
Growth, income and wealth accumulation in rich countries

This paper discusses estimates of the distribution of national income and wealth produced by the World Inequality Lab in its *World Inequality Report 2022*. The methodology combines all existing microeconomic data on incomes (surveys, tax data) with macroeconomic data (the system of national accounts). While growth has slowed in rich countries, private wealth accumulation has continued to accelerate and public wealth continued to decline in an era of rising asset prices. The importance of «pre-distributive» policies for income inequality, and «popular wealth» for wealth inequality is emphasised, as well as the differing effects of the financial and Covid crises. In an age of big data it is time for countries to reconcile sources to provide official distributional estimates consistent with macroeconomic growth.

Este artículo analiza las estimaciones de la distribución del ingreso y la riqueza nacional realizadas por el World Inequality Lab en su World Inequality Report 2022. La metodología combina datos microeconómicos sobre ingresos (encuestas, datos fiscales) con datos macroeconómicos (cuentas nacionales). Si bien el crecimiento se ha desacelerado en los países ricos, la acumulación de riqueza privada aumenta mientras que la riqueza pública disminuye. Se enfatiza la importancia de las políticas «predistributivas» y la mejor distribución de la riqueza para reducir la desigualdad, así como los efectos de la crisis financiera y la pandemia. En la era del big data, es hora de que los países armonicen las fuentes de información para proporcionar estimaciones distributivas oficiales consistentes con el crecimiento macroeconómico.

Artikulu honek World Inequality Lab delakoak bere World Inequality Report 2022an diru-sarrerren banaketari eta aberastasun nazionalari buruz egindako estimazioak aztertzen ditu. Metodologiak diru-sarrerei buruzko datu mikroekonomikoak (inkestak, datu fiskalak) eta datu makroekonomikoak (kontu nazionalak) konbinatzen ditu. Herrialde aberatsetan hazkundera moteldu egin bada ere, aberastasun pribatuaren metaketak gora egiten du, eta aberastasun publikoak, berriz, behera. Desberdintasuna murrizteko, «banaketa aurreko» politikek eta aberastasunaren banaketa hobeak duten garrantzia nabarmentzen da, baita finantza-krisiaren eta pandemiaren ondorioak ere. Big dataren aroan, bada garaia herrialdeek informazio-iturriak harmonizatzeko, hazkunde makroekonomikoarekin bat datozen banaketa-estimazio ofizialak emateko.

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1. INTRODUCTION

The so-called «social question» – the pursuit of inclusive growth – is a continuing feature of advanced economies, in large part because of the growing salience of inequality. Inequality seems to be everywhere, but to what extent is it also visible in official statistics? The question is motivated by the challenge of reconciling micro-level and macro-level data on income (see Kuznets 1953 and Altimir 1987 for early references). This is important as macro-level data – i.e., the system of national accounts (SNA) – are used to measure the growth of income, while micro-level data (e.g., household surveys and income tax declarations) are typically used to measure the distribution of income.¹ The challenge comes from the discrepancy in income levels and

¹ The use of administrative data on personal incomes from income tax, or other registers, is vital to get an accurate picture of the distribution of micro-level income, as shown by Carranza, Morgan and Nolan

growth rates which continue to separate micro and macro data (Ravaillon 2003; Deaton 2005; Bourguignon 2015; Nolan *et al.* 2019), especially concerning the coverage of capital incomes (Törmälehto 2011; Flores 2021). If economic growth is an established macroeconomic measure for countries as a whole, produced by government agencies and used by the wider international community, it would seem reasonable that income inequality data should be made consistent with this measure.

Fortunately, some international initiatives have already embarked on producing such macro-consistent inequality estimates. There is the OECD's Expert Group on Disparities in a National Accounts (DNA) framework, which seeks to construct and disseminate inequality estimates consistent with the macroeconomic income of the household sector (what is technically referred to as the «Balance of Primary Incomes») in the SNA (Zwijnenburg 2019). There is also the World Inequality Lab's Distributional National Accounts (DINA) project, which seeks to build inequality estimates consistent with a different denominator – national income, as opposed to its subcomponent household sector income – from the SNA (World Inequality Lab 2020). Both initiatives use all available data from surveys, administrative records, rich lists, and the SNA to arrive at its estimates of income inequality. Both also go beyond income, measuring wealth and its distribution within countries, following the latest guidelines from the SNA (United Nations 2009).

Studying wealth is important in its own right. The concept represents a claim on the ownership of property, which confers power over production and thus economic growth. Property incomes are derived from owning assets, and changes in income bring about changes in savings and the resulting acquisition of financial assets. By studying wealth dynamics, we are also indirectly studying income dynamics and vice-versa. However, wealth presents more acute data challenges, not only because of the scarcity of surveys and administrative data, but also because of the late development of the SNA from the side of wealth. Kuznets (1953) derived distributional estimates for savings consistent with macroeconomic data, but did not investigate the distribution of wealth. Lampman (1962) and Atkinson and Harrison (1978) made important strides in the literature on wealth inequality – from the viewpoint of top wealth holders – in the US and UK respectively. Piketty *et al.* (2006) and Roine and Waldenström (2009) continued and updated this line of work for the cases of France and Sweden respectively. Piketty (2014) in turn popularised this type of research in his best-selling book *Capital in the Twenty-First Century*, where the assembled estimates of wealth inequality form an important part of the book, alongside data on the evolution of national wealth, the latter drawing on the work of Piketty and Zucman (2014). Further studies have made progress on estimating the distribution

(2021) for European countries. There is an abundant literature of income inequality research across various different countries and regions, which this paper cannot do justice to.

of household wealth (Saez and Zucman 2016; Martinez-Toledano 2020; Garbinti *et al.* 2021), building on prior estimates of aggregate wealth levels and combining them with micro-level data on its distribution.

In this paper, we discuss findings on the distribution of growth and national wealth, with a focus on rich countries, drawing on the latest DINA estimates produced by the World Inequality Lab in its World Inequality Report (Chancel, L., Piketty, T., Saez, E., Zucman, G. *et al.* 2021). All estimates are conveniently centralized on the World Inequality Database (<https://wid.world/>). We also draw on other current research for interpretations on distributional dynamics, such as those between Europe and the United States (US), and the changing nature of wealth. We begin by discussing the concept of growth and how we measure it, before presenting the case of wealth, followed by estimates of income inequality, wealth inequality, and a reflection on recent crises, before concluding.

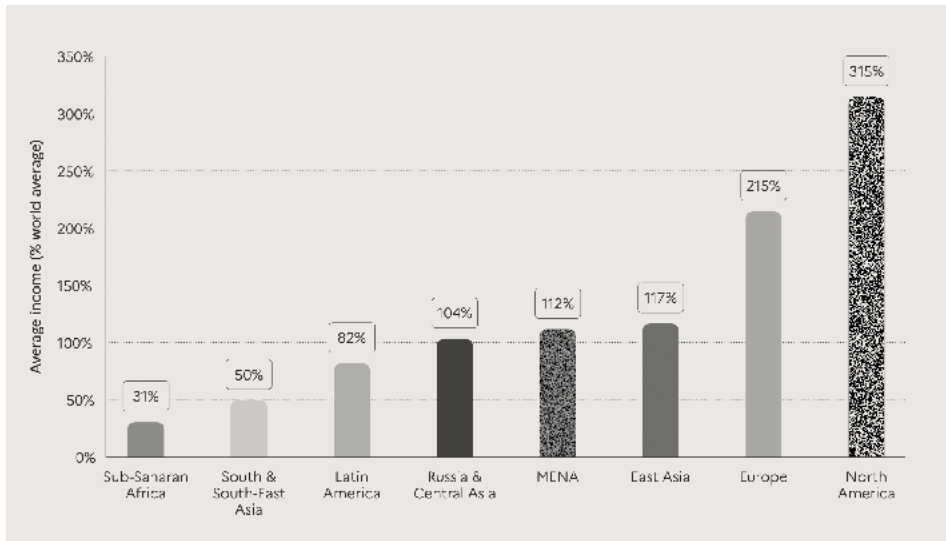
2. WHAT IS GROWTH, AND HOW DO WE MEASURE IT?

