World Inequality Lab – Working Paper N° 2021/21

Global Carbon Inequality, 1990-2019

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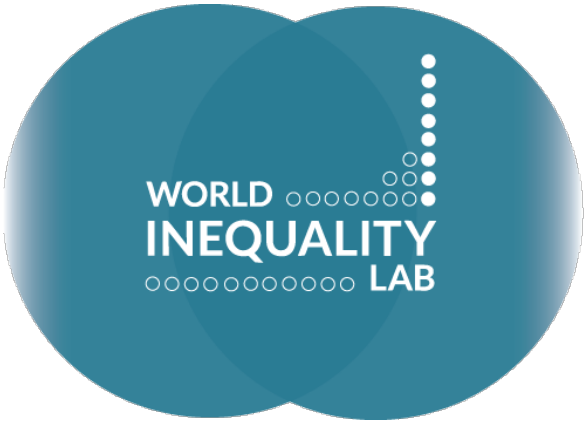
This version: 22 October 2021
First draft: 21 October 2021



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Global carbon inequality, 1990-2019

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ABSTRACT

This paper estimates global greenhouse gas (GHG) emissions inequality between 1990 and 2019, based on a newly assembled global dataset of income and wealth inequality from the World Inequality Database and on Environmental Input-Output tables. We find that the richest 10% of the global population emits nearly 48% of global emissions in 2019, the top 1% emits 17% of the total, whereas the poorest half of the global population emits 12% of global emissions. While two thirds of the inequality in individual emissions was due to emissions inequalities *between* countries in 1990, the situation has entirely reversed in 2019: 63% of the global inequality in individual emissions is now due to gaps between low and high emitters *within* countries. Our main results appear to be robust to a wide range of parametric assumptions on the relationship between carbon emissions and economic inequality. We stress at the onset that a lot of efforts need to be done by governments to properly monitor carbon inequalities. Absent such information, it is impossible to properly asses the distributional impacts of climate policies.

Introduction

Climate change and rising economic inequality are among the main challenges of our times and there is growing evidence that these issues are interrelated. On the one hand, climate change has already exacerbated inequalities within and between countries and will do so in the future[1–4] and on the other, economic inequalities are a challenge for the implementation and effectiveness of sound climate policies[5,6]. A vast body of work has shown that income and wealth inequality have been rising in most countries since the early 1980s[7]. It remains unclear, however, how this has materialized in terms of the global inequality of carbon emissions between individuals.

Modern statistical apparatuses have not been designed to properly track income and wealth inequality, as a result, researchers and tax authorities still experience difficulties when measuring international financial flows and how these impact income and wealth inequality. This measurement challenge is even more pronounced when it comes to properly estimating and comparing the distribution of individual carbon emission levels across and within countries. As a result, researchers, policymakers and civil society still struggle with basic facts about carbon footprints across the world. National carbon footprints (i.e. emissions net of the GHG content of goods and services traded with the rest of the world) are not published by most statistical institutions across the globe (and when they are, this is done with several years of delay) and their distribution across the population is mostly unknown.

The present paper addresses this issue by combining recent progress in income and wealth inequality research, with data on the GHG content of individuals' consumption and wealth ownership. The rest of this paper is organized as follows: (i) Section I presents the main data sources and measurement methods use in this paper, (ii) section II presents

our main results on the global inequality of carbon emissions, (iii) section III discusses these results. The Methods section as well as the Supplementary Information document presents additional methodological details.

Measuring the global inequality of individual carbon emission

Taking stock of recent progress in global inequality research

The past decade was marked by important breakthroughs in researcher's ability to monitor global income and wealth inequality, thanks to the development of new concepts and methods as well as to the release of new income and wealth tax data. The standard method used to track inequality within countries and globally in the second half of the 20th century relied on household surveys. This was problematic given that surveys are hardly comparable across countries, fail to properly measures incomes at the top of the distribution and are not consistent with macroeconomic totals[1][8,9].

The Distributional National Accounts (DINA) methodology[10,11] developed by a large network of researchers affiliated to the World Inequality Database (wid.world), in partnership with national and international statistical organizations, sought to address these issues by systematically combining household surveys with additional sources of information on economic inequality, namely administrative tax data and National Accounts. Tax data offer a more reliable account of income and wealth dynamics among wealthy groups than do self-declared values report in household surveys and enable long term comparisons, spanning over decades and centuries in some countries. National Accounts enable more robust international comparisons of income and wealth growth rates.

This body of work contributed to improve collective understanding of the ultimate beneficiaries of economic growth within countries and at the global level. Within countries, it was shown that contemporary societies recorded a significant rise in income and wealth disparities after the 1980s, following a historical decline in inequality between the 1940-1980s.[7,12]. At the global level, this body of work revealed that the top 1% global income distribution captured significantly more economic growth than the entire half of the global population, since 1980[7] and that inequalities remain very large, despite strong growth in the emerging world over the past decades. While such dynamics can have important impacts on global carbon emissions, these interactions between global inequality of income, wealth, and emissions have attracted only a limited amount of attention among researchers to date.[13,14] They constitute the topic of this paper.

The link between carbon emissions inequality and economic inequality

The study of the global inequality in individual carbon emissions faces informational, conceptual and methodological challenges. Most countries do not publish standardized data sources on individual emissions levels. Researchers looking for such information can use household socio-economic surveys to estimate people's carbon footprints, but this requires significant efforts. Some researchers and statistical agencies have produced such estimates, combining individual level socio-economic surveys with energy databases and Input-Output tables (see below) or with life cycle analyses[2] to estimate the carbon footprints of different groups of individuals in countries.[?,15–18]

This literature typically finds that carbon emissions associated to individual consumption depend on several factors including income and expenditure as well as households' location, technologies, occupation, habits, age or regulations.

[1] (that is, the sum of incomes in surveys does not match the sum of incomes used to measure standard aggregate indicators such as the Gross Domestic Product, GDP)

[2] Life cycle analyses, contrary to Input-Output estimates, estimate GHG footprints following a "bottom-up" approach, i.e. using product-level information on the carbon content of goods and services. Input-Output approaches typically mobilize less granular data, but offer macroeconomic consistency, i.e. one tonne of carbon cannot be counted twice. Double-counting can be an issue with Life-Cycle methods.

While non-income factors play a significant role in determining direct individual emissions levels (i.e. emissions stemming from the direct use of energy, such as emissions associated to car driving), it is found that income inequality levels are the main driver of indirect emissions (emissions associated to energy mobilized to produce goods and services consumed by individuals), and of overall emissions inequalities. The reason for the dominance of income in the determination of overall emission levels is relatively straightforward: at a given income level, two individuals may have different heating or transportation needs, implying different direct energy requirement and different direct emissions levels. However, when taking into account the carbon content of their overall consumption (the clothes or appliances they buy, the food they eat, the services they purchase, etc.), differences in direct energy needs are comparably small.

Micro-level studies focusing on the inequality of overall energy use, or overall emissions typically find that the elasticity of individual carbon emissions, or the strength of the relationship between rising individual income and CO_2 emissions (or energy consumption) (see Methods),[3] is contained in the 0.5-0.9 range depending on countries and model specifications, with a median value around 0.7-0.8 when focusing on expenditure and a little less when focusing on income[15,19–23] (see **Supplementary Information**, Table 1).[4]

Using these observed regularities, one can estimate emissions inequalities within countries and globally, provided they have access to standardized global income and consumption datasets. Some studies have followed this strategy[24–26] and provided useful benchmarks numbers about global carbon inequality levels, that have been mobilized in global policy debates[27,28].[5]

In this paper, we build up on this approach to develop a novel framework, which distributes the totality of global emissions to individuals within countries, taking into account their emissions as consumers, beneficiaries of public expenditures and as asset owners (that is, when individuals own wealth). We take into account the role of both consumption and capital ownership in individual carbon footprints. Our basic framework is as follows: carbon emissions are generated by economic activity, which results in the production of goods and services, which generates flows of income. These flows can be either consumed or saved and invested, in line with the standard national accounting[29] framework. In our basic framework, any flow of anthropogenic GHG emissions can be traced to a flow of consumption or to a flow of savings and investments.[30] In this approach, it is essential to start with correct emission totals.

Getting macroeconomic emissions levels right: Input-Output tables

Governments around the globe do not release data on carbon footprints, i.e. information which takes into account the carbon associated to the production of goods and services imported and exported to other countries. To recover these levels, we rely on Input-Output tables. The Input-Output framework is quantitative model of the economy initially developed to represent the inter-dependencies between different economic sectors (households, governments, firms) within and between a countries[31]. The framework was extended to economy-environment interactions[32] to better understand the material content of production and the impact of environmental policies and relatively recently to study international flows of carbon embodied in international trade[33,34].

The strength of the Input-Output framework applied to carbon accounting is that it relies on a systematic representation of the world economy which avoids any double-counting: the same tonne of carbon cannot be ultimately

[3] In a model of the form $log(CO_2) = \alpha.\log(income)$, where α is the elasticity

[4] See also[?] for a critical discussion of this methodology

[5] While[24] does not factor in emissions embodied in international trade[24–26] do not treat investment related emissions differently than consumption-related emissions.

attributed to two different agents[6]. The environmental Input-Output approach is also particularly useful because it can distinguish between emissions from household consumption, emissions associated to firms investments and to government expenditures – again perfectly in line with National Accounts concepts.

Input-Output estimates typically find that 60-70% carbon footprints can be traced to households (or individuals)' private consumption, 10-20% to public consumption [7] and 15-25% of emissions are associated to firms' investments. Significant variations occur across countries.[8]

In this study, we distribute the totality of global GHG emissions to individuals. We assume that: (i) aggregate carbon footprints of the household sector in a given country are distributed following a power law of individual income. We test a wide range of parametric assumptions to accommodate for a diversity of relationships between carbon emissions and income (see Methods); (ii) aggregate emissions associated to investments and capital stock replacement are distributed following the distribution of asset ownership within countries; (iii) aggregate emissions from the Government sector (emissions from the public health sector, education, infrastructure defense, etc.) are distributed equally to individuals. We test multiple parametric assumptions and define more than 20 scenarios, which are presented in the **Supplementary Information** (SI) to this paper.

The global inequality of individual carbon emissions

Carbon inequality levels within and between world regions

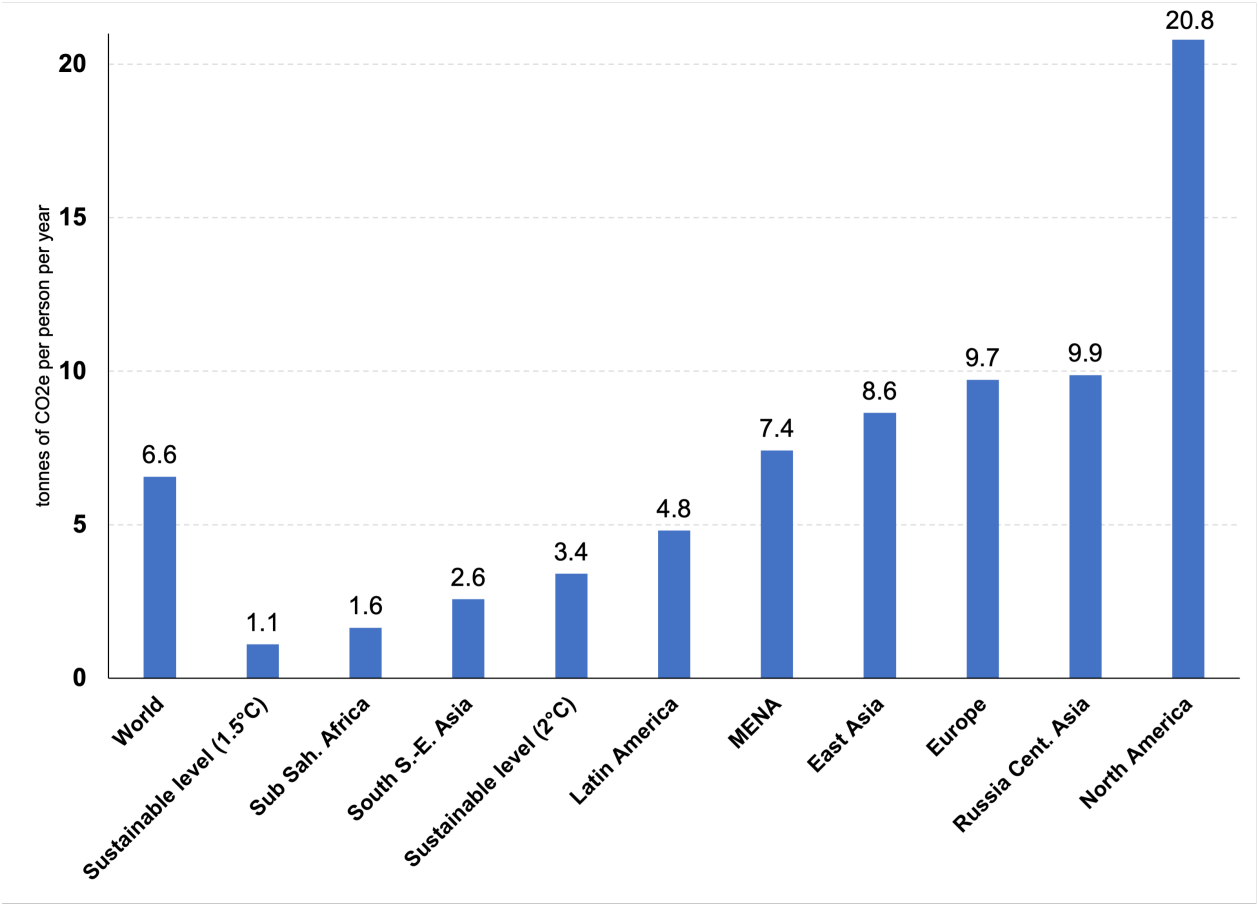
Figure 1 presents average GHG emissions by region in 2019, while SI Table 2 presents these values as a ratio world average. Per capita emissions in Sub-Saharan Africa (1.6 tonnes per person per annum) represent just one quarter of the average global per capita emissions. Thus, average emissions in Sub-Saharan Africa are close to 50% above the 1.5°C sustainable level and about half of the 2°C budget. At the other end of the spectrum, per capita emissions in North America are 21 tonnes per capita (three times the world average and six times higher than the 2°C sustainable level). In between these two extremes stand South and South-East Asia, at 2.5 tonnes per capita (40% of the current world average and 80% of the 2°C budget) and Latin America at 4.8 tonnes (70% of world average, 1.4 times the 2°C budget), followed by the Middle East and North Africa, East Asia, Europe, and Russia and Central Asia, whose averages fall in the 7.5-10 tonnes range (between one and 1.5 times the world average, and two to three times more than the 2°C sustainable level). Note that these values include emissions embedded in the goods and services traded with the rest of the world (see Methods and SI Table 3).

Significant inequalities in carbon footprints are observed in every region of the world. Figure 2 presents the carbon footprints of the poorest 50%, the middle 40% and the richest 10% of the population across the regions. In East Asia, the poorest 50% emit on average around three tonnes per annum, while the middle 40% emit nearly eight tonnes, and the top 10% almost 40 tonnes. This contrasts sharply with North America, where the bottom 50% emit fewer than 10 tonnes, the middle 40% around 22 tonnes, and the top 10% over 70 tonnes of carbon dioxide equivalent. This in turn can be contrasted with the emissions in Europe, where the bottom 50% emit nearly five tonnes, the middle 40% around 10.5 tonnes, and the top 10% around 30 tonnes. Emissions levels in South and South East Asia are significantly lower, from one tonne for the bottom 50% to fewer than 11 tonnes on average for the top 10%.

[6] In other carbon accounting methodologies, such as the life-cycle analyses, the issue of double counting is omnipresent

[7] i.e. these correspond to emissions of the government, which are associated to public spending (i.e. collective consumption expenditure such as schools, healthcare, defense, etc.)

[8] Estimates obtained with[35–37].



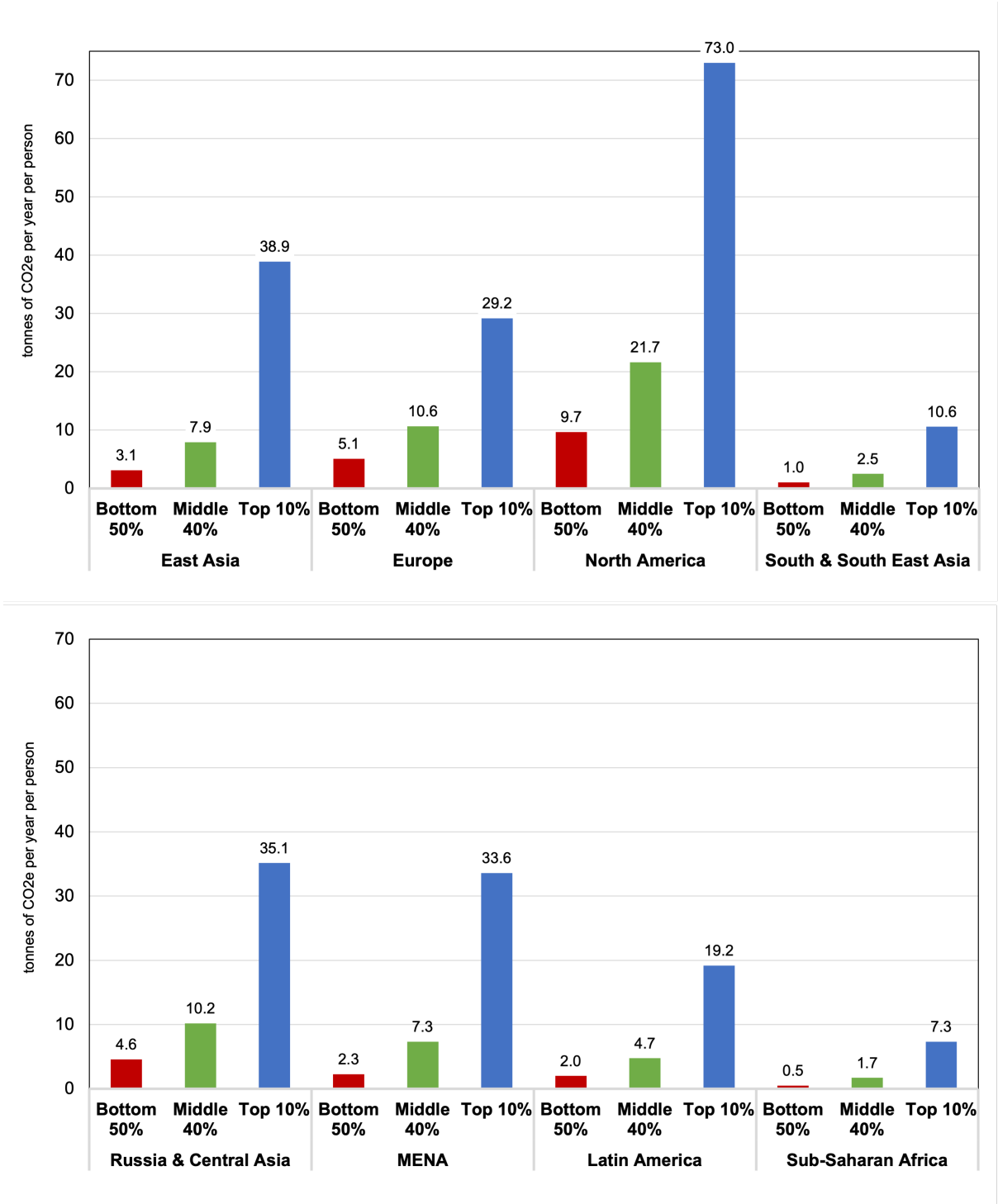
Interpretation: Values include emissions from domestic consumption, public and private investments as well as imports and exports of carbon embedded in goods and services traded with the rest of the world. Sustainable level correspond to an egalitarian distribution of the remaining carbon budget until 2050. *Source and series*: See Supplementary Information, Chancel (2021).

Figure 1. Per capita emissions (incl. imports) by world region (tCO2/year), 2019

It is striking that the poorest half of the population in the US has emission levels comparable with the European middle 40%, despite being almost twice as poor. This difference is largely due to the carbon-intensive energy mix in the US, where emissions from electricity are about twice as much as in the European Union. In the US, basic infrastructure consumes much more energy (because of the more widespread use of cars, for example), and devices tend to be less energy efficient (on average, cars are larger and less fuel efficient in the US than in Europe).

Nevertheless, European emissions remain very high by global standards. The European middle class emits significantly more than its counterparts in East Asia (around 10.5 tonnes compared with eight tonnes) and all other regions except North America. Yet it is also remarkable that the richest East Asians and the richest 10% in the Middle East emit more than the richest Europeans (39 tonnes, 34 tonnes, and 29 tonnes, respectively). This difference results from the higher income and wealth inequality levels in East Asia and the MENA region than in Europe, and to the fact that investments by wealthy Chinese are associated with significant volumes of emissions.

