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Global Distributions of Capital and Labor Incomes: Capitalization of the Global Middle Class

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Global Distributions of Capital and Labor Incomes*

Capitalization of the Global Middle Class

Marco Ranaldi†

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Abstract

This article studies global distributions of capital and labor income among individuals in 2000 and 2016. By constructing a novel database covering approximately the 80% of the global output and the 60% of the world population, two major findings stand out. First, the world underwent a spectacular process of capitalization. The share of world individuals with positive capital income rose from 20% to 32%. Second, the global middle class benefited the most, in relative terms, from such capitalization process. In China, the average growth rate of capital income was 20 times higher than in western economies. The global composition of capital and labor income is, therefore, more equal today than it was twenty years ago, and the world is moving towards a *global multiple-sources-of-income society*.

JEL-Classification: D31

Keywords: Global Inequality, Capital and Labor, Compositional Inequality

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1 Introduction

In recent years a number of scholarly works have unveiled novel stylized facts on the dynamics of global income inequality. Despite the many challenges that come along with the empirical measurement of the world distribution of income,[1] these studies concur on the fact that *relative* global income inequality has decreased over the last three decades (Lakner and Milanovic, 2015, Alvaredo et al., 2018, Milanovic, 2020).[2] A similar pattern has also been recently documented for global earnings inequality (Hammar and Waldenstrom, 2020). As discussed by Anand and Segal (2008), these dynamics can be regarded as a product of globalization, particularly of the intensification of trade and financial flows between countries.

Modern globalization has another distinct feature: it is considerably increasing the movements of capital and labor across borders. Such aspect of globalization is shaping international labor markets and increasing the access to capital in the developing world, with profound consequences on labor compensation and the returns to capitals. We do not yet know, however, how these movements of capital and labor differently impact world individuals. To understand this we must address another, so far neglected, question: how global distributions of capital and labor incomes change across time. This article addresses this gap by measuring and analyzing the changes in the global distributions of capital and labor incomes between 2000 and 2016.

By constructing a novel database covering almost the 80% of the global output and the 60% of the world population, two major results emerge. First, the world underwent a spectacular process of capitalization. The share of world's citizens with positive capital income substantially increased, moving from 20% in 2000, to 32% in 2016. Second, the global middle class benefited the most, in relative terms, from such capitalization process. This is particularly true for China, whose average capital income growth was about 20 times higher than that of western economies. The capitalization of the global middle class implied a reduction in global capital income

[1] For a comprehensive review of the major challenges, see Anand and Segal (2008).

[2] The dynamics of *absolute* global inequality can display different patterns from its relative counterpart, as discussed in Atkinson and Brandolini (2010).

inequality. The Gini coefficient of capital income decreased by 3% between 2000 and 2016, moving from 85 to 82 Gini points. At the same time, also labor income inequality decreased on a global scale, with a Gini coefficient falling from 73 to 67 points. This is largely explained by stagnant wages in mature economies over the period analyzed, and by positive labor income growth in countries like China and Russia. These results suggest that the composition of individuals' incomes in capital and labor is more equal today and, as a consequence, the world is moving towards what we call a global *multiple-sources-of-income society*.

This work has three main limitations. First, our analysis covers approximately the 80% of the world output and the 60% of the global population. These percentages are considerably lower than those covered by other global inequality studies. This is because, while surveys on individuals' income and consumption are in fact available for most countries of the world, harmonized surveys on individuals' income sources are more difficult to find, especially in the developing world. The only harmonized household surveys available for a large set of countries are those of the Luxembourg Income Study (LIS, 2020), which this paper is based on. Second, we only focus on two benchmark years: 2000 and 2016. This is done with the purpose of having a relatively balanced panel of countries in both years.[3] Finally, our database suffers from underestimations of both capital and labor income at the top of the distribution. Some methods do exist to correct the upper tail of the total income distribution (see, for instance, Blanchet et al. (2017) and Blanchet et al. (2019)). To our knowledge, however, there is no method available to adjust the composition of income in terms of capital and labor across the income spectrum for a large number of countries. The article will discuss all these issues in detail and present several robustness analyses.

This work contributes to the rich body of literature on global inequality studies, which has so far focused on individuals' differences in terms of income (Bourguignon and Morrison, 2002, Bourguignon, 2015, Milanovic, 2002, 2005, 2020, Lakner and Mi-

[3]Data for China are, for instance, only available in 2002 and 2013, while data for India are available in 2004 and 2011. If we wanted to add an intermediate data point to the analysis (say in 2008), we would need to use the same household surveys for India and China twice (purchasing power-adjusted).

lanovic, 2015, Anand and Segal, 2015, Alvaredo et al., 2018, Tornarolli et al., 2018),[4] wealth (Davies et al., 2008, 2011, 2017), earnings (Hammar and Waldenstrom, 2020) and land (Bauluz et al., 2020). It complements this literature by presenting the first estimates of the global distributions of capital and labor incomes. To this end, this paper constructs a new database based on average labor and capital incomes for each percentile of a given country's factor income distribution in 2000 and 2016. A detailed description of the database and its main variables can be found in the Description File. This paper also aims to contribute to the more recent stream of research on compositional inequality (Ranaldi, 2019, 2021, Ranaldi and Milanovic, 2020, Iacono and Ranaldi, 2020, Iacono and Palagi, 2020).

According to Milanovic (2017, 2019), two ideal-typical economic systems can be used to describe contemporary societies: classical and liberal capitalism. While classical capitalism describes a society composed by rich capital earners and poor laborers, liberal capitalism is characterized by individuals earning from multiple sources of income.[5] In a recent paper, Ranaldi and Milanovic (2020) show that the distributions of capital and labor income tell us which type of capitalism each country can be identified with. This paper looks at the world population as a whole, and shows that the world is moving from classical to liberal capitalism - or, in other words, that the composition of income in capital and labor is increasingly more equally distributed across world citizens.

The income-factor concentration (IFC) index is a measure of compositional inequality recently developed by Ranaldi (2021). It takes maximal value under classical capitalism and minimal under liberal capitalism. Between 2000 and 2016, the global IFC fell from 32 to 4 percent points. Such a change is equivalent to moving from the compositional inequality level of Latin America, to that of Canada and the UK (Ranaldi and Milanovic, 2020). This fall can be fully attributed to China: when China is removed from the sample, the IFC increases from 19 to 26 points. The fall of

[4] See Anand and Segal (2008) for a comprehensive review until 2008.

[5] Liberal capitalism tends, at the extreme, to Homoploutic capitalism (Milanovic, 2019, Berman and Milanovic, 2020), where every individual earns the same proportions of capital and labor income in her total income.

global compositional inequality has major implications for the relationship between the functional and personal distributions of income on a global scale. Under low levels of world compositional inequality, an increase in the global capital income share, all else being equal, will have limited effects on global inequality dynamics (Ranaldi, 2021). At the same time, a more equitable distribution of the income composition implies that a larger share of world individuals is more vulnerable to global financial shocks.

The article is structured as follows. Section 2 discusses the data and methodology used to estimate the global distributions of capital and labor incomes. Section 3 illustrates the main results of our analysis. Section 4 discusses, both theoretically and empirically, how changes in capital and labor income inequality affect income growth rates along the distribution. Section 5 focuses on several individual countries. Section 6 concludes the article.

2 Data Construction

We construct average per capita labor and capital incomes for a given percentile of the distribution in country i and year t. The averages are calculated under different orderings of individuals with respect to their total, labor and capital income.[6] We obtain average per capita incomes expressed in national currency from the Luxembourg Income Study Database (LIS, 2020),[7] which are then converted into PPPs consumption-based dollar produced in 2011. Table 1 reports the main information of our database.

Overall, our database includes 96 surveys, of which 47 from 2000 and 49 from 2016. It covers the 73% of the global GDP in 2000, and the 78% in 2016, whilst it rep-

[6]Specifically, we first rank individuals according to their level of total income and then calculate the average per capita total, labor and capital income of each percentile of the distribution. Then, we compute the average per capita labor and capital income of each percentile, with individuals ranked according to their labor and capital income, respectively. You can find a thorough description of all variables included in the database in the Description File.

[7]The Luxembourg Income Study Database collects and harmonizes microdata from more than 50 countries across the world, and provides with information on individual's labor income, capital income, pensions, public social benefits (excl. pensions) and private transfers, as well as taxes and contributions, demography, employment, and expenditures.

resents the 63% of world individuals in both years.

Table 1: Countries included in the database

	2000	**2016**	**Change**
N. of countries	47	49	4%
Regional GDP represented in the database (%)			
World	73	78	6%
Mature Economies	85	94	10%
LAC	77	77	0%
China	100	100	0%
India	100	100	0%
Other	1.8	2.6	33%
Regional population represented in the database (%)			
World	63	63	0%
Mature Economies	84	94	14%
LAC	74	72	-2%
China	100	100	0%
India	100	100	0%
Other	2	3.2	30%

The database does not cover world regions in the same proportions. It represents a large share of the GDP of mature economies (85% in 2000 and 94% in 2016)[8] and of Latin American countries (77% in both years). It misses, however, almost all African countries, with the exception of Egypt, Sudan, South Africa and Ivory Coast. Jordan, Russia, Iraq and Vietnam are also included in the database, as well as China and India.[9]

The unit of analysis is the individual and no economies of scale are applied.[10] In-

[8]Following the classification of (Lakner and Milanovic, 2015), the group of mature economies include EU-27, Australia, Bermuda, Canada, Hong Kong, Iceland, Israel, Japan, Korea, New Zealand, Norway, Singapore, Switzerland, Taiwan, United States and UK.

[9]To see the complete list of countries, see table 2.

[10]This choice is done with the purpose of making our database consistent with world population data, as commonly done in the global inequality literature.

dividuals with at least one negative value of either their capital or labor income are removed from the sample. To convert all individuals' income levels in \$2011 PPP we use the consumer price index (CPI), which adjusts the income values for inflation dynamics, and the 2011 purchasing power parity (PPP) conversion factor, that converts the inflated values in 2011 USD dollars.

The construction of percentile averages leads us ignore within-percentile inequalities. A country's overall level of inequality (within a Gini-type framework) can, in fact, be further decomposed into a between (between percentiles) and a within (within percentile) component when we assume the groups (i.e. the percentiles) are non-overlapping.[11] When percentile averages are calculated, the within component of our inequality decomposition equals zero. This aspect inevitably leads to underestimating overall inequality (see, also, Anand and Segal (2008)).