«Growth» is a short-hand term for «economic growth», referring to the annual (or quarterly) increase in a country's macroeconomic income as measured in the system of national accounts (SNA), which have been continuously developed at the world level since the 1950s. The most common indicator of growth is the increase in Gross Domestic Product (GDP), which measures the total value of goods and services produced by residents and non-residents in a country, including the depreciation of fixed capital used in production, minus the value of goods and services needed to produce them (i.e. intermediary production). GDP is often divided among the population to assess whether the economy is growing beyond the growth of the number of people it is employing and supporting. A more appropriate indicator of the income available to a country's residents is Net National Income (NNI), or simply «national income», which adds to GDP the income generated by residents abroad (for owning capital there), minus the income generated by non-residents at home (i.e. «net foreign income») and subtracts capital depreciation, which is not an income received by anybody in practice (but a replacement cost of fixed capital used in production). All taxes (e.g. on production, products and incomes) and transfers (e.g. on pensions, unemployment insurance and social assistance) simply redistribute the national income already produced among the population, such that there is no increase in the total.

Figure 1 shows us the inequality between countries comprising eight world regions, whose average income is compared to the average income of the world as a whole (16,700 euros at Purchasing Power Parity). Taking the two ends of the spectrum, we see that while the average North American makes over three times the average income of the world, residents of Sub-Saharan Africa barely receive one third of it. Rich countries are rich precisely due to their control over high value-added

production, and this is reflected in the notable gap between rich countries (in North America and Europe) and the rest.

Figure 1. **RELATIVE AVERAGE NATIONAL INCOME ACROSS WORLD REGIONS, 2021**

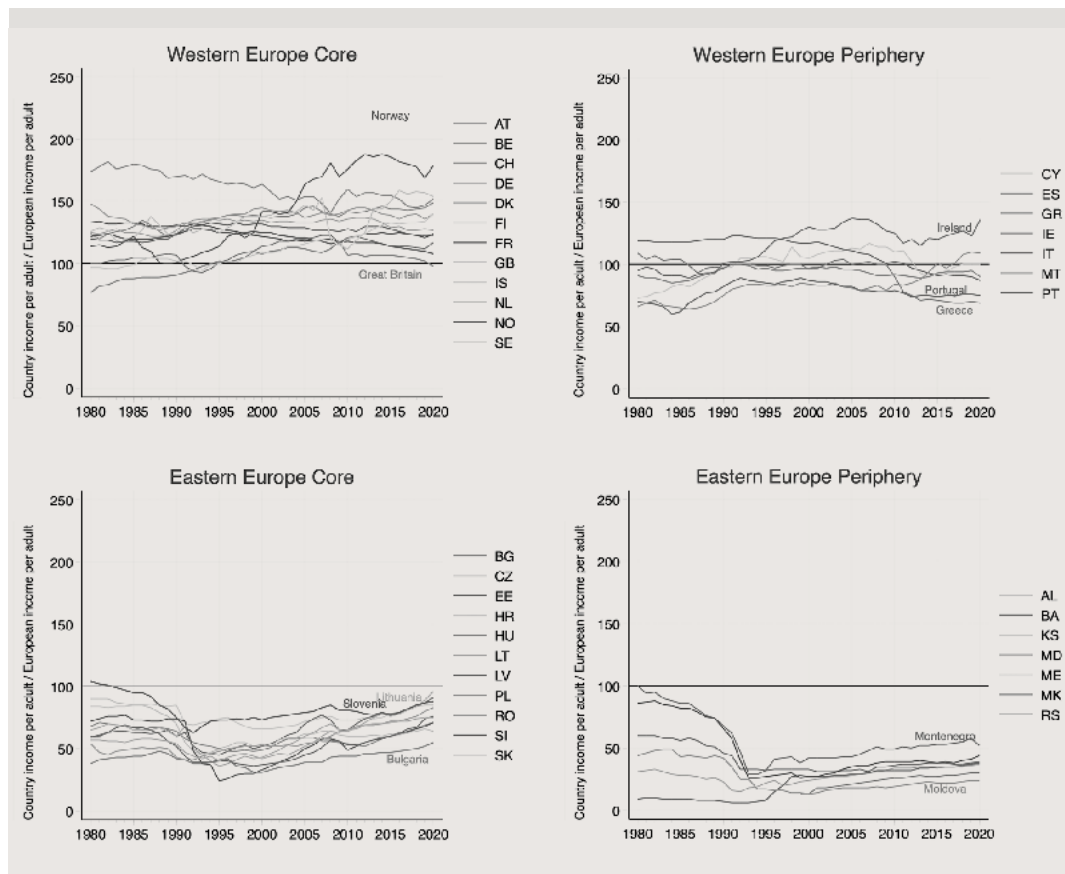


Notes: Oceania (Australia and New Zealand) is included in North America. Interpretation: in 2021, the average income of North America is 315% of the world average income (at Purchasing Power Parity). MENA is Middle-East and North Africa.

Sources: wir2022.wid.world/methodology.

If we zoom in on Europe we can see that the region is not very homogeneous. Figure 2 presents ratios for the average income of countries to the average income of the region as a whole, dividing the sample among Western countries and Eastern countries in the core and periphery respectively since 1980. Current country borders used throughout. A growing ratio implies that the country's economy is growing faster than the economies of its peers. While discrepancies are present between Eastern Europe and Western Europe, there are also large income disparities within these subregions. For example, while Eastern European core countries (i.e. EU member states) had an average adult national income of 78% of the European average in 2020, Eastern Europeans in the periphery (non-EU states) earned, on average, 37% of the European average. This division is historically weaker among the richer Western European countries. Yet, notable differences between peripheral countries and core countries in the West have advanced in recent decades, especially since the Great Recession of 2008-2009. Thus, income convergence in Europe is increasingly being defined between the growing Eastern EU member states and the regressing Western EU member states in the Southern periphery since the mid-1990s.

Figure 2. AVERAGE NATIONAL INCOME DIVERGENCES IN EUROPE



Notes: Incomes are converted to PPP.

Eastern Europe Core corresponds to EU member countries; Eastern Europe periphery corresponds to non-EU member countries. Interpretation: a ratio higher than 100 means that the country's average income is higher than the European average. Country codes are the following for Western Europe: Austria (AT), Belgium (BE), Cyprus (CY), Denmark (DK), Finland (FI), France (FR), Greece (GR), Germany (DE), Iceland (IS), Ireland (IE), Italy (IT), Malta (MT), Netherlands (NL), Norway (NO), Portugal (PT), Spain (ES), Sweden (SW), Switzerland (CH) and the United Kingdom (GB). Eastern Europe includes: Albania (AL), Bosnia and Herzegovina (BA), Bulgaria (BG), Czech Republic (CZ), Estonia (EE), Croatia (HR), Hungary (HU), Kosovo (KS), Lithuania (LT), Latvia (LV), Moldova (MD), Montenegro (ME), North Macedonia (MK), Poland (PL), Romania (RO), Serbia (RS), Slovenia (SI), and Slovakia (SK).