Turning to other regions, we find that Russia and Central Asia have an emissions profile close to that of Europe, but with higher top 10% emissions. Sub-Saharan Africa lags behind, with the bottom 50% emissions around 0.5 tonnes and top 10% emissions around 7 tonnes per person per annum. Overall, it stands out that only the poorest 50% of the



Interpretation: Personal carbon footprints include emissions from domestic consumption, public and private investments as well as imports and exports of carbon embedded in goods and services traded with the rest of the world. Modeled estimates based the systematic combination of tax data, household surveys and input-output tables. Benchmark scenario. Emissions split equally within households. **Source and series**: See Supplementary Information, Chancel (2021).

Figure 2. Carbon footprints by income group across the world, 2019

	Number of individuals (million)	Average (tonne CO2 per capita)	Threshold (tonne CO2 per capita)	Share (% total)
Full population	**7710**	**6.6**	**<0.1**	**100%**
Bottom 50%	**3855**	**1.6**	**<0.1**	**12.0%**
incl. Bottom 20%	*1542*	*0.8*	*<0.1*	*2.5%*
incl. Bottom 30%	*2313*	*2.1*	*1.8*	*9.5%*
Middle 40%	**3084**	**6.6**	**3.1**	**40.4%**
Top 10%	**771**	**31**	**13**	**47.6%**
incl. Top 1%	*77.1*	*110*	*46*	*16.8%*
incl. Top 0.1%	*7.71*	*467*	*130*	*7.1%*
incl. Top 0.01%	*0.771*	*2531*	*569*	*3.9%*

Table 1. Global inequality of individual carbon emissions, 2019

Interpretation: Individual carbon footprints include emissions from domestic consumption, public and private investments as well as imports and exports of carbon embedded in goods and services traded with the rest of the world. Modeled estimates based the systematic combination of tax data, household surveys and input-output tables. Benchmark scenario. Emissions split equally within households. *Source and series*: See Supplementary Information, Chancel (2021).

population in Sub-Saharan Africa and South and South-East Asia come in under the 1.5°C per capita budget. Measuring levels against the 2°C per capita budget, we observe that the bottom half of the population in each region is below or close to the threshold. In fact, it is striking that the bottom 50% in high and middle income regions such as Europe, and Russia and Central Asia emit levels that fall within the 2°C budget. This shows that climate mitigation is largely a distributional issue, not only between countries but also within them.

Global carbon inequality between individuals

Figure 3 present the inequality of carbon emissions inequality between individuals at the world level. The global bottom 50% emit on average 1.6 tonnes per annum and contribute 12% of the total. The middle 40% emit 6.6 tonnes on average, making up 40.4% of the total. The top 10% emit 31 tonnes (47.6% of the total). The top 1% emits 110 tonnes (16.8% of the total). Global carbon emissions inequality thus appears to be very great: close to half of all emissions are due to one tenth of the global population, and just one hundredth of the world population (77 million individuals) emits about 50% more than the entire bottom half of the population (3.8 billion individuals).

Table 1 presents more details on the global distribution of carbon emissions. The bottom 20% of the world population (1.5 billion individuals) emit fewer than 1.8 tonnes per capita per annum. In fact, about one billion individuals emit less than a tonne per capita. The entry threshold to get in the middle 40% is 3.1 tonnes, and it takes 13 tonnes per capita per annum to get in the top 10%. It takes 130 tonnes to break into the global top 0.1% group of emitters (7.7 million individuals).

The evolution of individual carbon emissions inequalities

How has global emissions inequality evolved over the past decades? A simple way to represent the evolution of carbon emissions inequality is to plot average emissions growth rate by percentile of the global income distribution. Global polluters are ranked from the least emitter to the richest on the horizontal axis of Figure 4, and their per capita emissions growth rate is presented on the vertical axis. Since 1990, average global emissions per capita grew by about 7% (and overall emissions grew by 58%). The per capita emissions of the bottom 50% grew faster than the average (32%), while

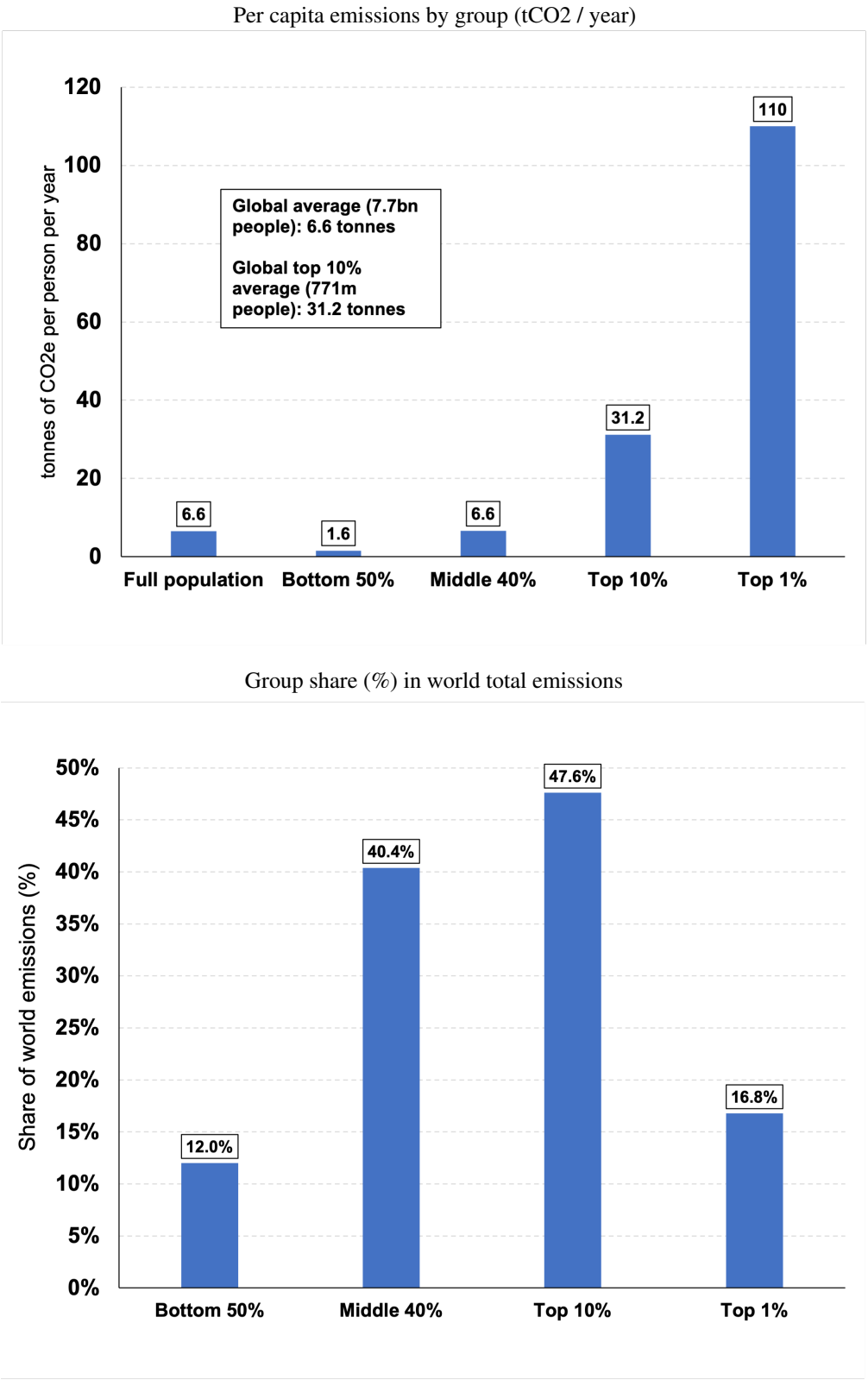
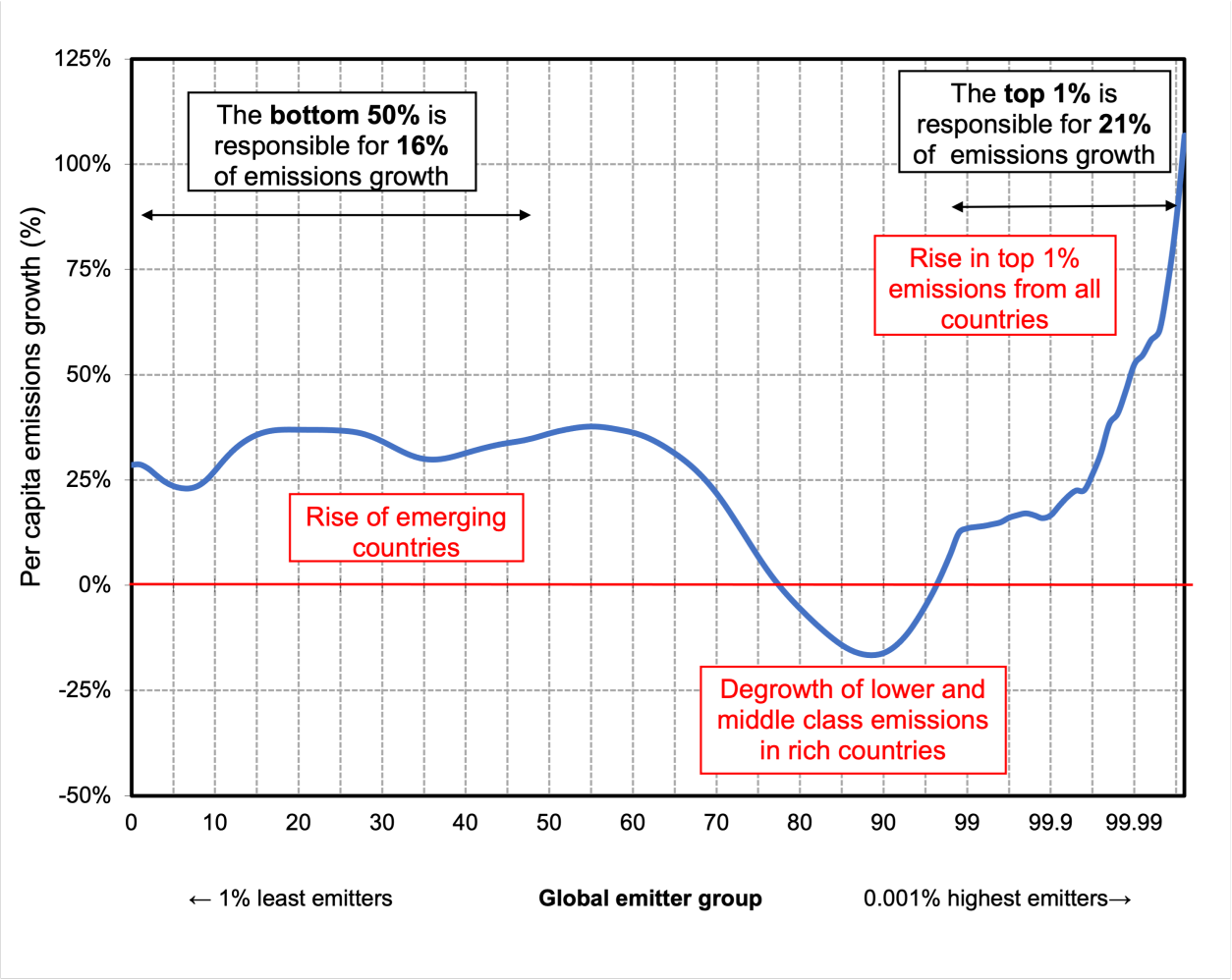


Figure 3. Global inequality in individual carbon emissions, 2019

Interpretation: Personal carbon footprints include emissions from domestic consumption, public and private investments as well as imports and exports of carbon embedded in goods and services traded with the rest of the world. Modeled estimates based the systematic combination of tax data, household surveys and input-output tables. Benchmark scenario. Emissions split equally within households. **Source and series**: See Supplementary Information, Chancel (2021).



Interpretation: Emissions of the global bottom 50% rose by around 20-40% between 1990 and 2019. Emissions notably declined among groups above the bottom 80% and below the top 5% of the global distribution, these groups mainly correspond to lower and middle income groups in rich countries. Emissions of the global top 1% and richer groups rose substantially. Personal carbon footprints include emissions from domestic consumption, public and private investments as well as imports and exports of carbon embedded in goods and services traded with the rest of the world. Modeled estimates based the systematic combination of tax data, household surveys and input-output tables. Benchmark scenario. Emissions split equally within households. *Source and series*: See Supplementary Information, Chancel (2021).

Figure 4. Global inequality and carbon emissions, 1990-2019

those of the middle 40% as a whole grew more slowly than the average (4%), and some percentiles of the distribution actually saw a reduction in their emissions of between five and 25%. Per capita emissions of the top 1% emissions grew by 26% and top 0.01% emissions by more than 110%.

Per capita emissions matter, but understanding the contribution of each group to the overall share of total emissions growth is critical. Groups starting with very low per capita emissions levels can increase their emissions substantially over a given period, yet still contribute very little to the overall growth in global emissions. This is in effect what has happened since 1990 (see Table 2, last column). The bottom half of the global population contributed only 16% of the growth in emissions observed since then, while the top 1% (77 million individuals) was responsible for 21% of emissions growth. These values are reported in the two boxes of Figure 4

	Per capita emissions (tonnes CO2e per capita)		Total emissions (billion tonnes CO2e)		Growth in per capita emissions (1990-2019)	Growth in total emissions (1990-2019)	Share in emissions growth (1990-2019)
	1990	2019	1990	2019			
Full population	6.2	6.6	32.0	50.5	7%	58%	100%
Bottom 50%	1.2	1.6	3.1	6.1	32%	96%	16%
Middle 40%	6	6.6	13.3	20.4	4%	54%	39%
Top 10%	30	31	15.7	24.0	4%	54%	45%
Top 1%	87	110	4.5	8.5	26%	87%	21%
Top 0.1%	323	467	1.7	3.6	45%	114%	10%
Top 0.01%	1397	2531	0.7	2.0	81%	168%	7%

Table 2. Emissions growth and inequality, 1990-2019

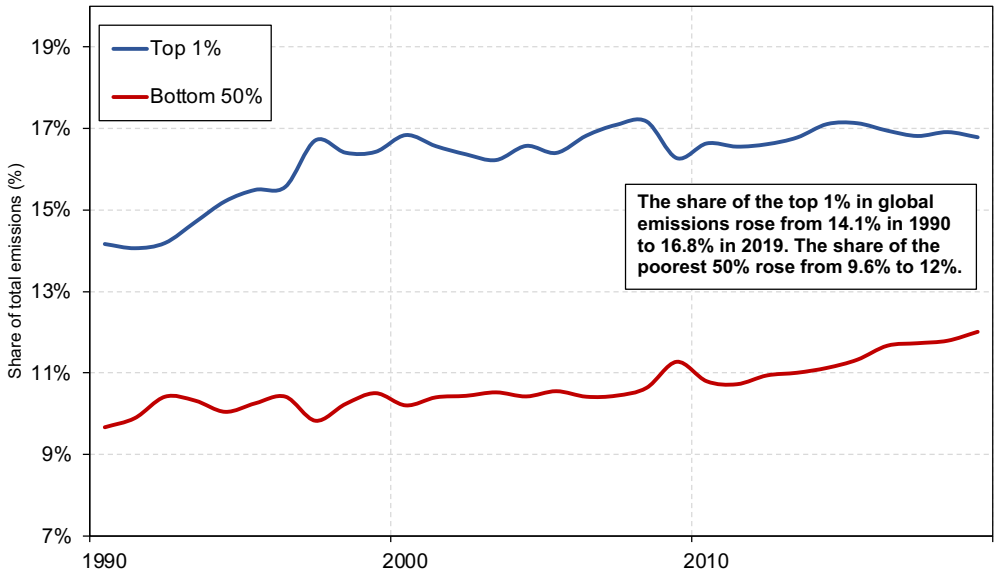
Interpretation: Individual carbon footprints include emissions from domestic consumption, public and private investments as well as imports and exports of carbon embedded in goods and services traded with the rest of the world. Modeled estimates based the systematic combination of tax data, household surveys and input-output tables. Benchmark scenario. Emissions split equally within households. *Source and series*: See Supplementary Information, Chancel (2021).

One of the most striking results shown in Figure 4 is the reduction in the emissions of about 15-20% of the world population, which largely corresponds to the lower and middle income groups of the rich countries. In these countries, the working and middle classes have reduced their emissions over the past 30 years. To be sure, these reductions are insufficient to meet the goals of the Paris Climate Agreement to limit global warming to 1.5°C or 2°C, but they contrast nevertheless with the emissions of the top 1% in these countries (and at the global level), which have significantly increased. Such a gap in carbon mitigation efforts between the rich and the less well-off in rich countries raises important questions about climate policies. In societies where the standards of living of the wealthy also shape the emissions of other social groups, this can have consequences for future emissions patterns. These dynamics also fuel criticisms of environmental policies such as carbon taxes, which have been shown to affect working and middle classes disproportionately in several countries (more on this below).

Figure 5 presents the evolution of the top 1% and the bottom 50% shares in total emissions between 1980 and 2019. Between 1990 and 2019, the global bottom 50% increased its share of the total, from around 9.5% to 12%, but at the same time, the top 1% share rose from 14% to close to 17%. Put differently, the gap in emissions between the top of the distribution and the bottom remained substantial over the entire period.

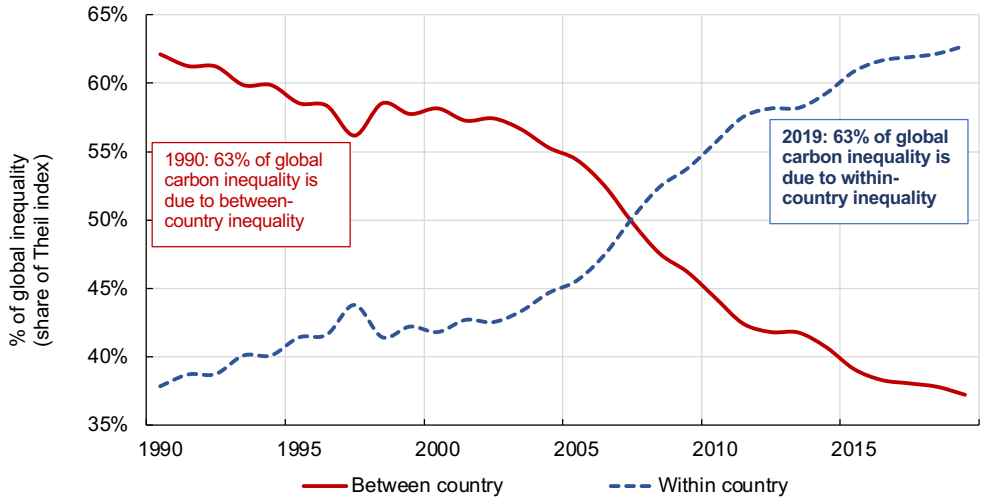
The rise in top 1% emissions is due to the increase in income and wealth inequalities within countries and to the rising share of their emissions from the assets they own. We find that around half of emissions from the global top 1% stemmed from asset ownership in 1990 and this value has risen over 70% in 2019.

What has been driving the dynamics of global carbon inequality over the past decades: average emission differentials between countries, or inequalities within them? Figure 6 compares the share of global emissions that is due to within-country differences with the between-country differences. In 1990, most global carbon inequality (63%) was due to differences between countries: then, the average citizen of a rich country polluted unequivocally more than the rest of the world's citizens, and social inequalities within countries were on average lower across the globe than today. The situation has almost entirely reversed in 30 years. Within-country emissions inequalities now account for nearly two thirds of global emissions inequality. As for income, this does not mean that there do not remain significant (often huge) inequalities in emissions between countries and world regions, on the contrary. In fact, it means that on top of the great



Interpretation: This figure presents the share of global GHG emissions by the top 1% and bottom 50% of the global population between 1990 and 2019. GHG emissions measured correspond to individual footprints, i.e. they include indirect emissions produced abroad and embedded in individual consumption. Modeled estimates based on the systematic combination of tax data, household surveys and input-output tables. Benchmark scenario. Emissions split equally within households.*Source and series*: See Supplementary Information, Chancel (2021).

Figure 5. Top 1% and bottom 50% shares in global carbon emissions, 1990-2019



Interpretation: 37% of global carbon inequality between individuals is due differences in emissions levels between countries while 63% is explained by inequality within countries in 2019. *Source and series*: See Supplementary Information, Chancel (2021).

Figure 6. Global carbon inequalities are mainly due to inequality within countries, 1990-2019
(Theil index decomposition of global carbon inequality)

inter-national inequality in carbon emissions, there also exist even greater inequalities in emissions between individuals. This has major implications for global debate on climate policies.

Figure 7 (top panel) shows the geographical breakdown of each group of emitters. More precisely, the graph tells us

about the share of population of each region in each percentile of the global carbon distribution. It shows, for example, that China, Latin America, and MENA are well represented among the low emitters as well as among the high emitter groups. This reflects the dual nature of these societies, where extreme polluters live close to very low polluters. Europe and North America are essentially represented in the top half of the global distribution (right hand side of the graph). The representation gap between Europe and North America among the very top of the distribution is clear in this graph, as is the large representation of Chinese among the highest polluters.

Figure 7 (bottom panel), provides another representation of the global carbon distribution. Each color wedge is proportional to the population of a region, and the total colored area represents the global population. The graph summarizes key insights about the global distribution of carbon emissions presented above.