We construct two principal benchmarks years: 2000 and 2016. A survey in country i is considered a benchmark survey if (i) it is the closest available survey to the related benchmark year and (ii) it was conducted before 2008 for the first benchmark year, and after 2008 for the second.[12] Some surveys from the period 1995 – 2000 are also considered (see table 3 for further information about each country's bin years). Differently from Lakner and Milanovic (2015), who construct five benchmark years, we can only create two of them due to data availability. The surveys of China and India are, for instance, only available in 2002 and 2013, and in 2004 and 2011, respectively. All the results that follow in the next sections are based on the unbalanced panel of country-percentiles.

The income concept we adopt is market income, defined as the sum of capital and labor incomes. While capital income is composed by rent, dividends and interests, labor income is the sum of wages and self-employment income.[13] In appendix C, an

[11] To account for the fact that groups overlap in practice, also a residual, or overlapping term should be considered.

[12] This is done with the purpose of limiting the effect of the global financial crisis on the choice of the benchmark surveys.

[13] One limitation of LIS data is that the labor income variable adopted is not homogeneous across countries. For some countries it refers to *net* labor income (after social contribution), whilst for others to *gross* labor income. Given that tax information are provided on total income only (and not on its components), we cannot easily calculate the pre- and post-tax distributions of capital and labor

additional income concept is considered, namely market income plus transfers.[14] The overall message of the paper is unaffected by the income definition adopted.

It is well known that household surveys have a tendency to "miss the rich" (Lustig, 2020). This is mainly due to several factors: undercoverage, sparseness, unit and item nonresponse, underreporting and top coding (Lustig, 2020). Several new methods have been developed to correct the upper tale of the total income distribution (see, for instance, Blanchet et al. (2017) and Blanchet et al. (2019)). However, little is known about how to correct the composition of income across the income spectrum for a large set of countries. Capital and labor income information from national accounts, or tax data, are difficult to find for all the countries/years covered by the database. Aggregate totals of capital and labor incomes at the household sector, which are provided by the System of National Accounts (SNA), are only available for a half of our sample.

In a recent article, Yonzan et al. (2020) compare survey and tax data under a standardized definition of fiscal income for the US, Germany and France. They show that these two data sources display very similar results for the top decile of the income distribution. Specifically, they find that the composition of income sources is relatively the same above the 90^{th} percentile and up to the top 1 percent of the distribution. They conclude that the major source of discrepancy between survey and tax data is found in correspondence to the top 1% of the income distribution. This result, although cannot be generalized for all countries,[15] reinforces the reliability of survey data to study the composition of income across countries and years.

incomes. For more information on the limitations of the labor income variable in LIS data, see Guillaud et al. (2020).

[14] This allows us to evaluate the impact of government interventions on capital and labor income growth differentials.

[15] In a recent article, De Rosa et al. (2021) show that survey data capture approximately a half of the national income in many Latin American countries, and illustrate that the major source of discrepancy is to be imputed to the missing capital income at the top.

3 Main Results

3.1 Summary statistics

Table 4 reports the standard relative measures of distributional analysis. This paper exclusively focuses on the distributions of capital and labor incomes, and leaves aside the total income distribution.[16] Moreover, this section not only illustrates the results for the entire world, but also for three representative countries: China, India and the US. This allows us to relate our global findings to those of three important world players. Section 5 focuses, instead, on the other countries.

Global capital income inequality, as measured by the Gini coefficient, is, as expected, higher than labor income inequality, and both inequality dimensions decreased between 2000 and 2016. However, while the former inequality dimension moved from 85 to 82 Gini points (−3%), the latter experienced a greater reduction, with a Gini coefficient declining from 73 to 67 points (−7%). Our estimates of the Gini of labor income are in line with existing findings from the literature, which report a Gini of overall income of 71.5 in 1998 (Lakner and Milanovic, 2015) and of 61.2 in 2013 (Milanovic, 2020).[17] The same decreasing patterns can be observed by looking at the dynamics of the top 10% capital and labor income shares, which fell from 98% to 91%, and from 63% to 55%, respectively.

Let us now focus on the three main countries (China, India, and the US). China simultaneously experienced a significant reduction in capital income inequality, and a mild increase in labor income inequality between 2000 and 2016. The top 10% Chinese capital income share fell from 99% in 2000, to 68% in 2016. In India, both capital and labor income inequality increased, although the former more than the latter: the Gini of capital income moved from 58 to 69 points, whilst that of labor income from 50 to 53. The US documented a rise in capital income inequality (from 83 to 86 Gini

[16] As discussed in the introduction, the global distribution of total disposable income has been the subject of extensive studies, which reached a higher coverage both in terms of world GDP and population size than our own (Lakner and Milanovic, 2015, Milanovic, 2020).

[17] Recall that given the high level of the estimated labor share (95%, see table 7 for details), the Gini of labor income proxies relatively well the overall income Gini (Lerman and Yitzhaki, 1985).

points) and a stable level of labor income inequality (47 Gini points). The fall of global capital income inequality is, hence, combined with the rise of capital income inequality in India and the US, as well as in Latin American countries and mature economies (see table 4). This can be explained by the fact that the within component of global capital income inequality increased, whilst the between component decreased in the period analyzed.

When we focus on absolute amounts (table 5), we observe that the world average capital income increased by 45%, jumping from 243$ to 355$ per person, while the world average labor income rose by 35%, moving from 4685$ to 6349$ per person. The very low reported value of the average capital income reflects the fact that a large share of the world population has no capital income at all. The world median capital income equals, in fact, zero in both years. The share of world individuals without capital income considerably decreased, moving form 80% in 2000, to 68% in 2016 (−15%) (table 6). This is also illustrated by figure 1, which shows the global density functions for capital and labor incomes in 2000 and 2016. The area below the density function of capital income, for income lower than 150% per year, is considerably higher in 2016 than in 2000. This striking result calls attention on the marked capitalization process taken hold in the past two decades, which almost doubled the share of individuals with positive capital income. As it is shown in the next section, a large share of this capital income growth principally accrued to the hand of the global middle class.

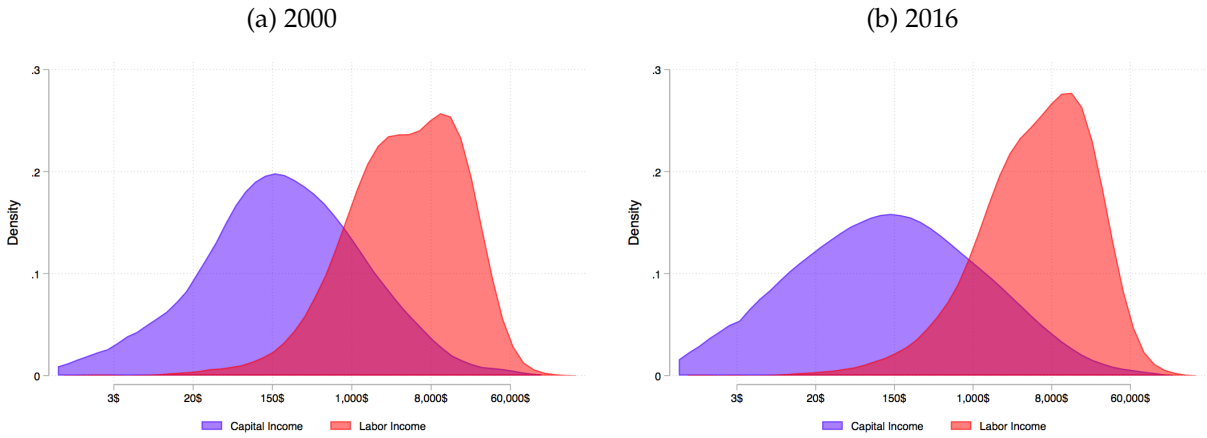
China's average capital income grew 16-fold, going from 19$ per person in 2000, to 348$ in 2016, differently from other world regions. The average capital income in India increased by only 40% (from 13$ to 19$), whilst that in the US decreased by 8% (from 1747$ to 1607$).[18] As for labor income growth, China registered a 134% increase (from 1484$ to 3484$), whilst India and the US grew by, at maximum, 41%.

While both capital and labor income inequality decreased in the period considered, little is known about the dynamics of compositional inequality. Compositional inequality is the extent to which the composition of income in capital and labor is un-

[18]This is, once again, in line with the dynamics of mature economies, who registered only a 1% increase in their average capital income (see table 5).

equally distributed across the total income spectrum. A high level of compositional inequality implies a strong relationship between the functional and the personal income distributions: if income-rich individuals earn from capital income and income-poor from labor income, than an increase in the capital share of income, all else being equal, will automatically accrue to the income of the rich and increases the level of income inequality in society. Furthermore, high levels of compositional inequality are associated to classical capitalism, where rich and poor separately earn from different income sources, whereas low levels to liberal, or multiple-sources-of-income societies (Ranaldi and Milanovic, 2020).

Figure 1: Global Density Functions of Capital and Labor Income



To measure the dynamics of world compositional inequality, we use the income-factor concentration (IFC) index, a synthetic measure recently introduced by Ranaldi (2021). The IFC ranges between -1 and 1: it equals 1 when capital income is at the top and labor income at the bottom of the total income ladder, 0 when all world individuals earn capital and labor income in same proportions and -1 when capital income is concentrated at the bottom and labor income at the top of the total income distribution. As we can see from table 6, the IFC fell from 32 percent point in 2000, to 4 in 2016. As a matter of comparison, a reduction of 28 IFC points is equivalent to transitioning from Latin American "class-based" societies, to western liberal capi-

talism, according to the estimates provided by Ranaldi and Milanovic (2020). Recall, however, that the income concept adopted by the authors in their study is slightly different from the one used in this article, insofar as pensions are excluded from our analysis. The falling degree of compositional inequality is almost entirely explained by the capitalization process occurred in China over the period. When China is, in fact, removed from the sample, the IFC moves from 19 to 26 points, by hence showing an increase, rather than a decrease of global compositional inequality. Since China occupies the middle of the global income distribution, its capital income growth accrues directly to the hands of the global middle class, which is generally characterized by mild levels of capital income as compared to that of the top income class.

