Government Redistribution and Development:

Global Estimates of Tax-and-Transfer Progressivity, 1980-2023

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Abstract

This article constructs a new database on the distributional incidence of taxes and transfers in 151 countries from 1980 to 2023. We combine household surveys, national accounts, government budgets, tax simulators, and existing fiscal incidence studies to allocate the entirety of tax revenue and public expenditure to individuals. We establish five main findings. First, tax-and-transfer systems reduce inequality in all countries, but with large variations. Second, transfers accounts for 90% of this reduction in inequality, while taxes account for only 10%. Third, redistribution rises with development, but this is entirely due to transfers; tax progressivity is uncorrelated with per-capita income. Fourth, there has been no cross-country convergence in redistribution: fiscal progressivity has increased in Western Europe and the Anglosphere while it has stagnated in Africa. Fifth, differences in pretax inequality ("predistribution") account for 80% of variations in posttax inequality, while differences in tax-and-transfer systems ("redistribution") account for 20%.

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1. Introduction

Income inequality has risen in many countries in recent decades. This trend has raised significant attention in the research community and the general public, leading to a multiplication of studies on the structure of inequality and the role of taxes and transfers in shaping it. Yet, because most efforts remain country-specific, we lack a global view on how government policies have shaped inequality in different parts of the world. As a result, basic questions remain unanswered: which countries are most successful at reducing inequality through taxes and transfers? Has government redistribution increased or decreased? Are developing countries catching up? And to what extent are cross-country differences in inequality mainly due to market income distributions or to tax-and-transfer systems?

This article makes a step towards answering these questions by assembling a new database on government redistribution in 151 countries from 1980 to 2023. Our estimates account for all major forms of taxes and transfers, including personal income taxes, corporate and consumption taxes, cash transfers, and public education and health expenditure. We distribute all taxes and transfers using a common methodological framework, Distributional National Accounts (DINA; Blanchet et al., 2021), which ensures that our estimates are comparable across countries and over time, and consistent with national accounts and government budget aggregates.

In the absence of detailed survey or tax microdata, which largely do not exist for our sample, several new sources and methodological innovations allow us to take such a global view. Pretax income distributions are taken from recent developments of the World Inequality Database (Chancel et al., 2022). Historical tax revenue and government expenditure aggregates have been recently collected for most countries in the world thanks to work by Bachas et al. (2022) and Bharti et al. (2025). We complement them with newly assembled information on statutory tax schedules, essential features of the informal sector (Bachas, Gadenne, and Jensen, 2022; Jensen, 2022), and various dimensions of the distributional incidence of transfers (Gethin,

2025), allowing us to capture key components of how fiscal progressivity varies over the course of development. We validate our estimates against those of existing studies where those exist, ensuring that our simplified methodology accurately reproduces results from preexisting work.

Our database reveals five new stylized facts on worldwide fiscal progressivity. First, tax-and-transfer systems always reduce inequality. One way to measure this is to compare the top 10% to bottom 50% average income ratio in terms of pretax and posttax income. Taxes and transfers reduce this ratio in all 151 countries in our sample. This effect varies considerably, however, from 25% in the average African country to 50% in Europe and the United States.

Second, transfers explain almost all of this redistributive effect. Taxes are only weakly progressive in most countries: low-income households face about the same effective tax rates as high-income households. As a result, removing taxes from individual incomes reduces inequality by only 3% in the average country. In contrast, transfers reduce inequality by about 25%. Putting these two facts together, we estimate that 90% of the effect of tax-and-transfer systems on inequality comes from transfers, while 10% comes from taxes.

Third, redistribution increases over the course of development, but this is entirely due to transfers. Tax progressivity is uncorrelated with per-capita income. Noticeable regional patterns arise, however: taxes are progressive in Western Europe, the Anglosphere, and Africa but are strongly regressive in Eastern Europe and Latin America due to the prevalence of high indirect taxes. In contrast, the incidence of transfers on inequality rises sharply with development. This finding mainly arises from the fact that high-income countries have larger governments, but can also be explained by their greater reliance on more progressive forms of public spending—in particular social assistance. In the average African country, the tax-and-transfer system redistributes less than 3% of national income to the poorest 50%, compared to over 10% in Europe and the United States.

Fourth, there have been considerable improvements in many countries but no cross-country convergence in redistribution. The net reduction in inequality enabled by taxes and transfers has

increased significantly in the average country, approximately doubling in magnitude from 1980 to 2022. However, this average figure masks considerable heterogeneity. Redistribution has risen significantly in Western Europe, the Anglosphere, and Latin America, but it has stagnated in Eastern Europe and Africa. The gap in redistribution between low- and high-income countries has remained about the same. Upper-middle-income countries have caught up with high-income countries, but this is mainly due to the rise of fiscal progressivity in China.

Fifth, despite large cross-country differences in tax-and-transfer systems, variations in inequality are primarily driven by differences in pretax inequality ("predistribution") rather than taxes and transfers ("redistribution"). In line with previous work on Europe and the United States (Blanchet, Chancel, and Gethin, 2022; Bozio et al., 2022), we find that countries displaying the highest levels of pretax inequality also end up displaying the highest levels of posttax inequality. A simple cross-country regression of posttax inequality on pretax inequality yields an R-squared of 0.8. By this measure, predistribution accounts for 80% of cross-country variations in inequality, while redistribution accounts for 20%. We do find a correlation between predistribution and redistribution, however: countries with more progressive tax-and-transfer systems display lower levels of pretax inequality. This suggests that while the direct effect of taxes and transfers explains little of variations in posttax inequality, redistributive policies might still play a role in indirectly shaping the distribution of market incomes.

A growing literature has made progress in constructing estimates of the income distribution that are comparable across countries and consistent with macroeconomic growth figures. Piketty, Saez, and Zucman (2018) develop Distributional National Accounts (DINA) for the United States, allocating the entirety of national income, taxes, and transfers to individuals. A number of studies following a comparable methodology have been conducted since then. The advantage of this methodology is that it produces estimates of inequality that are consistent with macroeconomic growth. These estimates have been compiled in the World Inequality Database (Chancel et al., 2022), which now covers inequality statistics for most countries in the world since 1980. The main limitation is that the majority of existing studies only cover

the distribution of pretax income.[1] The contribution of this paper is to directly build from the WID to expand the analysis to the distributional incidence of taxes and transfers. In particular, following the DINA framework allows us to construct new measures of fiscal progressivity and posttax income inequality that are comparable across countries, comparable over time, and fully consistent with national accounts aggregates.

Our work also relates to the broader comparative literature on inequality and fiscal progressivity. A large literature documents how taxes and transfers affect poverty and inequality in different contexts (e.g., OECD, 2008). The vast majority of these studies focus on high-income countries. One important exception is the Commitment to Equity Institute, which has been spearheading fiscal incidence studies in low- and middle-income countries over the past decade (Lustig, 2018; World Bank, 2022). A growing literature also draws on available surveys to document key features of tax-and-transfer systems in the developing world, such as the progressivity of the personal income tax (Jensen, 2022), consumption taxes (Bachas, Gadenne, and Jensen, 2022), and social protection programs (Banerjee et al., 2024). Our analysis extends this body of work in two dimensions. First, we construct comparable measures of redistribution that cover all taxes and transfers and are consistent with the national accounts. Second, we expand the scope of the analysis to cover 151 countries from 1980 to 2023. In doing so, our work does not seek to replace country-specific studies, which remain essential for granular analyses of specific policies. Rather, we aim to complement them with broader comparative and historical insights that would otherwise be out of reach given the unavailability of microdata in many countries.

The rest of the article is organized as follows. Section 2 presents the data and methodology used to construct our new database on government redistribution. Section 3 presents the main results. Section 4 concludes.

[1]Among noticeable exceptions, studies covering taxes and transfers include Blanchet, Chancel, and Gethin (2022) for Europe, Bozio et al. (2022) and Germain et al. (2021) for France, Bruil et al. (2022) for the Netherlands, Chatterjee, Czajka, and Gethin (2021) for South Africa, and Flores, De Rosa, and Morgan (2022) for Latin America.

2. Data and Methodology

This section presents the methodology used to build our new database on government redistribution. Section 2.1 covers general methodological principles. Section 2.2 presents the World Inequality Database pretax inequality data. Section 2.3 turns to the the data sources used to cover government revenue and expenditure aggregates. Section 2.4 describes the methodology used to allocate taxes and transfers. Finally, Section 2.5 investigates the ability of our methodology to reproduce estimates from existing DINA studies.

2.1. Conceptual Framework

Concepts Our methodology follows the distributional national accounts (DINA) framework (Blanchet et al., 2021; Piketty, Saez, and Zucman, 2018), which aims to estimate the distribution of income, taxes, and transfers in a way that is consistent with national accounting principles (UN SNA, 2008). Unlike previous approaches to the measurement of inequality, the DINA methodology distributes all income flows to individuals, as well as all types of taxes paid and transfers received, to arrive at both pretax and posttax income distributions that match 100% of national income.

The DINA approach generally establishes three income concepts: factor national income, pretax national income, and posttax national income, all of which add up to net national income. Factor national income refers to market income flows deriving from labor and capital, before any form of government intervention. Pretax national income corresponds to income after the operation of the pension and unemployment systems, but before the operation of the tax-and-transfer system. It is equal to factor income, minus social contributions paid, plus social insurance benefits received. Finally, posttax national income corresponds to income after the operation of the tax-and-transfer system. All taxes are allocated and removed from individual pretax incomes, including personal income taxes, corporate taxes, property and wealth taxes,

and indirect taxes. Similarly, moving from pretax to posttax national income implies distributing the entirety of general government expenditure, including cash transfers, in-kind benefits (e.g., healthcare), and collective government expenditure (e.g., public order and safety).

We focus on measures of government redistribution that compare the distribution of pretax national income to that of posttax national income.[2] Starting with data on the distribution of pretax income z, we aim to measure the distribution of taxes $T(z)$ and government transfers $G(z)$, so as to reach posttax income y:

$$y = z - T(z) + G(z) \tag{1}$$

Our analysis therefore relies on three key ingredients: data on the distribution of pretax income, data on total taxes collected and transfers disbursed in each country, and data on the distributional incidence of each type of tax and transfer. We discuss each of them in turn.

2.2. Pretax Income Inequality

Our starting point on the distribution of pretax national income is the World Inequality Database, which covers 174 countries over the 1980-2023 period. The database was constructed by compiling estimates from existing DINA studies, which have been harmonized to yield comparable distributional statistics (see Chancel and Piketty, 2021). The data cover pretax income averages for 127 generalized percentiles (g-percentiles), corresponding to each percentile within the bottom 99% (*p0p1* through *p98p99*), followed by a more detailed decomposition of incomes within the top 1%. By construction, average income is consistent with net national income. The database also provides information on the share of pretax income coming from capital income and labor income for each g-percentile (Bachas et al., 2022).

[2]As in the existing studies that apply the DINA framework, we prefer to compare posttax income with pretax income rather than factor income. This comparison has the advantage of not making estimates of redistribution too sensitive to demographic factors, such as the size of the elderly population (where retired persons earn zero factor income but do receive significant social security benefits). See Blanchet, Chancel, and Gethin (2022).

2.3. Government Revenue and Expenditure Aggregates

Tax Revenue Aggregates To study the distribution of taxes paid, we first need to know the level and composition of government revenue. We rely on aggregate tax revenue series recently constructed by Bachas et al. (2022), who collect new government revenue statistics to estimate the evolution of macroeconomic tax rates in more than 150 countries since 1965. Their database provides information on total tax revenue as a share of national income, disaggregated into six categories: personal income taxes (code 1100 in the OECD classification of taxes; OECD, 2022), corporate income taxes (1200), social insurance contributions (2000, 3000), property and wealth taxes (4000), indirect taxes (5000), and other taxes (6000).

Government Expenditure Aggregates To study the distribution of transfers, we similarly need to know the level and composition of public spending. We use data from Bharti et al. (2025) and Gethin (2025), who construct new series on general government expenditure by function (COFOG). The database records public spending on social protection, education, healthcare, and other functions in 173 countries from 1980 to 2023. Social protection is disaggregated into social insurance (pension and unemployment benefits) and social assistance.

2.4. Distribution of Taxes and Transfers

We now present the data sources and methodology used to estimate the distributional incidence of taxes and transfers.

Personal Income Taxes We first microsimulate personal income taxes (PIT) in each country. Only taxpayers with income above the PIT exemption threshold K pay any taxes. We estimate K for all country-years from Bachas et al. (2022) and Jensen (2022). Above the PIT exemption threshold, we estimate the structure of personal income tax incidence using statutory rate schedules from the World Tax Indicators (WTI) database (Peter, Buttrick, and Duncan, 2010).

This database provides information on the average and marginal statutory income tax rates at the average income (where taxable income equals per capita national income), then at two and three and four times that level, and finally the top marginal tax rate. We complement the WTI with inputs from Strecker (2021) and Vegh and Vuletin (2015) and online sources. From this basis, we can approximate a continuous schedule of statutory personal income tax rates.

Drawing on additional data sources, we also make three key distinctions (1) between countries whose PIT systems tax married couples' joint income versus those that only tax individual incomes; (2) between countries whose PIT systems tax dividends and capital gains differently from labor income; and (3) between the pretax and taxable income distributions (since (1) and (2) may occasion some re-ranking). Appendix A.1 provides more details.

Corporate Income Taxes Following the Distributional National Accounts Guidelines (Blanchet et al., 2021), we allocate the corporate income tax (CIT) proportionally to income from corporate equity. High-quality estimates of corporate equity ownership by generalized percentile are available for the Netherlands (Bruil et al., 2022), the United States (Piketty, Saez, and Zucman, 2018), and South Africa (Chatterjee, Czajka, and Gethin, 2021).[3] In our benchmark estimates, in the absence of better information, we take the average of these tax incidence profiles. We then proportionally scale up the resulting profile in each country-year so as to match total CIT revenue.