Discussion

Our results highlight the very large inequality in carbon emissions at the global level: while a tenth of the global population is responsible for nearly half of all emissions, a half of the population emits no more than 12% of it. Inevitably, the current lack of individual level data on carbon emissions inequality renders any global estimation exercise challenging. However, our results are found to be quite robust to a large set of parametric assumptions, which we present in the Supplementary Information. In our extreme lower-bound scenario (which we do not see as a plausible representation of within-country emissions distributions), the global top 10% emissions' share nears 45%, which is still considerably high. In our extreme upper-bound scenario (which we do not see as a plausible representation of within-country distributions either), the global top 10% emissions' share is of 56%. More realistic lower-upper bounds fall in the range 46%-52.5%,[9], that is within a 5-10% range of our benchmark estimate. We also observe that global dynamics between 1990-2019 are very robust across these different scenarios, and are not particularly sensitive to potential changes in choices of parameters over time. In SI figure 3, we reproduce Figure 4 across dozens of scenarios and find that the pattern and levels are consistent with our benchmark scenario.

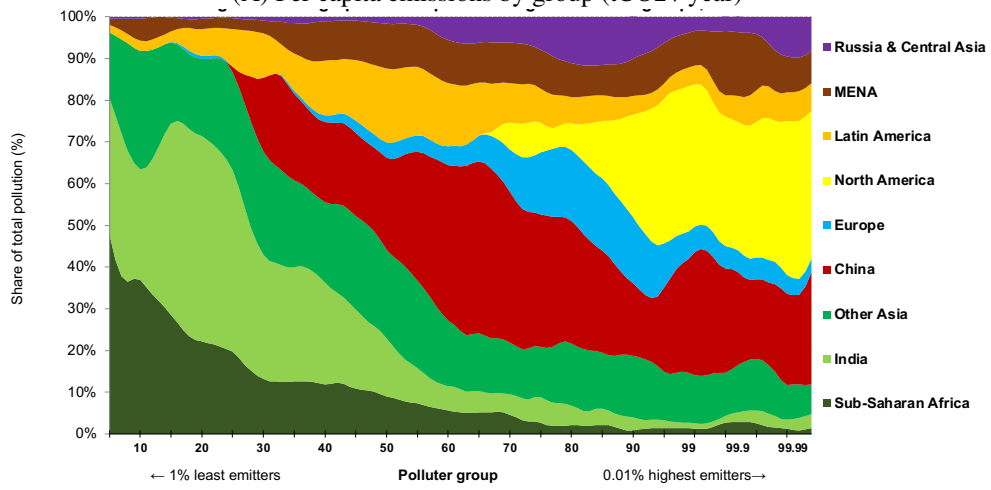
A striking result from this paper is the reduction of per capita GHG footprints since 1990, for a large segment of the population in rich countries - and not for the richest groups in these countries. Indeed, the bottom 50% in Europe and the US saw their emissions reduced by approximately 15%-20% over the period considered, whereas emissions of the top 1% increased significantly within countries and at the global level. Such differentiated trends are explained by the rise of income, consumption and wealth inequalities within countries.

When expressing European and US 2030 climate targets in per-capita terms (i.e. about 5 tonnes of CO2 in Europe and about 10 tonnes of CO2 in the US), we find that the bottom 50% of the population already meets the 2030 targets (see SI). This is not the case for the middle 40% and top 10% of the income distribution, which remains largely above per-capita 2030 climate targets. This raises important questions for the design of climate policies in the years to come: how to ensure that regulations, tax instruments and other policies effectively address emissions of the wealthy, who represent a disproportionate share of national (and global) emissions? How to ensure that climate policy tools do not place too much burden on lower-income groups?

There is no straightforward answer to such questions, but it appears that little has been done over the past decades to regulate and tax the carbon content of wealth ownership. Carbon taxation so far has essentially been seen as a tax on consumption, and has often had disproportionate impacts on lower-income groups because taxes on consumption

[9] i.e. elasticity values ranging between 0.5 and 0.8, closer to values observed in the literature for carbon-income relationships

(A) Per capita emissions by group (tCO2 / year)



(B) Group share (%) in world total emissions

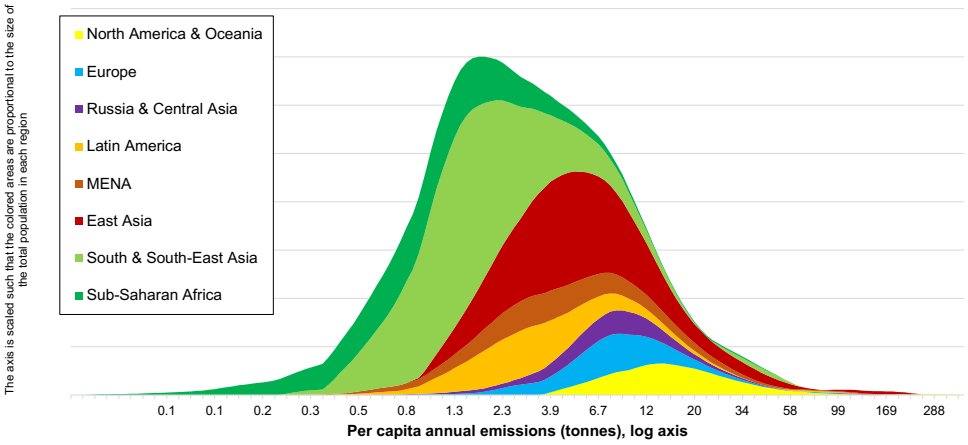


Figure 7. Global inequality in individual carbon emissions, 2019

Interpretation:Panel A The graph shows the share of world regions in each group of global emitters, from the lowest 1% to the highest 0.1%. Panel B shows the global distribution (density) of individual emitters in 2019. GHG emissions measured correspond to individual footprints, i.e. they include indirect emissions produced abroad and embedded in individual consumption. Modeled estimates based on the systematic combination of tax data, household surveys and input-output tables. Benchmark scenario. Emissions split equally within households. **Sources and series**: See Supplementary Information, Chancel (2021).

of basic goods (such as energy) tend to be regressive. Taxes on the ownership of polluting assets, or on dividends from pollution, could become attractive tools in contexts where carbon taxes on consumers face the risk of political backlash[5,38]. The informational, technical and economic conditions under which such taxes on carbon investments is a matter of further research.

Conclusion

This paper mobilizes state-of-the art data on global income and wealth inequality and systematically combines it with carbon footprints estimates to track the distribution of individual carbon emitters between 1990 and 2019.

We find that the global inequality of carbon emissions is both high and persistent, despite strong economic growth in the emerging world over the past three decades. The top 10% of emitters are responsible for around 48% of global emissions while the entire bottom 50% emits 12% of emissions in 2019. While significant inequalities in average emissions persist between countries, we find that the bulk of global inequalities in individual emissions is now due to within-country inequalities.

Over the past decades, emissions growth dynamics, driven by within country inequality growth dynamics, have been highly unequal. In rich countries, emissions of lower income groups declined while emissions of top groups increase significantly. In emerging countries (such as China), we find that emissions of top income groups are now comparable to top groups in rich countries. Our results highlight the need for more policy instruments specifically addressing emissions of the wealthy.

We stress at the outset that a lot of work still needs to be made to properly track carbon emissions inequality between and within countries. Absent such information, designing fair climate policies will remain an overly challenging task.

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Methods

Economic inequality dataset

Our economic inequality datasets are those developed in the context of the World Inequality Database (wid.world), which now provides income and wealth inequality series for 174 countries over the 1990-2020 period, i.e. more than 97% of the world population and 97% of global Gross Domestic Product or global income. WID.world contains reproducible inequality statistics based on the systematic combination of household surveys, tax data and national accounts, produced by an international network of researchers contributing to the dataset. The general set of guidelines and methods underlying these data series is described in the Distributional National Accounts Guidelines[11]. Table section 7 of the Supplementary Information presents inequality levels and macroeconomic indicators for each country used in this study.

The concept of income we use is equivalent to income measured after the operation of pension and unemployment systems (these represent the bulk of in-cash redistribution in most countries, which are thus taken into account in our income inequality estimate) and before the operation of other income and wealth taxes and transfers. Note that we opt for a relatively low benchmark emissions-income elasticity value (0.6) to account for the fact that we use income, rather than consumption inequality series.

Multi-regional Carbon Emissions Input-Output estimates

Aggregate carbon emissions data are based on multi-regional Input-Output (MRIO) tables. MRIO provide net emissions (i.e. emissions net of carbon embedded goods and services trade with the rest of the world), by institutional sectors of an economies. Institutional sectors are households, government and private investments (or Gross Fixed Capital Formation). In National Accounts, these sectors constitute "Final Demand". The sum of all "Final Demand" in an economy is equal to Gross Domestic Product (GDP).[10].

Our benchmark MRIO data source is the Global Carbon Project (GCP)[39], which we see as a global reference data source. In certain cases, GCP does not provide data for a given country or for a given type of emissions. In order to cover all countries and all types of emissions, we also rely on the EORA dataset[35].[11].

Distribution of carbon emissions to individuals

In line with the National Accounts Methodology, we decompose national-level distributions (of income, wealth or carbon emitters) in 127 generalized-percentiles: 99 percentiles from $p = 0\%$ to $p = 99\%$, 9 tenths of a percentile from $p = 99\%$ to $p = 99.9\%$, 9 hundredths of a percentile from $p = 99.9\%$ to $p = 99.99\%$, 10 thousandths of a percentile from $p = 99.99\%$ to $p = 100\%$.

In order to determine carbon emission levels associated to each of these generalized-percentiles of income, in each country of the world, we proceed as follows. Average per capita emissions at percentile p, in a given year and country are defined as:

$$E_p^{tot} = E_p^{cons} + E_p^{inv} + E_p^{gov} \tag{1}$$

Where E_p^{cons}, E_p^{inv}, E_p^{gov} are individual average footprints at percentile p, associated to consumption, private investment and public spending, respectively. More precisely:

$$E_p^{tot} = f(E^{cons}, Y_p, \alpha, \beta) + f(E^{inv}, W_p, \gamma) + f(E^{gov}, y_p, \delta) \tag{2}$$

Where E^{cons} is the average carbon footprint associated to consumption in the country, Y_p the average income level of individuals in percentile p, α the elasticity of household consumption carbon emissions to income (in a model of the form $E_p^{cons} = E^{cons} \times Y_p^{\alpha}$), β a minimum threshold of emissions in the country, corresponding to a fraction of average consumption-related emissions; E^{inv} is the average emissions level associated to investments (or asset ownership, in our framework), γ the elasticity of wealth to investment emissions; E^{gov} is the average emission level of the government sector (associated to in-kind redistribution) and δ, is the elasticity of government emissions to income. Given that distribute consumption emissions, investment emissions and government emissions using different elasticity values, the overall elasticity of emissions to income is not constant across the income spectrum.

We use the following range of parameters to estimate emissions within countries: $\alpha = (0.4; 0.5; 0.6; 0.7; 0.8; 0.9; 1)$; $\beta = (0; 0.1; 0.2; 0.3)$; γ=1; δ=0 (in our benchmark scenario, government emissions are distributed equally to individuals in a country). In all countries we assume that emissions are split equally within households.

[10] Changes in inventories and stocks are also reported in the dataset. Since they only represent a marginal fraction of emissions, we include them in GFCF totals so as to keep fully consistent datasets which always match with aggregate totals. We also include emissions of Non-Profit Institution Serving Households in the Household Sector as a first approximation.

[11] For details on the construction of aggregate series used in this study and on WID.world, see Burq and Chancel[40]

Acknowledgements

The author thanks Felix Bajard, François Burq Aymeric Capitaine for research assistance as well as Thomas Piketty, Tancrède Voituriez, Thomas Blanchet, Rowaida Moshrif, the UNPD HDRO team and participants at the Paris School of Economics, the London School of Economics and Sciences Po seminars, for valuable comments.

Global carbon inequality, 1990-2019

Supplementary Information

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ABSTRACT

This Supplementary Information document provides additional Methodological details, Figures and Tables to the paper "Global carbon inequality, 1990-2019".

1 Aggregate emissions estimates between 1990 and 2019

The full methodology followed to produce GHG emissions estimates, including carbon embedded in imports and exports of goods and services, by country and institutional sector of the economy (Government, Households, Investments), is detailed in Burq and Chancel (2021) Aggregate carbon footprints on WID.world, WID.world Working Paper 2021/3. In summary, our approach consists in using Global Carbon Project (GCP)[1] estimates as much as possible. GCP estimates are based on a Global Multiregional Input Output model. We complement these estimates with other datasets, when necessary. In particular, we mobilize the EORA data tables[2] to determine non-CO2 GHG emissions estimates by country and by institutional sector, an information not available from GCP.

SI Figure 1 provides an illustration of Input-Output data tables in a two countries, two institutional sectors and two industrial sectors context.

Inter-industry transations ("Z") / **Final demand ("Y")**

		Country 1		Country 2		Country 1		Country 2		Gross output
		Sector 1	Sector 2	Sector 1	Sector 2	HHs	Govt	HHs	Govt	
Country 1	Sector 1	340	150	100	154	150	150	300	160	1504
	Sector 2	354	200	200	600	200	400	300	200	2454
Country 2	Sector 1	300	200	300	60	100	200	290	500	1950
	Sector 2	50	250	427	200	35	400	300	200	1862

Country 1 sector 1 imported 354 from Country 1 Sector 2

Value Added = Sum of Final demands

Country 1	Value Added	460	1654		
Country 2	Value Added			923	848

Total input (x)

Input by country-sector	1504	2454	1950	1862

Carbon emissions ("Q")

Direct Emissions (CO2)	**200**	**300**	**200**	**400**

Figure 1. Input-Output tables: an illustration

To obtain the carbon footprint in country 1 associated to the final demand of institutional sectors, we define Z as the inter-industry transaction matrix, Y as the final demand matrix, Q as the carbon emissions matrix and x as the vector of total input by country-sector. Leontief's inverse (impact of final demand on sectors' output) is given by (see[3]):

$$L = (I - A)^{-1} \tag{1}$$

With:

$$A = Zx^{-1} \tag{2}$$

The net carbon (or carbon footprint) intensity of production is given by

$$C = (Qx^{-1})L \tag{3}$$

Net carbon emissions (or carbon footprint) associated to final demand is given by

$$N = CY \tag{4}$$

2 Income and wealth inequality series across countries, 1990-2019

We mobilize income and wealth inequality data from the World Inequality Database (WID.world). WID.world is based on the systematic combination of tax data, household survey data and national accounts. Income inequality estimates are available for all countries in the world for the entire period considered. Estimates of income inequality refer to the distribution of income after the operation of pension and unemployment insurance systems, and before the operation of other taxes and transfers. The full set of methods followed to construct these estimates is available online at WID.world and in Blanchet, T., Chancel, L., Flores, I., Morgan,M., et al. (2021) "Distributional National Accounts Guidelines: Concepts and Methods Used on WID.World", World Inequality Lab.[4]

Wealth inequality estimates are also available on WID.world, for all countries in the world between 1995 and 2021. Between 1990 and 1995, estimates are available for a large set of countries and when no data is available, we assume that wealth inequality follows the same trend as income inequality over this five-year interval. The methodology followed to construct global wealth inequality estimates is available Bauluz, L., Blanchet, T., Martinez Toledano, C., Sodano, A., (2021) "Global Wealth Aggregates in WID.world: Methodology", WID.World Working Paper 2021. This document should be complemented with Bajard, F., Chancel, L., Piketty, T., Moshrif, R. (2021) "Global wealth inequality imputations", WID.world Technical Note 2021.

Inequality estimates on WID.world are provided for each country and each year in the form of 127 generalized-percentiles (i.e. 99 bottom fractiles representing each 1% of the population, 9 fractiles representing 0.1% of the population, 9 fractiles representing 0.01% of the population and 10 fractiles representing 0.001% of the population). This level of granularity is rendered possible by the use of administrative data, combined with household surveys and national accounts.

SI Table 7 present key inequality, demographic economic indicator for the full set of countries used in the analysis.

3 Relationship between income, expenditure, energy consumption and carbon emissions

3.1 A multiple elasticity model

Average per capita emissions at percentile p, E_p, in a given year and country are defined as:

$$E_p^{tot} = E_p^{cons} + E_p^{inv} + E_p^{gov} \tag{5}$$

Where E_p^{cons}, E_p^{inv}, E_p^{gov} are individual average footprints at percentile p, associated to consumption, private investment and public spending, respectively. More precisely:

$$E_p^{tot} = f(E^{cons}, Y_p, \alpha, \beta) + f(E^{inv}, W_p, \gamma) + f(E^{gov}, y_p, \delta) \tag{6}$$

Where E^{cons} is the average carbon footprint associated to consumption in the country, Y_p the average income level of individuals in percentile p, α the elasticity of household consumption carbon emissions to income (in a model of the form $E_p^{cons} = E^{cons} \times Y_p^{\alpha}$), β a minimum threshold of emissions in the country, corresponding to a fraction of average consumption-related emissions; E^{inv} is the average emissions level associated to investments (or asset ownership, in our framework), γ the elasticity of wealth to investment emissions; E^{gov} is the average emission level of the government sector (associated to in-kind redistribution) and δ, is the elasticity of government emissions to income. Given that distribute consumption emissions, investment emissions and government emissions using different elasticity values, the overall elasticity of emissions to income is not constant across the income spectrum. We see this as a major improvement as compared to earlier studies on global carbon inequality.

3.2 Parameter values

Emissions from household consumption: We use the following range of parameters to estimate emissions within countries: $\alpha = (0.4; 0.5; 0.6; 0.7; 0.8; 0.9; 1)$; $\beta = (0; 0.1; 0.2; 0.3)$; γ=1; δ=0. Our choice for a relatively low carbon-income elasticity (0.6) is motivated by the fact that we apply this elasticity to a database of individual incomes (after pension and unemployment transfers), and not to consumption per se (see Table below for different values found in the literature).

Emissions from investments: Our central scenario choice of γ=1 is motivated by the fact that there is no empirical evidence of a reduction in the carbon content of investments, by euro invested, among wealthier groups. If anything, recent work[5] finds that emissions per euro owned tend to increase with wealth, rather than decrease per euro owned. This patterns is indeed different from the one observed when focusing on consumption (or income) in most countries. Given the lack of clear estimates on the elasticity of emissions to investments, we use γ=1 as a conservative assumption. Indeed, more work needs to be done to better understand the relationship between investment emissions and wealth or income. Given our current knowledge, we view the choice of γ=1 as a transparent and solid benchmark allocation rule for investment related emissions: a group responsible for x% of total investments is attributed x% of total emissions associated to investments.

Emissions from government spending: Our central scenario choice of $\delta = 0$ implies that we allocated government emissions as a lump-sum to individuals.

Overall, we see our central scenario as a conservative realistic scenario, i.e. it is grounded in empirical evidence but also tends to minimize carbon inequalities within countries rather than the opposite.

SI Table 1 presents α values found in the literature for different countries and years.