Sources: World Inequality Database (<https://wid.world/>).

3. WHAT IS WEALTH, AND HOW DO WE MEASURE IT?

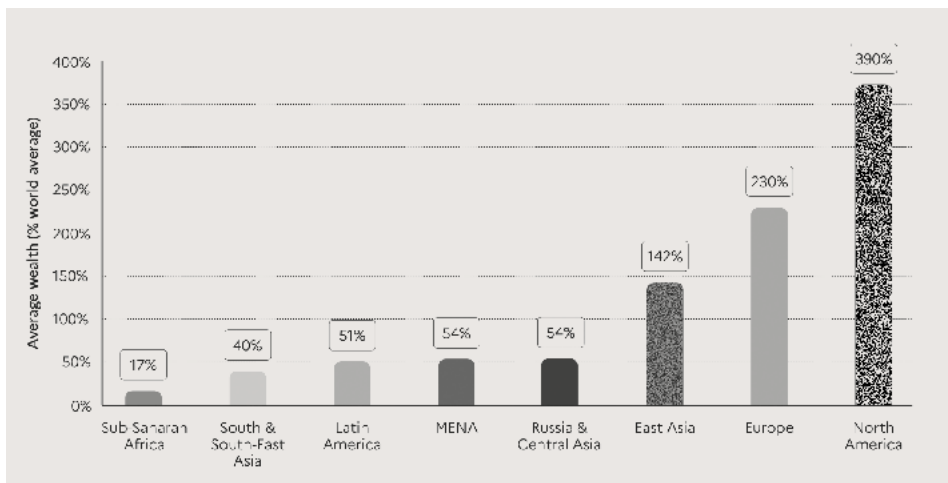
The concept of wealth has been less consistently defined over time than income, due to the variety of things that can in principle be owned. Following the presentation of the balance sheet in the SNA (United Nations 2009) and the growing research on the stock of wealth across countries, we follow the accounting and monetary defini-

tion of national wealth used in practice by businesses in their balance sheets (Hodgson 2014; Piketty 2014). This definition is the sum of non-financial assets (e.g. housing, buildings, equipment, infrastructure, land) and financial assets (e.g. deposits, equity, bonds, life insurance and pensions funds) owned by private residents and the government, minus their financial liabilities, measured at market value. In particular, corporations are valued by their equity liability, held as assets by their resident shareholders, as opposed to their «book value (i.e., the difference between their assets and their non-equity liabilities)» (World Inequality Lab 2020: 77).

The concept of «wealth», as defined here, is more comprehensive than the traditional concept of «capital» used in the economic growth literature, since it not only encompasses the produced capital stock necessary for production that generates profit (e.g. buildings, equipment, infrastructure, R&D), but also non-produced assets that generate an economic rent (e.g. financial assets, natural resources). It thus has a stronger link with the distribution of wealth and income as observed in micro-level data sets.

Data on wealth is typically sourced from sectoral financial accounts provided by national financial institutions, cadastres of properties held in a country, administrative data on personal wealth holdings for tax purposes (estate/wealth/income taxes), and from cumulating past investment flows of fixed capital by national statistics offices. Similar to the case of income in Figure 1, we can take a snapshot of the inequality in

Figure 3. **AVERAGE HOUSEHOLD WEALTH ACROSS WORLD REGIONS, 2021**



Notes: Oceania (Australia and New Zealand) is included in North America. Interpretation: in 2021, the average wealth of North America is 390% of the world's average income (at Purchasing Power Parity). Net household wealth is equal to the sum of financial assets (e.g. equity, bonds, deposits etc.) and non-financial assets (housing, land, unincorporated business capital) owned by individuals, net of their debts.

Sources: wir2022.wid.world/methodology

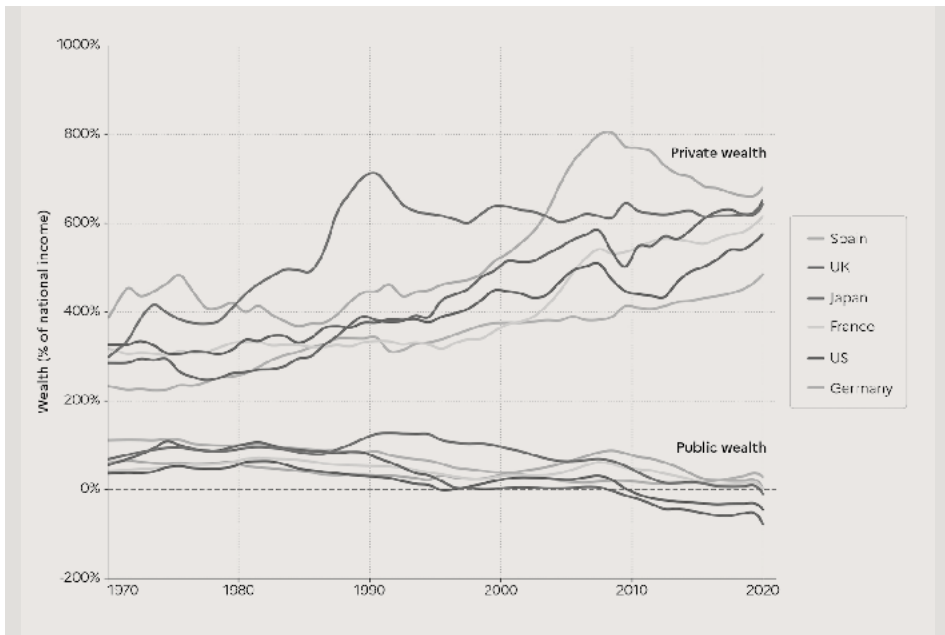
wealth between countries of the same eight world regions. Figure 3 depicts greater disparities in average wealth levels than in average income levels between regions. North Americans own almost four times the world average of about 95,000 euros, while residents of Sub-Saharan African claim less than one fifth of it.

We can zoom in on rich countries, who have more complete data, to present how the two main subcomponents of national wealth – private wealth and public wealth – have evolved over time. Figure 4 shows the ratios of private and public wealth to national income in a selection of six rich countries. The striking tale is that private residents in these countries have become richer, while their governments have become poorer since the 1970s. In other words, private wealth has consistently increased faster than income over the five decades, while public wealth has generally evolved more slowly than income. Some may interpret these trends as meaning that these countries need twice-to-three times as many assets to produce the same income, which would imply a fall in capital productivity by one half or two-thirds. However, this is misleading, given the way wealth is measured, as outlined above. The trends reflect the rise in asset prices (i.e. capital gains) – via scarcity of supply (the case of house prices) or expectations of future monopoly profits (the case of corporate equity prices) – which are not in current national income or GDP because they do not reflect new production. Capital gains are not often treated as taxable income unless they are realised (i.e. the asset is sold). But they nevertheless represent a monetary increase in a person's wealth and thus the national monetary wealth of a country.²

A mix of privatizations, financialization and the rise of public debt faster than income growth partly explain the low or negative net wealth position of the governments of rich countries. A negative position implies that selling all public assets would not be enough to repay all public liabilities. But there is a caveat here. Since the 2009 financial crisis and especially since the 2020 health pandemic crisis, national central banks – which are public institutions – have been buying significant amounts of public debt securities issued by national governments (Monnet 2021). Such asset holdings do not appear as government assets in the statistics presented in Figure 4 because the wealth accounts are unconsolidated, as recommended in the SNA guidelines (United Nations 2009). Therefore, the balance sheet of central banks is included with the balance sheets of other financial institutions in private wealth. As an order of magnitude the total assets held by central banks in seventeen rich countries is close to 70% of GDP on average in 2020 (Piketty 2020). Thus, consolidating the central bank and the general government sector would notably increase net public wealth in rich countries.