While global compositional inequality is lower in 2016 than in 2000, global *homoploutia* (Milanovic, 2019), or the share of world individuals that are simultaneously at the top 10% of the capital and labor income distributions, decreased from 15% to 9%. These two results - a falling degree of compositional inequality and of homoploutia - imply that both the global middle class and the top income class are benefiting from the reported rise of capital income.[19]

To conclude this section, we highlight the fact that the estimated world capital and labor income shares equal 5% and 95% in 2000, and 4% and 96% in 2016. Such low level of the capital share (and, hence, high level of the labor share) comes not as a surprise: it is well known that surveys underestimate the household sector capital share by more than two thirds, at least in the developed world (Flores, 2000).[20]

[19] While an estimate of global homoploutia can be safely calculated using our database in virtue of the high number of units per global percentile (recall that homoploutia is the share of world individuals simultaneously belonging to the top 10% of the capital and labor income distributions), the same cannot be done in a satisfactory manner for single countries. The very nature of our database, which includes, for each country and year, only 100 percentiles, would gives us a very rough estimates of this inequality dimension.

[20] Recall that, differently from the macroeconomic literature on the dynamics of the labor share (Karabarbounis and Neiman, 2014), our estimate of the labor share focuses solely on the household sector.

3.2 Pseudo-Growth Incidence Curve

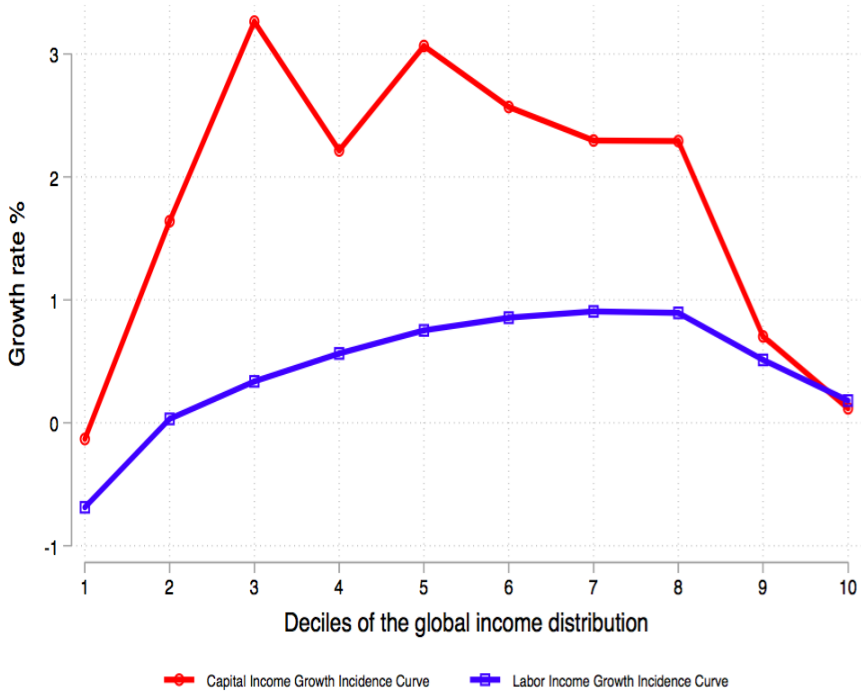
Who are the winners and losers of the documented capital and labor income growth? To properly answer this question, we need to compare the growth rates of capital and labor income along the income distribution (or, in other words, between rich and poor). For this reason, we introduce the anonymous *pseudo-growth incidence curve* (PGIC).[21] Differently from the standard anonymous growth incidence curve (GIC), which displays growth in average incomes by income fractiles, the anonymous PGIC displays growth in average *capital* and *labor* incomes by income fractile. The PGICs help us establish a relationship between the income rankings of world countries (X-axis), and their capital and labor income growth rates (Y-axis). Figure 2 displays the PGICs for labor (blue) and capital (red) incomes. Recall that the growth rate of total income is equal to the average between the capital and labor income growth rates, weighted by the capital and labor income shares, respectively. Such a decomposition applies to every decile (or fractile) of the income distribution.[22].

Figure 2 conveys three important messages. First, almost all the world's population experienced positive capital and labor income growth between 2000 and 2016, with the sole exception of the bottom income decile, whose labor income decreased over the period. This finding assumes even greater relevance if one considers that the period analyzed encompasses the outbreak of the 2008's global financial crisis. Second, capital income growth was higher than labor income growth for all income deciles of the world distribution. Moreover, the gap between capital and labor income growth is particularly large in correspondence to the middle of the distribution, for which capital income growth was three times higher than labor income growth. Third, the labor income PGIC monotonically increases with income deciles up to the eights decile, and then decreases over the last two deciles. The shape of the labor

[21] The term "pseudo" makes reference to the pseudo-Gini coefficient. The pseudo-Gini coefficient, differently from the standard Gini coefficient, summarizes the level of inequality of a given income source, such as capital income, when individuals are ranked according to their total, rather than capital, income. When total and capital income rankings are the same, the pseudo-Gini equals the standard Gini of capital income. However, when the two rankings are different, the two indices also differ.

[22] Section 4 explores this aspect in a formal manner.

Figure 2: Pseudo-Growth Incidence Curves for Capital and Labor



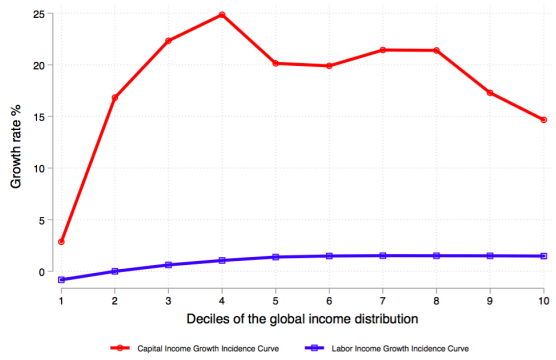
Note: Y-axis displays the growth rate of the decile average income source, weighted by population. Growth incidence is evaluated at decile groups of total income. Capital income is the sum of interests, dividends and rental income. Labor income includes wage income and self-employment income. Total income is, hence, the sum of labor and capital income.

income PGIC explains the previously documented fall of the labor income Gini coefficient. This result is in line with the recent findings of Hammar and Waldenstrom (2020), who show that global earning inequality declined in particular during the 2000s and 2010s. While Hammar and Waldenstrom (2020) report, however, a fall in the Gini of earnings of 15 points, we document a decrease of 6 points. The discrepancy between these two estimates are certainly due to the different unit of observations adopted (occupations versus individuals), the different data sources considered, as well as the different country coverage.[23] Capital and labor growth rates however

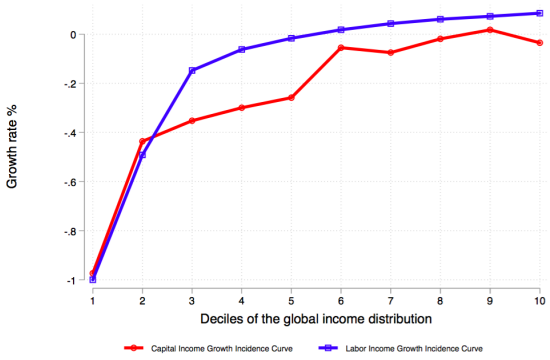
[23]Recall that Hammar and Waldenstrom (2020) construct their database using (i) earnings survey data from the Union Bank of Switzerland's *Prices and Earnings* report, and (ii) statistics from the ILO (hence not from LIS data). Moreover, the UBS data have only been collected in major cities, which implies it fails to cover rural areas.

Figure 3: Regional Pseudo-Growth Incidence Curves for Capital

(a) China



(b) US



Note: Y-axis displays the growth rate of the decile average capital (red) and labor (blue) income, weighted by population. Growth incidence is evaluated at decile groups of total income. Capital income is the sum of interests, dividends and rental income. Labor income includes wage income and self-employment income.

varied consistently between China and the US, as shown by figure 3.

China experienced a spectacular growth in capital income between 2000 and 2016. Such growth almost indistinctly accrued to the entire Chinese population, with the exception of the bottom income decile. This result is in line with recent findings documenting the process of wealth accumulation taken place in China during its transition from communism to a mixed economy (Piketty et al., 2019). Both curves for the US monotonically increase with income. Furthermore, labor income growth was negative for the bottom half of the income distribution, whilst capital income growth was negative for the entire distribution. The US PGICs display similar shapes to those of mature economies (see figure 11). As shown in appendix C, when transfer incomes are included in the definition of labor income, the overall shape of the global PGICs remain approximately the same.

4 Inequality Changes and Income Growth

In the previous section, we illustrated that global inequality in terms of capital and labor incomes decreased between 2000 and 2016. Moreover, we showed that

such decreasing trends were largely driven by the capital and labor income growth of the global middle class. China, in particular, displayed a capital income growth rate that was 20 times larger than that of the US. In this section we study how the growth rates of capital and labor income are related to variations in capital and labor income inequality from an analytical perspective. As showed by Lakner et al. (2020),[24] it is possible to establish a formal link between changes in income inequality, on the one hand, and total income growth differentials, on the other. In what follows, we extend their result in order to allow changes in capital and labor income inequality to affect income growth differentials across the distribution.

Let us consider individual i's income at time t is composed by the sum of her capital and labor incomes (in absolute terms), as follows:

$$y_i^t = \Pi_i^t + W_i^t. \tag{1}$$

As a consequence, individual i's income growth, g_i, can also be decomposed into the growth rates of capital and labor income so to obtain:

$$g_i^y = \pi_i g_i^\pi + w_i g_i^w, \tag{2}$$

where π_i and w_i are the individual i's capital and labor share at time t, while $g_i^\pi = \frac{\Pi_i^{t+1} - \Pi_i^t}{\Pi_i^t}$ and $g_i^w = \frac{W_i^{t+1} - W_i^t}{W_i^t}$ the individual i's capital and labor growth rates, respectively. As previously done, we can write individual i's final capital income, Π_i^*, as follows:

$$\Pi_i^* = (1 + \lambda_\pi)\left[(1 - \tau_\pi)\Pi_i + \tau_\pi \mu_\pi\right], \tag{3}$$

and individual i's final labor income, W_i^*, as follows:

$$W_i^* = (1 + \lambda_w)\left[(1 - \tau_w)W_i + \tau_w \mu_w\right], \tag{4}$$

where τ_π and τ_w are the proportional capital and labor income tax rates, whereas λ_π and λ_w the capital and labor mean income growth of the population. μ_π and μ_w are, instead, the population mean capital and labor income. If we combine equation

[24] See appendix A for details on the Lakner et al. (2020)'s method.