Property and Wealth Taxes Property and wealth taxes include taxes on immovable property, wealth taxes, inheritance and gift taxes, and taxes on financial and capital transactions. They are by far the least significant revenue item, averaging 2% of national income and rarely exceeding 4%. Like Piketty, Saez, and Zucman (2018), we assume that residential property taxes are paid by households proportionally to housing wealth, while business property taxes and inheritance, wealth, and financial transaction taxes are distributed proportionally to capital income excluding

[3] See Appendix Figure A1, which plots these three profiles by generalized percentile.

mixed income and imputed rents (that is, in the same way as corporate taxes).

Unfortunately, we do not observe the concentration of housing wealth, so we assume that residential property taxes are paid proportionally to pretax income. This is consistent with evidence from South Africa and the United States suggesting that the distribution of housing property taxes is relatively flat (Chatterjee, Czajka, and Gethin, 2021; Piketty, Saez, and Zucman, 2018). For other wealth taxes, we use the same corporate tax stylized profile as above.

Data on total property and wealth tax revenue come from Bachas et al. (2022). We complement them with the OECD tax database (OECD, 2022) to further decompose these taxes into housing property, business property, and other taxes on wealth. For country-years missing in the OECD database, we assume that 50% of property and wealth taxes fall on residential property, while 50% fall on business property and net wealth.

Indirect and Other Taxes We assume that indirect taxes are paid by consumers, but we also account for the fact that part of consumption goes untaxed because it is made in the informal sector. First, we estimate income-to-consumption ratios along the income distribution. Second, we estimate the share of informal consumption in total consumption by generalized percentile.

For the first step, our benchmark scenario assumes that the income-to-consumption ratio is logit-shaped and about two times higher for the 99^{th} percentile than for the median (see Appendix Figure A2). This functional shape draws on evidence from Chancel et al. (2023), who combine data on income-consumption ratios by pretax income percentile from a number of studies and show that this profile provides a good approximation of the typical empirical pattern observed.

For the second step, we account for the fact that low-income households tend to purchase goods in informal markets to a greater extent than high-income households. This implies that a greater fraction of their consumption goes untaxed, especially in low-income countries where informality is high. We draw on recent empirical evidence by Bachas, Gadenne, and Jensen

(2022), who estimate the share of consumption made in informal markets by consumption percentile in a sample of developing countries. Informality is relatively greater among low-income earners in poor countries than in rich countries.[4] Drawing on this empirical regularity documented in Bachas, Gadenne, and Jensen (2022), we estimate the share of consumption $s_{ct}(p)$ made in the formal market for percentile p in country c at time t as a linear function, whose slope depends on the level of economic development:

$$s_{ct}(p) = p \times \theta_{ct} \quad (2)$$

$$\theta_{ct} = \alpha + \beta GDP_{ct} \quad (3)$$

Where GDP_{ct} denotes GDP per capita in constant 2021 PPP USD. Accounting for informality makes indirect taxes significantly less regressive, in particular in low-income countries, although this effect is generally not sufficiently strong to make them progressive as a share of income.[5]

Finally, other residual taxes include a number of miscellaneous items, such as user fees, penalties, fines, and poll taxes, which usually represent less than 0.5% of national income. These taxes are generally not conditioned on income or consumption, which implies that their burden is much higher among low-income groups than high-income groups when expressed in proportion of income. We make the simplifying (and probably conservative) assumption that they are distributed similarly to indirect taxes, that is, in a regressive way.

Social Contributions We also construct estimates of the distribution of social contributions. Social insurance systems are already accounted for in pretax income, so we do not need to deduct social contributions to reach posttax income. However, we still estimate their incidence to arrive at a more comprehensive view of the progressivity of the tax system in each country.

We assume that social contributions are paid proportionally to labor income, excluding

[4] See Appendix Figure A3.

[5] Appendix Figure A4 illustrates how accounting for informality changes the progressivity of indirect taxes in Niger, one of the poorest countries in our sample.

income that is not taxed due to exemptions or evasion. To do so, we rely on a unique database provided by the International Labor Organization (ILO), which compiles labor force surveys fielded in about 150 countries since the 1990s. For approximately 110 countries, we observe whether individuals paid social contributions, and estimate the propensity to do so along the labor income distribution. Informal work and exemptions are generally more prevalent at the bottom of the distribution, while capital income is more prevalent at the top. As a result, middle-income groups often display the highest effective tax rates.[6]

Social Assistance Benefits Social assistance expenditure consists in both cash and in-kind transfers received by households, such as conditional cash transfers and food stamps, as defined in the system of national accounts (see Eurostat, 2019). Note that social assistance excludes social insurance transfers (mainly unemployment and pension benefits) and workfare program, which are already included in our definition of pretax income as discussed above.

Data on aggregate expenditure come from Gethin (2025), who draws on various sources to derive harmonized series on the evolution of spending on social assistance programs around the world. Data on the incidence of social transfers come from four sources: Piketty, Saez, and Zucman (2018) for the United States, Blanchet, Chancel, and Gethin (2022) for 30 European countries, the World Bank's ASPIRE database for 101 countries (World Bank, 2018), and the database of the Commitment to Equity Institute for 3 countries (Iran, Togo, and Venezuela; Lustig, 2023). These estimates are generally based on surveys in which program beneficiaries and transfers received are observed. For the 45 countries not covered by any of these sources, our benchmark scenario allocates transfers using the average profile observed in all countries.

Healthcare Data on the distributional incidence of healthcare come from Gethin (2025), who relies on series from the CEQ database and other microdata sources providing information on intensity of use of healthcare services to estimate the distributional incidence of public

[6]Appendix Figure A5 illustrates how accounting for informality and exemptions changes our estimates of the incidence of social contributions in the context of Argentina in 2023.

healthcare in most countries in the world. These estimates are validated against high-quality information available from selected studies (see Gethin, 2025 for more details).

Education We consider two alternative scenarios for the distribution of education spending. One option is to allocate education spending to the users of the education system, that is, children attending school in the household. This approach has been adopted by recent DINA studies covering Latin America (De Rosa, Flores, and Morgan, 2022) and South Africa (Gethin, 2022), as well as by the CEQ institute in a number of studies (Lustig, 2018). Gethin (2025) extends this approach to 150 countries from 1980 to 2022, exploiting a unique microdatabase covering school attendance and household income. The main limitation of this methodology is that education spending inequality might be underestimated in the presence of large spatial and socioeconomic inequalities in education financing. Another option is to allocate education proportionally to income, in line with existing studies on the United States (Piketty, Saez, and Zucman, 2018) and Europe (Blanchet, Chancel, and Gethin, 2022). This assumption has the advantage of neutrality—allocating education spending leaves inequality unchanged—but is likely conservative given empirical evidence on the high progressivity of education policies in many contexts (De Rosa, Flores, and Morgan, 2022; Gethin, 2022; Lustig, 2018).

In our benchmark specification, we distribute public education spending to children attending school, drawing on estimates from Gethin (2025). We show in appendix B.5 that all our main conclusions are robust to allocating education proportionally to disposable income. In a nutshell, the proportionality assumption mechanically implies slightly lower levels of redistribution in all countries, but does not alter our key findings on cross-country differences in redistribution, the evolution of redistribution over time and over the course of development, and the relative importance of predistribution versus redistribution in explaining cross-country inequality differences.

Other Expenditure Finally, we allocate all other in-kind transfers and collective government expenditure to individuals. This includes spending on transport, public order and safety, administration, defense, and all other forms of public goods. Unfortunately, data on the distributional incidence of these transfers is scarce (see Gethin, 2022 for an exploratory attempt in the context of South Africa). In our benchmark specification, we follow existing DINA studies and allocate this expenditure proportionally to posttax disposable income, that is, in a distributionally neutral way. As for education, we show in appendix B.6 that all our main results are robust to a polar assumption in which they are distributed as a lump sum.

2.5. Comparison With Existing DINA Studies

Data Sources We validate our new measures of tax progressivity by comparing them with estimates available from the literature.[7] We start by collecting data on countries for which detailed, high-quality estimates are available from existing DINA studies. In total, we were able to compile data from seven studies covering 657 country-years and 45 countries (see Appendix Table A1). From each study, we extract information on tax incidence profiles, that is, the share of taxes paid by pretax income generalized percentile. We then use this database to verify to what extent our simplified methodology provides a good approximation of variations in fiscal progressivity across countries and over time.

Challenges One major difficulty is that DINA studies are far from being perfectly comparable with one another, for two main reasons. First, they do not always use the same methodology. For instance, Piketty, Saez, and Zucman (2018) distribute business property taxes proportionally to corporate equity, while other studies distribute them either proportionally to pretax income or in undocumented ways. Similarly, the quality of data available to distribute taxes varies tremendously across countries, from comprehensive administrative data in the Netherlands

[7]We focus on tax progressivity given that the distributional incidence of transfers is observed, not simulated. See Gethin (2025) for a similar validation exercise on the distributional incidence of education and healthcare.

(Bruil et al., 2022) to surveys in Latin America (Flores, De Rosa, and Morgan, 2022).

Second, estimates of effective tax rates paid by percentile are very noisy in a number of studies. For instance, Blanchet, Chancel, and Gethin (2022) rely on surveys to measure the distribution of direct taxes, which makes estimates of their progressivity very volatile. More importantly, all DINA studies rely on surveys reporting the joint distribution of pretax income and consumption to allocate indirect taxes. Because of the existence of many households with close to zero pretax incomes, consumption-to-income ratios can easily diverge, making estimates of the distributional incidence of consumption taxes particularly sensitive.[8]

Validation Results With these limitations in mind, Figure 1a compares our estimates of the effective tax rates faced by percentiles *p50*, *p75*, *p90* and *p99* with those of existing DINA studies. With few exceptions, our estimates are clustered along the 45-degree line, suggesting that our simplified approach does a good job at reproducing broad cross-country and time variations in taxes paid by different pretax income groups.

Figure 1b further disaggregates this comparison by type of tax. Our estimates fall very close to existing studies in the case of personal income taxes and corporate taxes. However, because of the issue of low pretax incomes highlighted above, the fit of indirect taxes is much more variable. Given well-known challenges in measuring the relationship between income and consumption in surveys (Chancel et al., 2023), whether our smoothed estimates or those of existing DINA studies are more reliable is difficult to say. On average, however, it is reassuring that our measures of the progressivity of indirect taxes falls close to existing work.

Finally, we zoom on effective tax rates paid by income group, focusing on the three countries with the highest-quality studies in our sample—the United States, the Netherlands, and South Africa (see Figure 2). Our simplified methodology reproduces the strong regressivity of taxes in the Netherlands and the relatively more progressive tax systems of the United States and South

[8]In South Africa, for instance, the bottom 50% pretax income share is less than 3%, leading effective tax rates to diverge towards infinity for most households within this group (Chatterjee, Czajka, and Gethin, 2021).

Africa remarkably well.

Together, these results suggest that our simplified estimates of fiscal progressivity do a good job at capturing patterns previously documented in existing work. While our estimates are not perfect, they provide a good first-order approximation of broad cross-country and historical variations in government redistribution, which is the main objective of this paper.

3. A Global Perspective on Government Redistribution

This section presents the main results on government redistribution around the world from 1980 to 2022. Section 3.1 studies tax progressivity, while sections 3.2 and 3.3 turn to the analysis of transfers and overall government redistribution. Section 3.4 investigates the role played by differences pretax inequality versus tax-and-transfer systems in explaining cross-country differences in inequality.

3.1. The Distribution of Taxes

3.1.1. A Global Perspective of Tax Progressivity

Taxes Are Weakly Progressive or Flat in Most Countries We start by documenting worldwide differences in the size and structure of taxes. Figure 3 plots the evolution of aggregate tax revenue by world region between 1980 and 2023. For simplicity and tractability, we divide the world in six groups of countries: the Anglosphere (United States, United Kingdom, Canada, Australia, and New Zealand), Western Europe, Eastern Europe (including Russia), Latin America, Asia, and Africa. We then calculate total tax revenue as a share of national income in each country and plot the resulting population-weighted average by world region.

Total taxation has increased in Asia, Latin America, and Western Europe, while it has remained stable in Africa, the Anglosphere, and Eastern Europe. Western European and

Anglosphere countries derive much larger tax revenue from personal income taxes, while indirect taxes are more widespread in other world regions. Overall, there have not been major changes in the composition of taxes within each region, although there are some exceptions. In Eastern Europe, in particular, corporate tax revenue has declined significantly, while indirect taxation has expanded as a share of national income.

Figure 4 plots the 2023 average effective tax rate (ETR) faced by selected pretax income groups in different regions of the world. Throughout this section, we exclude social contributions from the analysis and relegate results with social contributions to the appendix.[9] Consistently with Figure 3, there are large differences in aggregate tax rates between regions. Effective tax rates are lowest in Sub-Saharan Africa (10-15%) and highest in Western Europe (25-35%). There are also significant variations in progressivity. Taxes are highly progressive in Anglosphere countries, slightly progressive in Africa, Asia, and Western Europe, and approximately flat in Latin America and Eastern Europe. These differences reflect the fact that Eastern European and Latin American countries rely heavily on indirect taxes as a source of revenue, while indirect tax revenue is particularly low in Anglosphere countries. Eastern European countries have also moved toward a flat taxation of household income in recent decades, which further reduces tax progressivity in comparison to other world regions. Overall, effective tax rates vary only moderately by income group in most regions, however, suggesting that their role in reducing inequality is modest.

Taxes Have Little Effect on Inequality in Most Countries To make progress in quantifying the incidence of taxes on inequality, we summarize tax progressivity with a simple indicator: the percent difference in inequality, measured as the top 10% to bottom 50% average income ratio, before and after removing taxes from individual incomes:

$$\gamma_\tau = \frac{r_{pre} - r_{net}}{r_{pre}} \tag{4}$$

[9] See Appendix Figure A7. In this figure and in general, including social contributions reduces the progressivity of taxes everywhere, but the main conclusions on cross-country and time variations in progressivity are the same.