² As Hodgson (2014) points out, an increase in the monetary value of tangible or intangible wealth increases the value of collateral usable by individuals and businesses to obtain credit to expand productive activities.

Figure 4. **THE RISE OF PRIVATE WEALTH AND THE DECLINE OF PUBLIC WEALTH IN RICH COUNTRIES**



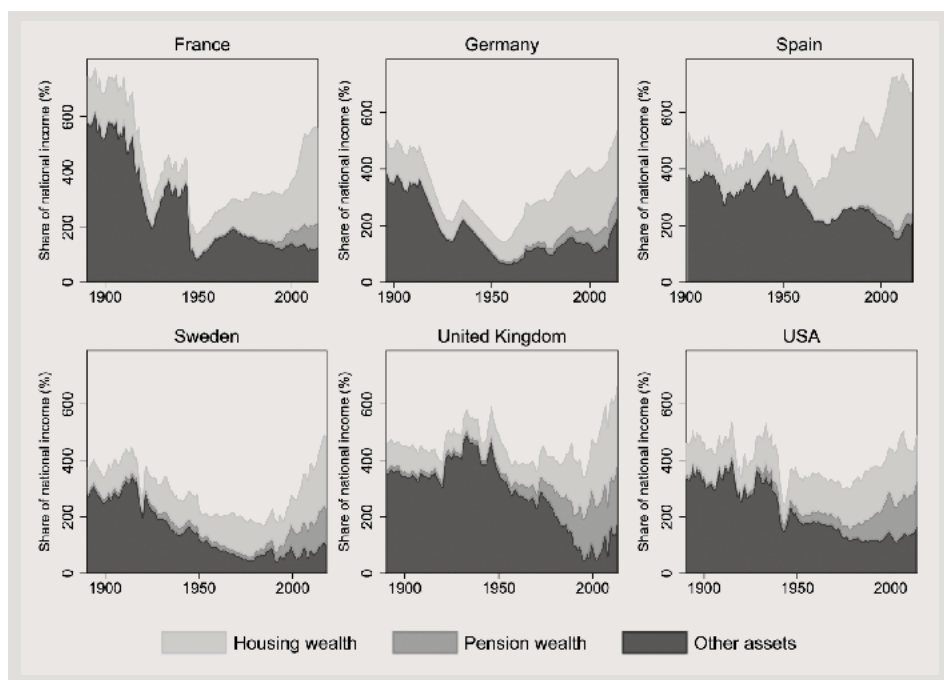
Interpretation: In the UK public wealth fell from 60% of national income in 1970 to -106% of national income in 2020. Public wealth is the sum of financial and non-financial assets, net of debts, held by the government sector.

Sources: wir2022.wid.world/methodology, Bauluz et al. (2021).

Figure 5 presents a different decomposition of private wealth into asset classes, taking the same six rich countries (with Sweden replacing Japan) since 1890. We can see that the rise in private wealth-income ratios in the post-1950 period is mainly due to the rapid rise of housing wealth – defined as the value of dwellings and underlying land – which was driven by new constructions for purchase (pre-1990s) and house price increases of the existing stock (post-1980s) in an era of rapidly expanding homeownership. This category is now the largest wealth component in all countries, with the exception of the USA. The falling share of other assets in the long run reflects the relative decline of produced business capital, as well as agricultural land in total wealth over time. This implies both that fixed capital investment has increased slower than house investment and prices, and that the value of agricultural land has not kept pace with the value of urban land. In more recent decades, funded pension wealth (which also includes life insurance) has grown in importance to reach about one quarter of total wealth on average, owing to the rise of contribution-based pension systems, especially in countries with large capital markets such as Britain and the USA, where capital gains in

the stock market have grown the most. The growing importance of housing and pension wealth in total wealth has been described as a process of rising popular wealth (Atkinson and Harrison 1978; Waldenström 2021), as these are the asset classes, other than bank deposits, owned in greater proportion by the middle and bottom of the distribution (Atkinson and Harrison 1978; Saez and Zucman 2016; Martínez-Toledano 2020; Garbinti *et al.* 2021).

Figure 5. **THE COMPOSITION OF PRIVATE WEALTH-INCOME RATIOS SINCE 1890**



Notes: Housing wealth is the value of dwellings and underlying land (buildings and land, AN.111 + AN.2112 in the SNA). Pension wealth comprises funded pensions and life insurance savings (AF. 6 in the SNA). Other assets comprise the remaining categories of private wealth (tangible and intangible unincorporated business capital and net financial assets).

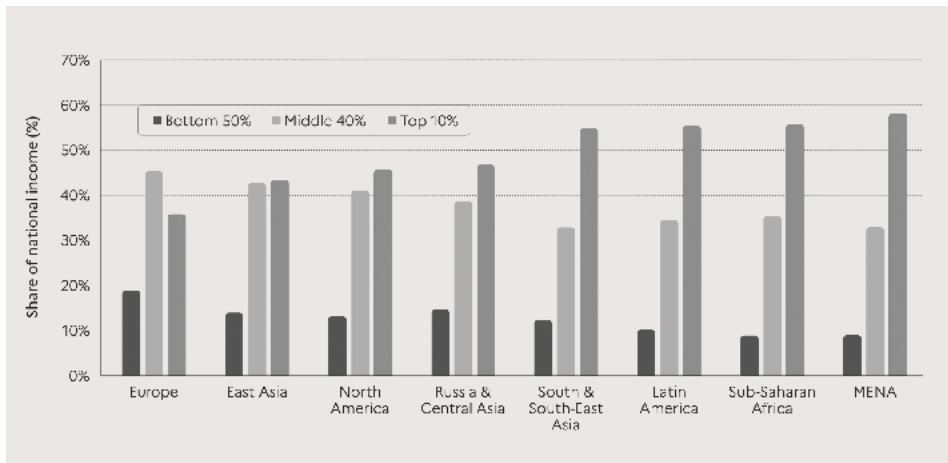
Sources: Waldenström (2021)

4. INCOME INEQUALITY WITHIN COUNTRIES

Having discussed measures of aggregate national income and its distribution between countries we can turn to measures of the distribution of national income within countries. Figure 6 offers a broad distributional picture across the same eight world regions assessed before. In each, the total adult population is divided into three income groups – the bottom 50%, the middle 40% and the top 10% in the dis-

tribution of national income. Europe can be seen to be the region with the lowest levels of income disparities, as the share of income concentrated in the richest 10% of the population is the lowest across all regions, while the shares captured by the middle and the bottom are the highest. The poorest half of the European population captures less than 20% of national income, that is, 40% of its proportional income share of 50% if income were distributed equally. In other words the income of the bottom 50% is 40% of the average income of the region. In the least unequal regions, the average income of the middle 40% of the distribution tends to be larger than the average for the region as a whole, while in all cases without exception the average income of the richest 10% is substantially greater than the average income of their region, ranging from three and a half times more in Europe to almost six times more in the Middle East and North Africa (MENA).

