. and Williamson, J.G. (2010): "*Pre-industrial inequality*", Economic Journal 121: 255–272.

Morley, S.A. (2000): "*The effects of growth and economic reform on income distribution in Latin America*", CEPAL Rev 71: 23-40

Owensby, P. (1999): *Intimate Ironies. Modernity and the Making of a Middle-Class Lives in Brazil*, Stanford, California: Stanford University Press.

Palma, J.G. (2011): "*Homogeneous middles vs. heterogeneous tails, and the end of the "inverted-U": it´s all about the share of the rich*", Develop. and Change 42(1): 87-153.

Piketty, T. (2014): *Capital in the Twenty-First Century*, Harvard University Press.

PREALC (1982): *Mercado de Trabajo en Cifras. 1950-1980*, PREALC publications.

Roberts, K.M. (2012): "*The politics of inequality and redistribution in Latin America's post-adjustment era*", UNU-WIDER wp 2012/8.

Rodrīguez Weber, J. (2014): *La Economía Política de la Desigualdad de Ingreso en Chile*, Doctoral thesis, Universidad de la República de Uruguay.

Rodrīguez Weber, J. (2015). "*The political economy of the top 1% in an age of turbulence: Chile 1913-1973*", Documentos de trabajo 41, Universidad de la República.

Souza, P.H.G.F. and Medeiros, M. (2015): "*Top income shares and inequality in Brazil, 1928-2012*", Journal of the Brazilian Sociological Society, 1 (jul-dec), 119-132.

Székely, M. and Hilgert, M. (1999): "*What's behind the inequality we measure: An investigation using Latin America data*", IADB wp 409.

Thorp R. (1998): Progress, Poverty and Exclusion: An Economic History of Latin America in the 20th Century, Inter-American Development Bank publications

Valecillos, H. (2007): *Crecimiento Económico, Mercado de Trabajo y Pobreza. La Experiencia Venezolana en el Siglo XX*, Ediciones Quinto Patio, Caracas.

Appendix

Table A1: Employment shares by occupational categories by decades

	Argentina				Brazil				Chile			
	e_1	e_2	e_3	e_4	e_1	e_2	e_3	e_4	e_1	e_2	e_3	e_4
1900	4.0	14.6	42.4	39.0	3.5	6.7	17.3	72.5	6.0	7.0	44.9	42.1
1910	4.1	15.0	46.6	34.3	3.6	7.3	18.1	70.9	6.8	7.0	44.1	42.1
1920	4.3	15.6	44.9	35.2	3.9	7.9	19.2	69.0	5.1	6.9	46.1	41.9
1930	4.4	16.7	43.6	35.2	3.9	6.6	22.8	66.7	4.7	7.0	45.3	43.1
1940	4.6	18.4	43.4	33.6	3.9	7.7	23.9	64.5	5.5	7.3	46.2	40.9
1950	5.1	17.6	51.9	25.5	3.9	9.3	26.4	60.4	5.6	8.4	48.2	37.7
1960	6.2	18.1	54.5	21.2	4.0	10.4	30.0	55.5	7.5	8.8	51.2	32.5
1970	6.7	20.2	53.3	19.8	4.6	10.9	35.1	49.5	8.4	13.1	54.0	24.5
1980	8.3	21.4	53.0	17.3	6.5	11.8	38.3	43.4	9.6	15.9	51.8	22.7
1990	10.4	26.0	47.0	16.6	6.7	13.7	44.0	35.6	12.1	14.7	50.6	22.7
2000	12.1	25.2	47.6	15.1	7.9	13.4	46.8	31.9	13.7	17.0	47.3	22.0
2010	11.4	25.4	46.3	16.9	8.4	13.0	51.8	26.7	14.5	16.5	49.0	20.1
	Colombia				Mexico				Venezuela			
	e_1	e_2	e_3	e_4	e_1	e_2	e_3	e_4	e_1	e_2	e_3	e_4
1900	6.2	5.1	23.2	65.5	3.3	4.9	21.0	70.8	4.1	6.4	19.8	69.6
1910	6.2	5.0	25.6	63.1	3.5	4.6	21.0	70.8	4.1	6.2	24.9	64.8
1920	6.0	4.5	28.9	60.7	3.5	4.8	20.9	70.8	4.6	6.3	29.1	60.0
1930	5.9	5.1	30.4	58.6	3.3	5.1	21.5	70.1	4.2	6.9	33.2	55.6
1940	5.7	5.4	32.0	56.9	2.9	5.6	25.5	66.0	4.2	7.5	37.9	50.3
1950	6.1	8.7	33.2	52.0	2.9	6.5	26.7	63.9	5.7	8.7	42.4	43.2
1960	7.3	9.9	33.9	48.9	4.0	8.0	32.6	55.3	5.8	11.1	45.2	37.8
1970	7.8	12.7	35.3	44.1	6.1	9.6	38.3	46.0	9.2	16.4	46.5	27.9
1980	7.5	13.9	38.8	39.8	7.2	11.4	40.8	40.5	12.5	17.4	45.9	24.3
1990	8.4	14.5	41.0	36.2	8.3	12.8	41.0	38.0	13.7	17.5	45.6	23.2
2000	9.1	14.0	40.9	36.0	9.5	14.1	43.9	32.4	12.3	17.5	46.5	23.7
2010	11.1	15.0	43.3	30.7	10.0	14.8	47.8	27.4	14.1	15.3	47.8	22.7