Where pre refers to pretax income, net refers to net-of-tax income (pretax income minus taxes), and $r = \frac{\bar{y}_{p90p100}}{\bar{y}_{p0p50}}$ is the ratio of the average income of the richest 10% to that of the poorest 50% individuals in each country-year. Positive values of γ_τ thus indicate progressive tax systems, while negative values indicate regressive tax systems.

We present a global map of tax progressivity in 2023 using this indicator in Appendix Figure A8. In the majority of countries in the world, taxes have little effect on inequality, reducing or increasing the inequality ratio r by less than 5%. The regional patterns documented in Figure 4 clearly stand out. Latin American and Eastern Europe countries have the most regressive tax systems, while Anglosphere, Western European, and Southern African countries display the most progressive tax systems.

Robustness A concern with this analysis is that this indicator of tax progressivity may not be perfectly comparable across countries. In countries with higher pretax inequality, in particular, taxes may appear mechanically more progressive (see Appendix A.2 for more details). As an alternative to this measure of "absolute" progressivity, we thus consider a complementary indicator of "normalized" progressivity. Normalized progressivity corresponds to absolute progressivity computed over a single, "normalized" distribution, which ensures that it is insensitive to differences in pretax inequality across countries. The results are similar (see Appendix A.2 and Appendix Figure A13).

3.1.2. Trends in Tax Progressivity Since 1980

Tax Progressivity Has Stagnated in Most World Regions We now turn to documenting trends in tax progressivity worldwide. To start, consider Figure 5, which plots the level and composition of taxes paid by percentile in the average country in 1980 and 2023. This figure is constructed by dividing taxes by pretax income for each percentile in each country, and then taking the population-weighted average of this indicator over all countries in the world.

Two results stand out. First, there has been an increase in worldwide taxation, which ranged from 18-22% of income in 1980, and increased to 22-26% by 2023 (including social contributions). Second, there has been no clear change in average worldwide tax progressivity since 1980; if anything, tax progressivity has declined. Overall, top-income groups face slightly higher effective tax rates than earners at the middle of the income distribution, because of the particularly progressive nature of personal income and corporate income taxes. Yet taxes are also slightly higher at the very bottom of the distribution, where consumption is high relative to pretax income and the burden of indirect taxes is thus particularly large. While direct taxes have grown (and PIT systems have become slightly more progressive), so have indirect taxes, leading to little change in average tax progressivity.

Figure 6 extends the analysis to the evolution of tax progressivity by world region from 1980 to 2023.[10] In 2023, taxes reduced inequality by about 10-15% in Anglosphere and Western European countries, left inequality essentially unchanged in Latin America, Asia, and Africa, and increased inequality by 10% in Eastern Europe. Tax progressivity has remained remarkably stable over the past decades. The one exception is Eastern Europe, which has seen a particularly pronounced and steady decline in progressivity: taxes used to be progressive in 1990 but have now become regressive.

There Has Been No Cross-Country Convergence in Effective Tax Rates Increases in average tax rates coupled with differences in progressivity imply that taxation has changed differentially for different income groups. We present more detailed results on top 1%, top 10%, and bottom 50% effective tax rates from 1980 to 2023 by world region in Appendix Figures A10, A11, and A12. Top 1% effective tax rates have declined in the Anglosphere and Eastern Europe, while they have increased rapidly in Western Europe and Latin America. By 2023, Western Europe has overtaken the Anglosphere as the region that taxes the richest the most, but the gap is even greater at the bottom of the distribution, which explains why overall tax progressivity is still

[10]Appendix Figure A9 reproduces this figure including social contributions.

higher in the Anglosphere. Eastern Europe began the post-Soviet era on a par with its Western European neighbors in terms of top-income taxation, but since then has reverted toward the global mean. Africa stands out as the only region with no significant change in taxation at all: on average, effective tax rates have remained low and stable for all income groups. All in all, there has been no clear convergence between countries in effective tax rates paid.

3.2. The Distribution of Government Transfers

We now turn to the analysis of government transfers. Figure 7 plots the average share of national income received by pretax income quintile in the form of social assistance, education, and healthcare by world region in 2023.

There are large differences across regions in the amount of transfers received by low-income groups. Total expenditure received by the poorest 20% ranges from about 1.5% of national income in Africa to 7% in Western Europe. On average, cash transfers, healthcare, and education each represent about a third of transfers received, but with substantial variations across regions. Redistribution in the form of social assistance is particularly developed in Europe, while public healthcare spending is exceptionally large in the United States (and targeted to low-income households lacking private insurance). In contrast, education and healthcare represent the bulk of redistribution in Africa and Asia.

Western European and Anglosphere countries stand out in terms of both *relative* and *absolute* progressivity: not only do they spend more on transfers, they also provide them in a more progressive way. In Asia and Africa, on the other hand, top earners receive about the same share of government transfers than the poorest quintile of the income distribution.

Appendix Figure A14 reproduces this figure when including other government expenditure distributed proportionally to posttax disposable income, which is the assumption most often

made in the DINA literature.[11] With this proportionality assumption, total transfers mechanically appear much less progressive. This is especially true in Africa and Asia, where the relative size of collective government consumption is large relative to other transfers and posttax disposable inequality is high. Accounting for other government expenditure does not significantly affect the ranking of which regions have the most progressive transfer systems, however, mainly because the size of collective government consumption varies less across countries than that of social assistance, education, and healthcare.

3.3. The Net Impact of Taxes and Transfers on Inequality

3.3.1. Cross-Country Variations in Government Redistribution

Tax-and-Transfer Systems Always Reduce Inequality, But With Large Variations Combining taxes and transfers, we provide a global map of government redistribution in Figure 8. The "extent of redistribution" is measured as the percent reduction in the top 10% to bottom 50% average income ratio before versus after taxes and transfers, as in equation (4) above.

Tax-and-transfer systems always reduce inequality: the indicator is strictly positive in all countries in the world. There are large variations in the extent of redistribution across countries, however, ranging from less than 20% in several Sub-Saharan countries to over 60% in countries such as the United States, France, Brazil, and South Africa. Overall redistribution follows clear regional patterns, being highest in Northern America, Europe, and Latin America, and lowest in Sub-Saharan African (excluding Southern Africa) and South and Southeast Asia.

Figure 9 further disaggregates redistribution in each region by plotting the net transfers received or paid by the bottom 50%, middle 40%, and top 10% as a fraction of national income.[12] In all regions of the world, tax-and-transfer systems mostly redistribute income from the top

[11] Appendix Figure A15 reproduces this figure under an alternative specification in which other expenditure is distributed as a lump sum.

[12] Appendix Figures A27 and A32 reproduce this figure with education distributed proportionally and expenditure other than social assistance, education, and healthcare distributed as a lump sum, respectively.

10% to the bottom 50%. On net, the middle 40% generally neither benefit nor lose much from the tax-and-transfer system. The net transfer received by the bottom 50% ranges from about 3% in Africa and Asia to 10-11% in the Anglosphere and Western Europe.

Transfers Account for 90% of Redistribution Combining our results on the weak progressivity of taxes and the large differences in transfers, we can expect transfers to be the dominant drivers of redistribution. We formalize this in Table 1, which reports how inequality changes before and after removing taxes and adding transfers to individual incomes. In 2023, the top 10% to bottom 50% income ratio was approximately $r = 19$ in the average country. Removing taxes barely affects inequality, while adding government transfers reduces it by over 5 percentage points. By this measure, taxes account for 10% of the effect of government redistribution on inequality, while transfers account for 90%. There are significant variations across regions: the contribution of taxes reaches about 25% in the Anglosphere, while it is negative in Eastern Europe, where taxes increase inequality. Overall, transfers largely dominate taxes in reducing inequality in almost all countries in the world.

Table 2 provides more detailed results on the redistributive impact of different categories of taxes and transfers. We calculate the progressivity of each type of tax or transfer as the percent reduction in inequality it occasions (as in equation 4 above). For instance, the statistic for personal income taxes γ_{PIT} corresponds to the percent reduction in the top 10% to bottom 50% ratio before and after removing personal income taxes from pretax income. Positive values indicate that the tax or transfer reduces inequality, while negative values indicate that it increases inequality.

The first column displays the results in the average country, taking the population-weighted average of the corresponding indicators across all countries in the world. Personal income taxes and corporate taxes each reduce inequality by about 4%, while indirect taxes increase inequality by 7%. The effect of property and wealth taxes is negligible.

The effect of transfers on inequality is significantly higher: social assistance, education, and

healthcare expenditure each reduce inequality by about 10-15%. All in all, the progressivity of personal income taxes and corporate taxes thus appears to be more or less canceled by the regressivity of indirect taxes, leading to a tax system that reduces inequality by only 3% in the average country. Meanwhile, all transfers are strongly progressive, which explains why they reduce inequality by about 25% overall.

Interesting regional variations stands out. Personal income taxes play a key role in reducing inequality in the Anglosphere and Western Europe, while indirect taxes increase inequality most in Europe and Latin America. Social assistance is the most significant driver of redistribution in Europe, while education and healthcare play a more important role in Latin America, Asia, and Africa.

3.3.2. Trends in Government Redistribution Since 1980

We now present results on trends in redistribution from 1980 to 2023. Figure 10 plots the evolution of the share of national income redistributed to the bottom 50% by region.[13] Redistribution has increased in most regions, from about 3% in 1980 to 4.5% in 2023 in the average country. This average figure hides considerable heterogeneity. Redistribution has grown rapidly in Western Europe, the Anglosphere, and Latin America, while it has completely stagnated in Eastern Europe and Africa. Overall, there is no evidence of cross-country convergence in the redistributive power of tax-and-transfer systems. If anything, Africa has lagged behind the rise of redistribution observed in developed economies.

Appendix Figure A18 reproduces this analysis with the percent reduction in the top 10% to bottom 50% income ratio operated by the tax-and-transfer system. The results are similar. In the average country, the extent of redistribution increased from about 20% to 30%.

[13]Appendix Figures A28 and A33 reproduce this figure with education distributed proportionally and expenditure other than social assistance, education, and healthcare distributed as a lump sum, respectively.

3.3.3. Government Redistribution Over the Course of Development

We conclude this section with a complementary analysis of how government redistribution varies over the course the development.

Tax Progressivity Is Uncorrelated With GDP per capita Tax progressivity varies little with development (Figure 11). The raw correlation between tax progressivity and GDP per capita is approximately $\rho = 0.08$. In other words, total taxation increases as countries develop, but there is little progressivity in the increase, and little tax progressivity overall: effective taxation on low-income individuals rises in parallel to effective taxation on the richest. Overall, the tax system appears to increase or reduce inequality by less than 10% in the vast majority of countries in the world.

Transfer Progressivity Is Positively Correlated With GDP In contrast, low-income households benefit from much greater government transfers in rich countries than in poor countries. Figure 12 plots government transfers received by the bottom 50% as a share of national income against GDP per capita.[14] The raw correlation between the two variables is $\rho = 0.63$. In Anglosphere and Western European countries, the bottom 50% receive 15-20% of national income, versus 2-6% in many African countries. Transfers thus appear to reduce inequality much more in high-income countries than in low-income countries. There are interesting exceptions, however. For instance, the bottom 50% benefit from substantially larger transfers in South Africa than in China, despite China being richer.

This positive relationship between transfers and development is not only driven by the fact that high-income countries have larger governments: high-income countries also provide more progressive transfers. Appendix Figure A16 reproduces Figure 12, but focusing on transfers received by the bottom 50% as a fraction of total public spending. There is a large

[14] Appendix Figures A29 and A34 reproduce this figure with education distributed proportionally and expenditure other than social assistance, education, and healthcare distributed as a lump sum, respectively.

positive relationship between the two variables. In many African countries, only 20-30% of government expenditure accrues to the bottom 50%, while this share reaches 40-50% in Anglosphere and Western European countries. This result is driven by two main factors. First, the distribution of social assistance, education, and healthcare tends to be more progressive in high-income countries (Figure 7). Second, high-income countries dedicate a greater fraction of their government budget to social assistance, education, and healthcare. The bulk of transfers in low-income countries corresponds to other forms of public goods, such as administration or public order and safety, which we distribute proportionally to disposable income, that is, in a highly unequal way.

Net Redistribution Is Positively Correlated with GDP Putting these two results together yields Figure 13, which plots the net transfer received by the bottom 50% as a share of national income against GDP per capita.[15] The raw correlation between overall progressivity of the tax-and-transfer system and development is $\rho = 0.56$. The net transfer received by the bottom 50% ranges from 1-2% in countries such as Ethiopia and Pakistan to 11-12% in France and the United States. There is considerable heterogeneity at each stage of development, however. For instance, redistribution is only 3% of national income in Russia compared to 12% in South Africa despite Russia being significantly richer. Appendix Figure A17 extends this analysis to the net reduction in the top 10% to bottom 50% income ratio, with similar conclusions. The reduction in inequality enabled by the tax-and-transfer system ranges from 10-20% in poorest countries to 50-60% in Europe and the United States.

High-income countries thus appear to redistribute significantly more than low-income countries, both today and in 1980. Appendix Figures A19 and A20 plot the evolution of total fiscal progressivity and net transfers received by the bottom 50% by country income group. There has been no catch-up of low-income countries in terms of redistribution—if anything, the gap between high- and low-income countries has widened. Upper middle-income countries

[15] Appendix Figures A30 and A35 reproduce this figure with education distributed proportionally and expenditure other than social assistance, education, and healthcare distributed as a lump sum, respectively.

have been catching up since the early 2000s, but this is almost entirely explained by rising redistribution in China.