2 with equations 3 and 4 and we rearrange terms, we obtain (see appendix B for details):

$$g_i = \lambda + \dot{\tilde{G}}_\pi(1+\lambda_\pi)\left(\frac{\Pi_i - \mu_\pi}{y_i}\right) + \dot{\tilde{G}}_w(1+\lambda_w)\left(\frac{W_i - \mu_w}{y_i}\right), \tag{5}$$

where $\dot{\tilde{G}}_\pi = -\tau_\pi$ and $\dot{\tilde{G}}_w = -\tau_w$ are the pseudo-Gini of capital and labor income changes. If we assume the overall growth rates of total, capital and labor income equal to zero, equation 5 can be written as:

$$g_i = \dot{\tilde{G}}_\pi\left(\frac{\Pi_i - \mu_\pi}{y_i}\right) + \dot{\tilde{G}}_w\left(\frac{W_i - \mu_w}{y_i}\right), \tag{6}$$

According to equation 6, the two terms $\left(\frac{\Pi_i - \mu_\pi}{y_i}\right)$ and $\left(\frac{W_i - \mu_w}{y_i}\right)$ determine the differential growth rates g_i across the income distribution under two specific tax and transfer schemes for capital and labor income. Hence, when an individual's capital (labor) income is below the average capital (labor) income, then a Gini reduction will positively affect her total income growth rate. The opposite happens when her income is above the mean.

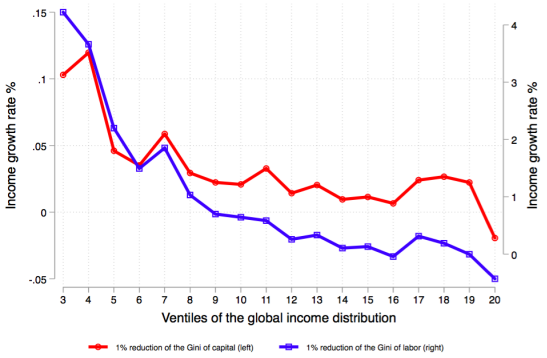
When we study how these two coefficients distribute along the world income spectrum, we obtain the results shown in figure 4. Given that income levels at the bottom deciles are particularly low, we restrict our analysis from the third decile onward.

The left graph in figure 4 evaluates the impacts of a 1% reduction in the pseudo-Gini coefficients of capital (red curve) and of labor (blue curve) income on growth differentials in 2000. The right graph instead evaluates these differentials in 2016. As expected, both curves decrease monotonically with income: the lower deciles would benefit, in income growth terms, from inequality reductions, whilst the upper deciles would experience negative income growth. While these are mechanical results, other aspects of these curves deserve attention.

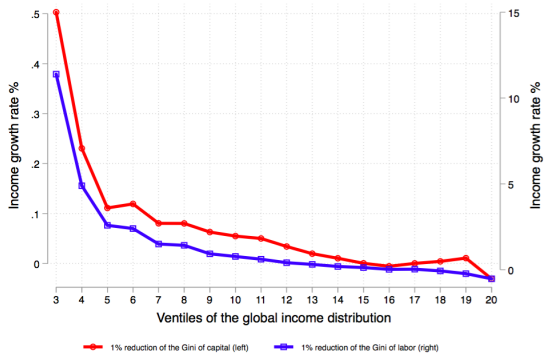
The individuals benefiting from a 1% reduction in global labor income inequality in 2000 would have belonged to the bottom 7 ventiles of the world income distribution. In 2016, however, these individuals would have belonged to the the bottom 12 ventiles. When we focus on the third ventile of the world income distribution, we observe that a 1% reduction in labor income inequality in 2016 would have increased its

Figure 4: Global effect of 1% capital and labor income pseudo-Gini reduction on income growth

(a) 2000



(b) 2016



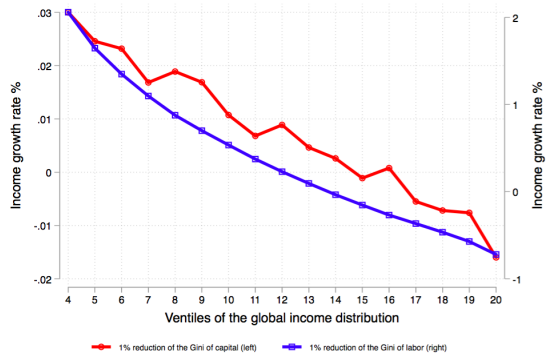
(overall) income growth three times more than how it would have done in 2000. This is explained by the fact that, under a lower absolute level of labor income inequality, the gain from a reduction in labor income inequality would be beneficial for a larger share of the world poorest population.

Capital income redistribution is, however, much less growth enhancing than labor income redistribution. There is, in fact, a much lower volume of capital income that, if redistributed, would foster overall income growth. With that said, the capitalization process observed in the last two decades played a major role in making capital income redistribution increasingly more growth enhancing. This can be observed by noticing that a 1% reduction in capital income inequality in 2000 would have risen the income of the third ventile of the world income distribution only one fifth of how it would have done in 2016.

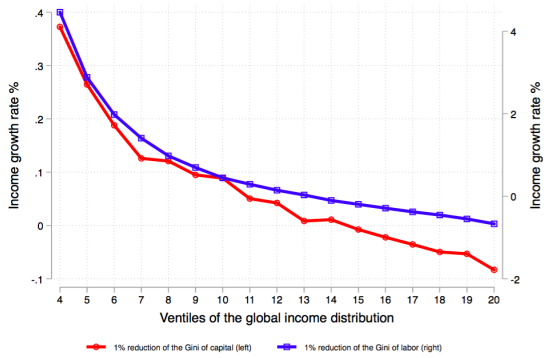
If we now focus on China and the US (figure 5), we observe similar results. In both countries a one percent reduction of both capital and labor income inequality would have enhanced capital and labor income growth more in 2016 than in 2000. This applies to all income ventiles above the fourth. In other words, inequality reduction today would boost the income growth of the bottom and middle classes more than how it would have done in the past.

Figure 5: Effect of 1% capital and labor income pseudo-Gini reduction on income growth in China and the US

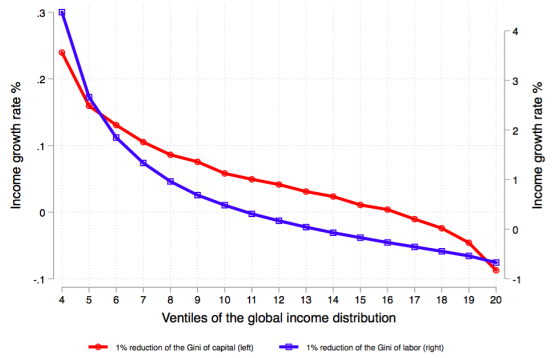
(a) China - 2000



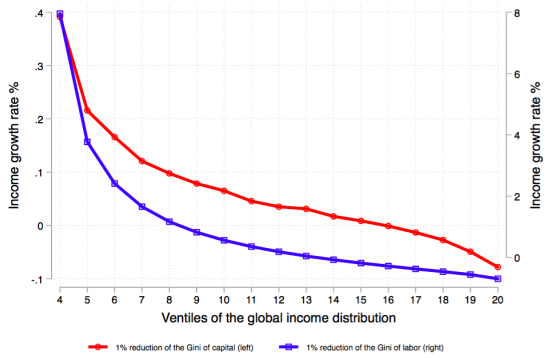
(b) China - 2016



(c) US - 2000



(d) US - 2016



5 Country-Specific Analysis

As shown by Lakner and Milanovic (2015), a simple way to evaluate the success of a country's deciles is to compare their positions in the global distributions of capital and labor incomes. In this section we focus on eight countries, namely China, India, US, Russia, Germany, Spain, Mexico and Iraq. Figure 6 focuses on the first four countries, and exclusively analyzes their capital income distributions.[25]

In 2000, only 12% of the Chinese earned from capital, and they fell within the top

[25]When we focus on the labor income distribution, instead, we observe that the positions of a country's deciles in the global labor income distribution is similar in the two benchmark years (see figures 12 and 13).

20% of the global capital income distribution.[26] In 2016, instead, these same people were part of the global top 10% capital earners. This speaks of the empowerment of the Chinese elite, a phenomenon recently analyzed by Yang et al. (2019) from an empirical perspective.[27] Moreover, the share of the Chinese population that earned from capital income increased drastically, reaching 55%. All of these people were included in the top 30% of the global distribution. This speaks of the profound capitalization of the Chinese middle class, as compared to the other world countries. The Russian capitalization process shares similarities with the Chinese one. In 2000, only 2% of the population earned from capital income, whilst in 2016 the 13% of Russian had positive capital income.[28] In other words, the share of people with positive capital income increased by more than five times between 2000 and 2016.

The results for the US and India are, however, completely different. Both countries lost positions in the global capital income ranking over the period analyzed. However, while in the US such loss involved the 60% of the population, in India it involved only the 4% of the population. Moreover, in both countries the "poorest" capital income earners were the most affected.