Figure 6. INCOME SHARES ACROSS THE WORLD, 2021



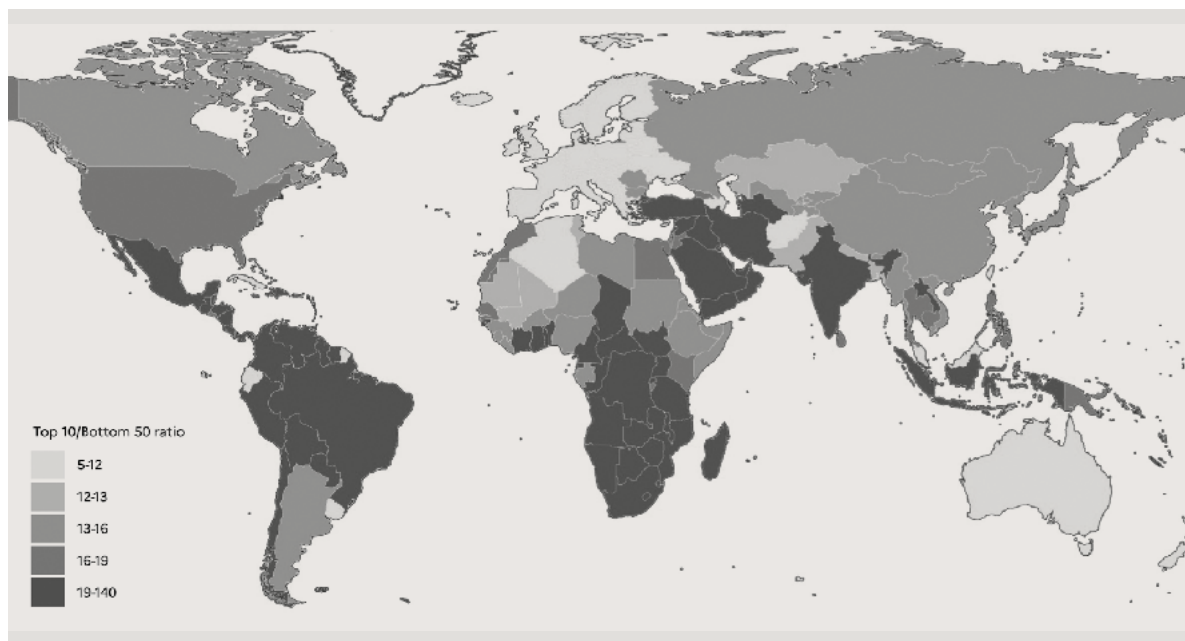
Notes: Oceania (Australia and New Zealand) is included in North America. Income is measured after pension and unemployment benefits (net of contributions) received by individuals, but before income taxes and other transfers. The unit of observation is the adult individual aged 20. Income is split equally among spouses. Interpretation: in Latin America, the top 10% concentrates 55% of national incomes, compared with 36% in Europe. MENA is Middle-East and North Africa.

Sources: wir2022.wid.world/methodology

One way to summarise inequality levels across countries is to measure the income gap between the top of the distribution and the bottom. Figure 7 shows the world map of countries ranked according to the magnitude of this gap, measured as the ratio of the average income of the top 10% to the average income of the bottom 50%. As informed by Figure 6 European countries again stand out as the least unequal. But as discussed for the case of aggregate income figures, this does not imply that the region is homogeneous in terms of inequality levels. Figure 8 illustrates this

point for Western European countries, core and periphery alike, since 1980. There is about a ten percentage point spread across the top 10% income shares in each country grouping (this difference is a bit less for the bottom 50%). While inequality levels do vary widely across these relatively rich cohorts of countries, they have broadly experienced a similar trend in inequality since the 1980s, that is, rising inequality, albeit at different speeds across individual countries. The lesson that emerges is that public policies matter to explain distributional dynamics across a group of similarly placed countries in the global economy. When combined with Figure 2, relatively higher growth can co-exist with relatively lower inequality.

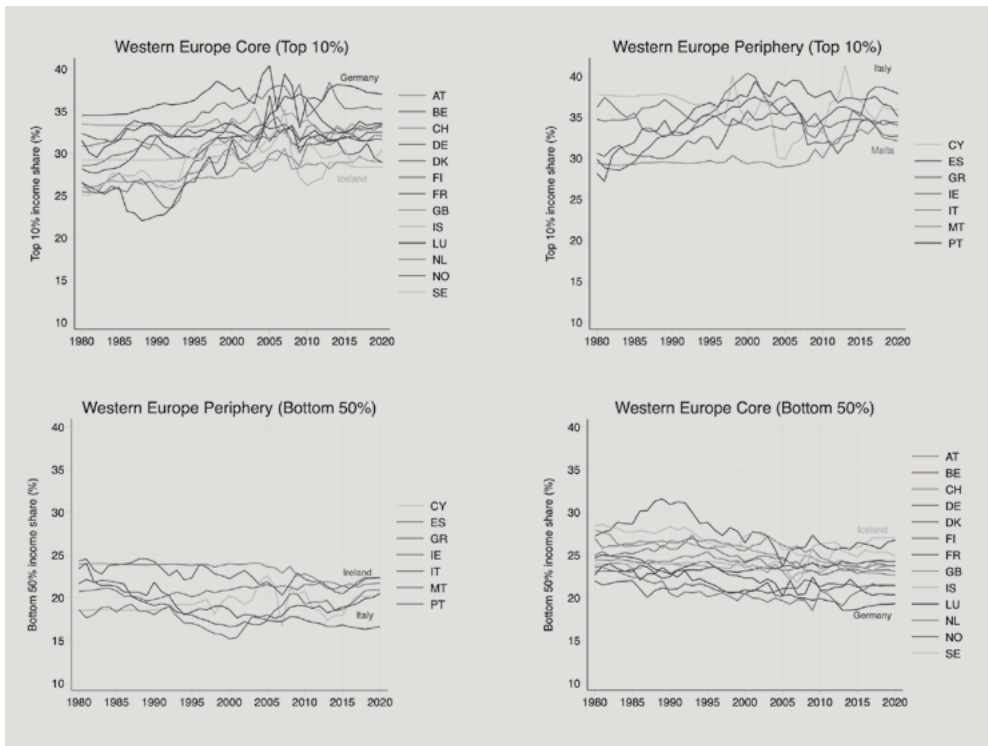
Figure 7. **TOP10/BOTTOM 50 INCOME GAPS ACROSS THE WORLD, 2021**



Notes: Income is measured after pension and unemployment benefits (net of contributions) received by individuals, but before income taxes and other transfers. The unit of observation is the adult individual aged 20. Income is split equally among spouses. Interpretation: in Brazil the bottom 50% earns 29 times less than the top 10%. In France this value is 7.

Sources: wir2022.wid.world/methodology

Figure 8. **TOP 10% AND BOTTOM 50% INCOME SHARES IN WESTERN EUROPE**



Notes: Income is measured after pension and unemployment benefits (net of contributions) received by individuals, but before income taxes and other transfers. The unit of observation is the adult individual aged 20. Income is split equally among spouses. Interpretation: in Germany the top 10% income share increased from 27% in 1980 to 37% in 2020, while the share of the bottom 50% fell from 25% in 1980 to 20% in 2020. Country codes are the following for Western Europe: Austria (AT), Belgium (BE), Cyprus (CY), Denmark (DK), Finland (FI), France (FR), Greece (GR), Germany (DE), Iceland (IS), Ireland (IE), Italy (IT), Malta (MT), Netherlands (NL), Norway (NO), Portugal (PT), Spain (ES), Sweden (SW), Switzerland (CH) and the United Kingdom (GB).