Country	Reference	Year	Relationship	Elasticity
Australia	[6]	1993-1994	Expenditure-Energy	0.78
Brazil	[6]	1995-1996	Expenditure-Energy	1
Denmark	[7]	1995	Expenditure-Energy	0.9
Denmark	[7]	1995	Expenditure-Carbon	0.9
Denmark	[6]	1995	Expenditure-Energy	0.86
India	[6]	1997-1998	Expenditure-Energy	0.86
Japan	[6]	1999	Expenditure-Energy	0.64
United Kingdom	[8]	2006-2009	Income-Carbon	0.43-0.6
the Netherlands	[9]	1983	Expenditure-Energy	0.83
Norway	[10]	1999-2001	Expenditure-Carbon	0.88
Spain	[11]	2000	Expenditure-Carbon	0.91-0.99
USA	[12]	2004	Expenditure-Carbon	0.6-0.8

Table 1. Elasticity values found in the literature

Interpretation: this table provides elasticity values observed in the literature. Our central scenario elasticity choice of 0.6 is motivated by the fact that we use income data rather than consumption data. Because the inequality of income is lower than the inequality of consumption, the elasticity of emissions to income is lower than the elasticity of emissions to consumption. Source: Author and Chakravarty et al. (2009)[13]

4 Aggregate and average estimates by region

5 Inequality estimates by country: world maps

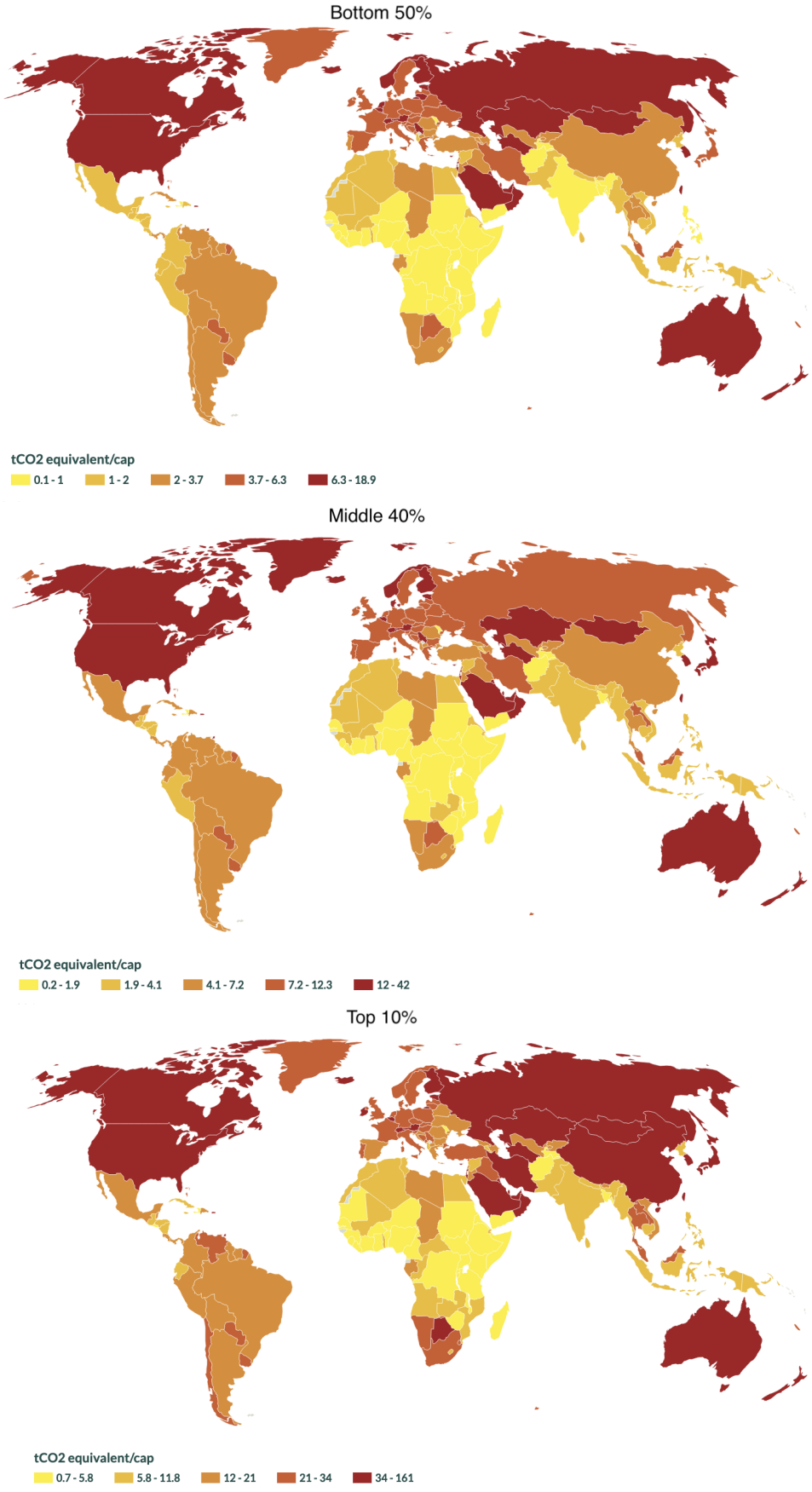

Figure 2. Average per capita emissions (tCO2/year) by income group across the world, 2019

Interpretation: Individual carbon footprints include emissions from domestic consumption, public and private investments as well as imports and exports of carbon embedded in goods and services traded with the rest of the world. Modeled estimates based the systematic combination of tax data, household surveys and input-output tables. Benchmark scenario. Emissions split equally within households. **Source and series**: Author.

Table 2. Emissions per capita by world region, 2019

	Carbon footprint		
	(tonnes per capita)	(x global average)	(x 2° budget)
World	**6.6**	**1**	**1.9**
Sub Saharan Africa	1.6	0.3	0.5
South South-East Asia	2.6	0.4	0.8
Latin America	4.8	0.7	1.4
Middle East	7.4	1.1	2.2
East Asia	8.6	1.3	2.5
Europe	9.7	1.5	2.9
Central Asia / Russia	9.9	1.5	2.9
North America	20.8	3.2	6.1

Interpretation Estimates takes into account emissions of all greenhouse gases from domestic consumption, public and private investments as well as net imports embedded in goods and services from the rest of the world. The +2°budget corresponds to an egalitarian distribution across the world population, between now and 2050, of all emissions left to limit temperature increase to +2°C. To stay below +1.5°C, the equitable per capita budget is 1.1 tonne per person per year. *Source and series*: Author

6 Results across scenarios

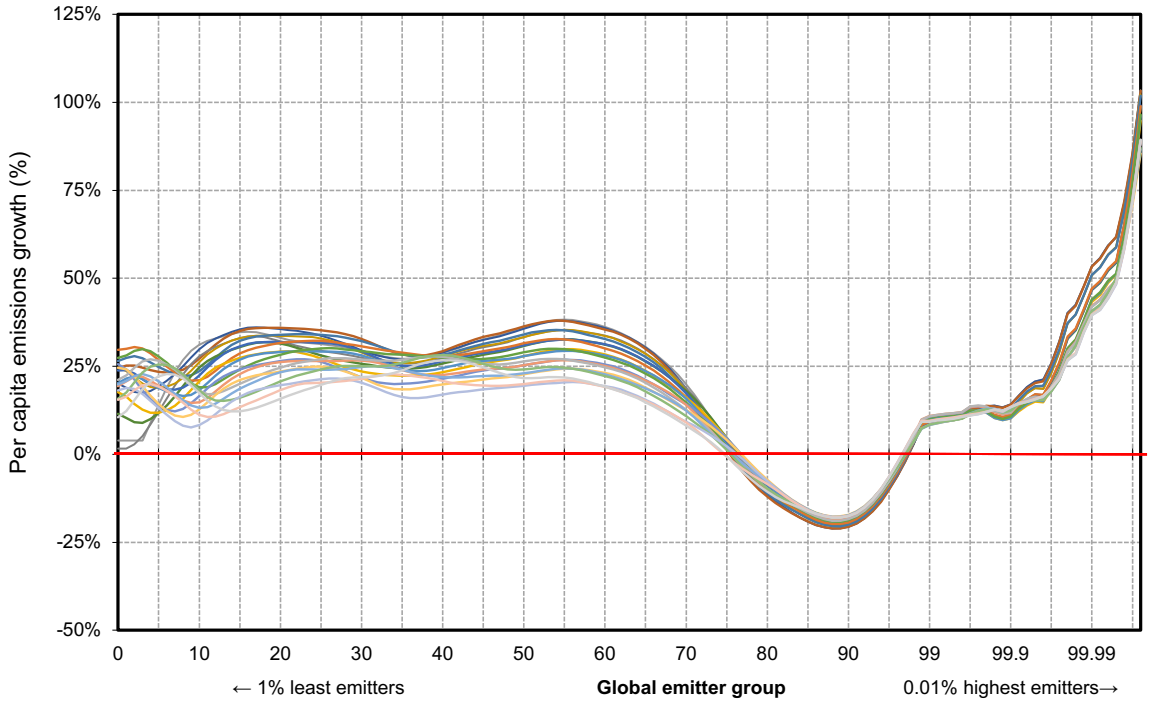

Figure 3. Income growth by percentile across multiple scenarios, 1990-2019

Interpretation: Results show average per capita GHG growth rates across a variety of scenario representing different parametric assumptions on the shape of the emission-income relationship, using scenarios ranging from $\alpha = 0.4$ to $\alpha = 1$ and $\beta = 0.1$ to $\beta = 0.3$ (see Methods section of the main paper) **Source and series**: Author.

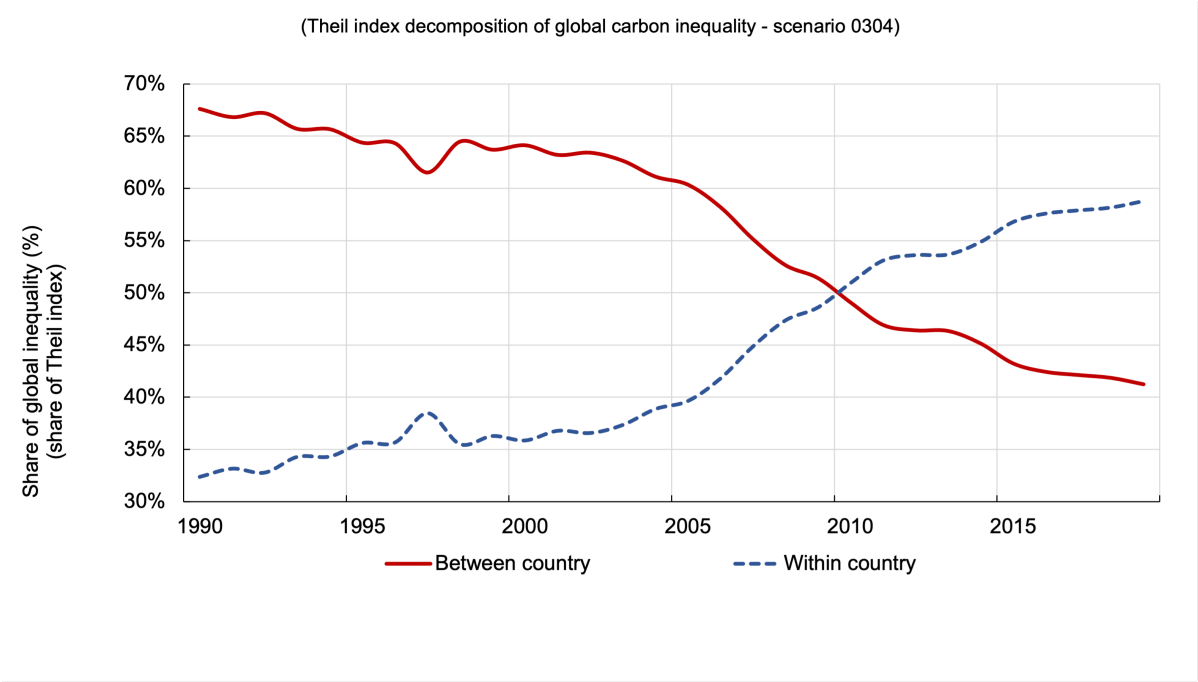

Figure 4. Theil decomposition in the "Extreme low inequality" Scenario, 1990-2019

Interpretation: Results show the Theil decomposition of global inequality in a scenario where the elasticity of emissions to income is 0.4 and in which no individual emits less than 30% of the average. We see this scenario as an extreme lower bound to carbon inequality levels within countries. Even in this scenario, we observe that the within component of the Theil index takes over the between component. **Source and series**: Author.

Table 3. Carbon footprints vs. territorial emissions across the world, 2019

	Footprint inc. consumption (tCO2/capita)	Territorial (tCO2/capita)	% difference footprint vs. territorial
World	*6.6*	*6.6*	*0%*
Sub Saharan Africa	1.6	2.1	-22%
South South-East Asia	2.6	2.7	-5%
Latin America	4.8	4.9	-2%
Middle East	7.4	8.0	-7%
East Asia	8.6	9.4	-8%
Europe	9.7	7.9	23%
Central Asia / Russia	9.9	11.9	-17%
North America	20.8	19.8	5%

Interpretation: Carbon footprints include emissions from domestic consumption, public and private investments as well as net imports embedded in goods and services from the rest of the world. *Source*: Author

Table 4. Global share of emissions by income across 21 scenarios, 2019

	Share of total emissions (%)			
Scenario	*Bot. 50%*	*Mid. 40%*	*Top 10%*	*Top 1%*
104	13.2	41.8	45	15.3
105	12.5	41.2	46.3	16
106	11.8	40.5	47.7	16.8
107	11	39.5	49.5	17.9
108	10.3	38.4	51.3	19.3
109	9.5	37.2	53.3	20.9
110	8.7	35.5	55.8	23.2
204	13.4	41.7	44.9	15.2
205	12.7	41.2	46.1	15.9
206	12	40.5	47.5	16.8
207	11.3	39.5	49.2	17.8
208	10.6	38.4	51	19.2
209	9.8	37.2	53	20.7
210	9	35.5	55.4	23.1
304	13.6	41.8	44.7	15.2
305	12.9	41.2	45.9	15.9
306	12.3	40.4	47.3	16.7
307	11.6	39.6	48.8	17.8
308	10.9	38.4	50.6	19.1

Table 4. Global share of emissions by income across 21 scenarios, 2019

	Share of total emissions (%)			
Scenario	*Bot. 50%*	*Mid. 40%*	*Top 10%*	*Top 1%*
309	10.3	37.2	52.5	20.6
310	9.5	35.7	54.8	22.8

Interpretation: The table present results on global emitter groups' shares in world total emissions from different scenarios. scenario 104 corresponds to β=0.1 and $\alpha = 0.4$, scenario 205 corresponds to β=0.2 and $\alpha = 0.5$, etc. (see Methods section of the main paper). *Sources and series:* Author based on the systematic combination of tax data, household surveys, national accounts and Input-Output Tables.

Table 5. Global CO2eq emissions by income group across 21 scenarios, 2019

	Annual GHG emissions (tCO2eq per person)			
Scenario	*Bot. 50%*	*Mid. 40%*	*Top 10%*	*Top 1%*
104	1.6	6.3	26.9	91.4
105	1.5	6.2	27.7	95.5
106	1.4	6.1	28.6	100.5
107	1.3	5.9	29.6	107.1
108	1.2	5.8	30.7	115.5
109	1.1	5.6	31.9	124.8
110	1	5.3	33.4	138.9
204	1.6	6.2	26.9	91.2
205	1.5	6.2	27.6	95.3
206	1.4	6.1	28.4	100.3
207	1.4	5.9	29.4	106.8
208	1.3	5.7	30.5	115
209	1.2	5.6	31.7	124.2
210	1.1	5.3	33.2	138
304	1.6	6.2	26.7	91
305	1.5	6.2	27.5	95.1
306	1.5	6	28.3	99.9
307	1.4	5.9	29.2	106.3
308	1.3	5.7	30.3	114.2
309	1.2	5.6	31.4	123.1

Table 5. Global CO2eq emissions by income group across 21 scenarios, 2019

	Annual GHG emissions (tCO2eq per person)			
Scenario	*Bot. 50%*	*Mid. 40%*	*Top 10%*	*Top 1%*
310	1.1	5.3	32.8	136.4

Interpretation: The table present results on global emitter groups' per capita emission levels from different scenarios. Scenario "104" corresponds to β=0.1 and $\alpha = 0.4$, Scenario "205" corresponds to β=0.2 and $\alpha = 0.5$, etc. (see Methods section of the main paper). *Sources and series:* Author based on the systematic combination of tax data, household surveys, national accounts and Input-Output Tables. Note that in this table, emissions add up to 44GtCO2. In order to obtain world totals matching the 50.5GtCO2 reported by PRIMAP-hist in 2019 (third-party reporting), we rescale averages by 50.5/44. This operation does not modify inequality levels within countries nor between countries.

Table 6. Share of emissions by income group across world regions, central scenario vs. extreme scenarios, 2019

		Share of total emissions (%)			
	Scenario	*Bot. 50%*	*Mid. 40%*	*Top 10%*	*Top 1%*
East Asia	Extreme high	14	34	52	19.9
	Central	18.1	36.7	45.2	16.6
	Extreme low	20.4	37.1	42.5	15.8
Europe	Extreme high	20.6	42	37.4	13.4
	Central	26.2	43.8	30	9.2
	Extreme low	29.2	43.5	27.3	8.2
Latin America	Extreme high	13.8	33.7	52.4	24.2
	Central	21.2	40.2	38.6	14.5
	Extreme low	25.5	41.2	33.3	12.3
Middle East & North Africa	Extreme high	10.6	33.3	56.1	23.8
	Central	15.2	39.5	45.3	15.8
	Extreme low	17.4	41	41.5	13.5
North America	Extreme high	16	37.7	46.2	20
	Central	23.3	41.6	35.1	12.6
	Extreme low	27.4	41.5	31.1	11
Russia & Central Asia	Extreme high	17.8	36.2	46	22
	Central	23.2	41.2	35.6	14.5
	Extreme low	25.8	42.3	31.9	13

Table 6. Share of emissions by income group across world regions, central scenario vs. extreme scenarios, 2019

		Share of total emissions (%)			
	Scenario	*Bot. 50%*	*Mid. 40%*	*Top 10%*	*Top 1%*
South & South-East Asia	Extreme high	13.2	32.6	54.2	22.5
	Central	20.2	38.7	41.1	15.1
	Extreme low	23.7	39.5	36.8	13.5
Sub-Saharan Africa	Extreme high	9.9	34	56.1	24.3
	Central	15.3	40.7	44	16.4
	Extreme low	18.2	41.8	40	13.7

Interpretation: The table present results on different emitter groups' shares in regional total emissions from different scenarios. Scenario "Extreme high" corresponds to parameters $\beta = 0.1$ and $\alpha = 1$. This scenario should be viewed as an extreme upper bound to within-country consumption-related carbon inequalities, based on available micro-level studies on the relationship between income and emissions. Scenario "Extreme low" corresponds to parameters set to β=0.3 and $\alpha = 0.4$. This scenario should be viewed as an extreme lower bound to within-country consumption-related inequalities (See Methods). *Sources and series:* Author based on the systematic combination of tax data, household surveys, national accounts and Input-Output Tables.

Table 7. CO2eq emissions by income group across world regions, central scenario vs. extreme bounds, 2019

		Annual GHG emissions (tCO2 per person)		
	Scenario	*Bot. 50%*	*Mid. 40%*	*Top 10%*
East Asia	Extreme high	2.4	7.3	44.8
	Central	3.1	7.9	38.9
	Extreme low	3.5	8	36.6
Europe	Extreme high	4	10.2	36.3
	Central	5.1	10.6	29.2
	Extreme low	5.7	10.6	26.6
Latin America	Extreme high	1.3	4	24.7
	Central	2	4.7	18.2
	Extreme low	2.4	4.8	15.7
Middle East & North Africa	Extreme high	1.6	6.2	41.6
	Central	2.3	7.3	33.6
	Extreme low	2.6	7.6	30.8
North America	Extreme high	6.7	19.6	96.1
	Central	9.7	21.7	73
	Extreme low	11.4	21.6	64.7

Table 7. CO2eq emissions by income group across world regions, central scenario vs. extreme bounds, 2019

		Annual GHG emissions (tCO2 per person)		
	Scenario	*Bot. 50%*	*Mid. 40%*	*Top 10%*
Russia & Central Asia	Extreme high	3.5	8.9	45.4
	Central	4.6	10.2	35.1
	Extreme low	5.1	10.4	31.5
South & South-East Asia	Extreme high	.7	2.1	13.9
	Central	1	2.5	10.6
	Extreme low	1.2	2.5	9.5
Sub-Saharan Africa	Extreme high	.3	1.4	9.4
	Central	.5	1.7	7.3
	Extreme low	.6	1.7	6.7

Interpretation: The table present results on different emitter groups' shares in regional total emissions from different scenarios. Scenario "Extreme high" corresponds to parameters $\beta = 0.1$ and $\alpha = 1$. This scenario should be viewed as an extreme upper bound to within-country consumption-related carbon inequalities, based on available micro-level studies on the relationship between income and emissions. Scenario "Extreme low" corresponds to parameters set to β=0.3 and $\alpha = 0.4$. This scenario should be viewed as an extreme lower bound to within-country consumption-related inequalities (See Methods). *Sources and series:* Author based on the systematic combination of tax data, household surveys, national accounts and Input-Output Tables.

7 Additional tables

SI Table 7 presents average income, population and income inequality summary statistics for the 174 countries included in the analysis. The countries represent over 97% of the world population and income over the period considered.