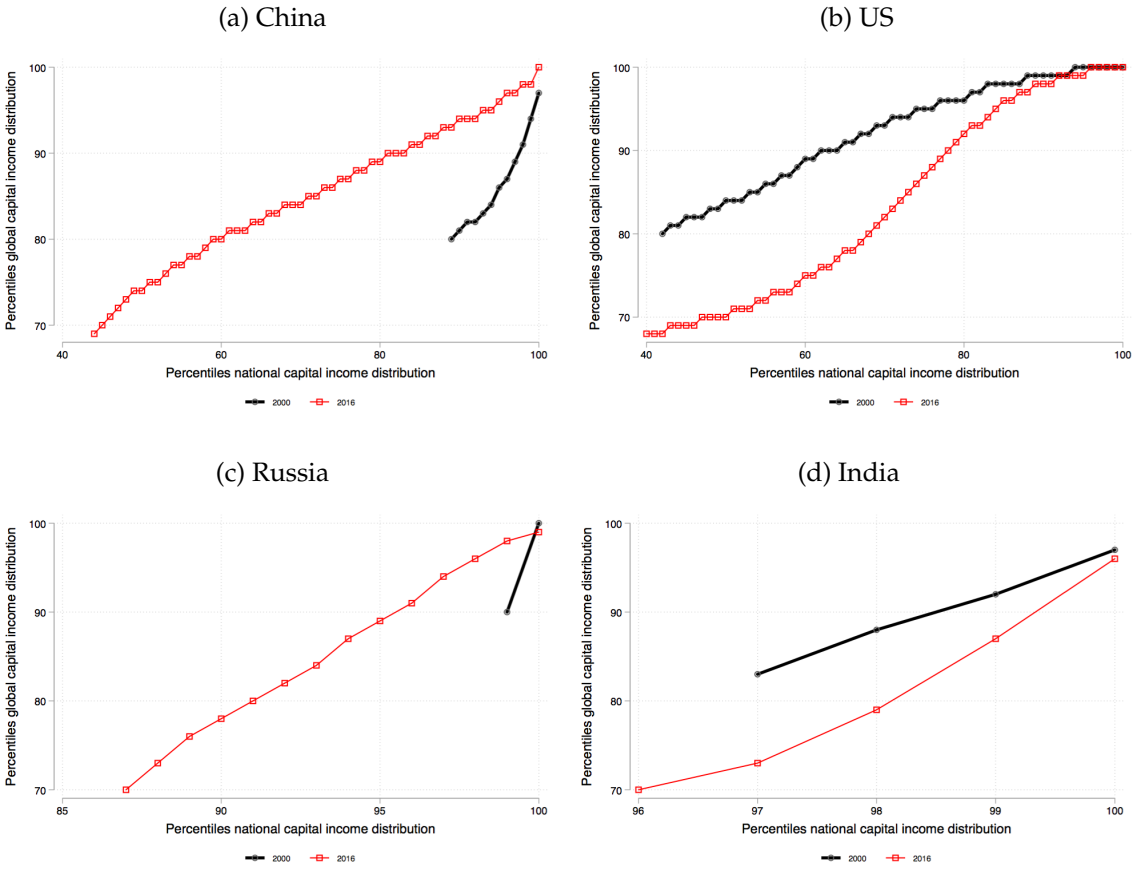
Other western economies, such as Germany and Spain, lost positions in the global capital income distribution (figure 7). The share of Germans with positive capital income remained almost the same between 2000 and 2016 (approximately the 80% of the entire population), whilst the share of Spanish fell from 70% to 50%. Mexico occupied the same global positions in both years, and its share of individuals with positive capital income almost doubled (moving from 2% to 4%). On the contrary, Iraq had

[26] This result is in line with Goldstein and Tian (2020), who report a similar increase in the percentage of Chinese households with an income composed, at least, by the 10% of capital income.

[27] Yang et al. (2019) study the changing composition of the Chinese top 5% between the late-1970s and early-2010s, and show that the rapid market transition of these years led to a new type of elite, firstly composed by technocrats enrolling in the Chinese Communist Party (CCP), and then joined by entrepreneurs and capitalists. The Chinese *political capitalism* (Milanovic, 2019) is currently in a political equilibrium where the private sector elite is left prospering as long as it does not question the political order.

[28] Recall that survey data severely underestimates the concentration of capital incomes at the very top. Furthermore, our data do not account for capital flights, which was an important feature of the Russian economy, as discussed by Novokmet et al. (2018). With that said, the extent of the capitalization process that we report in our analysis is in line with the documented rise of private wealth holdings occurred in the country (Novokmet et al., 2018).

Figure 6: Global Against National Rankings - Capital Income



Note: Only percentiles with non-zero capital incomes are considered.

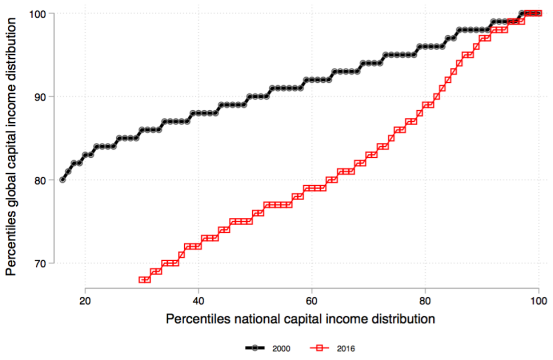
the same share of capital income earners (80% of the total), which however lost global positions.

Another relationship that deserves attention is the one between the positions of a country's deciles in the global capital and total income distributions. Figure 8 combines these two distributions for seven countries in 2016. The bisector indicates a benchmark distribution whereby the two rankings are perfectly correlated. In other words, if we denote by $r_c^g(y)$ and $r_c^g(\pi)$ the rankings of country c in the global (g) distributions of total, y, and capital, π, income, respectively, the bisector is characterized by a correlation coefficient between $r_c^g(y)$ and $r_c^g(\pi)$, denoted by $\mathscr{R}(r_c^g(y), r_c^g(\pi))$, which is equal to 1.

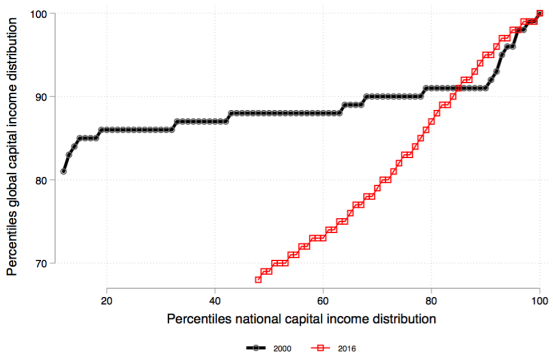
When a country's deciles lye above the bisector, all of its global income rankings

Figure 7: Global Against National Rankings - Capital Income

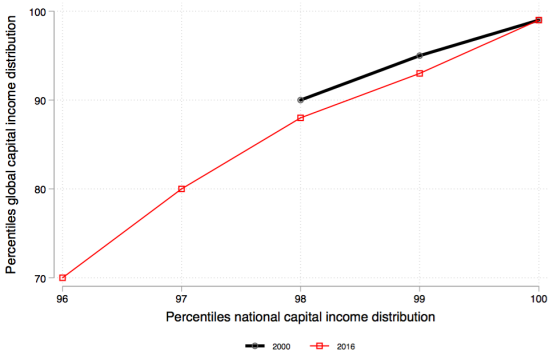
(a) Germany



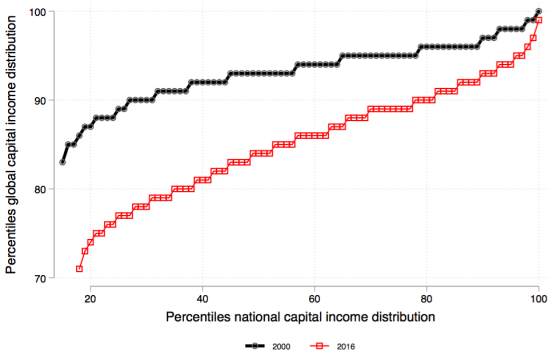
(b) Spain



(c) Mexico



(d) Iraq

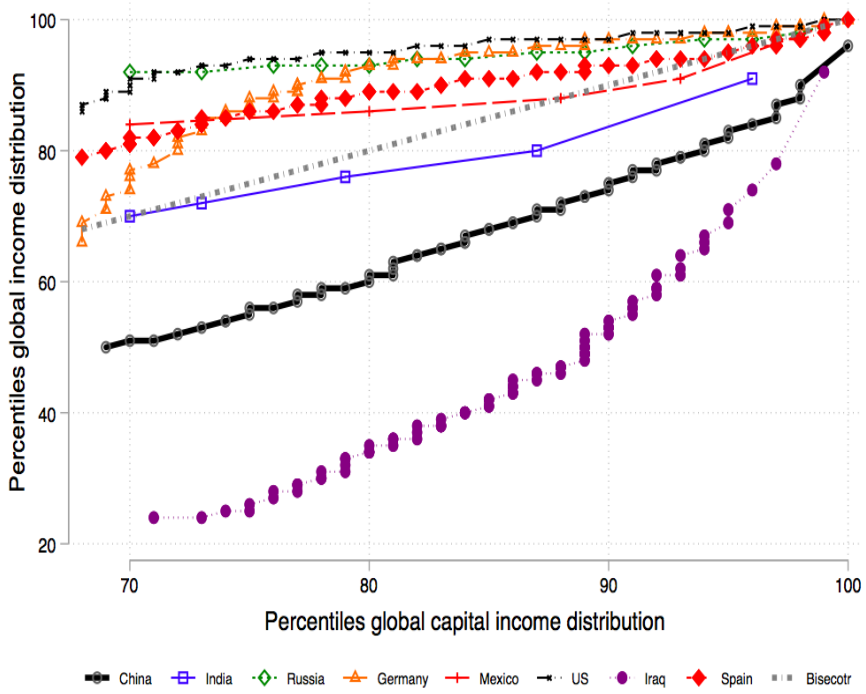


Note: Only percentiles with non-zero capital incomes are considered.

are greater than the capital ones ($r_c^g(y) > r_c^g(\pi) \ \ \forall\pi$). This implies that an individual, or a fractile that occupies a given position $r_c^g(\pi_i)$ in the capital distribution is higher up in the income distribution (i.e. $r_c^g(y_i) > r_c^g(\pi_i)$), thanks to her labor incomes. On the contrary, when a country's deciles lye below the bisector, all of its global income rankings are lower than the capital ones ($r_c^g(y) < r_c^g(\pi) \ \ \forall\pi$). In other words, under the latter scenario, an individual's labor income is not high enough, as compared to that of other world countries, to allow her achieving a global income position that is, at least, equivalent to her capital income position.

Russia, Germany, Spain and the US are located above the bisector. Their global income rankings is, therefore, higher up than their capital income ranking. Furthermore, if an individual of these countries increases her position along the capital in-

Figure 8: Global capital and total income positions - 2016



Note: Only percentiles with non-zero capital incomes are considered.

come distribution, this has only a mild impact on her total income ranking. This evidence speaks of the important role played by labor income in making the individuals of these countries globally rich. Notice that the curves for Russia and the US almost coincide. This implies that, if you selected a Russian or an American with the same capital income, they would also share the same level of total income (PPP-adjusted). Bear in mind, however, that the size of these two groups are completely different, as suggested by figure 6. In fact, while the probability to select an American in 2016 with positive capital income is the 60%, that of selecting a Russian with positive capital income, in the same year, is the 13%. A different situation holds, however, true for China and Iraq, which are located below the bisector. This means that all individuals in these countries occupy a global capital income position that is higher up than their global income position. In other words, if you compared the total income

of an Iraqis and an American that share the same level of capital income (in PPP), the former would be much poorer than the latter. This result shows how the Chinese and Iraqis capitalization process has not been accompanied by a proportional increase in labor compensations. Finally, India and Mexico approximately distribute along the bisector. Indians and Mexicans share, therefore, similar global positions in both the capital and total income distributions with respect to the other countries. Notice that, however, the poorest capital income earners in Mexico are almost as (income) rich as the wealthy capital income earners. Tu put it differently, those who earn positive capital income in Mexico occupy, on average, the 90^{th} decile of the global total income distribution. The probability to belong to this group was, however, only the 4% in 2016.