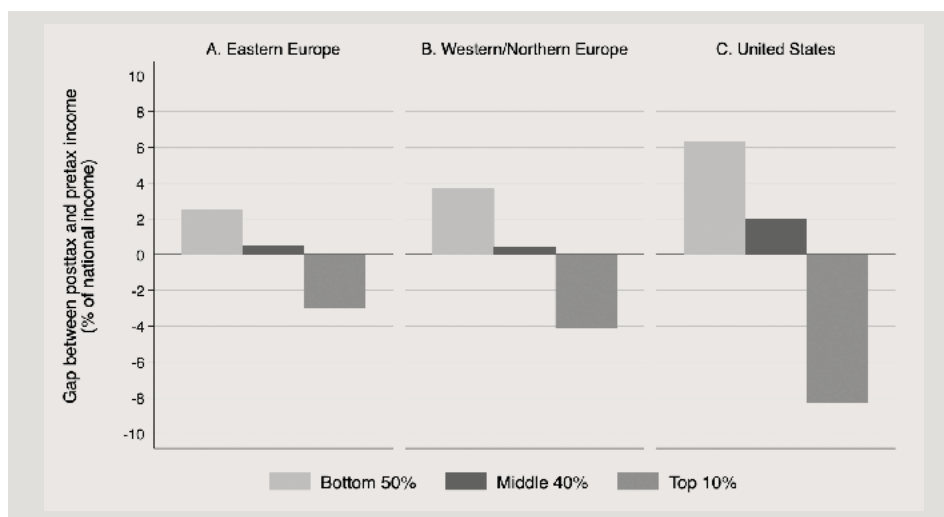
Sources: World Inequality Database (<https://wid.world/>)

5. WHY IS EUROPE LESS UNEQUAL THAN THE UNITED STATES?

Figure 7 suggests that Europe has a less unequal distribution of national income than the United States (US). The key to understanding why lies precisely in that distributional picture – Europe's distribution is less unequal *prior to* the redistributive effect of taxes and transfers. Thus, the lower inequality levels in Europe are not due to a more equalizing tax-and-transfer system, but to a more equal «pre-distribution». As Blanchet, Chancel and Gethin (2021) show, once all taxes (direct and indirect) and all transfers (monetary and in-kind) in national income are accounted for in the distribution of household incomes, redistribution in the US is actually greater than that in any European country.

Figure 9 summarizes this result looking at the effect of the tax and transfer system in reducing the gap between gross and net incomes for three income groups in the population. In the US, the net transfers of the tax-and-transfer system reduces the gap between bottom groups and top groups by a greater magnitude than in countries from either Eastern Europe or Western/Northern Europe. Mechanically, this arises because the bottom and middle groups in the US have greater net positive gains than their counterparts in European countries, while the top 10% experience a greater reduction between their gross and net income. Driving these dynamics are the fact that bottom groups in Europe face a higher burden of consumption and indirect taxes than the same groups in the US, while top groups face higher effective income and wealth taxes in the US. Moreover, the slightly more progressive transfer system in Europe does not compensate for the regressiveness of the tax system (Blanchet, Chancel and Gethin 2021). The bottom line is that Europe remains less unequal than the US, but it is rather due to its institutions that regulate the gross distribution of income (collective wage bargaining, CEO pay, pension policy, etc.)

Figure 9. **REDISTRIBUTION IN EUROPE AND THE UNITED STATES**



Notes: the figure represents the net transfer received or paid by pretax income group in Eastern Europe, Western and Northern Europe, and the United States in 2017. The unit of observation is the adult individual aged 20. Income is split equally among spouses.

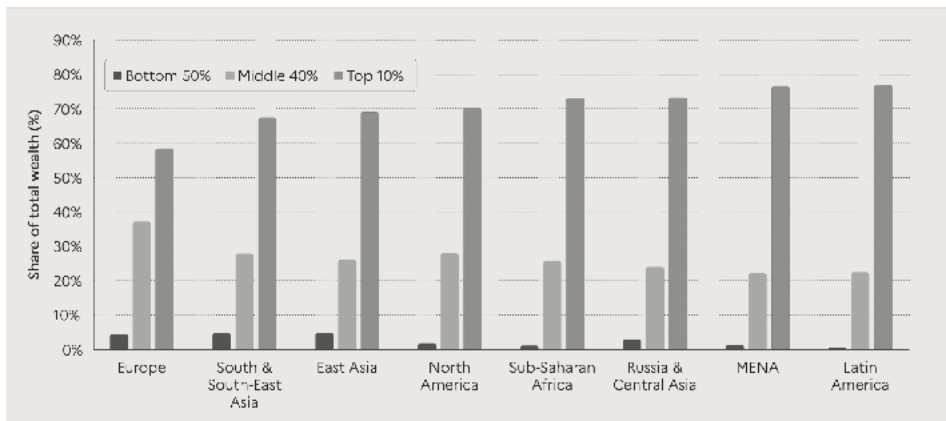
Source: Blanchet, Chancel and Gethin (2021)

6. WEALTH INEQUALITY WITHIN COUNTRIES

Shedding light on the dynamics of aggregate wealth among countries is important for current debates on debt, public infrastructure, privatizations, and even the role of inheritance in private wealth. But similar to the necessity to complement aggregate in-

come measures with distributional income measures, the study of distributional wealth dynamics is a crucial complement to aggregate wealth dynamics. A necessary complement is the study of national wealth inequality. Figure 10 presents the distribution of wealth across the same eight world regions as before. Concentration levels are appreciably greater for wealth than for income, as confirmed by Figure 11 which depicts the correlation between the top 10% income share and wealth share across countries. On average concentration levels for wealth are about 1.5 times higher than for income.

Figure 10. **WEALTH INEQUALITY ACROSS WORLD REGIONS, 2021**



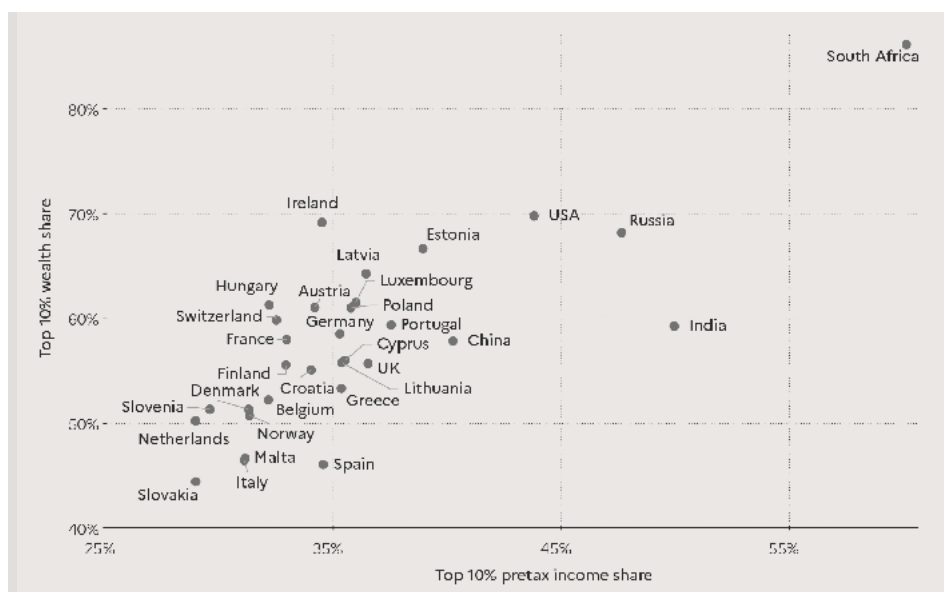
Notes: Net household wealth is equal to the sum of financial assets (e.g. equity, bonds, deposits etc.) and non-financial assets (housing, land, unincorporated business capital) owned by individuals, net of their debts. The unit of observation is the adult individual aged 20. Wealth is split equally among spouses.

