

Top Incomes in Mexico in the Twentieth Century: A First Exploration

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January 19, 2023

Abstract

This paper presents new estimates on income concentration in Mexico for 1927 and 1970 based on newly digitised tax records. The findings confirm that Mexico's inequality was persistent and high in the twentieth century. Income was highly concentrated in the top 1 per cent. In 1927 and in 1970, 15.4% and 18.4% of the national income, respectively, was concentrated in this percentage. I also calculate the income concentration for the merchant elite who were subject to income tax. The findings show that in this group of the elite, too, was concentrated around 3% to 5% of the national income over the same period. The results find support in Williamson's explanation for the economic backwardness of countries in Latin America, where income distribution did not improve in the mid-twentieth century as it did in most of the world during the "*Great Egalitarian Leveling*".

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1 Introduction

One of the most salient features of modern economies is the income concentration at the top of the income distribution. What are the causes of persistent uneven income and wealth distribution? Some answers have been provided over time. On one side, there is a pessimistic view where the accumulation of private capital will result in a few individuals concentrating most of their wealth in a country (Marx, 1959). On the other side, a more optimistic view states that technological change and its underlying economic growth will result in lower inequality; therefore, a more equitable distribution of incomes will occur as far as the economy is in a later stage of development (Kuznets, 1955). Recent and systematic evidence suggests that, in fact, *“there is no natural, spontaneous process to prevent destabilising, inequalitarian forces from prevailing permanently”* (Piketty, 2014).

Mexico’s present income concentration figures point towards a pessimistic view. The country stands as one of the most unequal countries on the globe. The bottom 50% of the population owns 9.2% of the total income, while the top 10% concentrates 57.4% (Chancel et al., 2022). These figures imply that economic growth is far from being evenly distributed. Moreover, Mexico has been characterised as a Classical Capitalism type economy (Ranaldi and Milanovic, 2020) in which today’s capital and labour incomes are earned by different groups, implying that most capitalists may be richer than any worker in Mexico.

Is this a recent economic phenomenon rather than Mexico’s economic development feature over time? Evidence points out a high inequality level regardless of the epoch. This was the case in pre-industrial Mexico (Milanovic et al., 2011), from the nineteenth to twentieth-century (Castañeda Garza and Bengtsson, 2020; Székely, 2005), or in the recent decades of the twenty-first-century (Lustig et al., 2013). However, all these studies miss an important piece of data information to our understanding of inequality in Mexico’s twentieth century: tax tabulations to calculate the incomes at the top. Consequently, no single estimations in Mexico employ tax tabulations to address the income shares at the top of the twentieth century.

Based on the digitisation and transcription of income tax tabulations, this study answers three questions: (1) how much income is concentrated in the top one per cent over the twentieth century in Mexico? (2) how do these estimates inform about the inequality in the long-term trends and levels that have been estimated before with and without data that misses the top earners? and (3) how do these estimates compare with top income shares estimated in Latin American countries and advanced economies? I address these questions in this chapter by providing evidence for the first time of the income shares at the top from

tax tabulations.

The results show that the top one per cent shares from 1927 to 1970 have been stable. My findings show that the top 1% income share in 1927 and 1970 was about 15.4% and 18.4%, respectively. These concentration levels from a century ago are similar to those estimated for 2012, where the top 1% concentrates 13.6% ([Sandoval-Olascoaga, 2015](#)). The World Inequality Lab reports 29.6% for the same year. Regarding the top 0.1%, the results from 1970 are similar to the ones observed in 2012 ([Sandoval-Olascoaga, 2015](#)), 6.0% and 6.3%, respectively. The most recent estimates for Mexico for 2018 show that the top 1% income share is 29.4% (World Inequality Lab). While incomplete, these findings show higher and persistent concentration levels at the top of Mexico's income distribution over the twentieth century.

2 Related Literature

Top incomes literature has explode over recent decades to continue Kuznets' pioneering work on the US top incomes ([Kuznets and Jenks, 1953](#)). The top incomes started to gain attention after the works published in the 2000s by Thomas Piketty, first in 2001 about the top incomes in France ([Piketty, 2001](#)) and then the volumes published by ([Atkinson and Piketty, 2007, 2010](#)) about the top incomes shares for a wide range of countries and periods. Today, the World Incomes Database covered several countries across the globe to inform the evolution of the top income shares globally. More recently, a growing number of developing countries have been included in these estimations, including Latin American countries. However, Mexico is one of the countries where top income shares have been unknown over the twentieth century. The main reason to explain the scarcity of top incomes studies is the difficulties in finding tax income data for Mexico

Mexico's overall inequality trends distinguish three different periods in the last thirty years; an upward trend in inequality levels between 1989 and 1994, a decline between 1994 and 2006 ([Campos-Vázquez, 2013](#)), and after 2006 until nowadays, the most recent evidence concludes that inequality in Mexico did no longer declines from 2006 to 2017 ([Campos-Vazquez and Lustig, 2017](#)).