3.4. Predistribution versus Redistribution: A Global Perspective

We conclude this paper with an analysis of the relationship between pretax and posttax income inequality. We start by showing that pretax inequality is the dominant driver of cross-country differences in posttax inequality. While tax-and-transfer systems do vary substantially across countries, they do not significantly alter the ranking of which countries are the most or least unequal in the world. Moving beyond this direct effect of taxes and transfers, we then provide suggestive evidence that redistribution may have significant indirect effects on pretax inequality. Accounting for this indirect effect would potentially lead to putting a much greater weight on redistributive policies in accounting for cross-country differences in inequality.

3.4.1. Pretax Versus Posttax Inequality

We start by comparing the bottom 50% share in terms of pretax national income and posttax national income in all 151 countries in 2023 (see Figure 14).[16] This comparison provides direct evidence on the role of pretax inequality ("predistribution") versus taxes and transfers ("redistribution") in shaping the final distribution of income. If cross-country differences in posttax inequality were entirely driven by taxes and transfers and pretax inequality played no role, then pretax and posttax inequality should be uncorrelated. On the contrary, if posttax inequality was entirely driven by pretax inequality, then we should expect the ranking of countries to remain exactly the same before and after accounting for taxes and transfers.

The main takeaway is that there is a very strong correlation between pretax and posttax inequality. Notwithstanding a few exceptions—in particular South Africa and the United States,

[16] Appendix Figures A31 and A36 reproduce this figure with education distributed proportionally and expenditure other than social assistance, education, and healthcare distributed as a lump sum, respectively. See also Appendix Figure A21 for comparable results on the top 10% to bottom 50% average income ratio.

which display high pretax inequality but exceptionally progressive tax-and-transfer systems—the ranking of countries in terms of pretax and posttax income inequality is almost exactly the same. This finding aligns with previous evidence focusing on Europe and the United States (Blanchet, Chancel, and Gethin, 2022). A useful way of quantifying this relationship is to run a cross-country regression of the posttax bottom 50% income share on the bottom 50% pretax income share in 2023. This regression delivers an R-Squared of about 0.8. By this measure, "predistribution" accounts for 80% of cross-country variations in income inequality, while "redistribution" accounts for 20%.

We extend this analysis to the bottom 50%, top 10%, and top 1% income shares by region in the appendix (see Appendix Figures A22, A23, and A24). The results are similar: regions with the most equal pretax income distributions generally also have the most equal posttax income distributions.

3.4.2. Redistribution Versus Pretax Inequality

A natural limitation of the previous analysis is that redistribution might indirectly affect pretax inequality. For instance, greater investments in social assistance, education, and health-care may play a key role in generating higher pretax income growth for low-income households. Answering this question rigorously would require data sources and identification strategies that go beyond those mobilized in this paper. However, it is still interesting to investigate whether countries redistributing more are also those that display the lowest levels of pretax inequality.

Appendix Figure A25 plots the net transfer received by the bottom 50% against the bottom 50% pretax income share across countries in 2023. The correlation between the two variables is positive and statistically significant ($\rho = 0.3$): countries with more progressive tax-and-transfer systems display lower levels of pretax inequality. There are many important exceptions, however, including highly unequal countries with substantial government redistribution (such as the United States and South Africa), but also equal countries with weakly progressive tax-

and-transfer systems (the majority of Eastern European countries). This modest but positive correlation is again consistent with previous evidence focusing on Europe and the United States (Blanchet, Chancel, and Gethin, 2022). We also stress that this relationship is not fully robust to using alternative indicators of pretax inequality and redistribution.[17]

Based on this evidence, we conclude that the evidence on redistribution determining pretax inequality is mixed. Taxes and transfers could well contribute to indirectly shaping pretax inequality, but the magnitude and drivers of these effects remain to be better understood. In any case, there are many important exceptions that suggest that redistribution alone is likely to be insufficient to reduce inequality. For instance, redistribution is almost four times larger in South Africa than in India, yet South Africa displays dramatically higher levels of pretax inequality. Similarly, Latin American countries are characterized by high levels of pretax inequality at the same time as very progressive tax-and-transfer systems.

4. Conclusion

In this paper, we have constructed new estimates of the distributional incidence of taxes and transfers in 151 countries from 1980 to 2023. Combining newly assembled data on the structure and progressivity of tax-and-transfer systems, we derived measures of redistribution that are consistent, comparable across countries and over time, and successful at reproducing results from previous work covering a more limited number of countries.

Drawing on this database, we have uncovered a number of new stylized facts. Taxes do not significantly increase or decrease inequality in the majority of countries in the world. Anglosphere countries display the most progressive tax systems, while taxes tend to increase inequality in many Latin American and Eastern European countries due to the prevalence of indirect taxation. Because transfers strongly benefit low-income households, however, tax-

[17] See Appendix Figure A26: the correlation between the extent of redistribution and the bottom 50% pretax income share is essentially zero.

and-transfer systems always reduce inequality. They do so much more in high-income than in low-income countries, mainly because the former display larger welfare states, but also because they better target government transfers towards low-income households. There has been little cross-country convergence in redistribution. If anything, the gap has widened: from 1980 to 2023, the share of national income transferred to low-income households increased rapidly in Western Europe and the Anglosphere but stagnated in Africa. As a result, taxes and transfers have done little to change the global picture of inequality. In a static sense, predistribution matters demonstrably more than redistribution, explaining about 80% of cross-country variations in posttax income inequality.

These results call for future research in at least three dimensions. First, we still lack a good understanding of the progressivity of many types of transfers. While we showed that our results are robust to polar assumptions on the distributional incidence of public services and collective government consumption, much remains to be understood and conceptualized when its comes to who benefits from them. This could have significant implications for measured levels and trends in redistribution, given the large size of these transfers.

Second, more theoretical and empirical research is needed on the relationship between predistribution and redistribution. While our correlational analysis was not conclusive, further work could explicitly model the role of specific policies, such as education systems or social assistance, in shaping the long-run evolution of the pretax income distribution.

Third, there remains a need to better understand the drivers of cross-country and historical variations in redistribution. We restricted our analysis to how fiscal progressivity varies with GDP per capita, yet substantial differences exist at each level of development. This result opens the way for examining other factors, such as political institutions, culture, or historical processes in shaping the progressivity of government policies.

We hope that the new database constructed in this paper will contribute to encouraging research in these multiple directions.

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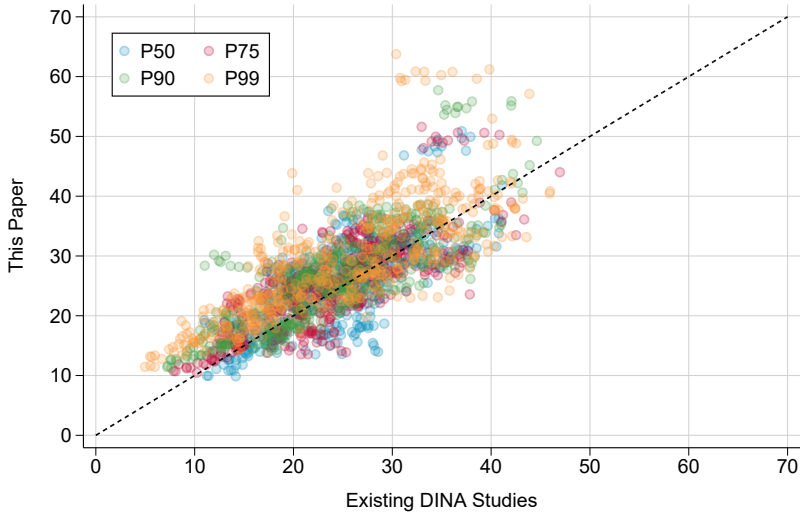
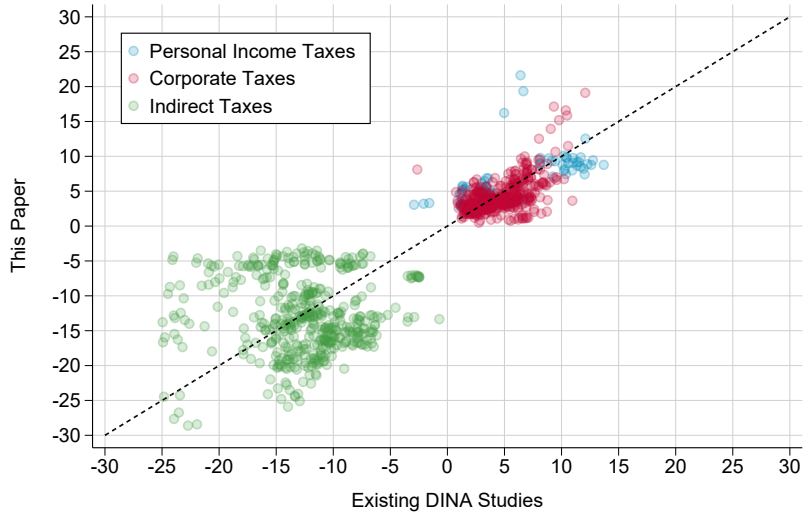
Figure 1 – Validation: Comparison With Existing DINA Studies, Overall Tax Progressivity

(a) Comparison of Effective Tax Rates



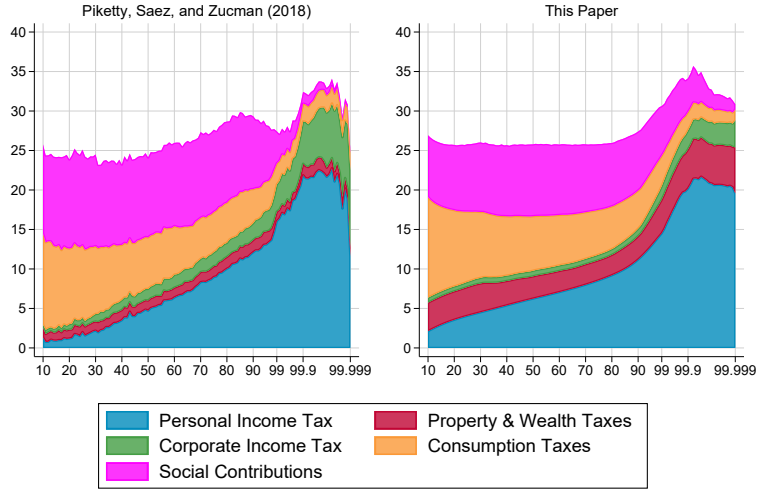
(b) Comparison of Tax Incidence by Type of Tax



Notes. Panel (a) compares estimates of effective taxes paid at the 50th, 75th, 90th, and 99th percentiles of the pretax income distribution as a share of pretax income in existing DINA studies with those estimated in this paper. Each point represents a country-year-percentile. Panel (b) compares estimates of the distributional incidence of personal income taxes, corporate taxes, and indirect taxes in existing DINA studies with those estimated in this paper. Each point represents a country-year. Tax incidence is measured as the percent reduction in the top 10% to bottom 50% average income ratio before and after deducting a given tax from pretax incomes.

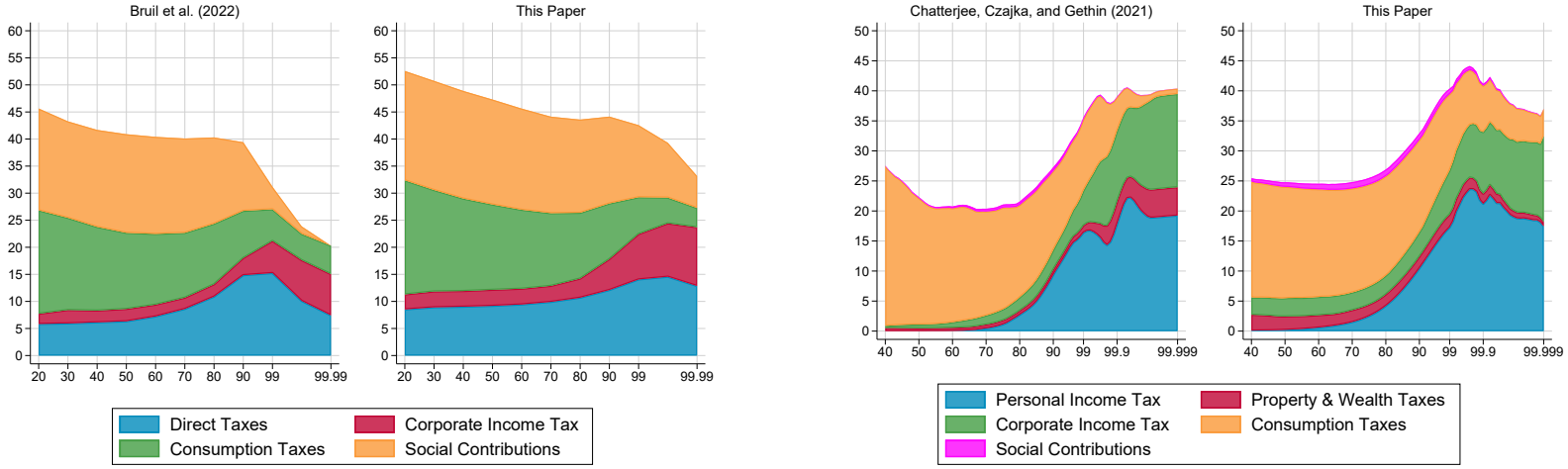
Figure 2 – Validation: Comparison With Existing DINA Studies, Effective Tax Rates