Sources: wir2022.wid.world/methodology

Given the relationship between income and wealth it is not surprising that Europe is the region with the lowest inequality of wealth, where the concentration among the top decile barely reaches 60%, and the middle of the distribution almost reaches its proportional share of 40%. What is true across the world is that the wealth owned by the poorest half of the population is extremely low, even in Europe where it hovers around 4% of total household wealth, which is twice the world average of 2%. A wealth share of 2% means that the average wealth of the bottom 50% is one-tenth the value of the average, which would be one-tenth of 95,000 euros, so some 9,500 euros. A big part of the reason why richer countries limited the wealth holdings of the top of the distribution has been the development of «popular wealth» (that is, housing and pension wealth) among the rest of the population (Waldenström 2021). The rise of this form of wealth, as detailed above, represented a significant increase in the wealth holdings of bottom and middle groups in the distribution by a relatively larger magnitude than the increase in wealth for top groups. This is revealed in Figure 12, which shows the long run decline in top wealth con-

centration in six developed economies since the late 19th century. The fall of top 1% wealth shares occurred from the early 20th century, typically after the First World War, with varying speeds across countries. The decline was sharpest in the country where it was greatest – the United Kingdom (UK) – where it fell from 70% at the start of the period to 15% in the 1980s. But the trends are broadly mimicked across all the rich countries with available evidence. Since the 1970s the trends have reverted, although not with the same speed nor time frame across countries. It has increased earlier in France and the US, while later in Spain and the UK.

Figure 11. **WEALTH INEQUALITY VS INCOME INEQUALITY ACROSS THE WORLD**



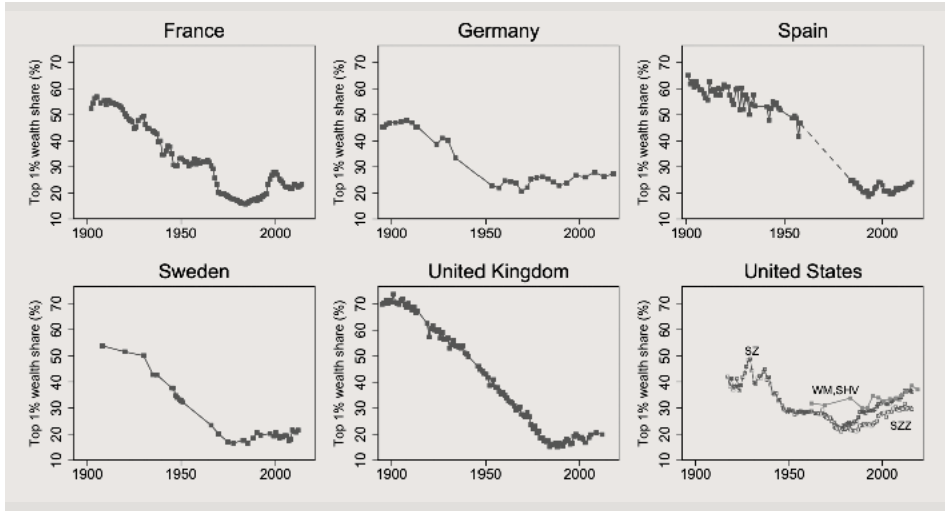
Notes: Each country's data point refers to the average top 10% share over 1995-2021. Income is measured after pension and unemployment benefits (net of contributions) received by individuals, but before income taxes and other transfers. Net household wealth is equal to the sum of financial assets (e.g. equity, bonds, deposits etc.) and non-financial assets (housing, land, unincorporated business capital) owned by individuals, net of their debts. The unit of observation is the adult individual aged 20. Wealth and income are split equally among spouses.

Sources: wir2022.wid.world/methodology, Bauluz et al. (2021)

How can these trends be reconciled with trends in aggregate wealth dynamics observed in Figure 5? Precisely because of the larger share of popular wealth (housing and pension assets) in total wealth, which have concentrated a large share of total capital gains. Thus, compared to the early 20th century, capital gains have been more evenly distributed in the last thirty years (Waldenström 2021). Other important equalizing factors over the 20th century have been wars and regulatory instruments such as progressive capital levies and income taxation, which have either limited wealth accumulation through physical destruction or through limiting saving of

top groups (Piketty and Zucman 2014). Wars demolished physical capital, but they also set in a regulatory agenda to prevent the reconstruction of large oligarchic fortunes from returning in the post-war years through taxation and market regulations (antitrust policy, financial market regulation, capital controls, etc.).

Figure 12. **TOP 1% WEALTH SHARE IN SIX ADVANCED COUNTRIES 1896-2019**



Notes: The series show top one percentile share of total private wealth.

Sources: Waldenström (2021).

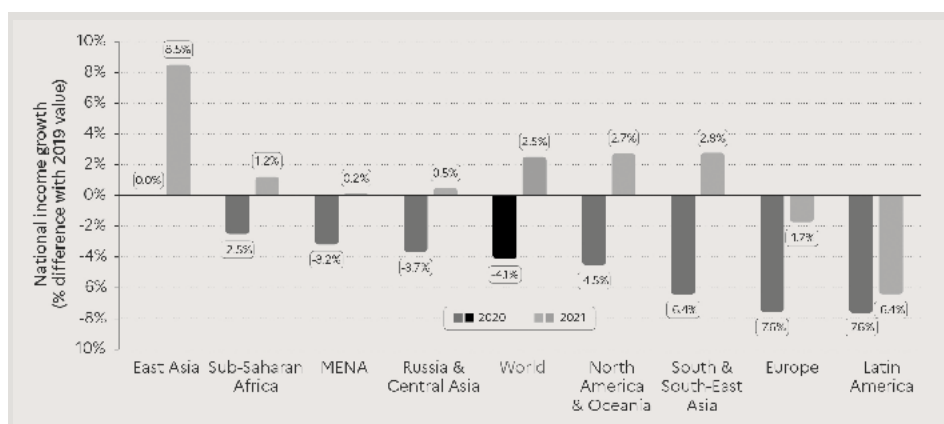
However, if we exclude popular wealth from the analysis (particularly housing), and only focus on the ownership of productive capital, the wealth distribution would probably not look so different from the situation in the early 20th century, given what we know about the composition of wealth in rich countries like Sweden, Spain, France and the US today from a combination of survey, tax and aggregate macro statistics, where business capital and corporate ownership continue to be extremely concentrated (Roine and Waldenström 2009; Martinez-Toledano 2017; Garbinti *et al.* 2021; Saez and Zucman 2016; Kuhn, Schularick, and Steins 2020).

7. THE GREAT RECESSION VS THE GREAT LOCKDOWN: DYNAMICS OF TWO CRISES

The economic crisis of 2020 produced as a result of the lockdowns in response to the Covid-19 pandemic brought forth an important distributional challenge. Executive action paralyzed national economies, and by extension the world economy, in a manner not seen before. Given that the protocols were national, the degree of economic loss varied across regions. Figure 13 shows the impact of the Covid-19 re-

cession («The Great Lockdown») on the same eight world regions we have been analysing throughout. On average the world economy declined by over 4% in 2020, but in half of the eight regions, the recession was larger, including in North America and Europe. Similarly, national labour markets were heterogeneously affected. Yet, even if the immediate economic losses were sharper than previous crises, and unemployment greater, income losses were largely compensated by fiscal policy. Herein lies an important difference with the next most severe economic crisis since the Great Depression – the Great Recession of 2008-2009.