All figures in percentages (%) and are three years averages except those for 1900 based on two years.

Sources: Benchmark figures circa 2000 are from ECLAC (2000), except for Argentina which are based on ILO's data.

Table A2: Relative income ratios by occupational categories by decades

	Argentina				Brazil				Chile			
	r_1	r_2	r_3	r_4	r_1	r_2	r_3	r_4	r_1	r_2	r_3	r_4
1900	10.8	0.76	0.68	0.44	7.4	1.81	1.10	0.59	7.4	1.46	0.72	0.31
1910	13.3	0.63	0.49	0.37	9.2	1.72	1.09	0.48	6.0	1.51	0.72	0.40
1920	11.7	0.70	0.60	0.33	9.2	1.25	1.05	0.49	9.4	0.96	0.58	0.45
1930	10.0	0.83	0.70	0.32	9.0	1.07	0.99	0.53	9.5	1.50	0.63	0.38
1940	9.7	0.79	0.66	0.37	9.6	1.00	0.75	0.58	8.4	0.84	0.72	0.35
1950	8.2	0.92	0.64	0.32	9.6	1.30	0.69	0.53	6.7	1.18	0.77	0.35
1960	7.5	0.82	0.58	0.35	11.1	1.25	0.70	0.39	6.6	0.99	0.65	0.26
1970	7.2	0.84	0.56	0.31	10.7	0.99	0.78	0.30	6.8	0.92	0.51	0.21
1980	6.3	0.72	0.56	0.17	8.3	0.98	0.64	0.23	6.5	0.62	0.48	0.14
1990	5.1	0.72	0.52	0.24	8.1	0.93	0.62	0.15	5.1	0.71	0.48	0.19
2000	4.4	0.76	0.50	0.24	6.1	1.20	0.65	0.16	4.9	0.60	0.42	0.16
2010	3.9	0.97	0.56	0.28	5.1	1.21	0.69	0.22	4.3	0.69	0.45	0.17
	Colombia				Mexico				Venezuela			
	r_1	r_2	r_3	r_4	r_1	r_2	r_3	r_4	r_1	r_2	r_3	r_4
1900	6.1	2.35	1.00	0.41	8.8	1.78	1.00	0.59	7.4	2.47	1.22	0.42
1910	7.1	1.93	0.77	0.41	12.3	1.48	0.68	0.50	6.7	2.39	1.20	0.43
1920	6.9	1.43	0.94	0.42	13.5	0.97	0.42	0.56	7.6	1.77	1.06	0.38
1930	7.9	1.32	0.96	0.30	10.5	1.85	0.75	0.57	6.8	1.95	1.12	0.36
1940	8.2	1.12	0.80	0.38	10.4	1.79	0.93	0.55	9.2	1.40	0.92	0.31
1950	7.5	1.07	0.70	0.40	17.1	1.07	0.65	0.38	6.4	1.36	0.96	0.23
1960	7.3	1.09	0.60	0.33	10.6	1.05	0.78	0.42	8.2	1.14	0.66	0.26
1970	7.0	1.02	0.56	0.29	8.0	0.96	0.64	0.40	4.4	1.23	0.70	0.34
1980	6.4	0.98	0.61	0.36	7.7	0.83	0.49	0.38	4.3	1.00	0.45	0.34
1990	6.1	0.93	0.57	0.34	6.0	1.07	0.61	0.30	4.8	0.66	0.38	0.22
2000	6.0	0.91	0.54	0.30	5.7	1.01	0.57	0.19	4.0	0.99	0.53	0.34
2010	5.3	0.81	0.48	0.27	5.3	0.96	0.57	0.22	3.6	0.86	0.62	0.28