There is a consensus about the causes that explain the upward trend in inequality from 1989 to the mid-1990s: an initial trade liberalisation process which started in 1988 with the elimination of trade barriers previously imposed mainly in low-skill-intensive industries ([Hanson and Harrison, 1999](#)) combined with a decline in unionisation and a fall in minimum

wages. From 1994 to 2006, wage inequality measured by the Gini coefficient went from 0.547 to 0.475, and it decreased due mainly to a supply of skilled workers that outpaced demand ([Esquivel, 2010](#)). The decline in Mexico's inequality levels during the 2000s was mainly explained by a fall in the premium to skilled labour and more progressive government transfers ([Lustig et al., 2013](#)).

This evidence in recent inequality trends is possible due to three recent systematic publicly available survey data: a) National Survey of Household Income and Expenditure (ENIGH), which records different sources of household income and expenses and its amount, and it also contains occupational and sociodemographic characteristics of the individuals into the households. This has been publicly available since 1984; b) The National Survey of Occupation and Employment (ENOE) which records the statistical information on occupational characteristics of the population nationwide, as well as other demographic and economic variables to deepen the analysis of labour issues available quarterly since January 2005, and c) National Urban Employment Survey (ENEU) which precedes ENOE. It is available quarterly from 1987 to 2004 and covers only urban areas.

However, now is well accepted that household surveys underreport the incomes at the top, particularly capital income; this can be noticed when one compares the income captured in the surveys with the national account figures. Two main reasons can explain this gap in our knowledge of incomes at the top. First, top incomes literature is motivated by underestimating inequality measures calculated from household income or consumption surveys that fail to capture the income at the top of the income distribution. This is confirmed by the gap between the income reported in national surveys and the income in national accounts ([Deaton, 2005](#); [Bourguignon, 2015](#); [Nolan et al., 2019](#); [Ravallion, 2003](#)). Second, while personal income tax tabulations can estimate the income share at the top, these tabulations are not always publicly available. Still, many countries are reluctant to release this information to the public ([Burq and Chancel, 2020](#)). Moreover, whether the combination of income tax records data with surveys is preferred is still debatable ([Ravallion, 2022](#)).

Moreover, there is no single method to adjust the incomes at the top. Recently, one method that has gained attention has been proposed by [Atkinson and Piketty \(2007\)](#); [Atkinson et al. \(2011\)](#). They propose a unified method that can be used to estimate the shares of capital and income and to know the entire income distribution. The "Distributional National Accounts" (DINA) method combines tax, national accounts data and Pareto interpolation techniques to construct long-term series consisting of annual estimates of the entire distribution of income and wealth. Implementing this technique in Mexico's case is impossible since tax records are

not available for conducting a long-run study.

In Mexico, some recent attempts have been made to correct the missing top incomes in the surveys without using tax records. However, this gap between national income and income reported in income surveys had been largely noticed in Mexico ([M de Navarrete, 1960](#); [Altimir, 1987](#)) who developed corrections to alleviate these discrepancies. [M de Navarrete \(1960\)](#) proposed a series of steps to impute the differences between the national accounts to the incomes reported in the survey. [Altimir \(1987\)](#) also suggested a method to impute national accounts figures to the household surveys. He also emphasizes that underreporting in the surveys should be linked to the income source rather than the level.

More recently, researchers in Mexico have tried to follow these correction methods to minimize the underreporting problem in Mexico's household surveys. The first proposal was made by [Bustos and Leyva \(2017\)](#) who combined tax records, household surveys and national account figures to estimate the entire income distribution in 2012. They find a significant underreporting over the entire income range in the survey with a considerable truncation at the top of the income distribution. At the top, they find that the richest 1% of households in Mexico concentrate almost as much income as the bottom 60%.