Figure 13. **IMPACT OF THE GREAT LOCKDOWN ACROSS WORLD REGIONS, 2020-2021**



Interpretation: In 2020, national income in Europe decreased by 7.6%, compared with 4.1% at the world level. In 2021 national income grew in East Asia by 8.5% compared to 2019 values. Sources: *wir2022.wid.world/methodology*.

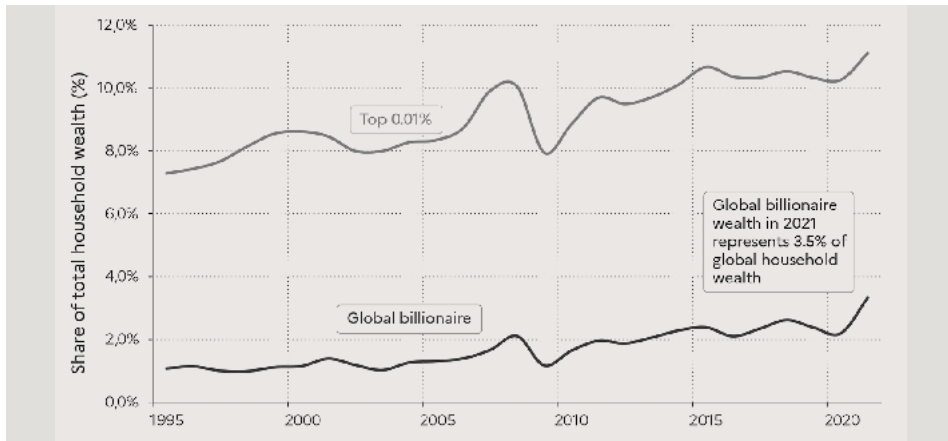
Sources:

The Great Recession was not as sharp, but it was produced by a financial crisis, which first hit capital incomes severely before cascading into the labour market. This can partly be seen from the fall in top income shares in Figure 8. This fall implies that top incomes fell by a greater magnitude than other incomes lower down the distribution during the first year. The un-equalizing effects over the following five-to-ten years were a result of austere fiscal policy, as governments of rich countries railed in expenditures to curtail budget deficits and quell rising debt levels (in a context of privatised bond markets) at the cost of stagnating the economy (Heimberger 2017, 2020). The Great Lockdown disproportionately affected low-income and mid-income jobs in the retail, cultural and restoration sectors, yet it also disrupted supply chains across the entire economy. However, the crisis was buffered by universal wage subsidies, as well as pension top-ups and loan guarantees by governments.³

³ See <https://www.imf.org/en/Topics/imf-and-covid19/Fiscal-Policies-Database-in-Rsponse-to-COVID-19>

It should be noted that the distributional evidence presented for 2020 only partially accounts for the effects of the pandemic-induced economic crisis through imputations from latest macroeconomic data (GDP, national income and its decompositions). Official distributional information from annual household surveys or tax data is not yet available for 2020. The evidence gathered to date from simulations, real-time surveys and digital banking transactions generally points towards a deterioration of inequalities within countries and between countries (Adams-Prassl *et al.*, 2020; Almeida *et al.*, 2020; Furceri *et al.*, 2021), with few exceptions (see Clark, Ambrosio, and Lepinteur (2021) for survey-based evidence on declining inequality over the first half of 2020 and O'Donoghue, Sologon and Kyzyma (2021) for micro-simulated evidence of a reduction in Ireland due to the equalizing effect of fiscal policy).

Figure 14. **EXTREME WEALTH CONCENTRATION: THE RISE OF GLOBAL BILLIONAIRES, 1995-2021**



Notes: Net household wealth is equal to the sum of financial assets (e.g. equity, bonds, deposits etc.) and non-financial assets (housing, land, unincorporated business capital) owned by individuals, net of their debts. The unit of observation is the adult individual aged 20. Wealth is split equally among spouses. Interpretation: The share of wealth concentrated by the world's billionaires rose from 1% of total household wealth in 1995 to 3.5% today.

Sources: wir2022.wid.world/methodology, Bauluz *et al.* (2021).

What seems to be more clear-cut is the evidence that points towards an increase in the inequality of savings and therefore wealth. Most groups in the distribution of income experienced a loss in earnings, with groups at the bottom and middle of the distribution being over-compensated by the income policy of the government. But the percentage fall in spending was greatest for higher income households, who therefore saw a proportionally larger increase in their savings (see Hacıoğlu Hoke, Känzig, and Surico (2020) for the case of the UK). We also know that elite groups at the very summit of the distribution experienced relative gains, especially business owners in the e-commerce sector, who profited greatly from the global lockdowns. Figure 14 shows

the increase in the wealth share of global billionaires (less than 3,000 individuals) and the global top 0.01% (some 500,000 people) over 2020-2021, based on wealth data from rich lists, such as Forbes magazine, and extrapolations from aggregated macroeconomic data. Wealth concentration at the very top has trended upwards since the 1990s. The Covid-19 pandemic has exacerbated this trend in the short-run. What direction this inequality takes in the future remains an open question whose answer lies fully within the realm of government policy, as past experiences have shown us.

8. CONCLUDING REMARKS

This article has reviewed the current state of knowledge on growth, income and wealth accumulation across the world, with a particular focus on rich countries. Tracking inequality remains a challenge, paradoxically in a world of big data. The reconciliation of aggregate macroeconomic statistics on growth from the system of national accounts (SNA) with distributional data by the academic community is a big step forward, which like the advent of the SNA itself, hopes to draw in official institutional partners for the continued production of distributional growth statistics on income and wealth. This would be a considerable improvement on current standards, which continue to rely to a large extent on inadequate voluntary self-reported questionnaires for distributional information across the entire population. Developed, high-income countries are the regions with the most abundant data on wealth, incomes, and living standards in the world. Yet this data is still widely scattered across a variety of sources, with varying levels of quality, which need reconciliation. Again, similar to the SNA, the standard needs to be feasible in less advanced contexts as well.

To the extent possible all countries should progress to link the income respondents in surveys and administrative data, while maintaining confidentiality standards. The use of third-party reported administrative data on incomes would substantially improve the representativeness of income in surveys, making a significant difference to inequality measures, as found in Carranza, Morgan, and Nolan (2021). Data quality and transparency would be improved further if countries made their administrative data as comprehensive as possible, e.g. by including tax exempt personal incomes. If distributional information from dual tax systems on labour and capital incomes were unified into one single dataset, this would greatly help to improve the precision of inequality estimates going forward, especially concerning the top of the distribution. Shedding greater light on the multiple «black boxes» of the SNA is also necessary. With the revolution in big data there should come a revolution in official public statistics on the distribution of aggregate indicators.

Since its early development in the 1930s, the SNA has been subject to multiple criticisms: among them its ignorance of economic inequality.⁴ Economic growth as

⁴ Others are the omissions of environmental degradation and human well-being, broadly understood. For an example see Stiglitz, Sen and Fitoussi (2009).

measured traditionally from the lens of aggregate production does not necessarily mean that the material standard of living is improving for all households in a country to the same degree. With increased data at our disposal and ever more immediate and critical junctures in our history, better measuring our future, as well as our past, can only improve our vision and imagination required for the challenges ahead.

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