6 Conclusion

This paper estimates and analyzes the global distributions of capital and labor incomes. Based on a novel database covering approximately the 80% of the world output and the 60% of the global population, it discusses these two distributions in the years 2000 and 2016. Two major results emerge from our analysis. First, the world underwent a spectacular process of capitalization. The share of world individuals with positive capital income rose from 20 to 32 percent. Second, the reported capital income growth accrued principally to the hands of the global middle class. This is particularly true for China, whose average growth rate was about 20 times higher than that of western economies.

Global inequality in both capital and labor income decreased. Specifically, the Gini coefficient of capital income fell from 85 to 83 points, and that of labor income from 73 to 67 points. While the fall in relative labor income inequality is consistent with the documented decline in global inequality in income (Lakner and Milanovic, 2015, Milanovic, 2020) and earnings (Hammar and Waldenstrom, 2020), the dynamics of capital inequality has been undocumented so far. The result whereby relative capital income inequality is greater than labor income inequality is also consistent with

country-level evidences (see, for instance, Milanovic (2019)).

Many western countries lost positions in the global capital income distribution. The rankings of Germans and Spanish citizens in the global capital income distribution fell, on average, by 10 percentiles. In other words, when we compare the global position of a German occupying the 50^{th} percentile of the *national* capital income distribution in 2000 and 2016, we observe that she fell from the 90^{th}, to the 80^{th} percentile. Such a loss of global capital income positions, however, did not involve the top 5% capital income earners, but rather the lower and middle classes.

We also report that the global (total) income ranking is higher up than the capital income ranking for many western economies like the US. In other words, western countries tend to be globally rich in terms of total income, rather than capital income. This speaks to the crucial role played by labor income in making the individuals of these countries higher up in the global income distribution. On the contrary, China's and Itaq's citizens occupy global capital income positions that are higher up than their global total income positions. This implies that their labor compensations are extremely low, as compared to those of the rest of the world.

We also show that global compositional inequality in terms of capital and labor income decreased substantially over the period considered. The IFC index, a synthetic measure of compositional inequality, fell from 32 to 4 points. We showed that this fall is almost entirely explained by the Chinese capitalization process. This change is equivalent to moving from LAC compositional inequality levels, to the levels of Canada and the UK (Ranaldi and Milanovic, 2020). The relationship between the functional and the personal distributions of income, therefore, weakened on a global scale. The implications are twofold: on the one hand, an increase in the global capital share, all else being equal, will have limited impact on global inequality. On the other hand, a larger fraction of the world population is more vulnerable vis-á-vis a global financial crisis.

Given the data limitations that come along with the empirical measurement of the global capital and labor income distributions, we call for the collection and harmonization of more survey data on individuals' income sources. We also encourage the

development of novel methodological techniques in order to improve not only the estimation of the total income distribution, but also its composition in terms of capital and labor incomes.

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Appendices

A Inequality and Growth

In a recent work, Lakner et al. (2020) develop an analytical framework to model the relationship between inequality and poverty in the long run. Such framework can also be useful for the purpose of studying the relationship between income growth, on the one hand, and different sources of inequality (i.e. capital and labor), on the other. The objective of this section is to express the average growth rate of a given income percentile, g_i, as a function of capital, I_k, and of labor, I_l, income inequality. To this end, let us first introduce the framework by Lakner et al. (2020).

If we denote by y_i the initial mean income of percentile group i, and by y_i^* the final mean income of the same percentile group, we can express y_i^* as follows:

$$y_i^* = y_i(1 + g_i). \tag{7}$$

In order to establish a relationship between growth and inequality for each percentile of the income distribution, Lakner et al. (2020) rely on the tax and transfer scheme firstly introduced by Kakwani (1993), and then further extended by Ferreira and Leite (2003). This tax and transfer scheme involves an increase of everyone's income at a rate λ (mean income growth rate of the population), together with a tax and transfer scheme that taxes everyone at a rate τ and gives everyone an equal absolute transfer, $\tau\mu_y$, where μ_y is the population mean income. It can be shown that the Gini coefficient obtained after the tax and transfer scheme, G_y^*, is equal to $(1 - \tau)G_y$. In other words, the tax rate imposed, τ, is equivalent to the observed percentage change in the Gini coefficient. Individual i's income after the tax and transfer scheme can, hence, be written as follows:

$$y_i^* = (1 + \lambda)[(1 - \tau)y_i + \mu_y\tau]. \tag{8}$$

By combining equations 7 and 8, we obtain:

$$g_i = (1 - \tau)(1 + \lambda) - 1 + [\tau(1 + \lambda)\mu_y]\frac{1}{y_i}. \tag{9}$$

Equation 9 expresses percentile i's mean income growth as a function of percentile i's mean initial income y_i, population mean income μ_y, and changes in the inequality

level τ. If no tax and transfer scheme was adopted, everyone's income growth would have simply been a function of λ. On the contrary, if a proportional tax rate τ was applied and an equal absolute transfer given to everyone, income growth would have been negatively related with initial income: the income of the richest would have grown less than that of the poorest.

B Proof Result 5

Let us rewrite the growth rates of capital and labor income as follows:

$$g_\pi = (1-\tau_\pi)(1+\lambda_\pi) - 1 + [\tau_\pi(1+\lambda_\pi\mu_\pi),]\,\frac{1}{\Pi_i} \tag{10}$$

and:

$$g_w = (1-\tau_w)(1+\lambda_w) - 1 + [\tau_w(1+\lambda_w\mu_w)]\,\frac{1}{W_i}. \tag{11}$$

Given that individual i's growth rate can always be decomposed in the following way: $g_i^y = \pi_i g_i^\pi + w_i g_i^w$, equations 10 and 11 can be combined as:

$$\begin{aligned} g_i^y =& \pi(1-\tau_\pi)(1+\lambda_\pi) + w(1-\tau_w)(1+\lambda_w) - w - \pi \\ &+ \pi\,[\tau_\pi(1+\lambda_\pi)\mu_\pi]\,\frac{1}{\Pi_i} + w\,[\tau_w(1+\lambda_w)\mu_w]\,\frac{1}{W_i}, \end{aligned} \tag{12}$$

and by noticing that $\lambda_y = \pi\lambda_\pi + w\lambda_w$, it yields:

$$\begin{aligned} g_i^y =& \lambda_y - \tau_\pi\pi(1+\lambda_\pi) - \tau_w w(1+\lambda_w) \\ &+ \pi\,[\tau_\pi(1+\lambda_\pi)\mu_\pi]\,\frac{1}{\Pi_i} + w\,[\tau_w(1+\lambda_w)\mu_w]\,\frac{1}{W_i}. \end{aligned} \tag{13}$$

When we further rearrange terms, we obtain:

$$\begin{aligned} g_i^y =& \lambda_y + \pi\left[\tau_\pi(1+\lambda_\pi)\left(\frac{\mu_\pi - \Pi_i}{\Pi_i}\right)\right] \\ &+ w\left[\tau_w(1+\lambda_w)\left(\frac{\mu_w - W_i}{W_i}\right)\right], \end{aligned} \tag{14}$$

and by multiplying the two squared brackets by $\frac{Y_i}{Y_i}$, it finally gives:

$$\begin{aligned} g_i^y =& \lambda_y + \left[\tau_\pi(1+\lambda_\pi)\left(\frac{\mu_\pi - \Pi_i}{Y_i}\right)\right] \\ &+ \left[\tau_w(1+\lambda_w)\left(\frac{\mu_w - W_i}{Y_i}\right)\right]. \end{aligned} \tag{15}$$

Following Kakwani (1993), it is straightforward to show that τ_π and τ_w equal the relative change of the pseudo-Gini coefficients of capital and labor income, and not of the Ginis of capital and labor income. This is explained by the fact that individuals need be ranked according to i, and hence with respect to total, rather than capital or labor, income.

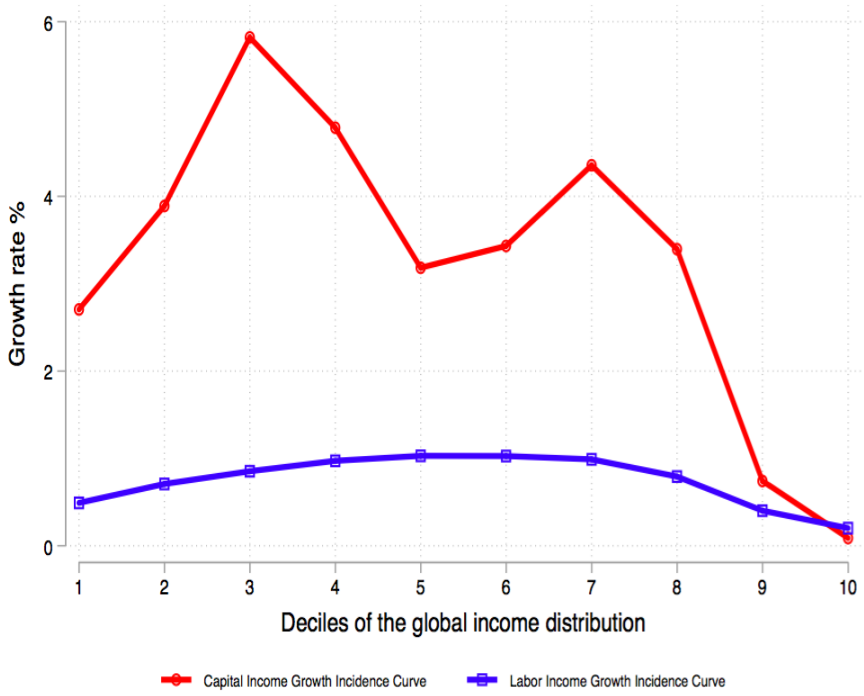
C Robustness

In this section, we display the global capital and labor PGICs under a second definition of income. Overall, the global PGICs are unaffected by the income concept adopted. However, the regional PGICs for China and the US show slightly different shapes. This is explained by the fact that the novel (labor) income definition not only modifies the labor income growth rates across the distribution, but also the same individuals' total income rankings.