All figures are three years averages except those for 1900 based on two years. Income ratios are calculated using estimated personal income per person engaged in the denominator.

NOTES ON ESTIMATION PROCEDURE AND DATA SOURCES

Economically active population shares: see Astorga (2015, Annex C).

Overall income: when available, I use national accounts estimates of house-hold incomes (HI). When this is not available, I use data on compensation of employees (CE) and apply a scaling factor (SF) to derive estimates for HI. The SF is calculated for adjacent years with data on both HI and CE. Otherwise indicated, the source for HI and CE is ECLAC. To go back and forth from the years with HI or CE, I use the rate of growth of national income or, if not avail-able, GDP (see Astorga, 2015, Annex C). Details by country are as follows: Argentina: in 1935-1962 uses CE sourced from BCRA (1976), and then ap-plies SF = 0.52 (the average SF for the remaining five countries in years with full data). Brazil: HI in 1970, 1975, 1980, 1985, 2000-2009. Between 1990 and 2000 a SF = 0.47 (the value circa 2000) is applied to CE. In 1947-1970 CE is estimated by applying labour income shares in Frankema (2010) to GDP series (IBGE). Chile: HI in1970-73 and 1996-2011. In 1960-1969 and 1974-1995, HI uses SF = 0.44 (circa 1996) applied to CE. Colombia: HI in 1970-2011. Mexico: HI in 1993-2011. In 1970-1992, HI uses SF = 0.39 (circa 1993) to CE. Venezuela: HI in 1960-1970 and 1978-2007. In 1970-1978, HI uses SF = 0.64 (circa 1978) to CE. In 1936-1960 CE is derived from private con-sumption sourced from Valecillos (2007) and BCV; and then HI uses SF = 0.67 (circa 1960). Years between 2000 and 2003 are interpolated to avoid the distortion caused by the oil strike.

Wage series: these wage series were assembled with the aim of reflecting different skill levels and of making them as comparable as possible across the six countries and overtime. However, it needs to be stressed that all series are subject to estimation problems – with different degrees of severity depending on the country –with changes in definitions, sources, and coverage over time. Comparable wage levels are set in the core period of 1965-1980 (using the same source and definitions) and the series are completed back and forth us-ing rate of growth of wage series from other sources.

• For the unskilled workers: weighted average of the monthly national wage for the unskilled worker in agriculture and the minimum urban real wage from PREALC (1982). The weights reflect rural/urban shares in the low income EAP group also from PREALC.

• For semi-skilled workers: the average hourly wage in the construction indus-try collected in ILO's October Enquiry, Part I. In most cases the average is cal-culated from seven occupations (bricklayers & masons, structural iron workers, concrete workers, carpenters and joiners, painters, plumbers and electrical fitters).

• For relatively skilled workers: monthly wages for clerks available in ILO's October Enquiry, Part II, or average wages in manufacturing from PREALC (1982) otherwise.

Regarding rate of growth, Group 2 uses series of manufacturing wages (in most cases average monthly values) and, when this is not an option, wages of mid-range officers in the public sector (e.g. Colombia). Group 3, in gen-

eral, uses average wage series in the construction sector or in retailing. For Argentina: average wages of non-agricultural sectors (excluding government) pre-1965. Chile pre-1930: wages in low productivity sectors (food and drinks and textiles). For Group 4 prior to1965, primarily uses rural daily wages for unskilled workers, complemented in some cases by wages for unskilled government employees (e.g. Colombia). And in the post-1980 period uses a combination of rural and urban minimum wages, or average wages in retailing and personal services. Full details on sources and procedure will be included in a forthcoming publication. Please contact the author for more details.