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	Year	Population (million)	Avg. income	Nat. income shares (%)			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
Afghanistan	1990	12.4	4033	17.2	40.2	42.6	14.1
(Other Asia)	1995	18.1	2109	17.4	40.7	41.9	13.4
	2000	20.8	1515	17.8	40.3	41.9	13.9
	2005	25.7	2028	17.8	39.3	42.9	15.4
	2010	29.2	3074	18.6	39.4	42	14.8
	2015	34.4	3088	19	39.6	41.4	14.4
	2019	38	2902	18.7	39.3	42.1	14.8
Albania	1990	3.3	5524	21.2	48.5	30.2	7.1
(Europe)	1995	3.1	5363	21.2	48.5	30.2	7.1
	2000	3.1	6527	20.1	48.7	31.2	7.3
	2005	3.1	8262	20.5	48.1	31.5	7.7
	2010	2.9	10014	21	47.9	31.1	7.6
	2015	2.9	10577	19.4	46.8	33.8	8.8
	2019	2.9	11716	19.3	46.7	34	9
Algeria	1990	25.8	16504	15	36.9	48.1	17
(MENA)	1995	28.8	14144	16.6	41.2	42.2	11.7
	2000	31	14150	17.9	41.5	40.6	11.1
	2005	33.1	15168	19.2	41.7	39.1	10.4
	2010	36	15731	20.4	42	37.6	9.8
	2015	39.7	15633	20.7	42	37.3	9.7
	2019	43.1	14961	20.7	42	37.3	9.7
Angola	1990	11.8	7970	13.8	38.4	47.8	15.1
(SubSaharan Africa)	1995	13.9	5514	13.8	38.4	47.8	15.1
	2000	16.4	5936	9.5	32.7	57.8	21.9
	2005	19.4	7909	11.7	36.1	52.2	17.7
	2010	23.4	9817	12.3	37	50.6	17.3
	2015	27.9	10833	10.6	34.4	55.1	22.6
	2019	31.8	8704	9.5	32.8	57.7	25.8
Argentina	1990	32.6	10889	10.9	40.7	48.4	17
(Latin America)	1995	34.8	13520	10.9	40.7	48.4	17
	2000	36.9	14058	10.9	40.7	48.4	17
	2005	38.9	15509	14	40.9	45.2	15.8

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	**Year**	**Population (million)**	**Avg. income**	**Nat. income shares (%)**			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
	2010	40.9	18686	14.4	40.8	44.8	15
	2015	43.1	20369	15.8	41.4	42.8	16.9
	2019	44.8	17994	17.6	41.8	40.6	15.9
Armenia	1990	3.5	4228	26.5	47.8	25.7	5.9
(Central Asia)	1995	3.2	2477	22.9	46.8	30.3	8.3
	2000	3.1	3212	21.9	46.3	31.8	9.2
	2005	3	5746	20.2	45.8	34.1	10.6
	2010	2.9	6976	20.2	45.9	33.9	10.1
	2015	2.9	8148	20.1	45.6	34.3	10.9
	2019	3	9436	20.2	45.3	34.5	11.5
Australia	1990	17.1	27926	21.4	52.8	25.7	7.2
(Other Rich)	1995	18	28928	20.6	52.2	27.2	8.1
	2000	19	33882	19.6	50.7	29.7	10.2
	2005	20.2	36736	19.6	50.3	30.1	10.9
	2010	22	37813	20	49.7	30.3	11.1
	2015	23.8	37670	18.8	49.4	31.8	11.4
	2019	25.1	39072	18.8	48.6	32.5	12.4
Austria	1990	7.7	30789	22.9	44.2	32.9	10.9
(Europe)	1995	8	32892	22.4	44.8	32.7	10.8
	2000	8.1	36998	23.4	42.7	33.9	11.5
	2005	8.3	39234	23	42.3	34.7	11
	2010	8.4	40553	23	43.1	33.9	11.1
	2015	8.7	39700	23.6	43.8	32.6	9.9
	2019	9	42114	24.5	43.6	32	9.2
Azerbaijan	1990	7.2	10586	26.5	47.8	25.7	5.9
(Central Asia)	1995	7.8	4193	22.9	46.8	30.3	8.3
	2000	8.1	5169	21.9	46.3	31.8	9.2
	2005	8.5	8163	20.2	45.8	34.1	10.6
	2010	9	17346	20.2	45.9	33.9	10.1
	2015	9.6	17675	20.1	45.6	34.3	10.9
	2019	10	15838	20.2	45.3	34.5	11.5
Bahamas	1990	.3	40067	10.2	37.2	52.5	21.6

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	Year	Population (million)	Avg. income	Nat. income shares (%)			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
(Latin America)	1995	.3	35597	10.2	37.2	52.5	21.6
	2000	.3	39620	10.2	37.2	52.5	21.6
	2005	.3	37492	10.7	37.3	52	21.4
	2010	.4	32579	11.2	37.4	51.3	20.7
	2015	.4	29478	12.1	37.9	50	21
	2019	.4	27827	12.7	38.8	48.5	20.2
Bahrain	1990	.5	44639	15.3	31.4	53.3	18.9
(MENA)	1995	.6	50237	15.3	31.4	53.3	18.9
	2000	.7	52386	15.5	32.2	52.3	18.5
	2005	.9	48621	15.7	32.8	51.5	18.1
	2010	1.2	38246	15.6	32.9	51.5	17.6
	2015	1.4	43544	15.4	32.7	51.9	18
	2019	1.6	39909	15.4	32.7	51.9	18
Bangladesh	1990	103.2	2205	21.7	40.9	37.4	12
(Other Asia)	1995	115.2	2385	18.9	37.3	43.8	16.1
	2000	127.7	2560	18.6	38	43.3	15.6
	2005	139	2854	18.4	37.5	44.1	15.8
	2010	147.6	3397	19.8	38.3	41.9	15.2
	2015	156.3	4150	19.7	38.6	41.7	15.7
	2019	163	5142	19.7	38.6	41.7	15.8
Belarus	1990	10.2	8259	26.5	47.8	25.7	5.9
(Central Asia)	1995	10.1	5254	22.9	46.8	30.3	8.3
	2000	9.9	7068	21.9	46.3	31.8	9.2
	2005	9.6	9860	20.2	45.8	34.1	10.6
	2010	9.4	13290	20.2	45.9	33.9	10.1
	2015	9.4	13462	20.1	45.6	34.3	10.9
	2019	9.5	14351	20.2	45.3	34.5	11.5
Belgium	1990	10	29981	20.8	46.1	33.1	8.5
(Europe)	1995	10.2	32088	21	46.5	32.5	8.1
	2000	10.3	36319	20.6	46.9	32.5	8.2
	2005	10.5	37779	20.9	47.2	31.8	8.5
	2010	10.9	38239	21	47.4	31.6	7.9

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	Year	Population (million)	Avg. income	Nat. income shares (%)			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
	2015	11.3	39406	21.4	47.3	31.3	8.2
	2019	11.5	40261	21.5	46.8	31.7	8.5
Belize	1990	.2	7357	10.2	37.2	52.5	21.6
(Latin America)	1995	.2	8795	10.2	37.2	52.5	21.6
	2000	.2	9066	10.2	37.2	52.5	21.6
	2005	.3	9229	10.7	37.3	52	21.4
	2010	.3	8461	11.2	37.4	51.3	20.7
	2015	.4	8772	12.1	37.9	50	21
	2019	.4	7689	12.7	38.8	48.5	20.2
Benin	1990	5	2482	15	36.8	48.2	16.1
(SubSaharan Africa)	1995	5.9	2594	15	36.8	48.2	16.1
	2000	6.9	2840	15	36.8	48.2	16.1
	2005	8	2920	14.5	36.6	49	15.9
	2010	9.2	3013	13.1	35.9	50.9	15.3
	2015	10.6	3229	11.5	33.8	54.7	17.5
	2019	11.8	3565	11.5	33.8	54.7	17.5
Bhutan	1990	.5	4127	14.4	37.2	48.3	17.2
(Other Asia)	1995	.5	4499	14.4	37.2	48.3	17.2
	2000	.6	5059	14.5	37.2	48.4	17.3
	2005	.6	6180	15.7	38.4	45.8	15.7
	2010	.7	8183	16.3	37.9	45.7	16.6
	2015	.7	9046	16.7	40.1	43.2	14.8
	2019	.8	9902	16.9	41.1	42	13.8
Bolivia	1990	6.9	5370	10.2	37.2	52.5	21.6
(Latin America)	1995	7.6	5951	10.2	37.2	52.5	21.6
	2000	8.4	6248	10.2	37.2	52.5	21.6
	2005	9.2	6388	10.7	37.3	52	21.4
	2010	10	6988	11.2	37.4	51.3	20.7
	2015	10.9	8178	12.1	37.9	50	21
	2019	11.5	8723	12.7	38.8	48.5	20.2
Bosnia and Herzegovina	1990	4.5	1652	25.3	49.2	25.4	5.4
(Europe)	1995	3.8	1969	23.5	48.7	27.8	6.6

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	Year	Population (million)	Avg. income	Nat. income shares (%)			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
	2000	3.8	7483	21.7	48.4	29.9	7.7
	2005	3.8	8811	20	47.4	32.6	7.9
	2010	3.7	9606	20	47.3	32.7	8.5
	2015	3.4	10889	20.6	47.3	32.1	8.4
	2019	3.3	12299	20.6	47.2	32.2	8.6
Botswana	1990	1.3	13797	7.3	26.9	65.8	30.6
(SubSaharan Africa)	1995	1.5	13991	6.3	24.6	69.1	34.1
	2000	1.6	14737	5.5	25.2	69.3	29.6
	2005	1.8	13685	5.7	25.9	68.4	28.4
	2010	2	14741	6.8	27.4	65.7	28.2
	2015	2.1	17567	8.7	32.4	58.9	22.6
	2019	2.3	17739	8.7	32.4	58.9	22.6
Brazil	1990	149	13195	11.2	34.2	54.5	24.5
(Latin America)	1995	162	13812	11.2	34.2	54.5	24.5
	2000	174.8	13335	11.2	34.2	54.5	24.5
	2005	186.1	13549	11	32.9	56.2	27.4
	2010	195.7	15198	10.7	31.4	57.9	28.5
	2015	204.5	14921	11.3	32.9	55.8	24.3
	2019	211	13998	9.9	31.1	59.1	30.6
Brunei Darussalam	1990	.3	104437	15.9	39.7	44.4	18.5
(Other Asia)	1995	.3	104077	15.9	39.7	44.4	18.5
	2000	.3	93847	15.9	39.7	44.4	18.5
	2005	.4	91504	15.5	39.7	44.8	17.1
	2010	.4	85295	16.2	40.6	43.2	17.2
	2015	.4	82129	19	41.6	39.4	14.6
	2019	.4	74122	19	41.6	39.4	14.6
Bulgaria	1990	8.8	8783	29.1	46.8	24.1	5.1
(Europe)	1995	8.4	8773	19.4	42.2	38.4	12.8
	2000	8	8331	22.4	45.9	31.7	9.2
	2005	7.7	11240	19.5	44.6	35.9	11.7
	2010	7.4	12979	20.5	45.2	34.3	11.3
	2015	7.2	14227	19	43.2	37.9	13.4

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	Year	Population (million)	Avg. income	Nat. income shares (%)			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
	2019	7	17648	17.6	39.7	42.7	18.3
Burkina Faso	1990	8.8	1517	11	31.7	57.4	21.1
(SubSaharan Africa)	1995	10.1	1611	10.8	30.7	58.4	22.4
	2000	11.6	1962	11.4	31.4	57.3	22.6
	2005	13.4	2244	13.3	36.3	50.4	16.8
	2010	15.6	2479	14.8	36.4	48.8	16.4
	2015	18.1	2647	16.5	37.1	46.5	14.3
	2019	20.3	3107	16.5	37.1	46.5	14.3
Burundi	1990	5.4	1583	17.6	40.2	42.2	12.3
(SubSaharan Africa)	1995	6	1397	15.5	38.4	46.2	14.9
	2000	6.4	1267	14.4	37	48.6	16.2
	2005	7.4	1161	16.8	38.1	45	13.2
	2010	8.7	1174	16.1	37.7	46.3	13.7
	2015	10.2	1114	15.1	37.1	47.8	14.6
	2019	11.5	1002	15.1	37.1	47.8	14.6
Cabo Verde	1990	.3	2942	9.2	30.3	60.5	23
(SubSaharan Africa)	1995	.4	4142	9.2	30.3	60.5	23
	2000	.4	6266	9.2	30.3	60.5	23
	2005	.5	6781	10.6	32.8	56.6	20.5
	2010	.5	7361	12	35.6	52.3	17.2
	2015	.5	6954	13.2	38.2	48.6	13.8
	2019	.5	7825	13.2	38.2	48.6	13.8
Cambodia	1990	9	2493	17.4	38.1	44.5	15.6
(Other Asia)	1995	10.7	1772	17.4	37.4	45.3	16.5
	2000	12.2	2240	17.3	37.6	45	16.2
	2005	13.3	2752	17.4	38.1	44.6	16.1
	2010	14.3	3274	16.8	37	46.2	17.8
	2015	15.5	3918	17.7	38.2	44.1	16.2
	2019	16.5	4698	17.6	38.2	44.2	16.3
Cameroon	1990	11.8	5052	12.4	33.8	53.7	18.3
(SubSaharan Africa)	1995	13.6	4013	12.4	33.8	53.7	18.3
	2000	15.5	4267	13.2	35.1	51.7	18.8

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	**Year**	**Population (million)**	**Avg. income**	**Nat. income shares (%)**			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
	2005	17.7	4606	13	36.7	50.3	16.6
	2010	20.3	4791	12.2	37.2	50.6	15.6
	2015	23.3	5237	11.3	37	51.7	15.7
	2019	25.9	5400	11.3	37	51.7	15.7
Canada	1990	27.7	29335	22.8	44.8	32.4	9.1
(North America)	1995	29.3	29829	20.5	44.4	35.1	10.1
	2000	30.7	34851	19.2	42.1	38.7	14.2
	2005	32.2	37082	19.1	41.6	39.3	14.9
	2010	34.1	36313	19.5	41.7	38.8	13.5
	2015	36	37659	19.3	40.8	39.9	15.2
	2019	37.3	39051	18.4	42.3	39.4	14.3
Central African Republic	1990	2.8	1590	5.7	29.3	65	28.5
(SubSaharan Africa)	1995	3.2	1438	7.6	31.6	60.7	24.8
	2000	3.6	1363	10.8	35.5	53.7	18.5
	2005	4	1385	10.8	33.7	55.5	21.2
	2010	4.4	1639	8	27.3	64.6	30.9
	2015	4.5	1212	8	27.3	64.6	30.9
	2019	4.7	1346	8	27.3	64.6	30.9
Chad	1990	6	1968	14.3	38.2	47.4	15.3
(SubSaharan Africa)	1995	7	1913	14.3	38.2	47.4	15.3
	2000	8.4	1851	14.3	38.2	47.4	15.3
	2005	10.1	3835	14	38.4	47.6	14.6
	2010	12	3819	13.1	38.2	48.7	15.4
	2015	14.1	4028	12.9	38.1	48.9	15.6
	2019	15.9	3331	12.9	38.1	48.9	15.6
Chile	1990	13.3	10508	9.7	32.6	57.7	26.7
(Latin America)	1995	14.4	14216	9.7	32.6	57.7	26.7
	2000	15.3	16080	9.7	32.6	57.7	26.7
	2005	16.2	17740	8.7	29.3	62	30.8
	2010	17.1	19632	8.5	29.3	62.3	27.5
	2015	18	22638	9.3	28.2	62.5	30.3
	2019	19	22255	10	29.6	60.4	28.1

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	Year	Population (million)	Avg. income	Nat. income shares (%)			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
China	1990	1143.3	2822	22.6	47	30.4	8.1
(China)	1995	1211.2	3815	19.3	47.1	33.6	9.3
	2000	1267.4	4286	18.1	46.4	35.6	10.4
	2005	1307.6	6256	15	43.1	41.9	14.2
	2010	1340.9	9089	14.3	43.1	42.6	15.1
	2015	1374.6	12646	14.8	43.7	41.4	13.9
	2019	1400.9	15365	14.8	43.7	41.4	13.9
Colombia	1990	33.1	8780	9.4	37.3	53.3	22.2
(Latin America)	1995	36.4	9715	9.4	37.3	53.3	22.2
	2000	39.6	10269	9.4	37.3	53.3	22.2
	2005	42.6	10393	10.4	37	52.6	22.9
	2010	45.2	11852	9.9	36.6	53.6	23
	2015	47.5	13840	11.5	38.7	49.8	21.2
	2019	50.3	13649	11.8	38.7	49.5	21
Comoros	1990	.4	4387	11.6	38.4	50	16.8
(SubSaharan Africa)	1995	.5	3946	11.6	38.4	50	16.8
	2000	.5	3995	9.7	31	59.2	23.5
	2005	.6	3791	8.6	26.5	64.9	27.5
	2010	.7	3742	10.5	32.9	56.6	20
	2015	.8	3765	12	38.1	49.9	14.1
	2019	.9	3793	12	38.1	49.9	14.1
Congo	1990	2.4	6558	11.1	34.8	54.1	18.4
(SubSaharan Africa)	1995	2.7	4493	11.1	34.8	54.1	18.4
	2000	3.1	4834	11.1	34.8	54.1	18.4
	2005	3.6	4932	11.1	34.8	54.1	18.4
	2010	4.3	6874	10.6	34.1	55.3	20.1
	2015	4.9	8091	10.5	33.9	55.6	20.4
	2019	5.4	6867	10.5	33.9	55.6	20.4
Costa Rica	1990	3.1	11602	10.9	41.7	47.4	16.4
(Latin America)	1995	3.5	13209	10.9	41.7	47.4	16.4
	2000	4	13566	10.9	41.7	47.4	16.4
	2005	4.3	14371	10.9	41.7	47.4	16.4

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	**Year**	**Population (million)**	**Avg. income**	**Nat. income shares (%)**			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
	2010	4.6	16112	10.9	41.7	47.4	16.4
	2015	4.8	17311	10.1	38.4	51.5	18.2
	2019	5	18124	9.4	38.7	51.9	21.3
Cote d'Ivoire	1990	11.9	4940	14	35.2	50.8	18.7
(SubSaharan Africa)	1995	14.2	4704	15.6	37.7	46.8	16.1
	2000	16.5	4811	13.1	35.7	51.1	19.2
	2005	18.4	4495	12.4	35.8	51.8	19.7
	2010	20.5	4511	13.3	37.4	49.3	17.9
	2015	23.2	5367	13.4	38.3	48.3	17.1
	2019	25.7	6396	13.4	38.3	48.3	17.1
Croatia	1990	4.8	17036	18.6	50.5	30.9	4.9
(Europe)	1995	4.6	12227	18.5	48.7	32.8	6.8
	2000	4.4	14637	18.1	48.4	33.5	7.7
	2005	4.4	18259	19	47.2	33.8	9.4
	2010	4.3	18113	18.6	48.7	32.7	8.5
	2015	4.2	19093	19.2	48.2	32.7	8.9
	2019	4.1	21655	19	48.8	32.2	9
Cuba	1990	10.6	15175	12.7	39.5	47.8	17.5
(Latin America)	1995	10.9	9051	12.7	39.5	47.8	17.5
	2000	11.1	10907	12.7	39.5	47.8	17.5
	2005	11.3	13341	14.1	40.8	45.2	16.1
	2010	11.2	16461	14.8	41.1	44.1	15.8
	2015	11.3	18665	16.5	42.6	40.9	14.8
	2019	11.3	19603	17.2	43.2	39.6	14.3
Cyprus	1990	.6	24109	18.9	44.3	36.8	11.2
(Europe)	1995	.7	26053	19.3	44.5	36.1	11.1
	2000	.7	29299	20.8	46.6	32.7	8.9
	2005	.7	33768	22.5	47.7	29.8	7.4
	2010	.8	33344	20.7	46.3	33	8.7
	2015	.8	28892	17.3	43.9	38.8	12.3
	2019	.9	32940	20.1	44.9	35	9.8
Czech Republic	1990	10.4	20675	34.1	46.3	19.7	4.4

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	**Year**	**Population (million)**	**Avg. income**	**Nat. income shares (%)**			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
(Europe)	1995	10.3	18141	29.6	45.3	25.2	7.9
	2000	10.3	18132	29.2	44.5	26.4	8.7
	2005	10.2	21397	27.9	43.8	28.2	10.4
	2010	10.5	21974	27.3	44.1	28.6	10.1
	2015	10.5	24038	26.7	43.6	29.7	10.8
	2019	10.6	27717	28.1	43.9	28	10
DR Congo	1990	34.6	2388	13.4	37.8	48.8	14.3
(SubSaharan Africa)	1995	41.6	1384	13.4	37.8	48.8	14.3
	2000	47.1	1003	13.4	37.8	48.8	14.3
	2005	54.8	1071	12.2	35.7	52	18.6
	2010	64.6	1123	12.9	37	50.1	16.3
	2015	76.2	1417	13.4	38.2	48.4	14.5
	2019	86.8	1436	13.4	38.2	48.4	14.5
Denmark	1990	5.1	29866	26.5	46.1	27.4	8.7
(Europe)	1995	5.2	33294	26.4	44.9	28.6	10
	2000	5.3	37863	25.4	44	30.7	11.5
	2005	5.4	42620	26.1	44	29.9	10.8
	2010	5.5	42403	24.7	44.4	30.9	11.2
	2015	5.7	44132	23.2	44.3	32.5	12.5
	2019	5.7	47461	23.3	45	31.7	11.2
Djibouti	1990	.6	2883	14.4	38.2	47.4	15.2
(SubSaharan Africa)	1995	.6	3337	14.4	38.2	47.4	15.2
	2000	.7	2940	14.4	38.2	47.4	15.2
	2005	.8	3003	13.8	37.6	48.6	15.8
	2010	.8	3456	12.8	36.6	50.6	16.7
	2015	.9	5543	13.3	36.6	50.1	16
	2019	1	6110	13.8	37.1	49.2	15.7
Dominican Republic	1990	7.1	8341	10.2	37.2	52.5	21.6
(Latin America)	1995	7.8	9365	10.2	37.2	52.5	21.6
	2000	8.5	11365	10.2	37.2	52.5	21.6
	2005	9.1	11912	10.7	37.3	52	21.4
	2010	9.7	14456	11.2	37.4	51.3	20.7