C.1 Market plus transfer income

The second income concept includes transfer income in the definition of labor income, and leaves the capital income definition unchanged. Transfer income includes pensions, public social benefits and private transfers. Pensions in turn include public non-contributory and contributor pensions, as well as private pensions. Family and unemployment benefits are part of the public social benefits, together with sickness and work injury pay, disability benefits, general assistance and housing benefits. Finally, when we refer to private transfers we mean cash transfers from private institutions (scholarship), inter-household cash transfers (alimony and child support) and Remittances. The rationale for considering market income plus transfers is that it allows us to investigate the role of state-sponsored policies in shaping individuals' income growth dynamics. Figure 9 shows the PGICs for capital (red) and labor (blue) income under the novel income concept adopted. The two curves are very similar to the benchmark curves. Their main difference relies on the magnitude of the capital income growth rates. While the global middle class experienced an average growth rate of 3% under the baseline income definition, its growth rate reached 4% under

Figure 9: Pseudo-Growth Incidence Curves for Capital and Labor



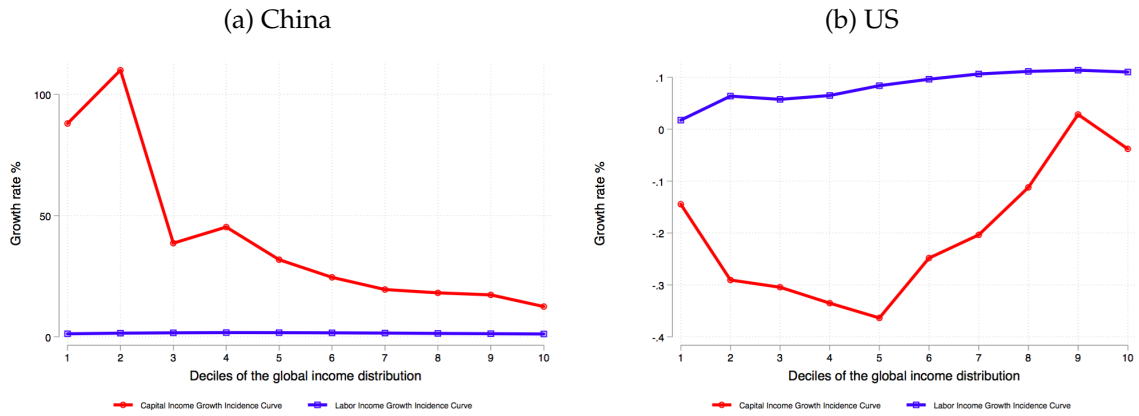
Note: Y-axis displays the growth rate of the decile average income source, weighted by population. Growth incidence is evaluated at decile groups of total income. Capital income is the sum of interests, dividends and rental income. Labor income includes wage income, self-employment income and transfers. Total income is, hence, the sum of labor and capital income.

the second income concept. As said before, although the definition of capital income is left intact, the countries' total income rankings in the two graphs are different. In other words, the composition of the global middle class varies across income concepts. This aspect also explains the emergence of two picks, one in correspondence of the third decile, and another of the seventh decile. To better understand what stands behind these two picks, let us focus on the regional PGICs for China and the US.

Figure 10 shows the regional capital and labor income PGICs for both countries. The capital income PGIC for China displays a spike in correspondence to the first two deciles: the growth rate of capital income at the bottom of the Chinese distribution grew 100-fold. This is explained by the fact that, when transfer income are included in our income concept, the poorest Chinese happen to be those earning from capital

income only. This implies that even a small increase in the absolute level of their income may result into an extremely high growth rate. The same situation, although less marked, applies to the US, which also experienced an increase in capital income growth at the bottom of their distribution. Recall that, under the baseline income definition, the bottom five deciles of the US income distribution experienced up to -100% capital income growth whilst, now, their average capital income growth is around -30%. The labor income PGIC for the US displays a consistent increase in the labor income at the bottom of the distribution, as compared to the PGIC without transfers income. It is not surprising that transfers have a favorable impact on income growth at the bottom of the distribution. In a recent study, Parolin and Gornick (2020) show, for instance, that the policy-driven contribution of transfers is growth-enhancing mainly at the bottom of the disposable income distribution in many high-income countries.

Figure 10: Regional Pseudo-Growth Incidence Curves for Capital



Note: Y-axis displays the growth rate of the decile average capital (red) and labor (blue) income, weighted by population. Growth incidence is evaluated at decile groups of total income. Capital income is the sum of interests, dividends and rental income. Labor income includes wage income and self-employment income.

D Supplementary Tables

Table 2: Descriptive Statistics (mean)

Country	Income		Capital income		Labor income		GDP pc	
	2000	2016	2000	2016	2000	2016	2000	2016
Australia	14406	21412	853	2299	13552	19112	35592	43651
Austria	11921	19947	426	642	11532	19313	38844	44632
Belgium	11998	17328	831	661	11128	16667	36580	42465
Brazil	3731	4717	78	117	3654	4599	12701	14200
Canada	17693	20195	856	1471	16836	18723	33742	43110
Chile	4190	6471	154	173	4036	6298	14241	22257
China	1504	3831	19	347	1484	3483	4302	11919
Colombia	2241	3867	89	223	2136	3644	9040	13207
Czech Rep	7033	10230	59	161	6974	10069	22297	31295
Denmark	19380	21426	748	951	18632	20474	42337	46906
Dominican Rep	3192		92		3099		10453	
Egypt	2802	2922	367	130	2435	2791	7192	10242
Estonia	3523	8722	36	110	3487	8855	15641	26081
Finland	14404	16968	1009	1166	13395	15802	34860	40310
France	10697	11967	690	642	10006	11325	34705	36814
Germany	19103	19742	1019	1166	18084	18576	36698	44467
Greece	7420	7604	462	397	6958	7207	24839	24188
Guatemala	3362	2735	85	29	3277	2705	6457	7147
Hungary	3409	5709	106	34	3301	5674	17082	25212
Iceland	20301	18626	1366	1324	18914	17282	38893	40136
India	1064	1505	13	19	1050	1487	3210	4624
Iraq	2018	1936	519	305	1499	1630	11774	15032
Ireland	11606	13786	326	280	11267	13504	40644	44897
Israel	10325	13067	399	463	9926	12603	26239	32617
Italy	8934	11514	813	241	8120	11272	36735	34840
Ivory Coast	1277	1692	45	52	1232	1640	2810	3225
Japan		13807		699		13107		37148
Jordan	2915	3422	393	197	2522	3224	7840	8768
Lithuania		9018		202		8813		28063
Luxembourg	17446	24403	1059	1204	16384	23205	81689	90656
Mexico	2958	3486	50	56	2908	3429	16129	17789

Netherlands	16645	19137	416	844	16226	18293	40613	45753
Norway	18516	24373	1555	1453	16960	22920	57986	62809
Panama	4368	5482	85	79	4282	5401	14006	19393
Paraguay	3777	4653	156	140	3621	4509	7983	11381
Peru	2286	3923	72	129	2194	3792	7142	12414
Poland	3859	6203	13	33	3846	6170	13943	26093
Romania	2491		14		2476		10367	
Russia	2399	10189	54	126	2344	10063	14050	24416
Serbia	2676	3142	36	34	2639	3108	11934	14902
Slovak Rep.	3942	7366	12	16	3929	7349	14083	26647
Slovenia	6148	8567	33	298	6115	8269	21909	29131
South Africa		6123		110		6013		12214
South Korea	12407	13734	102	122	12305	13627	26697	31776
Spain	9631	11865	313	539	9315	11326	30030	33244
Sudan		1011		22		989		4280
Sweden	14750		729		14021		36820	
Switzerland	24062	28321	1649	1440	22413	26880	50776	56535
UK	13259	16059	612	575	12646	15483	32372	39760
US	25611	26514	1745	1606	23865	24907	45661	53631
Uruguay	3374	6187	150	217	3224	5966	12089	20210
Vietnam		3214		106		3112		5065

Table 3: Bin years

Country	**Bin year**			
	2000	*Change*	2016	*Change*
Australia	2001	1	2014	-2
Austria	2000	0	2016	0
Belgium	2000	0	2016	0
Brazil	2006	6	2016	0
Canada	2000	0	2016	0
Chile	2000	0	2015	-1
China	2002	2	2013	-3
Colombia	2004	4	2016	0
Czech Rep	2002	2	2016	0
Denmark	2000	0	2016	0
Dominican Rep	2007	7		
Egypt	1999	-1	2015	-1
Estonia	2000	0	2013	-3
Finland	2000	0	2016	0
France	2000	0	2010	-6
Germany	2000	0	2016	0
Greece	2000	0	2016	0
Guatemala	2006	6	2014	-2
Hungary	1999	-1	2015	-1
Iceland	2004	4	2010	-6
India	2004	4	2011	-5
Iraq	2007	7	2012	-4
Ireland	2000	0	2010	-6
Israel	2001	1	2016	0
Italy	2000	0	2016	0
Ivory Coast	2002	2	2015	-1
Japan			2013	-3
Jordan	2002	2	2013	-3
Lithuania			2016	0
Luxembourg	2000	0	2013	-3
Mexico	2000	0	2016	0
Netherlands	1999	-1	2013	-3
Norway	2000	0	2013	-3

Panama	2007	7	2013	-3
Paraguay	2000	0	2016	0
Peru	2004	4	2016	0
Poland	1999	-1	2016	0
Romania	1997	-3		
Russia	2000	0	2016	0
Serbia	2006	6	2016	0
Slovak Rep.	2004	4	2013	-3
Slovenia	1999	-1	2015	-1
South Africa			2015	-1
South Korea	2006	6	2012	-4
Spain	2000	0	2016	0
Sudan			2009	-7
Sweden	2000	0		
Switzerland	2000	0	2013	-3
UK	1999	-1	2016	0
US	2000	0	2016	0
Uruguay	2004	4	2016	0
Vietnam			2013	-3