(a) United States



(b) Netherlands

(c) South Africa

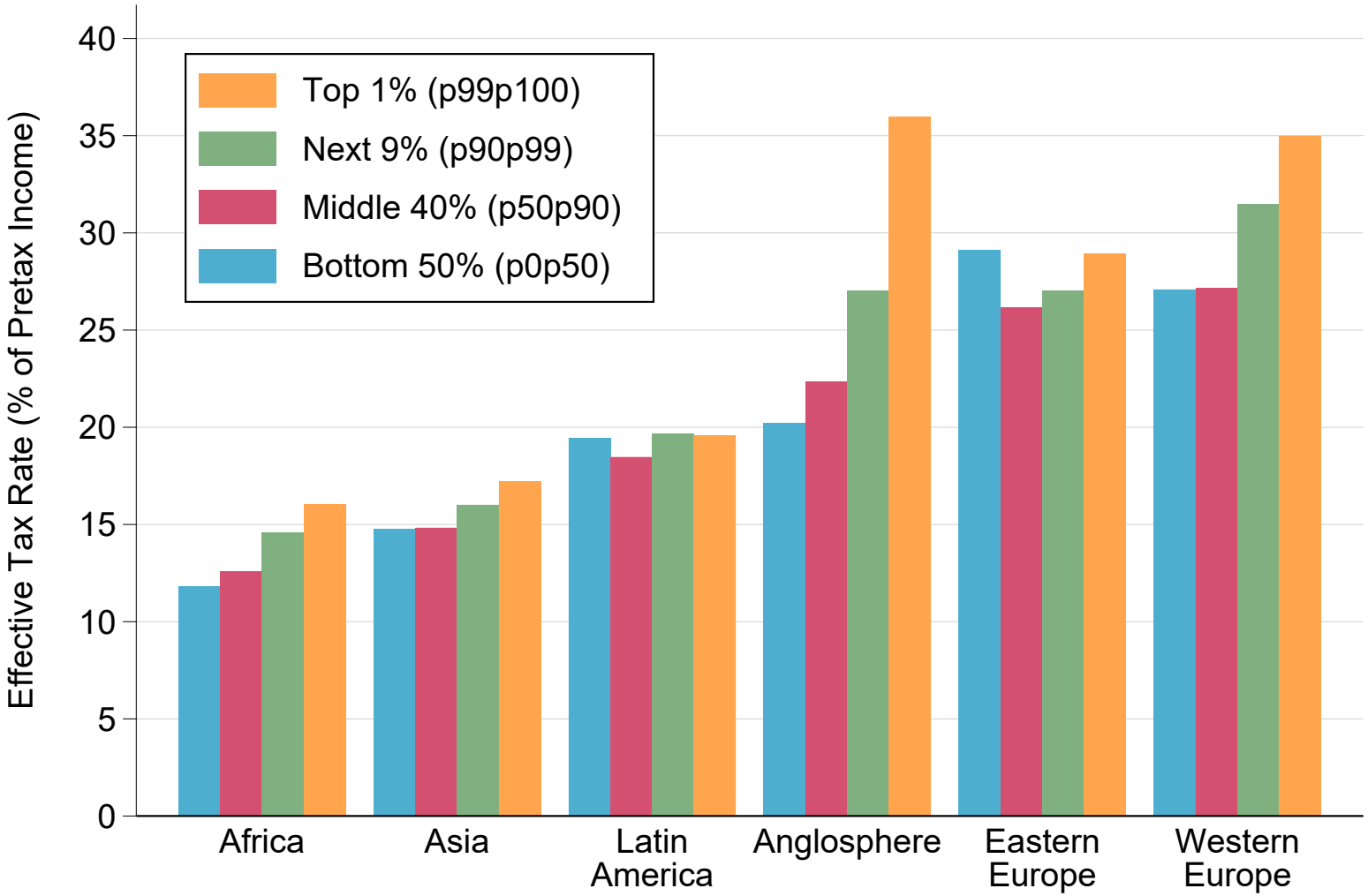


Notes. The figure compares estimates of effective tax rates by pretax income percentile in existing DINA studies with those estimated in this paper. Existing DINA studies are Piketty, Saez, and Zucman (2018) for the United States, Bruil et al. (2022) for the Netherlands, and Chatterjee, Czajka, and Gethin (2021) for South Africa.

Figure 3 – Tax Revenue by World Region, 1980-2023

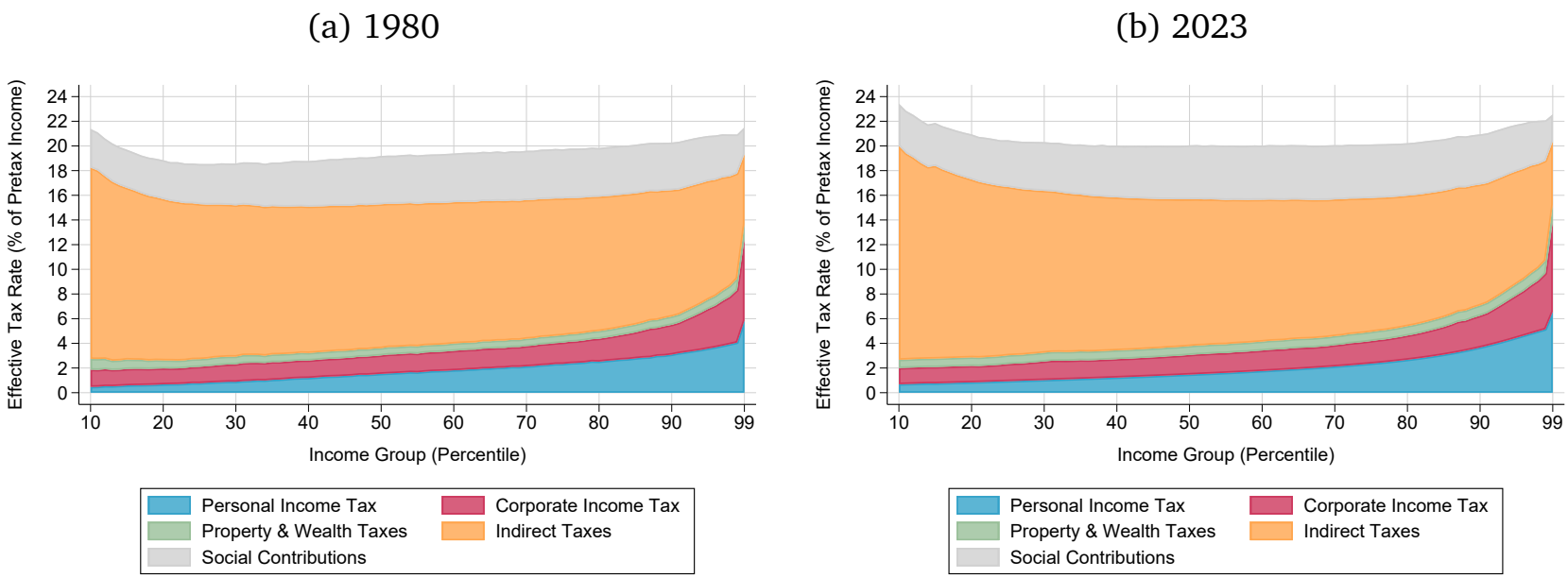
Notes. The figure plots the level and composition of tax revenue as a share of national income by world region. Total tax revenue was about 15% of national in the average African country in 2023, compared to 50% in Western Europe (including social contributions). Population-weighted averages of tax revenue aggregates in each country.

Figure 4 – Effective Tax Rate by Income Group and World Region, 2023



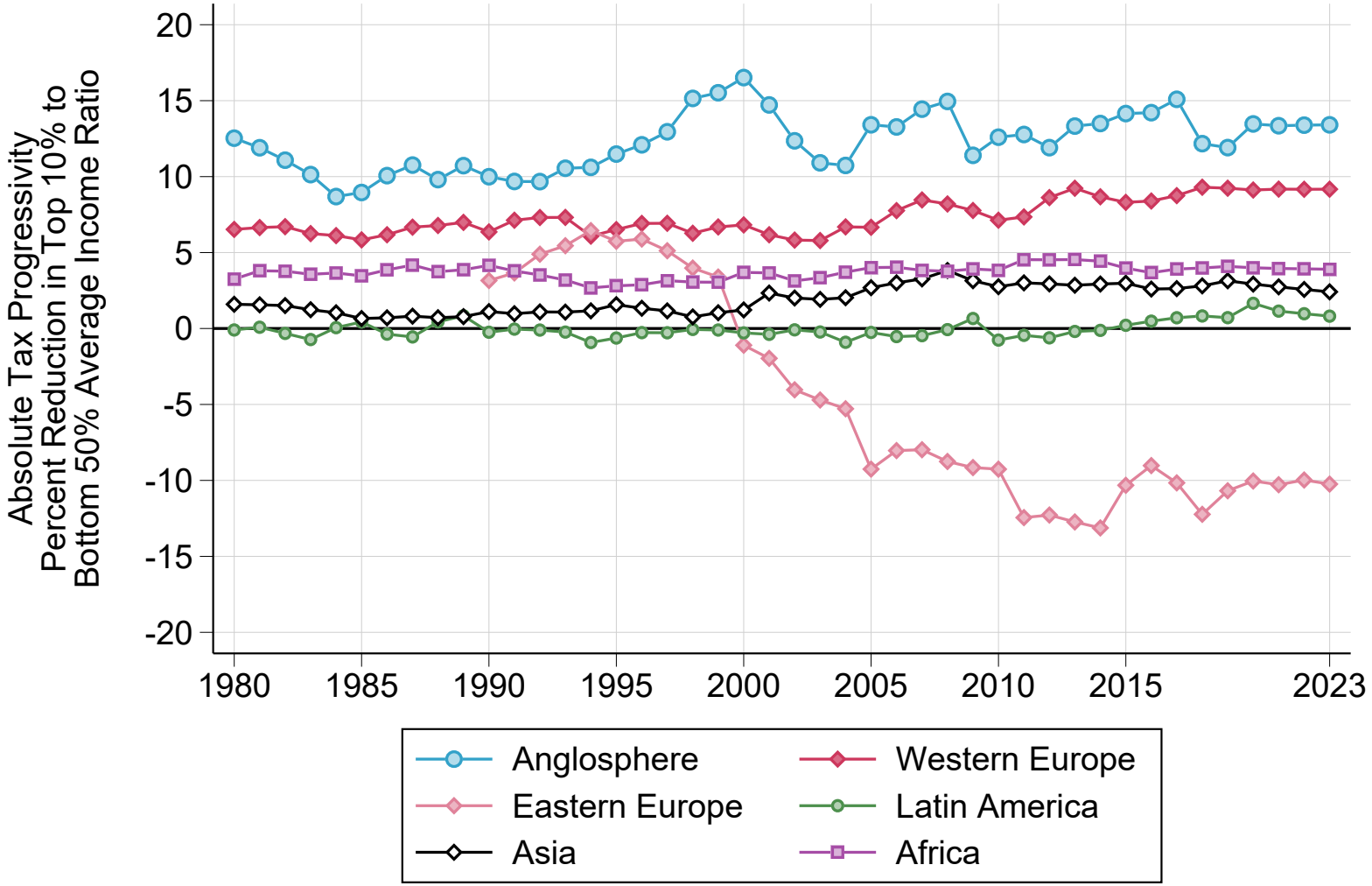
Notes. The figure plots taxes paid as a share of pretax income by income group and world region in 2023. Taxes paid by the top 10% amounted to about 35% of pretax income in the average Western European country. Population-weighted averages of effective tax rates by percentile in each country. Taxes exclude social contributions.

Figure 5 – Composition of Taxes Paid by Percentile, 1980-2023: World Average



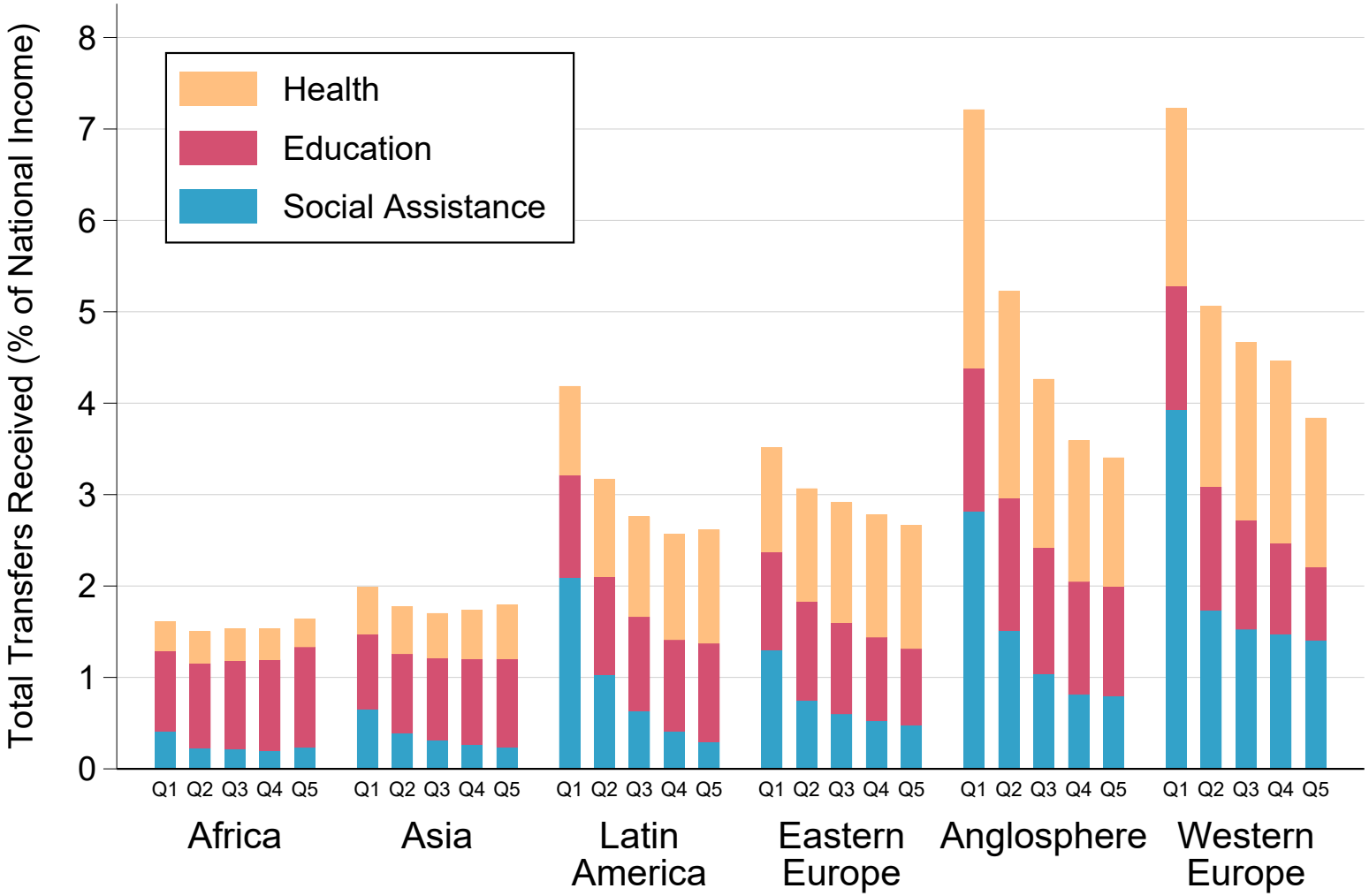
Notes. The figure plots the level and composition of taxes paid by percentile as a share of pretax income in 1980 and 2023 in the average country (population-weighted averages of effective tax rates by percentile in all countries in the world). Taxes paid by the top 1% were about 22% of pretax income in 2023.