Another recent study by [Reyes et al. \(2017\)](#) combine the same data as [Bustos and Leyva \(2017\)](#) but also adds an extra data source: the economic censuses. Across the data sources (survey, national accounts and economic census), they identify the source of income between capital and labour and impute the aggregates from national accounts. Their Gini estimation for 2014 in Mexico was 0.74, while the Gini from the unadjusted survey goes to 0.52.

Finally, [Negrete \(2017\)](#) set apart from the previous approach by recognizing that the current total income constructed in ENIGH is not directly comparable with the system of national accounts. Then, his methodology aims to make both sources comparable. By doing this, he creates a new current total income in the survey which can be compared with National Accounts. His methodology only adjusts the household's primary income. This primary household income in the Mexican case is the sum of the following income sources: employee's worker's activities, independent contractors, business in the household, and financial assets rents.

The concepts adjusted to national accounts are employee wages, independent contractors, interests by bank deposits and income by returns on equity. He found that the underreporting of wages in ENIGH is high among officials, managers and directors. Then, he assigns the wages' difference in national accounts and surveys in the following proportion:

80% is assigned to officials, managers and directors; 15% to professionals and technicians; finally, 5% to auxiliary workers in managerial activities, all based on the proportion of declared wages. In the case of independent contractors, he allocates this income source as follows: 20% of the missing amount between independent contractors, whose occupation was ranked in the first three divisions of SINCO classification. The remaining 80% is distributed among all those who declared having a business in the household as an income source, based on the proportion of declared income. The interest by bank deposits is assigned between individuals that reported having such income in the survey. The allocation of the differences is given by the proportion of the amount declared in the survey of this kind of income source. Finally, he uses information National Banking and Stock Commission Agency for the discrepancies in the income by returns on equity. According to the Commission, in 2012, brokerage firms held 163.673 contracts for individuals, established as follows: 82% of the contracts by less than 15 million pesos; 10% above 15 million pesos but less than 500 million pesos; and 8% by 500 million or above. Regarding investment companies, these companies accounted for 2,106,059. The difference between income reported (returns on equity) in the survey and National accounts is imputed to 2,5 million of individuals with the previously higher adjusted income. His method calculates an adjusted income coefficient in 2014 of 0.76, while the Gini without adjustment only goes to 0.57.

From the methods explained above, it is clear that all evidence on top income shares or adjustments to the surveys found an underreporting of income that needs to be corrected to better measure the magnitude of inequality in Mexico. The new estimations presented here based on tax tabulations add to this literature. In particular, it presents for the first time the top income shares during the twentieth century.

3 Data

The empirical approach combines data from schedular tabulations of the personal income tax to reconstruct with control income (household total income in the economy) and control population (the potential total number of taxpayers) to estimate the top one per cent income share. This is the standard methodology in the literature on top incomes ([Atkinson and Piketty, 2007, 2010](#)). One key difference with this methodology is that I use schedular tabulations, which are neglected in the top incomes literature because taxpayers can be taxed in more than one schedule (income source). These tabulations are a predecessor of the current personal income tax. Nowadays personal tax income is based on the taxation of the global income of tax units; however, schedular taxation was not based on the global

income of taxpayers but on the income source. This is an underlying source of error in my estimates. Therefore, a joint distribution of incomes from schedular tabulations can inform about the top incomes share. For my latest data point, 1970, the estimate comes from global income taxation rather than schedular taxation.

For instance, Mexico's authorities released public versions of personal tax returns between 2009 and 2012. Still, these tabulations were incomplete, and the full versions are only available for some government agencies or specific researchers. A study from [Sandoval-Olascoaga \(2015\)](#) exploited these complete versions of tax records. They were combined with Mexico's economic censuses, microdata from household surveys and national accounts to estimate the top 1%. The results from this study confirm the higher levels of inequality in Mexico, with the top 1% capturing between 2009 and 2012, 13.2% and 13.6%, respectively.

In contrast, Mexico's tax tabulations for other years are not available. Consequently, no single estimations in Mexico employ tax tabulations to address the income shares at the top. This study looked in the archives in Mexico for these tabulations. Still, only a few tabulations for specific years were located, although the old catalogues of the Ministry of Finance display these tabulations as part of its collection. The potential destruction of this material cannot be ruled out.

The data used in this study to estimate the income share at the top comes from the personal income tax original tabulations that were digitized directly in the Ministry of Finance historical archive during 2019. Schedular tabulations come in the form of six independent schedules with the number of taxpayers in each bracket, the total income earned in that bracket, the deductions, and the taxable income. Schedular tabulations mean that the government taxed the income source rather than the global income of individuals. For the Mexican case, since the origins of personal income tax, the government taxed six-seven income sources: wages, industry, agriculture, professionals, commerce, concession participation, and credits.