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	Year	Population (million)	Avg. income	Nat. income shares (%)			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
	2015	10.3	16460	12.1	37.9	50	21
	2019	10.7	19137	12.7	38.8	48.5	20.2
Ecuador	1990	10.2	9015	12.8	40.8	46.4	16.7
(Latin America)	1995	11.5	9723	12.8	40.8	46.4	16.7
	2000	12.7	8809	12.8	40.8	46.4	16.7
	2005	13.8	10296	13.4	42.8	43.8	15.3
	2010	15	10948	12.4	41.1	46.5	19
	2015	16.2	12222	15.7	45.6	38.7	12.8
	2019	17.4	11100	15.6	46.8	37.6	11.6
Egypt	1990	56.1	9035	18.4	32.1	49.5	18.9
(MENA)	1995	62.3	9674	18.4	32.1	49.5	18.9
	2000	68.8	11258	18.6	32.4	49	18.4
	2005	75.5	11553	19.4	33.2	47.4	17.5
	2010	82.8	12981	20.9	34.5	44.6	15.8
	2015	92.4	13582	19.9	32.7	47.3	18.7
	2019	100.4	15431	19.9	32.7	47.3	18.7
El Salvador	1990	5.3	6980	7.7	38.2	54.1	26
(Latin America)	1995	5.6	7985	7.7	38.2	54.1	26
	2000	5.9	7976	7.7	38.2	54.1	26
	2005	6.1	8005	8.1	41.8	50.1	19.4
	2010	6.2	8209	9.7	42.9	47.4	18.1
	2015	6.3	8431	9.2	41.2	49.6	21.9
	2019	6.5	8635	10.1	43.7	46.2	20.5
Equatorial Guinea	1990	.4	1541	13	36.8	50.2	15.9
(SubSaharan Africa)	1995	.5	2457	13.1	36.9	50	15.7
	2000	.6	14645	12.6	36.3	51.1	16.7
	2005	.7	41468	12.4	36.1	51.5	17.8
	2010	.9	40793	12.5	36.8	50.8	16.9
	2015	1.2	29932	12.3	36.9	50.8	16.9
	2019	1.4	20315	12.1	36.6	51.3	17.5
Eritrea	1990	2.1	3198	13.1	31.1	55.8	27.3
(SubSaharan Africa)	1995	2.2	4131	12.3	30	57.7	29.4

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	Year	Population (million)	Avg. income	Nat. income shares (%)			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
	2000	2.3	4462	19.3	39	41.7	13.6
	2005	2.8	3604	19.3	38.8	41.9	13.5
	2010	3.2	2942	17.8	38.2	44	14.7
	2015	3.3	3661	16.9	38.2	44.9	13.6
	2019	3.5	4028	16.9	38.2	44.9	13.6
Estonia	1990	1.6	14278	20.6	48.7	30.7	9.2
(Europe)	1995	1.4	10875	14.6	43.4	42	15.3
	2000	1.4	14197	15.3	43.8	40.9	14
	2005	1.4	20420	14.9	40.9	44.2	18.7
	2010	1.3	19084	17.8	46	36.1	11.1
	2015	1.3	23714	18.4	46.6	35	10.6
	2019	1.3	28308	20.1	45.1	34.8	13.9
Ethiopia	1990	50.1	1119	14.4	32.8	52.9	24.1
(SubSaharan Africa)	1995	57	1155	12.3	30	57.7	29.4
	2000	66.2	1227	19.3	39	41.7	13.6
	2005	76.3	1465	19.3	38.8	41.9	13.5
	2010	87.6	2084	17.8	38.2	44	14.7
	2015	100.8	2744	16.9	38.2	44.9	13.6
	2019	112.1	3212	16.9	38.2	44.9	13.6
Finland	1990	5	25559	27.1	48.4	24.5	4.3
(Europe)	1995	5.1	24576	25.7	45.5	28.8	8.5
	2000	5.2	31516	24.6	42.5	32.9	12.4
	2005	5.3	35556	24.8	44.3	30.9	10.3
	2010	5.4	36413	22.7	45.5	31.8	9.2
	2015	5.5	35195	22.9	45	32.1	9.1
	2019	5.5	37759	23.3	44	32.7	9.9
France	1990	58	30406	23.6	46.5	29.9	8.2
(Europe)	1995	59.3	30948	23	47.2	29.8	8.6
	2000	60.5	35011	22.4	45.8	31.7	10.3
	2005	62.6	36112	21.8	45.9	32.3	10.5
	2010	64.3	35772	21.7	46.2	32.1	10.2
	2015	66	35795	21.8	46.2	31.9	9.8

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	Year	Population (million)	Avg. income	Nat. income shares (%)			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
	2019	66.7	37249	22	45.9	32.1	10
Gabon	1990	.9	24829	13.4	36.3	50.3	17
(SubSaharan Africa)	1995	1.1	25054	13.4	36.3	50.3	17
	2000	1.2	21667	13.4	36.3	50.3	17
	2005	1.4	21296	13.4	36.3	50.3	17
	2010	1.6	18007	14.2	38.6	47.2	14.4
	2015	1.9	21492	15	40.9	44.1	11.9
	2019	2.2	20510	15.3	41.8	42.8	10.9
Gambia	1990	1	3759	11.1	33.2	55.8	22.8
(SubSaharan Africa)	1995	1.1	3652	10.9	33.7	55.3	20.6
	2000	1.3	4076	10.9	34.4	54.7	19.2
	2005	1.5	3885	11.6	34.4	54	20.7
	2010	1.8	4216	12.7	34.3	53	21.1
	2015	2.1	3509	16.2	38.6	45.2	13.4
	2019	2.3	3764	16.2	38.6	45.2	13.4
Georgia	1990	5.4	7728	26.5	47.8	25.7	5.9
(Central Asia)	1995	5	2318	22.9	46.8	30.3	8.3
	2000	4.4	3588	21.9	46.3	31.8	9.2
	2005	4.2	5191	20.2	45.8	34.1	10.6
	2010	4.1	6421	20.2	45.9	33.9	10.1
	2015	4	8251	20.1	45.6	34.3	10.9
	2019	4	9688	20.2	45.3	34.5	11.5
Germany	1990	63.2	33512	23.3	45.5	31.2	10.6
(Europe)	1995	81.7	30687	24.1	46.5	29.3	8.6
	2000	82.2	33028	22.2	46	31.8	10.3
	2005	82.5	34077	20.4	45.2	34.4	11.9
	2010	81.8	35455	19.9	43.7	36.4	12.8
	2015	82.5	37680	18.6	43.5	37.9	13.2
	2019	84.2	40110	19.1	43.6	37.3	13
Ghana	1990	14.8	3243	15.5	38.8	45.7	13.5
(SubSaharan Africa)	1995	17	3324	14.6	38.1	47.3	14.2
	2000	19.3	3558	13.9	37.8	48.4	15

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	Year	Population (million)	Avg. income	Nat. income shares (%)			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
	2005	21.8	3936	13.2	37.4	49.4	15.7
	2010	24.8	4520	13.3	38.4	48.4	14.7
	2015	27.8	5470	12.9	38.6	48.4	14.9
	2019	30.4	6008	12.8	38.6	48.6	15.1
Greece	1990	10.2	23905	18.4	47.4	34.2	10.1
(Europe)	1995	10.5	24463	16.5	47.2	36.3	10.6
	2000	10.9	26677	15.1	45.4	39.5	11.7
	2005	11	29978	17.3	45.3	37.3	11.2
	2010	11.1	27261	19.3	46.9	33.8	8.8
	2015	10.9	22045	18.2	45.2	36.6	13.3
	2019	10.7	23766	19.2	44.7	36.1	12.9
Guatemala	1990	9.3	8515	10.2	37.2	52.5	21.6
(Latin America)	1995	10.4	9406	10.2	37.2	52.5	21.6
	2000	11.7	9866	10.2	37.2	52.5	21.6
	2005	13.1	9672	10.7	37.3	52	21.4
	2010	14.6	9706	11.2	37.4	51.3	20.7
	2015	16.3	9893	12.1	37.9	50	21
	2019	17.6	9868	12.7	38.8	48.5	20.2
Guinea	1990	6.4	2210	10.9	41.1	48	14.7
(SubSaharan Africa)	1995	7.3	2452	11.6	39.1	49.3	16
	2000	8.2	2671	12.6	36.6	50.8	17.7
	2005	9.1	2952	14.5	37.7	47.9	15.6
	2010	10.2	2937	16.3	40	43.7	12.6
	2015	11.4	3186	17.4	40.5	42.1	12.4
	2019	12.8	3781	17.4	40.5	42.1	12.4
Guinea-Bissau	1990	1	2717	7.6	32.9	59.4	23.6
(SubSaharan Africa)	1995	1.1	2893	13.4	36.3	50.3	18.3
	2000	1.2	2400	15.6	38.4	46	15.2
	2005	1.3	2322	14.1	35.8	50.1	15.1
	2010	1.5	2375	10.2	30.1	59.7	17
	2015	1.7	2459	10.2	30.1	59.7	17
	2019	1.9	2498	10.2	30.1	59.7	17

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	Year	Population (million)	Avg. income	Nat. income shares (%)			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
Guyana	1990	.7	3915	10.2	37.2	52.5	21.6
(Latin America)	1995	.8	4925	10.2	37.2	52.5	21.6
	2000	.7	5994	10.2	37.2	52.5	21.6
	2005	.7	6328	10.7	37.3	52	21.4
	2010	.7	7788	11.2	37.4	51.3	20.7
	2015	.8	9041	12.1	37.9	50	21
	2019	.8	9313	12.7	38.8	48.5	20.2
Haiti	1990	7	3594	10.2	37.2	52.5	21.6
(Latin America)	1995	7.7	2907	10.2	37.2	52.5	21.6
	2000	8.5	2927	10.2	37.2	52.5	21.6
	2005	9.2	2493	10.7	37.3	52	21.4
	2010	9.9	2379	11.2	37.4	51.3	20.7
	2015	10.7	2474	12.1	37.9	50	21
	2019	11.3	2373	12.7	38.8	48.5	20.2
Honduras	1990	5	5295	10.2	37.2	52.5	21.6
(Latin America)	1995	5.7	5366	10.2	37.2	52.5	21.6
	2000	6.6	5388	10.2	37.2	52.5	21.6
	2005	7.5	5519	10.7	37.3	52	21.4
	2010	8.3	5509	11.2	37.4	51.3	20.7
	2015	9.1	5536	12.1	37.9	50	21
	2019	9.7	5545	12.7	38.8	48.5	20.2
Hungary	1990	10.4	15395	34.1	44.3	21.6	5.1
(Europe)	1995	10.3	11981	30.2	44.5	25.3	7.1
	2000	10.2	13380	27.9	43.6	28.5	9.1
	2005	10.1	17129	25.3	41.7	33	11.7
	2010	10	15755	23.1	43.2	33.7	11.4
	2015	9.9	18297	22.8	44.1	33.1	11.8
	2019	9.8	21853	22.3	43.3	34.3	12.4
Iceland	1990	.3	30483	23.8	46.6	29.7	7.8
(Europe)	1995	.3	30620	24	46.1	29.9	7.8
	2000	.3	37439	23.7	46.1	30.2	8.5
	2005	.3	42598	23.5	45.9	30.7	10

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	**Year**	**Population (million)**	**Avg. income**	**Nat. income shares (%)**			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
	2010	.3	32847	26.3	47.5	26.2	5.4
	2015	.3	45130	25.9	45.4	28.7	8
	2019	.3	50716	26.2	45.4	28.4	8.1
India	1990	873.3	2306	22.3	44.2	33.5	10.5
(India)	1995	963.9	2557	20.9	40.8	38.3	13
	2000	1056.6	3129	20.5	39.6	39.9	15.1
	2005	1147.6	3631	18.3	36.2	45.5	19.3
	2010	1234.3	4711	15.9	31.8	52.2	21.2
	2015	1310.2	5959	14.6	29.2	56.1	21.4
	2019	1366.4	7074	14.6	29.2	56.1	21.4
Indonesia	1990	182.2	3241	19.9	41.3	38.8	10.3
(Other Asia)	1995	197.8	4347	13.8	42.5	43.7	12
	2000	211.5	4934	21.6	40.5	37.9	10.4
	2005	226.3	5766	17.8	39.3	42.9	12.4
	2010	241.8	8819	17.9	40.6	41.5	11.2
	2015	258.4	10186	18.5	40.8	40.7	11
	2019	270.6	11611	17.6	41.7	40.7	10.7
Iran	1990	56.4	16364	15.4	34.9	49.7	17.1
(Other Asia)	1995	61.4	16738	15.4	34.9	49.7	17.1
	2000	65.6	16402	15.4	34.8	49.8	17.2
	2005	69.8	17689	15.3	34.7	49.9	17.4
	2010	73.8	18569	15.3	34.6	50	17.6
	2015	78.5	15589	17.7	34.9	47.4	15.5
	2019	82.9	15205	17.7	34.9	47.3	15.4
Iraq	1990	17.4	20158	15.6	31.5	52.9	22.7
(MENA)	1995	20.1	10658	15.6	31.5	52.9	22.8
	2000	23.5	19236	15.6	31.5	52.9	22.7
	2005	26.9	14045	15.6	31.5	52.9	22.7
	2010	29.7	19958	15.7	31.5	52.9	22.6
	2015	35.6	21647	15.7	31.5	52.8	22.6
	2019	39.3	21714	15.7	31.5	52.9	22.7
Ireland	1990	3.5	24279	24.7	46.3	29	8.1

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	Year	Population (million)	Avg. income	Nat. income shares (%)			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
(Europe)	1995	3.6	27132	22.8	45.9	31.3	9.3
	2000	3.8	35411	22.3	43.1	34.6	11.7
	2005	4.1	40060	21.9	42	36.1	12.9
	2010	4.6	36805	22.1	46	31.8	9.8
	2015	4.7	36622	20.4	45	34.7	11.6
	2019	4.9	43228	21.8	43.9	34.4	11.6
Israel	1990	4.4	26611	17.9	36	46.1	15.1
(MENA)	1995	5.3	30801	17.3	35.8	46.9	15.7
	2000	5.9	30897	16.7	35.6	47.7	16.3
	2005	6.5	31900	15.4	35.6	48.9	16.8
	2010	7.3	34512	15.1	34.9	50	17.9
	2015	8	38084	16.5	36.9	46.7	14.8
	2019	8.5	41673	16.7	37	46.3	14.4
Italy	1990	56.7	29436	24.7	48.4	26.9	6.2
(Europe)	1995	56.8	29913	23.2	47.9	28.8	7.4
	2000	56.9	32613	22.2	47.2	30.6	8.1
	2005	58.2	32996	22.4	47.3	30.3	8
	2010	59.8	30855	22.1	47.4	30.5	7.8
	2015	61	28380	21	48.4	30.6	7.7
	2019	60.9	30056	20.9	46.8	32.3	8.8
Jamaica	1990	2.4	9169	10.2	37.2	52.5	21.6
(Latin America)	1995	2.5	10581	10.2	37.2	52.5	21.6
	2000	2.7	9807	10.2	37.2	52.5	21.6
	2005	2.7	9863	10.7	37.3	52	21.4
	2010	2.8	9112	11.2	37.4	51.3	20.7
	2015	2.9	8795	12.1	37.9	50	21
	2019	2.9	8659	12.7	38.8	48.5	20.2
Japan	1990	123.6	26183	20.9	38.9	40.2	14.1
(Other Rich)	1995	125.6	25909	21.7	41.4	36.9	10
	2000	126.9	25340	20.4	39.9	39.7	10.8
	2005	127.8	26375	19	37.2	43.8	13
	2010	128.1	26035	19.3	37.8	42.9	12.2

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	Year	Population (million)	Avg. income	Nat. income shares (%)			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
	2015	126.8	28766	19.2	37.7	43	12.5
	2019	125.7	30209	19.3	37.8	42.9	12.3
Jordan	1990	3.6	11924	16.2	32.7	51.1	20.5
(MENA)	1995	4.6	11748	17	33.5	49.5	18.9
	2000	5.1	11929	18	34.7	47.3	16.5
	2005	5.8	13932	18.1	35.1	46.7	15.8
	2010	7.3	14043	17.4	31.8	50.8	21.7
	2015	9.3	12100	18.1	34.8	47	16.2
	2019	10.1	11390	18.1	34.8	47.1	16.3
Kazakhstan	1990	16.4	14383	17.9	41	41.2	13
(Central Asia)	1995	15.8	9277	17.8	42.2	40	11.8
	2000	14.9	10011	17.3	40.8	41.9	13.6
	2005	15.4	15092	19.9	40	40.1	14.2
	2010	16.3	18008	21.3	40.3	38.4	12.8
	2015	17.6	23169	22.6	41.3	36.2	11.9
	2019	18.6	24027	21.6	40.2	38.2	12.6
Kenya	1990	23.7	4324	7.7	26.3	66	32.4
(SubSaharan Africa)	1995	27.8	3982	12.7	35.4	51.9	18.8
	2000	32	3720	11.9	33.8	54.3	19.8
	2005	36.6	3800	11.6	33.7	54.7	21.3
	2010	42	4083	12.8	35.8	51.4	18.2
	2015	47.9	4175	14	37.8	48.2	15
	2019	52.6	4497	14	37.8	48.2	15
Korea	1990	42.9	12726	23.3	42.6	34.1	9.2
(Other Asia)	1995	45.1	16586	23.3	42.7	34	9.1
	2000	47	19203	20.7	42	37.3	9.7
	2005	48.2	21965	21.7	39.6	38.7	11.3
	2010	49.6	25101	19.1	36.6	44.3	13.8
	2015	51	27237	19	36.7	44.3	13.8
	2019	51.6	28633	18.9	36.6	44.5	14
Kuwait	1990	2.1	74315	15.2	32	52.8	17.4
(MENA)	1995	1.6	122479	15.2	32	52.8	17.4

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	**Year**	**Population (million)**	**Avg. income**	**Nat. income shares (%)**			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
	2000	2	103068	15.2	32	52.8	17.4
	2005	2.3	120179	15.2	31.9	52.9	17.5
	2010	3	91955	15.1	31.9	53	17.2
	2015	3.8	84252	14.9	31.8	53.3	17.8
	2019	4.2	78224	14.9	31.8	53.3	17.8
Kyrgyzstan	1990	4.4	4472	20.1	41.2	38.7	10.9
(Central Asia)	1995	4.6	2292	20.2	42.1	37.7	9.9
	2000	4.9	2499	20.2	42.2	37.5	9.7
	2005	5.1	2956	18.8	40	41.2	13.9
	2010	5.4	3207	21.1	40.3	38.6	12.9
	2015	6	3475	21.6	39.4	38.9	14.2
	2019	6.4	4069	22.3	40.1	37.6	12.7
Lao PDR	1990	4.3	2861	18	37.7	44.3	16
(Other Asia)	1995	4.8	3364	17.8	36.7	45.5	17.6
	2000	5.3	3926	18.3	37.4	44.3	16.8
	2005	5.8	4696	18.1	36.8	45.1	17.4
	2010	6.2	5944	17.8	36.7	45.5	17.4
	2015	6.7	7240	17.7	36.7	45.5	17.3
	2019	7.2	8290	17.7	36.7	45.6	17.3
Latvia	1990	2.7	15907	24.2	49.5	26.4	5.3
(Europe)	1995	2.5	5937	19.5	46.8	33.7	9.2
	2000	2.4	9049	18	45.7	36.3	9.8
	2005	2.3	14780	16.4	44	39.6	12
	2010	2.1	14612	19.4	45.1	35.5	9.3
	2015	2	18280	18.9	45.7	35.4	10.1
	2019	1.9	22224	19.1	46.5	34.4	9
Lebanon	1990	2.8	9317	12.9	35	52.2	21.6
(MENA)	1995	3.5	14935	12.9	35	52.2	21.6
	2000	3.8	13890	12.9	35	52.2	21.6
	2005	4.7	13469	12.9	35	52.2	21.6
	2010	5	17196	10.6	32.4	57	23.3
	2015	6.5	14297	10.6	32.3	57.1	23.4

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	Year	Population (million)	Avg. income	Nat. income shares (%)			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
	2019	6.9	13521	10.6	32.3	57.1	23.4
Lesotho	1990	1.7	6062	7.2	31.9	60.8	23.6
(SubSaharan Africa)	1995	1.9	5549	5.6	31.2	63.1	21.9
	2000	2	4164	8.3	34.3	57.3	19.4
	2005	2	4281	9	35	56	18.6
	2010	2	4519	8.4	34	57.6	18.9
	2015	2.1	4484	10.9	37.5	51.6	15.7
	2019	2.1	4799	11.9	38.9	49.1	14.3
Liberia	1990	2.1	2193	16.3	39.5	44.2	12.6
(SubSaharan Africa)	1995	2	627	16.3	39.5	44.2	12.6
	2000	2.8	2133	16.3	39.5	44.2	12.6
	2005	3.2	1154	16.3	39.5	44.2	12.6
	2010	3.9	115	16.9	40.1	43	11.8
	2015	4.5	2043	17.2	40.9	42	11.4
	2019	4.9	1660	16.6	40.8	42.6	12
Libya	1990	4.4	32827	16.4	38.7	44.8	14.1
(MENA)	1995	4.9	28580	17.1	39.4	43.5	13.2
	2000	5.4	30888	16.8	38.7	44.6	13.9
	2005	5.8	34231	17.3	38.9	43.8	13
	2010	6.2	37599	17.7	39.3	43	12.8
	2015	6.4	19442	17.6	38.3	44.1	14.2
	2019	6.8	18470	17.7	38.9	43.4	13.3
Lithuania	1990	3.7	14690	25	47.3	27.7	6.1
(Europe)	1995	3.6	8781	19.7	47	33.3	8.5
	2000	3.5	11888	20.5	47.5	32.1	8
	2005	3.3	17806	18.4	46.3	35.3	9.5
	2010	3.1	19184	19.7	45.9	34.4	9
	2015	2.9	23578	18.1	45.2	36.6	10.6
	2019	2.8	28808	18	43.8	38.2	12.2
Luxembourg	1990	.4	47689	22.3	41.4	36.3	14
(Europe)	1995	.4	60980	21.8	41.7	36.5	14.1
	2000	.4	76474	21.2	41.9	36.9	14.1