Figure 6 – Tax Progressivity by World Region, 1980-2023:
Percent Reduction in Top 10% to Bottom 50% Average Income Ratio (Pretax versus Net-of-tax Income)



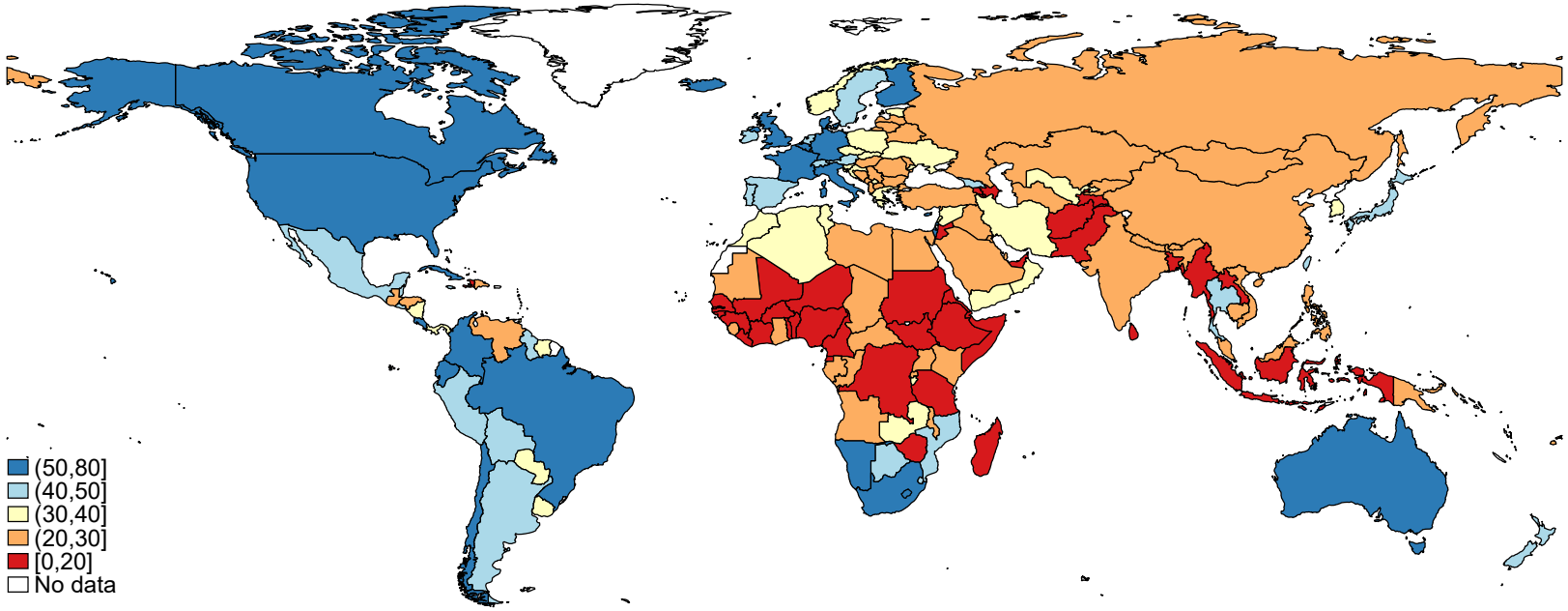
Notes. The figure plots the evolution of tax progressivity by world region, measured as the percent reduction in the top 10% to bottom 50% average income ratio before versus after removing taxes from pretax incomes. In 2023, taxes reduced inequality by about 10% in Western Europe, while they increased inequality by 10% in Eastern Europe. Taxes exclude social contributions. Population-weighted averages of tax progressivity in each country.

Figure 7 – Government Transfers Received by Income Quintile and World Region, 2023



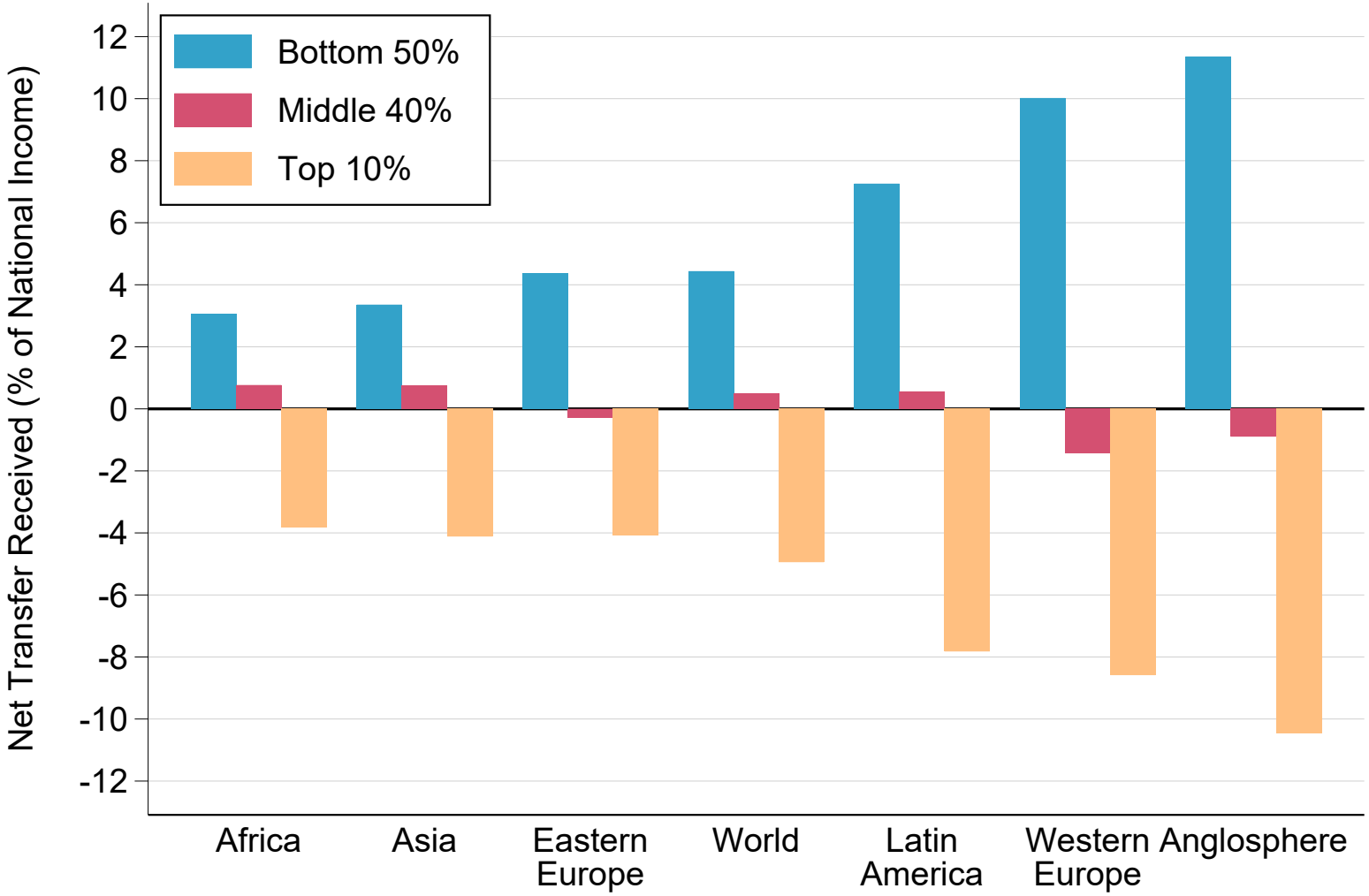
Notes. The figure plots social assistance, education, and health transfers received by pretax income quintile, expressed as share of national income, by world region. In 2023, the bottom 20% received about 1.5% of national income in transfers in the average African country, compared to 7% in Western Europe. Population-weighted average of transfers received by quintile in each country.

Figure 8 – A Global Map of Redistribution
Percent Reduction in Top 10% to Bottom 50% Income Ratio, Pretax - Posttax



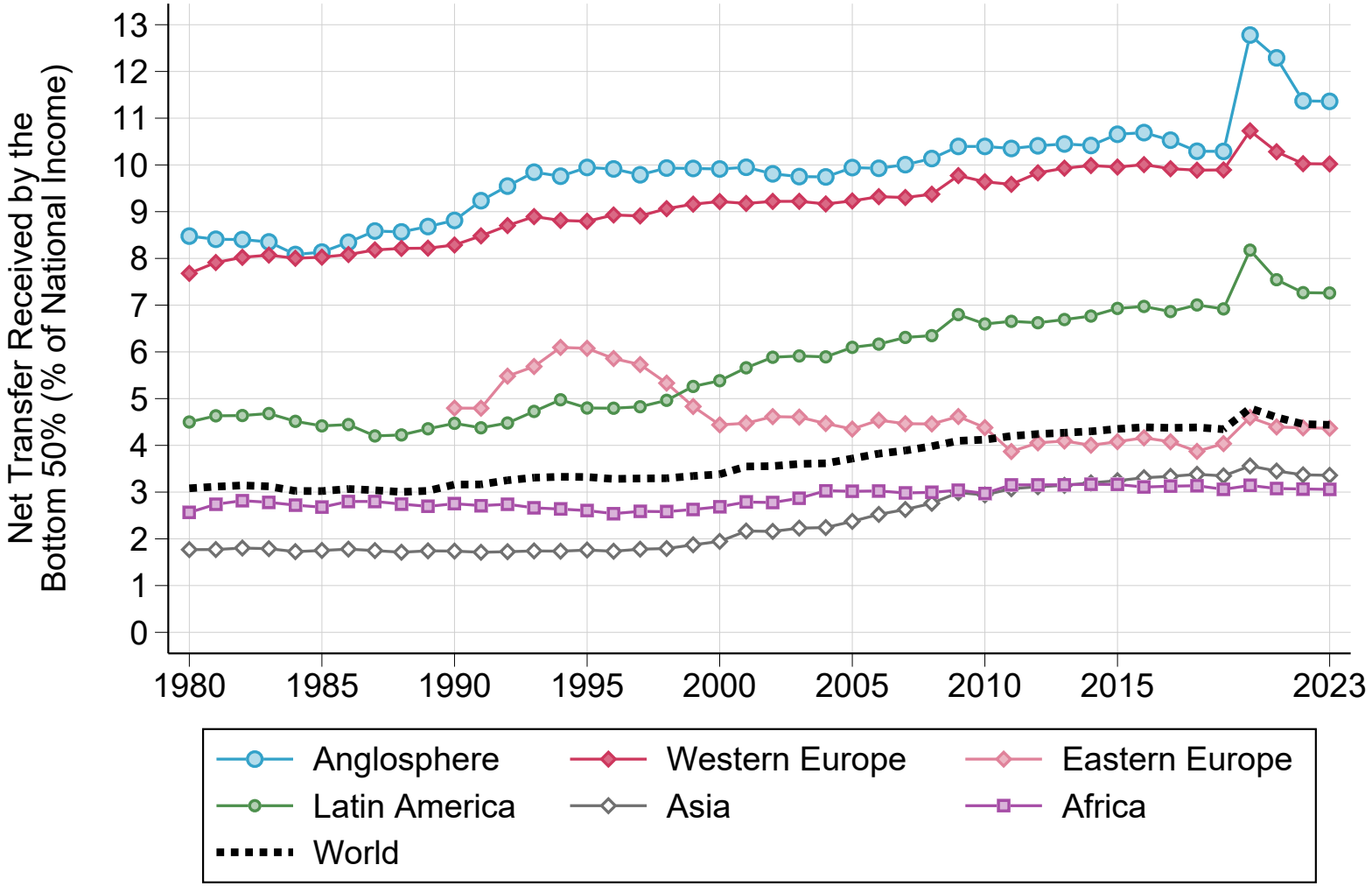
Notes. The figure maps redistribution around the world, measured as the percent reduction in the top 10% to bottom 50% average income ratio when moving from pretax income to posttax income. Taxes and transfers reduce inequality by less than 20% in many Sub-Saharan African countries, compared to over 50% in the United States. Posttax income equals pretax income, minus all taxes, plus all transfers.