Methodologically, schedular tabulations pose a challenge that can potentially bias the estimation of the top income shares if the same individual pays income tax in more than one schedule simply because we cannot distinguish this individual to recover the global income distribution for all the tax units. Therefore, I assume that taxpayers across schedules are independent, so it is possible to build a joint distribution each year under this assumption. Only for the year 1970, we can observe the global income distribution directly. Two arguments make this assumption reasonable. First, Mexico is one of the countries where its economic system has been described as a Classical Capitalism ([Ranaldi, 2022](#)). They proposed a new measure to classify countries between liberal capitalism and classical capi-

talism. The measure proposed is the Income-Factor concentration (IFC) defined in (Ranaldi and Milanovic, 2020) and it measures to what extent the capital and labour income is unevenly distributed across the income distribution in a particular country. For Mexico, this index takes a value of 0.538, one of the highest values in the countries analysed. Then, capital income earners are different from labour earners.

Additionally, 1927's estimates coincide with the reconstruction of the economy after the Mexican revolution and 1940 the start of the state formation or developmental state that intervened in the economic and social spheres at the same time the so-called "take-off" process started in Mexico with sustained economic growth. In such stages of economic development, it is reasonable to assume that labour and capital income are earned by different individuals during this stage. Finally, to understand the magnitude of my estimates, I compare the results with other Latin American economies in the same period, like Brazil and Argentina.

4 Method

A key element in calculating the top shares is the income definition. It needs to be consistent over time, and it requires caution to compare the estimates. The income used here is referred to as the gross taxable income; this definition is equal to gross taxable revenue minus the schedular deductions. This definition is applied to the years 1927, 1930 and 1943 and 1970.

Once I defined the income definition I used this number as my numerator that relates to the income at the top. The second step is to use a control income as the denominator to approximate the top income share at the top. Ideal control income in the literature for Latin American countries where this methodology has been applied (Milá, 2015) is the summation of a household's primary income and social benefits other than in-kind social transfer, minus: (1) employers' actual social contributions, (2) employees and self-employed actual social contributions, (3) imputed social contributions., (4) attributed property income of insurance policyholders, (5) imputed rents for owner-occupied housing, and (6) fixed capital consumption of households. This detailed personal income data is just available for recent decades. Then an assumption needs to be made to approximate the personal income from national accounts in the years I estimate the top income shares.

This control income needs to be approximated from GDP; studies use the current fraction of the GDP that belongs to the personal income definition described above, and this yields a control gross income of 60 per cent in the case of Brazil (Milá, 2015), the similar fraction has

been applied to Argentina’s studies ([Alvaredo, 2010](#)). The fraction I set as control income belongs to 70 per cent of net national income over the period analysed here. The selection of net national income rather than GDP is because, in the case of Mexico, GDP estimates before 1939 have shown to be unreliable ([Márquez, Márquez](#)). Regarding the fraction used (70%), it is supported by more recent Mexico’s top incomes studies that show the fraction of disposable income to GDP is precisely 70 per cent ([Campos et al., 2014](#)). It is also similar to other fractions set for other countries such as India ([Banerjee and Piketty, 2005](#)), Canada ([Saez and Veall, 2005](#)) and Colombia ([Alvaredo and Londoño Vélez, 2013](#)).

Tax tabulations allow for observing the number of taxpayers only, but those not paying taxes are unknown. The first thing that must be known is who is obligated to file a tax return, and this can be known by studying the legal history of the income tax law in Mexico. The law is not clear about who needs to fill the tax return; for now, I assume the tax units in the tabulations are individuals, which is the case in current legislation where tax fillers are individuals. Then the denominator I use to relate those taxpayers observed in the tabulations is the economically active population. [Table 1](#) shows the control income and control populations used to calculate the shares.

Table 1: Control income and control population

Year	Net National Income (NNI)	Economic Active Population
1927	1,984,500	5,151
1930	2,701,000	5,151
1943	6,802,000	5,858
1970	418,700,000	13,343

Source: Nacional Financiera.