Table 4: Descriptive statistics on unbalanced panel

	2000	**2016**	**Change** (%)
Gini of capital income (%)			
World	85	82	-3
China	74	68	-8
India	58	69	17
LAC	62	66	5
Mature Economies	84	87	2
US	83	86	3
Gini of labor income (%)			
World	73	67	-7
China	44	47	6
India	50	53	4
LAC	57	54	-5
Mature Economies	49	48	-3
US	47	47	2
Top 10% *capital income share (%)*			
World	98	91	-6
China	99	68	-31
India	100	100	0
LAC	100	100	0
Mature Economies	87	92	5
US	84	88	4
Top 10% *labor income share (%)*			
World	63	55	-13
China	32	35	7
India	39	41	5
LAC	46	44	-3
Mature Economies	39	38	-2
US	37	38	3

Table 5: Descriptive statistics on unbalanced panel

	2000	**2016**	**Change** (%)
Mean capital income ($)			
World	243	355	45
China	19	348	1670
India	13	19	40
LAC	79	102	27
Mature Economies	961	973	1
US	1747	1607	-8
Mean labor income ($)			
World	4685	6349	35
China	1484	3484	134
India	1051	1489	41
LAC	3343	4212	25
Mature Economies	15521	17325	11
US	23960	25012	4
Median capital income ($)			
World	0	0	
China	0	31	
India	0	0	
LAC	0	0	
Mature Economies	15	1	-93
US	21	7	-65
Median labor income ($)			
World	1168	2109	80
China	1020	2471.5	142
India	641	876	36
LAC	1779	2426	36
Mature Economies	10042	11554	15
US	16812	16945.5	0

Table 6: Descriptive statistics on unbalanced panel

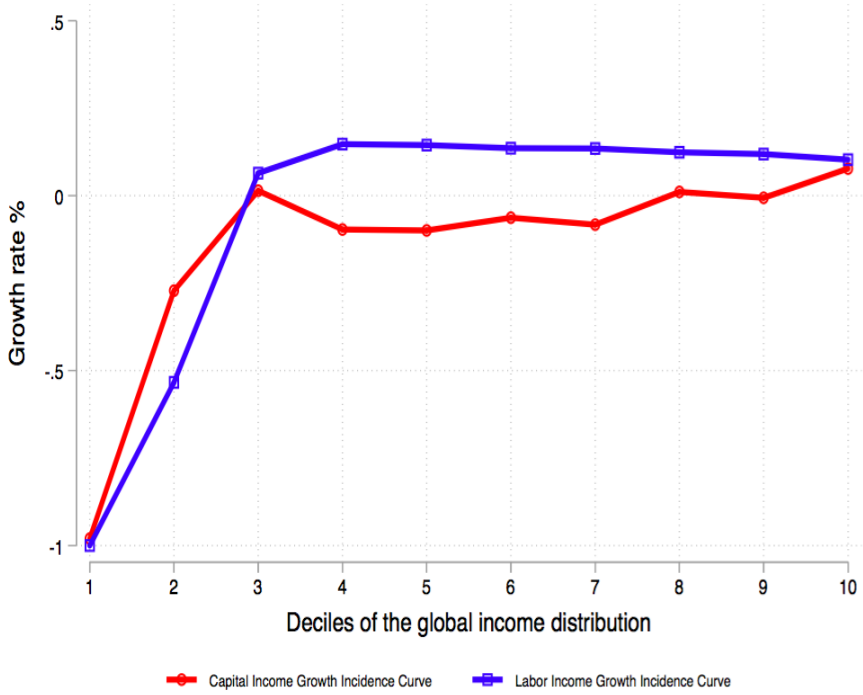
	2000	**2016**	**Change** (%)
Individuals without capital (%)			
World	80	68	-15
China	89	44	-50
India	97	96	-1
LAC	96	95	-1
Mature Economies	44	50	13
US	42	40	-4
Income-Factor Concentration (IFC) Index (%)			
World	32	4	-86
World *without* China	19	26	36
China	22	5	-74
India	42	44	4
LAC	42	34	-17
Mature Economies	1	12	860
US	10	17	69
Homoploutia (%)			
World	15	9	-37

Table 7: Descriptive statistics on unbalanced panel

	2000	**2016**	**Change** (%)
Capital share (%)			
World	4	5	7
China	1	9	608
India	1	1	1
LAC	2	2	4
Mature Economies	5	5	-8
US	6	6	-11
Labor Share (%)			
World	95	94	0
China	98	90	-7
India	98	98	0
LAC	97	97	0
Mature Economies	94	94	0
US	93	93	0

E Supplementary Figures

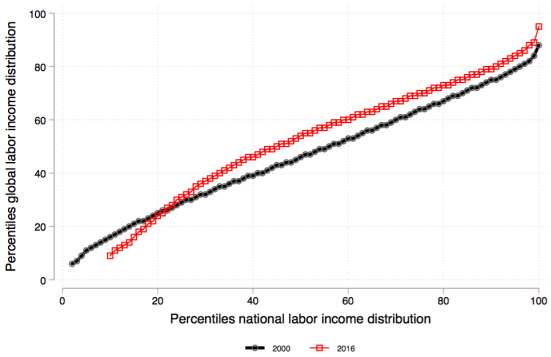
Figure 11: Pseudo-Growth Incidence Curves for Capital and Labor in Mature Economies



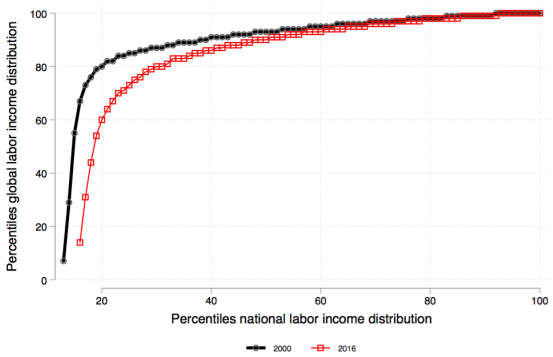
Note: Y-axis displays the growth rate of the decile average income source, weighted by population, of Mature Economies. Growth incidence is evaluated at decile groups of total income. Capital income is the sum of interests, dividends and rental income. Labor income includes wage income, self-employment income and transfers. Total income is, hence, the sum of labor and capital income. Following the classification of Lakner and Milanovic (2015), mature economies include EU-27, Australia, Bermuda, Canada, Hong Kong, Iceland, Israel, Japan, Korea, New Zealand, Norway, Singapore, Switzerland, Taiwan, United States and UK.

Figure 12: Global Against National Rankings - Labor Income

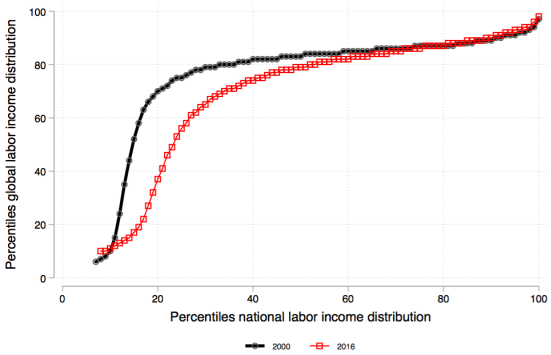
(a) China



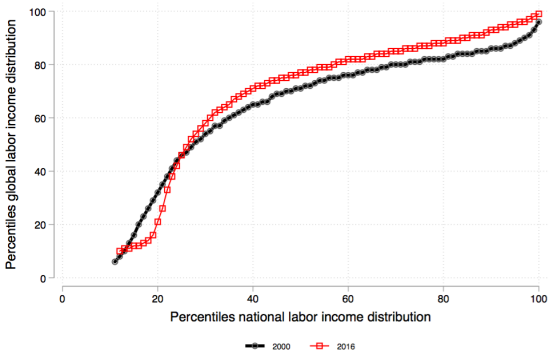
(b) US



(c) Russia



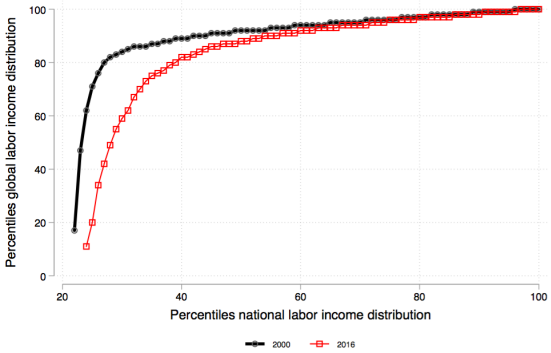
(d) India



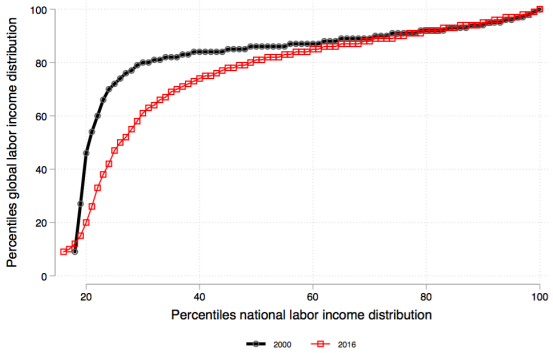
Note: Only percentiles with non-zero labor incomes are considered.

Figure 13: Global Against National Rankings - Labor Income

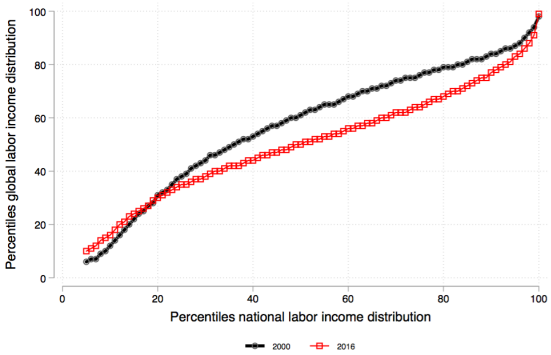
(a) Germany



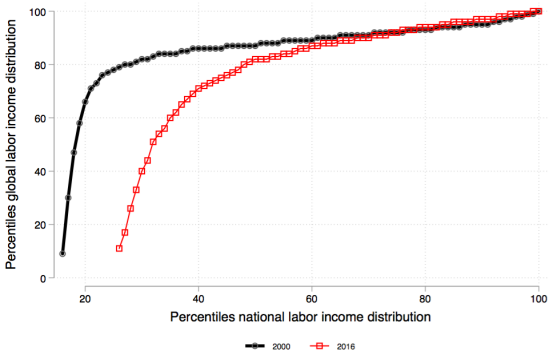
(b) Spain



(c) Mexico



(d) Iraq



Note: Only percentiles with non-zero labor incomes are considered.