Figure 9 – A Global Map of Redistribution: Net Transfers Operated by the Tax-and-Transfer System Between Pretax Income Groups, 2023



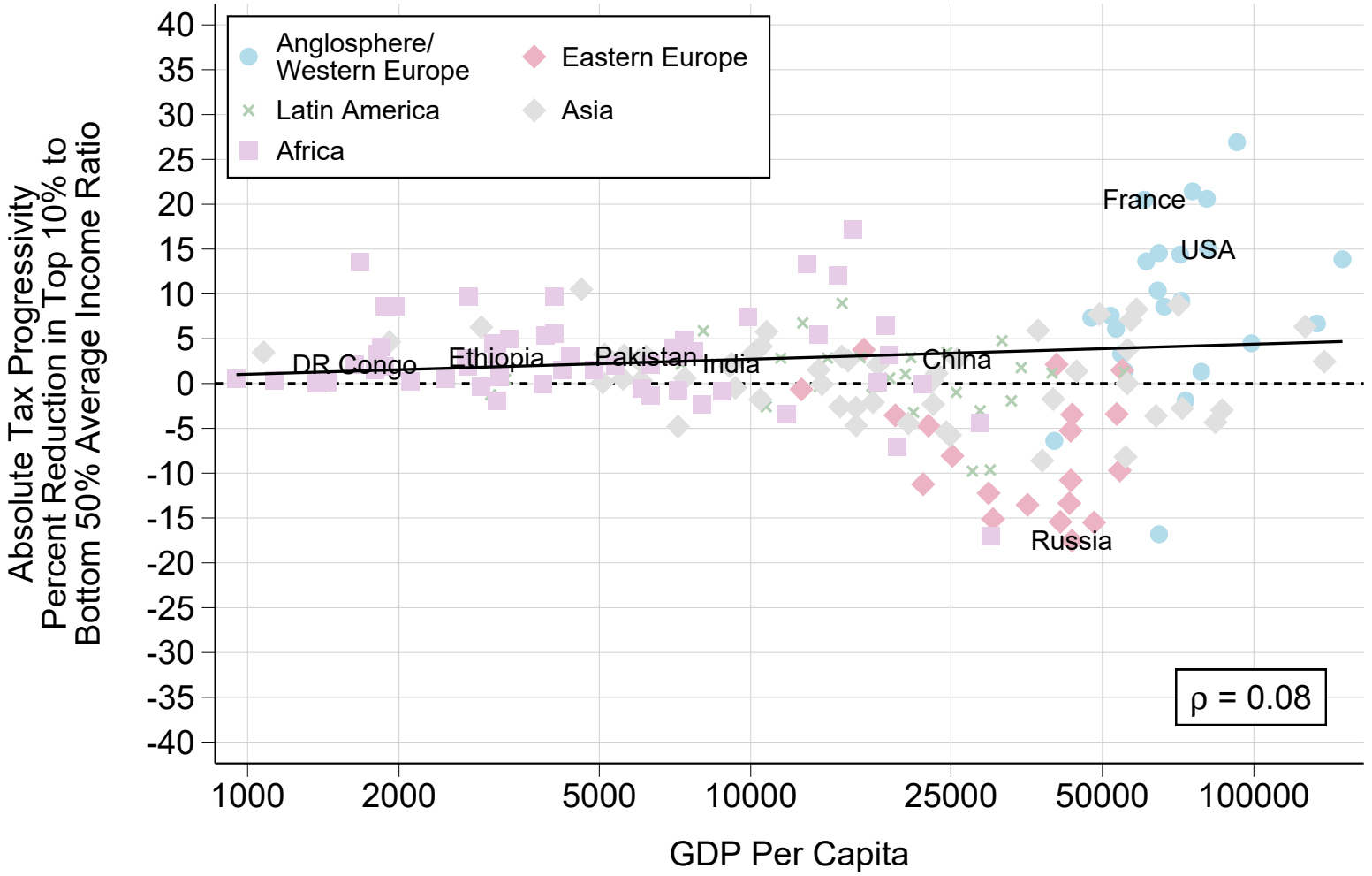
Notes. The figure plots the net redistribution operated by the tax-and-transfer system between the bottom 50%, the middle 40%, and the top 10%, expressed as a share of national income, by world region. In 2023, the net transfer received by the bottom 50% was about 3% in Africa, compared to 11% in the Anglosphere. Net transfers equal all transfers received minus all taxes paid. Population-weighted averages of net transfers received by income group in each country.

Figure 10 – Redistribution by World Region, 1980-2023:
Net Transfer Received by the Bottom 50% (% of National Income)



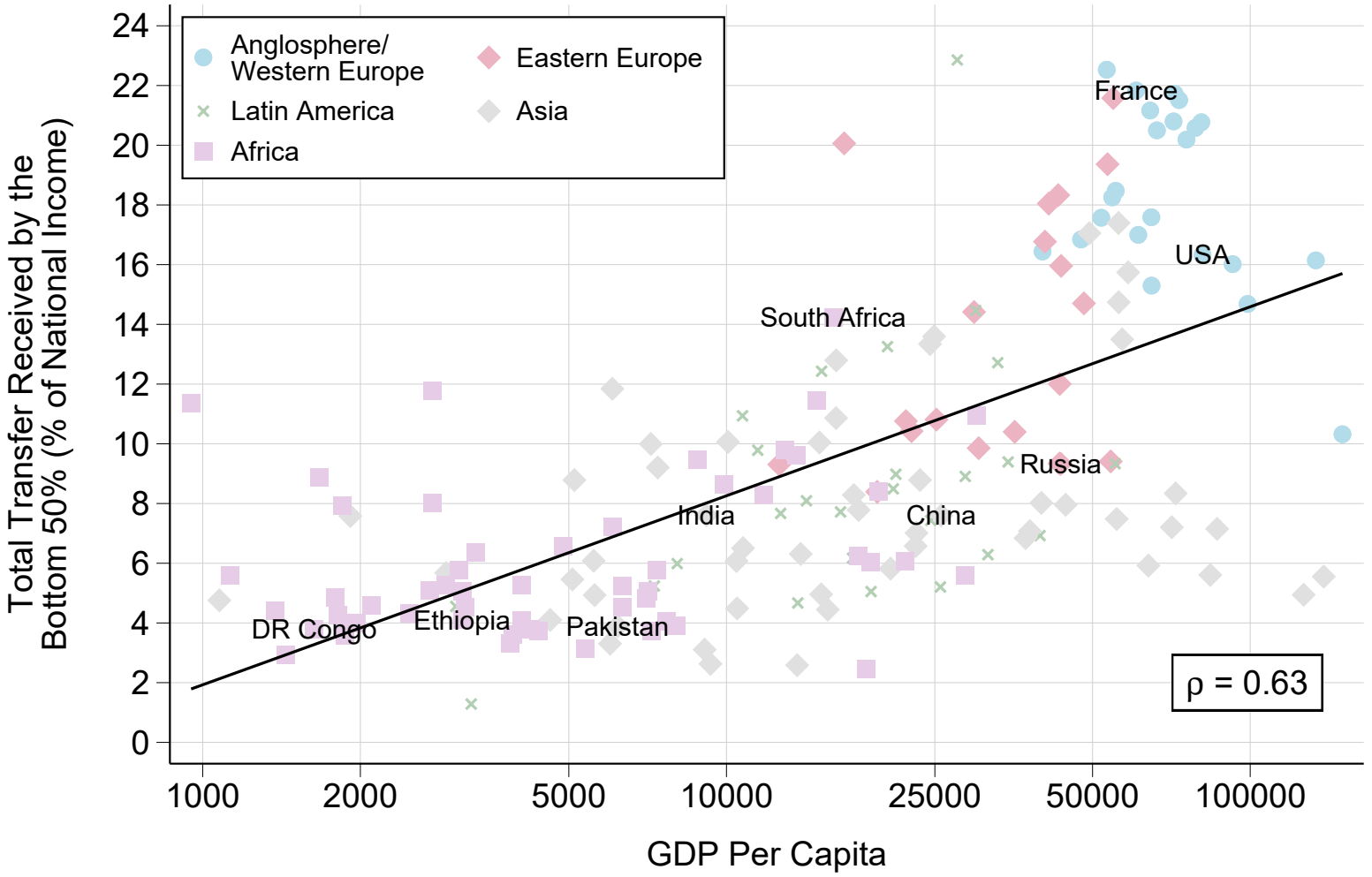
Notes. The figure plots the evolution of the net transfer (total transfers received minus total taxes paid) received by the bottom 50% by world region, expressed as a share of national income. The net transfer received by the bottom 50% has increased from about 3% to 4.5% of national in the average country. Population-weighted averages of net transfers received in each country.

Figure 11 – Tax Progressivity Over the Course of Development:
Percent Reduction in Top 10% to Bottom 50% Average Income Ratio (Pretax versus Net-of-tax Income)



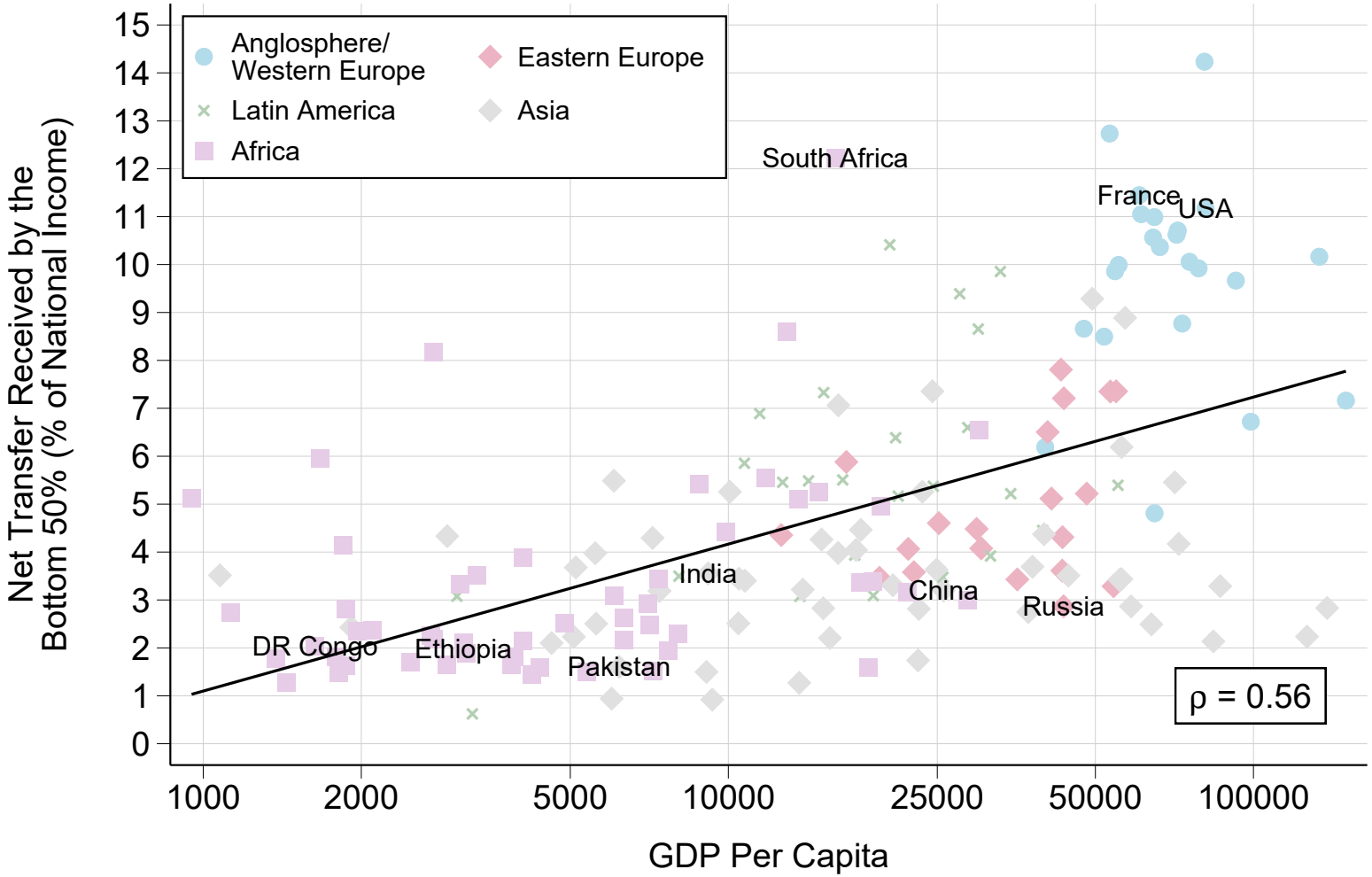
Notes. The figure plots tax progressivity against GDP per capita in 2023. Tax progressivity is measured as the percent reduction in the top 10% to bottom 50% average income ratio before versus after removing taxes from pretax incomes. Richer countries do not have significantly more or less progressive tax systems than poorer countries. GDP per capita in 2023 PPP USD. Taxes exclude social contributions.