Note: Numbers expressed in thousands

There most common method to calculate the top income share at the top is to assume that the income distribution at the top fits by a Pareto distribution ([Kuznets and Jenks, 1953](#)) this method has been followed also in [Atkinson et al. \(2011\)](#); [Atkinson and Piketty \(2007\)](#). The approach followed in this study uses the control income and the control populations to estimate the share at the top is made in two steps. First, I create the joint distribution using each schedule, once I have a single distribution of taxpayers and the income reported, I rank the taxpayers by gross taxable income (after deductions) from the lowest bracket to the highest. Second, once the rank is made, I divide each bracket of the national income to calculate the shares at each bracket (gross taxable income divided by control income) and the fraction of taxpayers relative to the total economic active populations. Once I have the

shares at each bracket for income and populations, I relate the cumulative percentage that gives me the one top per cent to its cumulative income share. In sum, rather than assume a Pareto distribution, I calculate the percentage of taxpayers arithmetically using the control population and the income shares by using a controlled income described in the last section.

5 Results

The income top shares are shown in Table 2. The top one per cent in 1927 held 15.5 per cent of national income; in 1970, this share was 18.4. These income shares for the top one per cent are similar to the Brazil shares in the same period. For 1943 I only observed the top earners in the commerce schedule, which represent 0.1% of the population holding 12.6% of the income share; this figure is similar to the one observed in 1943 in the case of Argentina. The results for Mexico speak for the persistence of the income shares at the top over the twentieth century, in line with the findings for Brazil and Argentina. In the twenty-first century, the income shares at the top have increased dramatically in the case of Mexico and Brazil.

Table 2: Top gross taxable income shares in Mexico, 1927 and 1970 (%)

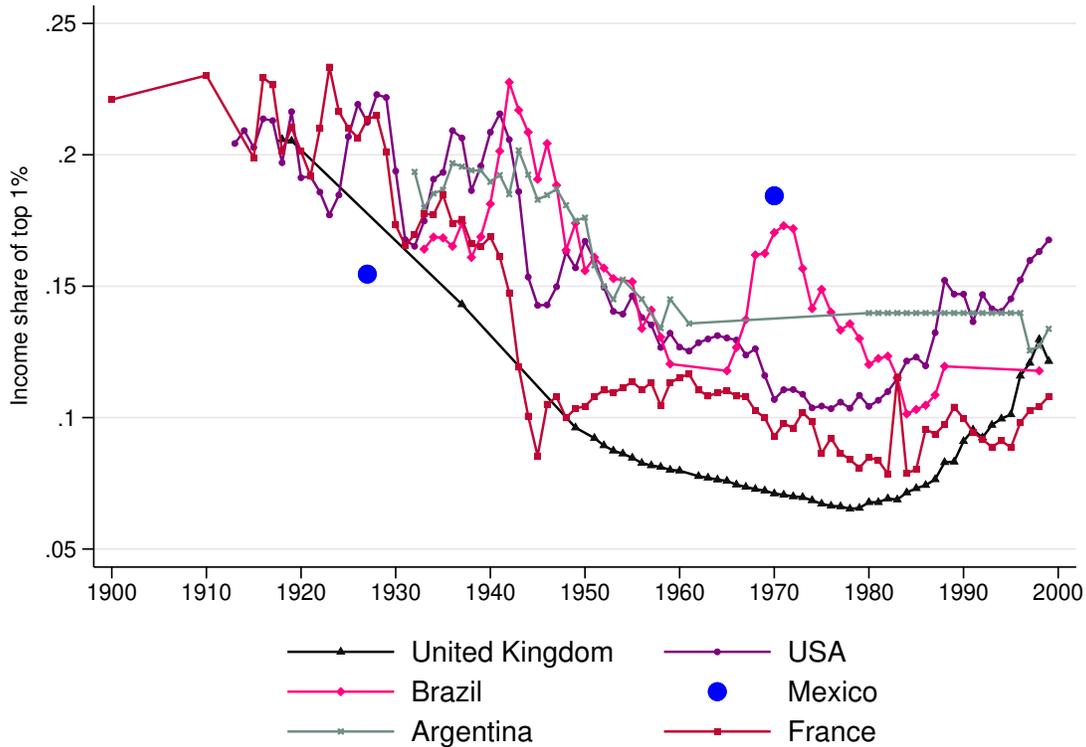
Year	Top 1%	Top 0.5%	Top 0.1%	Top 0.01%
1927	15.5	13.9	11.4	8.3
1970	18.4	12.0	6.08	0.9

Source: Author's calculations based on tax returns data.

Note: The table presents the top income shares.