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	Year	Population (million)	Avg. income	Nat. income shares (%)			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
	2005	.5	91878	20.4	39.9	39.7	16.1
	2010	.5	139309	20.9	42.8	36.3	13.7
	2015	.6	103469	20.7	45.8	33.5	10.6
	2019	.6	94992	20.6	46.6	32.8	9.2
Macao	1990	.3	42229	22.6	47	30.4	8.1
(Other Asia)	1995	.4	49301	19.3	47.1	33.6	9.3
	2000	.4	42665	18.1	46.4	35.6	10.4
	2005	.5	57911	15	43.1	41.9	14.2
	2010	.5	76313	14.3	43.1	42.6	15.1
	2015	.6	76754	14.8	43.7	41.4	13.9
	2019	.6	83086	14.8	43.7	41.4	13.9
Macedonia	1990	2	11164	25.5	49.4	25.1	5.4
(Europe)	1995	2	7920	18.8	51.8	29.4	6.6
	2000	2	9205	18.6	51.9	29.4	7.2
	2005	2.1	9470	18.3	51.4	30.3	6.7
	2010	2.1	10861	18.2	49.3	32.6	7.3
	2015	2.1	11787	20.2	48.7	31.1	7.6
	2019	2.1	12572	20.9	48.6	30.5	7.9
Madagascar	1990	11.6	3177	13.2	36.9	49.8	15.7
(SubSaharan Africa)	1995	13.5	2675	14.2	38.3	47.5	15
	2000	15.8	2853	13	38.1	48.9	13.7
	2005	18.3	2677	14.4	35.6	49.9	18.3
	2010	21.2	2626	13.4	34.7	51.9	18.5
	2015	24.2	2484	13.3	36.4	50.3	15
	2019	27	2579	13.3	36.4	50.3	15
Malawi	1990	9.4	1209	5.7	14.4	79.9	63.8
(SubSaharan Africa)	1995	9.8	1366	5.7	14.4	79.9	63.8
	2000	11.1	1534	9.4	23.2	67.4	44.5
	2005	12.6	1515	13.9	34.6	51.4	19.4
	2010	14.5	1854	11.9	33	55.1	21.8
	2015	16.7	1855	12.7	31.7	55.7	26.7
	2019	18.6	1910	12.8	31.4	55.8	27.7

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	Year	Population (million)	Avg. income	Nat. income shares (%)			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
Malaysia	1990	18	10867	15.9	39.7	44.4	18.5
(Other Asia)	1995	20.5	13407	15.9	39.7	44.4	18.5
	2000	23.2	15193	15.9	39.7	44.4	18.5
	2005	25.7	18830	15.5	39.7	44.8	17.1
	2010	28.2	21968	16.2	40.6	43.2	17.2
	2015	30.3	25937	19	41.6	39.4	14.6
	2019	31.9	28406	19	41.6	39.4	14.6
Maldives	1990	.2	11337	13.7	30.8	55.5	30.7
(Other Asia)	1995	.3	12488	13.7	30.8	55.5	30.7
	2000	.3	14625	13.7	30.8	55.4	30.7
	2005	.3	11495	15.2	34.7	50.1	23.8
	2010	.4	11706	16.2	37.5	46.3	18.8
	2015	.5	11576	16.3	37.8	45.9	18.4
	2019	.5	12072	16.3	37.8	45.8	18.4
Mali	1990	8.4	2317	10	31.9	58.1	21.5
(SubSaharan Africa)	1995	9.6	2401	10.6	33	56.4	20.4
	2000	10.9	2600	13.7	38.4	47.9	14.7
	2005	12.8	3112	14.9	38.8	46.3	12.9
	2010	15	3319	17.7	41.7	40.6	9.5
	2015	17.4	3500	17.7	41.7	40.6	9.5
	2019	19.7	3758	17.7	41.7	40.6	9.5
Malta	1990	.4	18155	23.5	47.5	28.9	7.4
(Europe)	1995	.4	20185	23.5	47.5	28.9	7.4
	2000	.4	23033	23.5	47.5	28.9	7.4
	2005	.4	24255	23.5	47.5	28.9	7.4
	2010	.4	24161	22.9	47.5	29.6	7.7
	2015	.4	30150	21.2	45.2	33.6	9.9
	2019	.4	36394	21.3	45.2	33.5	10.3
Mauritania	1990	2	4587	11.4	33.6	55	22.9
(SubSaharan Africa)	1995	2.3	4686	15.5	40.1	44.4	12.4
	2000	2.6	4710	14.8	40.1	45.1	11
	2005	3	5156	14.9	37.4	47.7	14.9

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	**Year**	**Population (million)**	**Avg. income**	**Nat. income shares (%)**			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
	2010	3.5	5525	16.9	42.5	40.6	10.3
	2015	4	5354	18	42.1	39.9	10.6
	2019	4.5	5683	18	42.1	39.9	10.6
Mauritius	1990	1.1	9556	16.5	38.4	45.1	13.5
(SubSaharan Africa)	1995	1.1	12188	16.5	38.4	45.1	13.5
	2000	1.2	14576	16.5	38.4	45.1	13.5
	2005	1.2	21462	16.5	38.4	45.1	13.5
	2010	1.2	28050	15.6	36.7	47.7	15.7
	2015	1.3	45970	15.6	36.7	47.7	16.1
	2019	1.3	33792	16	37.3	46.8	15.7
Mexico	1990	87.1	15376	7.9	38.3	53.9	23.2
(Latin America)	1995	94.5	16766	7.9	38.3	53.9	23.2
	2000	100.9	19712	7.9	38.3	53.9	23.2
	2005	107.2	17848	8.2	36	55.8	21
	2010	114.3	17746	7.1	33.8	59.1	25.1
	2015	121.4	18419	7.2	31.1	61.6	31.6
	2019	127.1	18255	8.3	32.2	59.5	30.3
Moldova	1990	4.4	7649	23.6	47.8	28.6	6.9
(Europe)	1995	4.3	3023	18.7	48.3	33	7.9
	2000	4.2	2747	18.7	47.7	33.6	8.1
	2005	4.2	4048	18.6	47	34.4	8.7
	2010	4.1	4353	19.7	47	33.3	9.2
	2015	4.1	4951	20.9	46.1	33	9.9
	2019	4	5741	20.9	45.7	33.4	10.4
Mongolia	1990	2.2	6689	18.7	41.5	39.7	12.5
(Other Asia)	1995	2.3	6264	18.7	41.5	39.7	12.5
	2000	2.4	6220	18.4	41	40.6	13.5
	2005	2.5	7612	18	39.5	42.5	15
	2010	2.7	8422	19	40.1	40.9	13.9
	2015	3	12077	19.4	39.6	41	14.6
	2019	3.2	13652	19.4	39.7	40.9	14.5
Montenegro	1990	.6	16572	22.9	50.1	27	5.7

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	Year	Population (million)	Avg. income	Nat. income shares (%)			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
(Europe)	1995	.6	7827	23.1	48.6	28.3	6.5
	2000	.6	11594	23.2	46.6	30.2	7.9
	2005	.6	12779	19.6	46.5	33.9	7.8
	2010	.6	14789	18.2	48	33.8	8.6
	2015	.6	16318	15.7	48.4	35.9	9.9
	2019	.6	18571	15.7	48.2	36.1	10.1
Morocco	1990	24.8	6088	14.2	36.9	48.8	17.7
(MENA)	1995	27	5798	14.4	37.5	48	15.9
	2000	28.8	6320	14	36.9	49.1	15.8
	2005	30.5	7209	14.1	35.7	50.3	16.7
	2010	32.3	8166	14.3	35.8	49.9	17.2
	2015	34.7	8922	14.6	36.6	48.8	15
	2019	36.5	9225	14.6	36.6	48.8	15
Mozambique	1990	13	871	8.9	29.5	61.6	23.9
(SubSaharan Africa)	1995	15.5	777	8.9	29.5	61.6	23.9
	2000	17.7	974	10.6	30.1	59.3	24.9
	2005	20.5	1305	11.8	31.9	56.3	23.8
	2010	23.5	1668	10.9	30.9	58.2	25.8
	2015	27	2088	8.9	26.9	64.2	30.9
	2019	30.4	2070	8.9	26.9	64.2	30.9
Myanmar	1990	41.3	1029	16	33.3	50.7	26.7
(Other Asia)	1995	43.9	1285	16	33.3	50.7	26.7
	2000	46.7	1714	16	33.2	50.8	26.7
	2005	48.9	2615	16	33.2	50.8	26.7
	2010	50.6	4497	16	33.2	50.8	26.7
	2015	52.7	5883	16	33.2	50.8	26.7
	2019	54	7114	16	33.2	50.8	26.7
Namibia	1990	1.4	9360	5.9	22.8	71.3	26.8
(SubSaharan Africa)	1995	1.6	10130	5.9	22.8	71.3	26.8
	2000	1.8	9961	5.9	22.8	71.3	26.8
	2005	1.9	11109	6.1	23.4	70.5	26.6
	2010	2.1	12005	6.6	25.4	68.1	25.4

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	Year	Population (million)	Avg. income	Nat. income shares (%)			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
	2015	2.3	14505	6.9	29.1	64	21.5
	2019	2.5	12989	6.9	29.1	64	21.5
Nepal	1990	18.9	2012	17.7	37.3	45	17.4
(Other Asia)	1995	21.6	2222	17.7	37.3	45	17.4
	2000	23.9	2476	19	39.3	41.8	14.4
	2005	25.7	2590	19.3	39.6	41.1	13.8
	2010	27	2914	19.5	39.7	40.8	13.5
	2015	27	3490	19.5	40	40.4	13.1
	2019	28.6	3832	19.6	40.1	40.4	13.1
Netherlands	1990	14.9	31689	26.5	47.3	26.2	5.7
(Europe)	1995	15.4	33637	25.6	47.4	27	5.8
	2000	15.9	40230	26.2	46.7	27.1	6.1
	2005	16.3	40639	24.4	46.4	29.2	7
	2010	16.6	43203	24.2	47.1	28.7	6.6
	2015	16.9	43213	23.5	47.5	28.9	6.8
	2019	17	46331	23.1	47.4	29.5	7
New Zealand	1990	3.4	23186	17.8	50.1	32.1	9.7
(Other Rich)	1995	3.7	23785	17.5	49.6	32.8	10
	2000	3.9	25954	22.7	45.6	31.7	9.3
	2005	4.1	28874	23.4	45.2	31.5	9.9
	2010	4.4	29166	23.7	46.4	29.9	9.1
	2015	4.6	32891	22.5	45	32.6	10.5
	2019	4.8	35697	22.6	44.1	33.3	11.4
Nicaragua	1990	4.2	5067	10.2	37.2	52.5	21.6
(Latin America)	1995	4.7	4615	10.2	37.2	52.5	21.6
	2000	5.1	5231	10.2	37.2	52.5	21.6
	2005	5.4	5423	10.7	37.3	52	21.4
	2010	5.8	5420	11.2	37.4	51.3	20.7
	2015	6.2	6264	12.1	37.9	50	21
	2019	6.5	5776	12.7	38.8	48.5	20.2
Niger	1990	8	1579	16.4	37.6	46.1	15.3
(SubSaharan Africa)	1995	9.5	1422	13.6	36.4	50	17.2

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	Year	Population (million)	Avg. income	Nat. income shares (%)			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
	2000	11.3	1376	13	34.7	52.3	20.4
	2005	13.6	1474	12.4	32.9	54.7	23.6
	2010	16.5	1599	17.8	38.2	44	13
	2015	20	1752	17.1	40.3	42.6	11.4
	2019	23.3	1864	17.1	40.3	42.6	11.4
Nigeria	1990	95.2	5369	12.8	41.5	45.7	11.4
(SubSaharan Africa)	1995	107.9	5100	12.7	41	46.3	11.8
	2000	122.3	5058	13.7	40.3	46	12.8
	2005	138.9	6836	13.9	39.1	47	14.1
	2010	158.5	8164	13.4	38.1	48.5	14.8
	2015	181.1	9400	15.4	40	44.5	12.7
	2019	201	8604	16.7	41.2	42.1	11.4
North Korea	1990	20.3	1647	19.9	42.7	37.5	11.7
(Other Asia)	1995	21.9	1143	18.3	42.5	39.2	12.4
	2000	22.9	1033	17.4	42	40.6	13
	2005	23.9	1099	16	41.1	42.9	14.5
	2010	24.5	1035	15.1	40.2	44.7	16.6
	2015	25.2	1008	16.3	41.7	42	14.4
	2019	25.7	896	16.3	41.6	42.1	14.6
Norway	1990	4.2	23127	30.9	46.3	22.8	5.8
(Europe)	1995	4.4	26263	28.7	44.4	26.8	8.4
	2000	4.5	37042	26.4	42	31.5	12.2
	2005	4.6	45618	25.8	41.9	32.3	12.8
	2010	4.9	49978	26.3	42.1	31.6	11.9
	2015	5.2	54311	26.5	43.7	29.8	9.5
	2019	5.4	55314	25.6	43.4	30.9	10.4
Oman	1990	1.8	53993	10.7	34.8	54.5	17.9
(MENA)	1995	2.2	54089	10.7	34.8	54.5	18.1
	2000	2.3	60375	10.7	34.8	54.5	18
	2005	2.5	53379	10.7	34.8	54.5	18
	2010	3	45811	10.8	34.9	54.4	17.7
	2015	4.3	36394	10.8	34.9	54.3	17.7

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	Year	Population (million)	Avg. income	Nat. income shares (%)			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
	2019	5	32313	10.7	34.9	54.4	17.8
Pakistan	1990	107.6	4949	18.8	39.1	42.1	14.6
(Other Asia)	1995	123.8	5373	20.6	38.2	41.1	16
	2000	142.3	5294	19.2	37.3	43.4	17.1
	2005	160.3	6053	18.4	36.1	45.5	18.4
	2010	179.4	6117	20.8	38	41.2	15.4
	2015	199.4	6580	19	36.2	44.8	18.4
	2019	216.6	7132	19	36.2	44.7	18.4
Palestine	1990	2.1	1266	15.1	36.7	48.2	14.5
(MENA)	1995	2.6	1934	15	36.6	48.4	14.7
	2000	3.2	1903	14.9	36.5	48.6	14.9
	2005	3.6	1760	14	36.1	49.9	16.2
	2010	4.1	1847	13.4	34.9	51.7	17.1
	2015	4.5	2066	13.9	35.8	50.2	16
	2019	5	2029	13.9	35.8	50.3	16.1
Panama	1990	2.5	10613	10.2	37.2	52.5	21.6
(Latin America)	1995	2.7	11758	10.2	37.2	52.5	21.6
	2000	3	12939	10.2	37.2	52.5	21.6
	2005	3.3	14008	10.7	37.3	52	21.4
	2010	3.6	17877	11.2	37.4	51.3	20.7
	2015	4	23459	12.1	37.9	50	21
	2019	4.2	25356	12.7	38.8	48.5	20.2
Papua New Guinea	1990	4.6	3324	17.9	40.5	41.6	14.4
(Other Asia)	1995	5.2	4213	14.9	41.1	44.1	15.3
	2000	5.8	3876	18.7	40.1	41.1	14.5
	2005	6.5	3647	16.7	39.5	43.8	14.7
	2010	7.3	4334	17.1	40.6	42.3	14.2
	2015	8.1	5344	18.7	41.2	40.1	12.8
	2019	8.8	5293	18.3	41.6	40.1	12.6
Paraguay	1990	4.2	12002	10.2	37.2	52.5	21.6
(Latin America)	1995	4.8	12201	10.2	37.2	52.5	21.6
	2000	5.3	10368	10.2	37.2	52.5	21.6

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	Year	Population (million)	Avg. income	Nat. income shares (%)			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
	2005	5.8	9857	10.7	37.3	52	21.4
	2010	6.2	12239	11.2	37.4	51.3	20.7
	2015	6.7	13300	12.1	37.9	50	21
	2019	7	14066	12.7	38.8	48.5	20.2
Peru	1990	22.1	7463	8.2	36.4	55.3	25.6
(Latin America)	1995	24.3	8616	8.2	36.4	55.3	25.6
	2000	26.5	8634	8.2	36.4	55.3	25.6
	2005	27.9	9203	7.3	34.3	58.4	27
	2010	29	11554	8.5	31.6	59.9	33.8
	2015	30.5	13798	7.7	27.8	64.5	42.3
	2019	32.5	13558	7.8	28	64.2	42
Philippines	1990	61.9	6156	14.7	37.3	48	18.1
(Other Asia)	1995	69.8	6237	12.2	33.9	53.9	24.7
	2000	78	6212	13.8	35.2	51	21.2
	2005	86.3	6601	14.3	37.2	48.5	17.5
	2010	94	7226	14.8	37.1	48.1	17.3
	2015	102.1	8718	15.6	37.8	46.6	16.7
	2019	108.1	10166	15.5	37.8	46.7	16.8
Poland	1990	38	10090	28.2	47.8	24	5.4
(Europe)	1995	38.5	11319	24	45.2	30.8	11
	2000	38.6	14173	22.3	44.9	32.9	10.3
	2005	38.4	15454	19.5	44.5	36.1	13.4
	2010	38.3	18926	20.3	43.3	36.4	13.3
	2015	38	21523	19.8	42.4	37.8	14.9
	2019	37.9	25332	20.1	42.8	37.1	14.6
Portugal	1990	9.9	20196	20.7	44.5	34.8	10.7
(Europe)	1995	10.1	20888	17.2	44.3	38.5	11.6
	2000	10.3	24278	17.9	43.8	38.3	11.3
	2005	10.5	24404	17.7	43.2	39.1	10.6
	2010	10.6	23891	19	43.3	37.8	9.9
	2015	10.4	23196	18.8	43.9	37.3	11.1
	2019	10.2	25841	19.4	43.2	37.4	11.6

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	Year	Population (million)	Avg. income	Nat. income shares (%)			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
Qatar	1990	.5	77631	13	34.9	52.1	18.5
(MENA)	1995	.5	78323	13	34.9	52.1	18.5
	2000	.6	114865	13	34.9	52.1	18.5
	2005	.9	106824	13	34.9	52.1	18.6
	2010	1.9	88918	13.9	33.6	52.5	19
	2015	2.6	96770	15	32.7	52.3	18.5
	2019	2.8	94231	14.6	32.8	52.6	19
Romania	1990	23.5	12255	28.8	46	25.2	6
(Europe)	1995	23	9278	24.3	44.6	31.1	8.8
	2000	22.1	9784	21	44.1	34.9	11.1
	2005	21.4	12858	17.5	43.1	39.4	13.4
	2010	20.5	15455	17.1	43	39.9	14.4
	2015	19.9	18116	15.7	42	42.3	16.5
	2019	19.4	21916	16.7	44.5	38.9	13.2
Russian Federation	1990	147.7	17862	29.5	47	23.6	7.3
(Central Asia)	1995	148.5	9447	14.1	43.6	42.3	13.8
	2000	146.9	12519	13.1	36.4	50.5	23.8
	2005	143.8	16910	14.3	37.8	48	25.4
	2010	142.9	19473	16.8	37.9	45.4	19.7
	2015	146.3	21062	17.4	37.4	45.2	19.6
	2019	147.1	21304	17.7	36.3	46.1	21.3
Rwanda	1990	7.3	1610	16.5	36.7	46.8	15.4
(SubSaharan Africa)	1995	5.8	1136	13.7	33.2	53.1	19.6
	2000	7.9	1403	10.9	29.8	59.4	23.9
	2005	8.8	1782	9.6	27.9	62.5	26.9
	2010	10	2265	11.4	30.2	58.4	23.5
	2015	11.4	2702	12.6	33	54.4	20.6
	2019	12.6	3153	12.8	33.9	53.4	19.7
Sao Tome and Principe	1990	.1	3799	18.2	42.8	39	9
(SubSaharan Africa)	1995	.1	3734	18.2	42.8	39	9
	2000	.1	3387	18.2	42.8	39	9
	2005	.2	3795	18.6	42.6	38.9	8.9

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	Year	Population (million)	Avg. income	Nat. income shares (%)			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
	2010	.2	4284	19	42.4	38.7	8.8
	2015	.2	4890	11.3	28.4	60.3	33.4
	2019	.2	5050	8.2	22.9	68.9	43.3
Saudi Arabia	1990	16.2	70300	13.1	33.4	53.5	18.6
(MENA)	1995	18.6	71483	13.1	33.4	53.5	18.6
	2000	20.7	63207	13.1	33.4	53.5	18.6
	2005	23.8	62708	13.1	33.4	53.5	18.6
	2010	27.4	57603	13.1	33.3	53.6	18.9
	2015	31.7	55936	13.1	33.3	53.6	18.9
	2019	34.3	52636	13.1	33.3	53.6	18.9
Senegal	1990	7.5	4069	8.5	30.8	60.7	25
(SubSaharan Africa)	1995	8.7	3818	13.8	34.8	51.4	19.1
	2000	9.8	3975	13.7	35.1	51.2	18.9
	2005	11.1	4331	14.7	39	46.2	13.3
	2010	12.7	4390	14.4	38.6	47	13.1
	2015	14.6	4568	14.3	38.5	47.2	13
	2019	16.3	5159	14.3	38.5	47.2	13
Serbia	1990	9.5	12702	21.7	48.1	30.1	9.2
(Europe)	1995	9.9	5310	21.7	48.1	30.2	9.2
	2000	7.5	7187	21.2	45.9	32.9	10.9
	2005	7.4	10194	18.6	46	35.4	11.7
	2010	7.3	11601	16.1	47.2	36.8	11.4
	2015	7.1	11699	14.4	46.6	39	13.8
	2019	7	13531	16.3	48.4	35.3	11.2
Seychelles	1990	.1	18857	13.1	34.7	52.2	22.1
(SubSaharan Africa)	1995	.1	18136	13.1	34.7	52.2	22.1
	2000	.1	21333	13.1	34.8	52.1	21.9
	2005	.1	17727	13	35.3	51.7	20.6
	2010	.1	21296	13	35.4	51.6	20.4
	2015	.1	23951	13	35.4	51.6	20.4
	2019	.1	27494	13	35.4	51.6	20.4
Sierra Leone	1990	4.3	1913	4.5	37.1	58.5	20.2

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	Year	Population (million)	Avg. income	Nat. income shares (%)			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
(SubSaharan Africa)	1995	4.3	1594	8.3	37.1	54.6	17.3
	2000	4.6	1589	12.1	37.2	50.7	14.4
	2005	5.6	1762	15.1	38	46.9	12.2
	2010	6.4	2019	16.9	40.1	43	10.8
	2015	7.2	2134	16.7	38.7	44.5	13
	2019	7.8	2318	16.3	37.4	46.3	14.8
Singapore	1990	3	36044	22.1	41	37	11
(Other Asia)	1995	3.5	44889	24.3	43.2	32.5	9.8
	2000	4	48261	19.7	39.3	41.1	13.1
	2005	4.3	55120	20.7	38.7	40.6	13.5
	2010	5.1	67466	19.7	38	42.3	13.3
	2015	5.5	69684	18.5	36.3	45.2	13.9
	2019	5.7	70798	18.5	36.3	45.3	13.9
Slovakia	1990	5.3	13508	30.1	47.4	22.5	4.7
(Europe)	1995	5.4	10464	27.5	47.6	25	6.2
	2000	5.4	11720	25.7	47.5	26.9	7
	2005	5.4	15307	22.8	47.7	29.5	8.4
	2010	5.4	19631	23.9	46.5	29.6	9.2
	2015	5.4	22038	26.1	46.3	27.6	8
	2019	5.5	24688	25.2	45.3	29.5	10.6
Slovenia	1990	2	18188	29.2	48.9	21.9	4.2
(Europe)	1995	2	17833	24.8	47.8	27.4	6.1
	2000	2	20335	24.3	47	28.7	7.2
	2005	2	23453	22.8	46.9	30.3	7.6
	2010	2	24441	23.1	47.3	29.6	7.1
	2015	2.1	23851	23.1	48	28.9	7.2
	2019	2.1	28644	24	46.6	29.4	8.2
Somalia	1990	7.2	1471	12.7	32.9	54.4	23.5
(SubSaharan Africa)	1995	7.5	991	12.6	32.6	54.9	24.3
	2000	8.9	960	15.5	36.2	48.3	17.3
	2005	10.4	978	15.7	36.4	48	16.8
	2010	12	983	15	36.1	48.9	17.2

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	Year	Population (million)	Avg. income	Nat. income shares (%)			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
	2015	13.8	1239	14.6	36.5	48.8	16.2
	2019	15.4	1368	14.5	36.1	49.3	16.7
South Africa	1990	35.5	12239	15.5	38.6	45.9	9.9
(SubSaharan Africa)	1995	39.4	11240	15	37.7	47.3	11.7
	2000	43.7	11186	11.5	35.8	52.7	15.2
	2005	47.8	12969	11.9	30.2	57.9	18
	2010	51.1	13966	8.9	30.3	60.7	18.6
	2015	54.4	13718	6.2	28.7	65.1	19.2
	2019	57.6	13110	6.2	28.7	65.1	19.2
South Sudan	1990	5.5	3951	11.4	39.4	49.1	14.1
(MENA)	1995	5.1	4512	11.4	39.4	49.1	14.1
	2000	6.2	4788	11.4	39.4	49.1	14.1
	2005	7.5	5633	11.4	39.4	49.1	14.1
	2010	9.5	8481	11.4	39.4	49.1	14.1
	2015	10.7	3107	11.4	39.4	49.1	14.1
	2019	11.1	3233	11.4	39.4	49.1	14.1
Spain	1990	38.9	23974	19.1	43.5	37.4	12.5
(Europe)	1995	39.8	24159	19.8	44.2	36	12.3
	2000	40.7	27264	20.8	45.2	34.1	11
	2005	44	28763	21.5	45.2	33.2	10.6
	2010	46.7	27969	21.6	44.6	33.8	11.3
	2015	46.3	28702	21.6	44.3	34.1	11.8
	2019	46.3	31764	21.9	43.9	34.2	12.2
Sri Lanka	1990	17.3	4729	18.8	37.4	43.8	17.2
(Other Asia)	1995	18.2	5609	17.5	37.9	44.6	15.8
	2000	18.8	6594	15	35.6	49.5	19.8
	2005	19.5	7470	15.4	35.2	49.3	20.8
	2010	20.3	9638	16.9	36.1	47	19.2
	2015	20.9	12091	16	35.1	49	20.6
	2019	21.3	13352	15.9	35	49.1	20.6
Sudan	1990	25.6	2982	16.6	41.4	42	11.2
(MENA)	1995	29.2	3405	16.6	41.4	42	11.2

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	Year	Population (million)	Avg. income	Nat. income shares (%)			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
	2000	33.5	3613	16.6	41.4	42	11.2
	2005	38.5	4251	16.6	41.4	42	11.2
	2010	34.5	6497	16.7	40.8	42.4	12
	2015	38.9	6693	17.1	38.6	44.4	15.1
	2019	42.8	5936	17.1	38.6	44.4	15.1
Suriname	1990	.4	13845	10.2	37.2	52.5	21.6
(Latin America)	1995	.4	12569	10.2	37.2	52.5	21.6
	2000	.5	11695	10.2	37.2	52.5	21.6
	2005	.5	14312	10.7	37.3	52	21.4
	2010	.5	16165	11.2	37.4	51.3	20.7
	2015	.6	16518	12.1	37.9	50	21
	2019	.6	13704	12.7	38.8	48.5	20.2
Swaziland	1990	.8	11293	6.7	25.8	67.5	31.5
(SubSaharan Africa)	1995	.9	10915	7.1	26.4	66.5	29.9
	2000	1	10916	9.1	29.1	61.8	21.6
	2005	1	12423	9.3	31.6	59.1	19.7
	2010	1.1	12221	9.3	33.3	57.3	18.3
	2015	1.1	13367	8.5	32.3	59.2	19.1
	2019	1.1	12897	8.4	32.1	59.6	19.2
Sweden	1990	8.6	25861	28.7	46	25.4	7.4
(Europe)	1995	8.8	25030	26.1	42.7	31.2	11.8
	2000	8.9	30658	27.2	42.8	29.9	9.6
	2005	9	35030	25.7	42.6	31.6	11.2
	2010	9.4	37364	23.8	45.5	30.7	10.5
	2015	9.5	41247	25	45	30	9.9
	2019	9.7	44192	25.6	45.5	28.8	9
Switzerland	1990	6.7	42397	24.4	45.5	30.1	10.1
(Europe)	1995	7	41346	25.4	45.9	28.6	9.1
	2000	7.1	46054	24	44.1	31.9	11.2
	2005	7.4	46517	23.1	43.1	33.8	12.7
	2010	7.8	49330	23.2	43.1	33.7	12.5
	2015	8.3	49063	23.8	44.1	32.1	11.3

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	Year	Population (million)	Avg. income	Nat. income shares (%)			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
	2019	8.6	50813	23.6	44.5	31.9	10.9
Syrian Arab Republic	1990	12.4	8130	14.8	36.9	48.3	14.2
(MENA)	1995	14.3	9773	14.8	36.8	48.4	14.4
	2000	16.4	8785	14.8	36.9	48.3	14.3
	2005	18.4	9719	14.8	36.9	48.3	14.3
	2010	21.4	9889	14.8	37	48.1	14
	2015	18	5019	14.9	37.1	48.1	13.9
	2019	17.1	5217	14.8	37	48.2	14
Taiwan	1990	20.4	17311	27.1	44.7	28.2	7.2
(Other Asia)	1995	21.4	22656	27	44.7	28.2	7
	2000	22.3	27464	25.1	43.9	31	8.8
	2005	22.8	30814	25	42	33	9.7
	2010	23.2	35828	23.2	40.8	36	11.1
	2015	23.5	38530	23	41.1	35.9	10.5
	2019	23.7	40855	23	41.1	35.9	10.5
Tajikistan	1990	5.3	5502	20.6	41.3	38.1	12.2
(Central Asia)	1995	5.8	2052	21	42.3	36.7	11.1
	2000	6.2	2161	19.8	41.6	38.6	12
	2005	6.8	2650	19.2	40.1	40.7	14.7
	2010	7.5	3459	20	40.7	39.2	13.1
	2015	8.5	4317	19.2	41.1	39.7	12.3
	2019	9.3	5167	19.1	40.2	40.7	13.3
Tanzania	1990	24.5	2360	16.8	40.6	42.6	11.4
(SubSaharan Africa)	1995	28.9	2201	16.3	40.1	43.6	11.9
	2000	32.6	2375	15.7	39.4	44.9	12.5
	2005	37.4	2877	14.7	37.5	47.8	15
	2010	43.1	3443	15.1	36.6	48.3	16.1
	2015	50	4069	14.6	38.8	46.6	13.9
	2019	54.7	4601	14.1	35.2	50.7	17.9
Thailand	1990	56.6	8217	8.9	35.1	56	23.1
(Other Asia)	1995	59.5	10206	8.9	35.1	56	23.1
	2000	63	8807	8.9	35.1	56	23.1

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	**Year**	**Population (million)**	**Avg. income**	**Nat. income shares (%)**			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
	2005	65.4	10436	11.2	34.3	54.5	22.7
	2010	67.2	11759	12.5	32.8	54.7	22.4
	2015	68.7	12596	14.3	35.9	49.7	19
	2019	69.6	14001	13.2	33.7	53.1	20.2
Timor-Leste	1990	.7	4324	17.2	38.6	44.2	15.8
(Other Asia)	1995	.8	6159	17.2	38.6	44.2	15.8
	2000	.9	11524	17.2	38.5	44.3	15.9
	2005	1	12899	20	39.7	40.2	14
	2010	1.1	24160	21.2	39.8	39	13.5
	2015	1.2	16936	21.2	39.5	39.3	13.7
	2019	1.3	14066	21.2	39.5	39.4	13.7
Togo	1990	3.8	2262	13.3	37.6	49	13.9
(SubSaharan Africa)	1995	4.2	2022	13.3	37.6	49	13.9
	2000	4.9	2055	13.3	37.6	49	13.9
	2005	5.6	1879	13.3	37.6	49	13.9
	2010	6.4	2021	11.9	37.5	50.6	15.1
	2015	7.3	2456	12.9	39.5	47.6	13.7
	2019	8.1	2561	12.9	39.5	47.6	13.7
Trinidad and Tobago	1990	1.2	12923	10.2	37.2	52.5	21.6
(Latin America)	1995	1.3	14835	10.2	37.2	52.5	21.6
	2000	1.3	19240	10.2	37.2	52.5	21.6
	2005	1.3	26225	10.7	37.3	52	21.4
	2010	1.3	30069	11.2	37.4	51.3	20.7
	2015	1.4	31286	12.1	37.9	50	21
	2019	1.4	27138	12.7	38.8	48.5	20.2
Tunisia	1990	8.2	7056	14.4	39.1	46.5	14.3
(MENA)	1995	9.1	7217	13.4	38.1	48.5	16.8
	2000	9.7	8340	13.9	37.8	48.2	15.8
	2005	10.1	9108	15.5	39.5	45	12.5
	2010	10.6	10206	16.5	41.3	42.3	10.8
	2015	11.2	10594	17.9	41.4	40.7	10.7
	2019	11.7	10787	17.9	41.4	40.7	10.7

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	Year	Population (million)	Avg. income	Nat. income shares (%)			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
Turkey	1990	53.9	14940	14.2	31.6	54.2	21.3
(MENA)	1995	58.5	15308	14.5	30.9	54.6	22
	2000	63.2	16256	14.5	30.9	54.6	22
	2005	67.9	18544	16.3	34	49.6	17.9
	2010	72.3	19464	16.8	33.1	50.1	19.2
	2015	78.5	24764	15.8	32.5	51.7	21.1
	2019	83.4	24949	15.4	31.3	53.3	23.4
Turkmenistan	1990	3.7	12499	14.7	37.2	48.1	18.8
(Central Asia)	1995	4.2	6673	14.8	37.7	47.4	18.1
	2000	4.5	7407	14.8	37.7	47.5	18.2
	2005	4.8	8487	14.8	37.4	47.8	18.5
	2010	5.1	12041	14.7	37.1	48.2	18.8
	2015	5.6	17572	14.8	37.6	47.6	18.3
	2019	5.9	20905	14.7	37	48.2	18.9
USA	1990	250.2	35338	16.9	44.7	38.4	14.2
(North America)	1995	266.6	38599	15.7	44.6	39.7	14.3
	2000	282.4	45885	15.1	42.3	42.6	17.3
	2005	296	49009	14.4	42.4	43.2	17.7
	2010	309.8	47538	13.9	42.5	43.7	17.6
	2015	321.7	50708	13.2	41.3	45.5	18.8
	2019	329.9	53261	13.5	41.1	45.3	18.7
Uganda	1990	17.4	1508	12.8	37.4	49.8	16.2
(SubSaharan Africa)	1995	20.4	1868	14.5	37	48.5	15.3
	2000	23.7	2147	12.8	33.5	53.7	20.3
	2005	27.7	2598	13	35	52	17.8
	2010	32.4	3221	13.1	34.2	52.8	17.3
	2015	38.2	3358	13.3	35.6	51.1	16.5
	2019	44.3	3506	13.1	35.4	51.5	16.9
Ukraine	1990	51.5	10296	26.5	47.8	25.7	5.9
(Central Asia)	1995	50.9	4647	22.9	46.8	30.3	8.3
	2000	48.8	4177	21.9	46.3	31.8	9.2
	2005	46.9	6689	20.2	45.8	34.1	10.6

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	**Year**	**Population (million)**	**Avg. income**	**Nat. income shares (%)**			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
	2010	45.8	7040	20.2	45.9	33.9	10.1
	2015	44.9	6377	20.1	45.6	34.3	10.9
	2019	44	7475	20.2	45.3	34.5	11.5
United Arab Emirates	1990	1.8	140093	12.7	33.1	54.2	18.1
(MENA)	1995	2.4	125112	12.7	33	54.3	18.2
	2000	3.1	122601	12.4	33	54.6	17.8
	2005	4.6	96166	11.9	32.8	55.3	17
	2010	8.5	53194	11.5	32.7	55.8	16.2
	2015	9.3	63957	11.5	32.8	55.8	16.1
	2019	9.8	64161	11.5	32.7	55.8	16.2
United Kingdom	1990	57.2	22141	20.1	47.5	32.4	8.5
(Europe)	1995	58	25047	20	45.7	34.2	10.3
	2000	58.9	29883	20.1	44.7	35.1	11.3
	2005	60.4	33508	19.3	42.7	38	14.4
	2010	62.8	32577	20.5	44.5	35	12.7
	2015	65	33397	20.3	43.8	35.9	12.6
	2019	66.6	34875	21.5	43.3	35.2	12.7
Uruguay	1990	3.1	11347	15.1	38.3	46.6	18.7
(Latin America)	1995	3.2	13389	15.1	38.3	46.6	18.7
	2000	3.3	14826	15.1	38.3	46.6	18.7
	2005	3.3	14327	14.7	38.1	47.1	18.3
	2010	3.4	18087	17.4	41	41.6	14.3
	2015	3.4	20613	17.5	39.6	42.9	17.1
	2019	3.5	21031	18.1	40.3	41.6	16.9
Uzbekistan	1990	20.4	5340	13.5	38.4	48.1	17
(Central Asia)	1995	22.8	3806	13.4	39.1	47.5	16.3
	2000	24.8	4068	17.2	38.8	44.1	15.9
	2005	26.4	4548	17.1	38.3	44.5	15.7
	2010	28.5	5781	16.9	38	45.1	16.2
	2015	30.9	7196	17.3	38.5	44.2	15.4
	2019	33	8394	16.9	37.9	45.2	16.3
Venezuela	1990	19.6	22294	10.2	37.2	52.5	21.6

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	**Year**	**Population (million)**	**Avg. income**	**Nat. income shares (%)**			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
(Latin America)	1995	21.9	22832	10.2	37.2	52.5	21.6
	2000	24.2	20312	10.2	37.2	52.5	21.6
	2005	26.4	20530	10.7	37.3	52	21.4
	2010	28.4	21298	11.2	37.4	51.3	20.7
	2015	30.1	19494	12.1	37.9	50	21
	2019	28.5	9512	12.7	38.8	48.5	20.2
Viet Nam	1990	68	2110	17.4	38.2	44.4	15.2
(Other Asia)	1995	74.9	2708	17.5	37.7	44.8	15.4
	2000	79.9	3250	17.1	37.5	45.5	15.6
	2005	83.8	3977	17.3	38.9	43.8	14.7
	2010	88	4643	16.4	37	46.6	18
	2015	92.7	5444	18.2	39.4	42.4	14.9
	2019	96.5	6689	18.1	39.3	42.6	15.2
Yemen	1990	11.7	7524	14.9	36.6	48.5	15.1
(MENA)	1995	14.9	7163	14.8	36.5	48.6	15.2
	2000	17.4	7328	14.9	36.6	48.6	15.1
	2005	20.1	7254	14.9	36.6	48.6	15.1
	2010	23.2	7417	14.9	36.7	48.4	14.9
	2015	26.5	4991	14.9	36.7	48.3	14.8
	2019	29.2	3578	14.9	36.7	48.4	14.9
Zambia	1990	8	3643	5.6	35.6	58.8	18.9
(SubSaharan Africa)	1995	9.1	2783	10	34.9	55.1	19.1
	2000	10.4	3412	11.9	34.6	53.5	19.7
	2005	11.9	3980	8.4	31.3	60.3	22.2
	2010	13.6	5230	8.1	29	62.9	24.9
	2015	15.9	5990	7.3	31.2	61.5	23.1
	2019	17.9	5933	7.3	31.2	61.5	23.1
Zanzibar	1990	.7	2067	16.8	40.6	42.6	11.4
(SubSaharan Africa)	1995	.8	2281	16.3	40.1	43.6	11.9
	2000	.9	2697	15.7	39.4	44.9	12.5
	2005	1.1	3224	14.7	37.5	47.8	15
	2010	1.3	3582	15.1	36.6	48.3	16.1

Table 8. Summary inequality and demographic statistics by country, 1990-2019

Country	Year	Population (million)	Avg. income	Nat. income shares (%)			
(Region)			EUR 2019	*Bot. 50%*	*Middle 40%*	*Top 10%*	*Top 1%*
	2015	1.4	4088	14.6	38.8	46.6	13.9
	2019	1.6	4935	14.1	35.2	50.7	17.9
Zimbabwe	1990	10.4	4832	8.9	29.5	61.6	27.3
(SubSaharan Africa)	1995	11.4	4525	10.3	31.1	58.6	24.9
	2000	11.9	4713	11.3	32.8	55.9	22.4
	2005	12.1	3292	12	34.5	53.6	20
	2010	12.7	3114	12.7	36.1	51.2	17.7
	2015	13.8	4001	12.4	36	51.6	17.3
	2019	14.6	3974	12.2	35.8	52	17.3

Sources. Author based on WID.world data. Inequality measures include survey, tax data and national accounts. See[4] and www.wid.world for methodological details. Distribution of pretax, post pension and unemployment insurance transfers, per adult income. Average income values are in PPP Euros 2019.

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