The results show that income concentration at the top one per cent in 1927 and 1970 has not changed. For 1927, the top one percent income share in Mexico was similar to the levels observed in France, Brazil, and US (See Figure 1). The data available do not allow us to show Mexico's top incomes after 1927 when most countries experienced a substantial drop in income concentration levels in the following decades. The next data point for Mexico is for 1970. The top incomes level this year are only similar to the ones observed in the case of Brazil, while the rest of the country's top income levels are much lower than these two countries. My findings show that the 1% top income shares in 1927 and 1970 were about 15.4% and 18.4% respectively. Most recent methods combined with modern data show that in 2012, Mexico's top 1% concentrates 13.6% (Sandoval-Olascoaga, 2015) while the World Inequality Lab reports 29.6% for the same year. Regarding the top 0.1%, the results from

Figure 1: Top 1% income share in Mexico and selected countries, 1900-2000



Source: Author's calculations based on tax data in 1927 and 1970 and [World Inequality Database](#)

1970 are similar to the ones observed in 2012 ([Sandoval-Olascoaga, 2015](#)), 5.8% and 6.3%, respectively. The most recent estimates from the [World Inequality Lab](#) for Mexico in 2018 show that the top 1% income share is 29.4%. These findings, while incomplete, show higher and almost constant levels of concentration at the top of Mexico's income distribution over the twentieth century.

There is a significant gap in Mexico's top incomes series, and more investigation is needed to know if Mexico missed the improvements in inequality that occurred in countries such as the United Kingdom, France or US around the 1930s. For this reason, I estimate top income shares with the available merchant's income schedule tabulations. This is an approximation of the income share at the top. This group is an adaptation of the "200 families" ([Piketty, 2001](#)) in France who used to be the largest shareholders in the Banque de France. In the Mexican case, historians have shown the economic power of the merchant elite since colonial times ([Brading, 1971](#); [Hoberman, 1991](#)). Moreover, there is an increasing attention to understand the business income at the top ([Kopczuk and Zwick, 2020](#)) and its implications

for inequality and tax policy (Aghion et al., 2019; Smith et al., 2019).

Table 3 presents the merchant’s income share in Mexico for 1927, 1930, 1943, and 1970. This information does not indicate a deterioration of the merchant’s income share at the top. On the contrary, the income share for this population group, following closely the share of 0.01% of the Mexican population, shows increasing participation in Mexican total income over time.

Table 3: Top Merchant’s Income Shares in Mexico, 1927-1970 (%)

Year	Tax units	Share Population	Income Share
1927	4,045	0.08%	3.6%
1930	3,808	0.08%	2.3%
1943	4,685	0.08%	10.2%
1970	9,276	0.08%	5.6%

Source: Author’s calculations based on tax data in 1927, 1930, 1943 and 1970.

Note: TThe table presents the top income 0.08% shares for the merchant’s tax returns

6 Conclusions

The results based on the income tax tabulations point towards a persistent concentration at the very top of the income distribution. The Great Depression did not affect the incomes at the top, such as the merchant’s elite. The top one per cent income share did not change substantially from 1926 to 1970. Recent methods combined with modern data by the [World Inequality Lab](#); suggest that the top 1% in the twenty-first century is among the highest across the globe (see Figure 1). Unsurprisingly, Mexico is part of the most unequal region in the world.

Several explanations have been offered to explain the persistent and pervasive high inequality levels in the region where Mexico is inserted. On one side, the ”institutional reversal” explains that the colonial legacy is responsible for the high levels of inequality (Acemoglu et al., 2002). These explanations, however, do not find support when labour markets have been analysed through the evolution of real wages (Challú and Gómez-Galvarriato, 2015; Allen et al., 2012). On the other side, the arguments emphasise similar inequality levels before 1800 were similar to other economies. Therefore, the explanation for the economic backwardness of countries in Latin America should have an answer in the mid-twentieth

century when income distribution did not improve as it happened in most of the world (Williamson, 2010, 2015).

The top 1% income shares in 1927 in Mexico were similar to the levels observed in France, the USA, the United Kingdom and Brazil. However, by 1970 only Brazil and Mexico remained with higher top 1% income shares levels than the ones observed in 1927. In contrast, the UK, USA and France improved their income concentration at the top in this period, just as has been proposed by Williamson (2015) and Prados de la Escosura (2007). The findings support a key proposition made by Williamson (2015) and Prados de la Escosura (2007) to explain the persistent high inequality levels in the Latin America region. To them, Latin America missed the “*Great Egalitarian Leveling*” that occurred from World War I to the 1970s in most of the world but not in Latin America.

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