Figure 12 – Transfer Progressivity Over the Course of Development:
Total Transfer Received by the Bottom 50% (% of National Income)



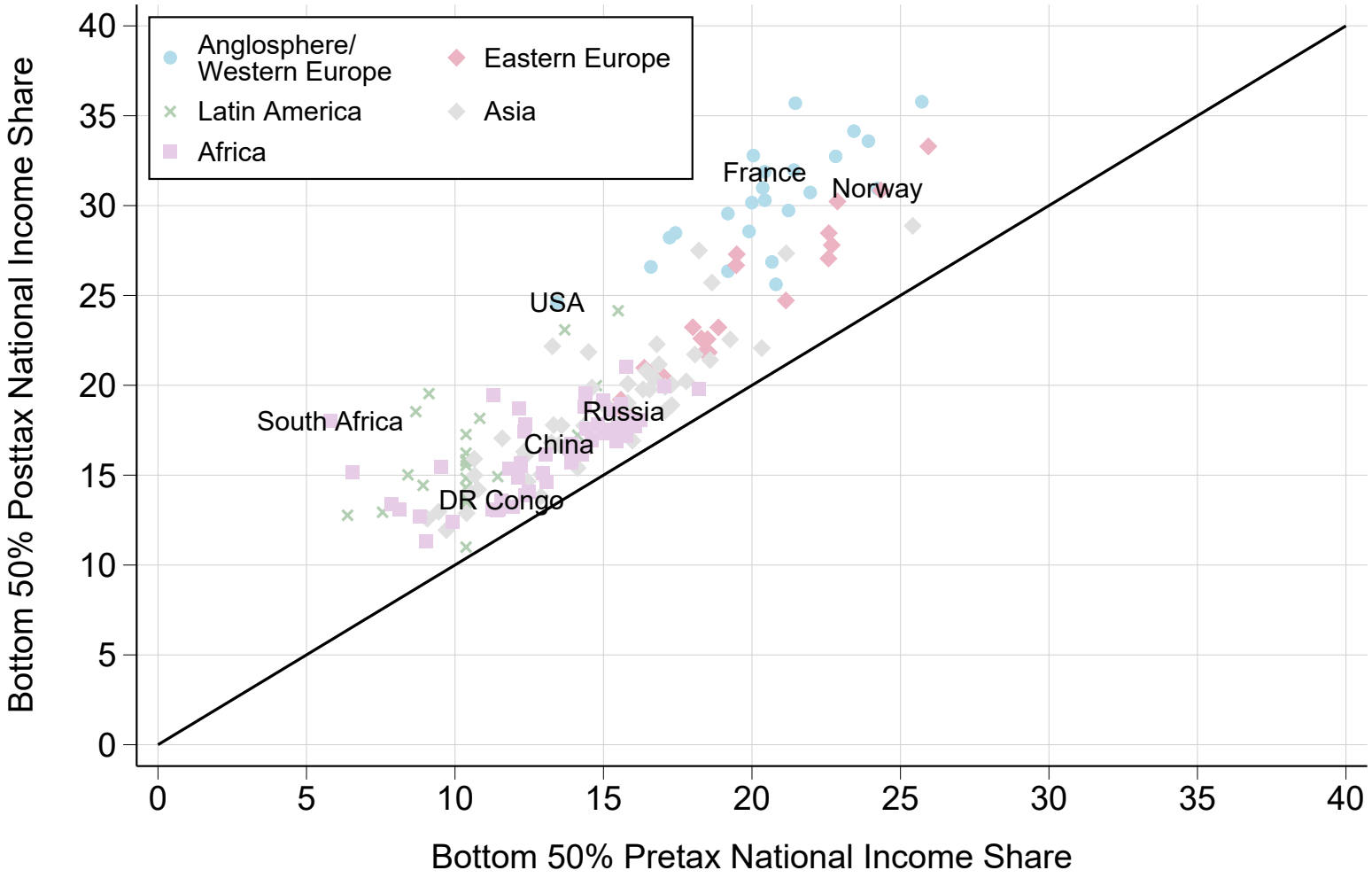
Notes. The figure plots transfer progressivity against GDP per capita in 2023. Transfer progressivity appears strongly positively correlated with GDP per capita. Transfer progressivity is measured as total transfers received by the bottom 50% expressed as a share of national income. GDP per capita in 2023 PPP USD. Taxes exclude social contributions.

Figure 13 – Extent of Redistribution Over the Course of Development:
Net Transfer Received by the Bottom 50% (% of National Income)



Notes. The figure plots the extent of redistribution against GDP per capita in 2023. Redistribution appears strongly positively correlated with GDP per capita. The extent of redistribution is measured as the net transfer (total transfers received minus total taxes paid) received by the bottom 50% expressed as a share of national income. GDP per capita in 2023 PPP USD. Taxes exclude social contributions.

Figure 14 – Predistribution versus Redistribution:
Bottom 50% Pretax versus Posttax National Income Shares by Country, 2023



Notes. The figure compares the bottom 50% pretax and posttax income share across countries in 2023. Posttax inequality is lower than pretax inequality in all countries, but cross-country differences in inequality appear very similar across both concepts. Posttax income equals pretax income minus all taxes paid plus all transfers received.

Table 1 – Extent of Redistribution by World Region: the Dominant Role of Transfers

	Top 10% / Bottom 50% Average Income Ratio			Extent of Redistribution: Percent Reduction in Inequality		
	Pretax Income	After Taxes	After Taxes & Transfers	Through Taxes	Through Taxes & Transfers	Tax Share of Redistribution
Africa	19.8	18.8	14.0	3.9%	23.8%	16.4%
Anglosphere	15.1	13.0	6.4	13.4%	57.2%	23.5%
Asia	18.0	17.6	13.3	2.4%	25.9%	9.3%
Eastern Europe	12.3	13.8	9.2	-10.2%	27.0%	-38.0%
Latin America	31.5	31.1	15.3	0.8%	50.1%	1.6%
Western Europe	8.9	8.1	4.4	9.2%	49.7%	18.5%
World Average	18.6	18.1	12.6	3.0%	30.5%	9.9%

Notes. The table reports the top 10% to bottom 50% income ratio and the extent of redistribution by world region for different income concepts. Taxes reduce inequality much less than transfers in all countries. In the average country, taxes account for 10% of overall redistribution, while transfers account for 90%. Population-weighted averages of indicators estimated in each country. After taxes: top 10% to bottom 50% average income ratio in terms of net-of-tax income (pretax income minus all taxes). After taxes and transfers: top 10% to bottom 50% average income ratio in terms of posttax income (pretax income minus all taxes plus all transfers). Tax share of redistribution: ratio of the extent of redistribution through taxes to the extent of redistribution through taxes and transfers.

Table 2 – Extent of Redistribution by World Region: Decomposition by Tax and Transfer, 2023

	World Average	Anglosphere	Western Europe	Eastern Europe	Latin America	Asia	Africa
Personal Income Taxes	4.3%	13.1%	14.1%	3.7%	4.5%	3.1%	3.0%
Corporate Taxes	3.6%	2.8%	3.3%	3.8%	3.8%	3.9%	3.1%
Property & Wealth Taxes	0.4%	2.3%	1.4%	0.6%	0.4%	0.3%	0.0%
Indirect Taxes	-6.7%	-7.6%	-14.6%	-20.3%	-10.0%	-5.8%	-3.0%
Social Contributions	-1.1%	-3.3%	-3.1%	-7.1%	-0.7%	-0.8%	0.2%
All Taxes	3.0%	13.4%	9.2%	-10.2%	0.8%	2.4%	3.9%
Social Assistance	10.2%	23.6%	23.0%	9.6%	24.7%	7.5%	5.3%
Education	13.9%	19.1%	13.2%	11.8%	22.0%	12.5%	13.9%
Healthcare	10.2%	27.9%	17.8%	12.9%	20.5%	7.5%	6.2%
All Transfers	25.8%	46.9%	39.1%	26.3%	44.6%	21.9%	19.8%

Notes. The table reports the percent reduction in the top 10% to bottom 50% income ratio before and after removing specific taxes or adding specific government transfers to pretax income. For instance, the top row reports the percent reduction in inequality resulting from removing personal income taxes from individual incomes. In the average country, the personal income tax reduces inequality by 4%, while social assistance transfers reduce inequality by 10%. Population-weighted averages of indicators in each country.

Supplementary Online Appendix

A. Additional Methodological Details

A.1. Distribution of Personal Income Taxes

This section provides more details on the methods and data sources used to estimate the distribution of personal income taxes.

In the case of the personal income tax (PIT), the only tax units that pay any PIT are those whose income places them above the personal income tax exemption threshold. We retrieve these exemption thresholds for more than 90 countries from Jensen (2022), and retrieve the missing country-years from Bachas et al. (2022). Bachas et al. (2022) impute the exemption threshold for country-years missing from Jensen (2022) in a way that is consistent with the findings of the latter study, which discovered that the PIT exemption threshold (expressed as a percentile of the income distribution) falls with rising per capita income, across countries and over time.

Starting from the PIT exemption threshold, we simulate the structure of personal income tax incidence using statutory rate schedules from the World Tax Indicators (WTI) database (see Peter, Buttrick, and Duncan, 2010). This database parameterizes the progressivity of the income tax structure. It provides information on the average and marginal statutory income tax rates at several points of the pretax income distribution: at the average income, then at two and three and four times that level, and finally the top marginal tax rate. While the WTI covers 189 countries, it does not cover years beyond 2005, so we extend the database with inputs from Strecker (2021) and Vegh and Vuletin (2015, updated 2023), the latter of which can also be used to corroborate top marginal tax rates from WTI. For the remaining country-years (and to check robustness) we retrieve statutory (marginal) rates schedules from

Ernst & Young (2006-23) and PwC (2023) and similar sources online, including national tax authorities' legislative documents and independent scholarly accounts. From this basis, we can approximate a continuous schedule of statutory income tax incidence. We assign the statutory tax rate as zero at the exemption threshold K, rising to the top marginal tax rate at *p99.999p100* (the highest g-percentile), with kink points at the rates observed in WTI. Rates are interpolated linearly between each observed value.

Note that we also distinguish between individualized and joint personal income taxation systems: Some countries tax married couples together (or allow tax units this option), and some countries tax individual incomes separately. The former, joint taxation, conforms naturally to the benchmark WID pretax DINA income concept, as these distributions are estimated for "equal-split adults" (where households' total income is split equally among all adult members). However, where PIT systems tax individual incomes, we must transform the WID pretax income distribution from that of "equal-split" adults to that of "individualized" adults.[18] We do this by way of microdata from the International Labour Organization (2020), whose universe of labor force survey microdata represents more than 100 countries since the 1990s. For countries whose PIT systems are individual but for which no (household-identified, individual) income survey microdata exists, we use "nearest-neighbor matching" to simulate the effect, matching the microdata from a selected neighboring country. In this way, we are able to estimate the ratio of individualized income to equal-split income, across the g-percentile distribution, and to easily move back-and-forth between equal-split and individualized income distributions.

After we assign taxes to individuals, we can transform the taxes paid by each household—from an effective rate on individualized income, to an effective rate on equal-split income. For example, for a married couple in an individualized tax system, earning two different levels of income and being taxed at two different rates, this transformation adds up both the

[18]Note that individualized income distributions are more unequal than equal-split income distributions. This is so by construction among top earners (only if all top earners were married to each other would their equal-split incomes equal their individualized incomes), and generally true throughout the distribution. The left tail of the individualized distribution contains many more observations with zero incomes (non-working spouses).

incomes earned and the taxes paid by the couple, then divides these by two for the uniform effective rate on their (identical, by construction) equal-split incomes. For countries whose PIT system is on individuals' incomes rather than taxing married couples jointly, this ILO-microdata transformation effectively moves an individualized income tax schedule onto the equal-split income distribution, with effective tax rates transformed accordingly.

Finally, we account for the empirical regularity that capital income is taxed less than labor income in PIT systems worldwide. For each country for which we observe tax revenue aggregates (and statutory PIT rates on taxable income), we also tabulate the country's tax rates toward dividends and capital gains. While there are nuances within many tax administrations' policies on the taxability of dividends and capital gains, we simplify concepts for tractability on tax rates and tax bases in a DINA framework: our benchmark concept for the rate of dividend taxation is the rate at which a resident is taxed on dividends from domestic companies. Similarly, our benchmark concept for the rate of capital gains taxation is the rate at which a resident is taxed on gains from selling shares in domestic companies. We also exclude imputed rents, government operating surplus, and indirect taxes from the PIT tax base. Social insurance benefits received are taxed as labor income.

The main takeaway of this microsimulation is that much of capital income is untaxed, or taxed at a lower rate. Taxable income is less than total pretax income (in the DINA sense), and particularly so for the top g-percentiles where capital income is concentrated.

The elements of the PIT system, in this simplified simulation, can be summarized as follows. We estimate the tax rate τ for any g-percentile p and its corresponding income level z:

$$\tau(z)_{PIT} = \sum_{j=1}^{3} \frac{\tau_j z_j}{z}$$

where j refers to three types of PIT taxes (with taxable incomes z_j taxed at rate τ_j): on labor

income (employee compensation and mixed income[19]), on dividends, and on capital gains.

After building this statutory rate schedule, we fit its "predicted" revenues to actual PIT revenues received observed in Bachas et al. (2022). In this way, we simulate statutory rates in order to estimate effective tax rates throughout the distribution. It is important to note that the "predicted" statutory rates above do not match—but rather are proportional to—the effective rates we estimate. This mismatch between statutory and effective rates is to be expected, and can be true for a number of reasons that we do not observe in aggregate data (e.g., tax evasion or avoidance, unobserved deductions, allowances, exemptions and tax breaks, etc.).

We validate our estimates against existing measures of the distributional incidence of personal income taxes by DINA pretax income in the United States (Piketty, Saez, and Zucman, 2018). Appendix Figure A6 plots effective personal income taxes at percentile p50, p90, and p99 from 1980 to 2018. Our simplified simulation provides an excellent fit, and our simulated effective PIT rates rarely differ by more than half of a percentage point, matching on both levels and trends.

A.2. Measures of Tax Progressivity

In our main analysis, we summarize the progressivity of taxes with the percent reduction in inequality, measured as the top 10% to bottom 50% average income ratio, before and after removing taxes from individual incomes:

$$\gamma_\tau = \frac{r_{pre} - r_{net}}{r_{pre}}$$

After some algebra, this absolute progressivity statistic γ_τ reduces to:

$$\gamma_\tau = \frac{\overline{ETR}_{p90p100} - \overline{ETR}_{p0p50}}{1 - \overline{ETR}_{p0p50}} \tag{5}$$

[19]All self-employment income is treated as labor income for the purposes of this PIT simulation, as is the case in most PIT systems.

Since γ_τ is a function only of the ETR profile, it is independent of the pretax inequality ratio r_{pre}. We note, however, that the "naive" γ_τ of equations (4) and (5) is sensitive to variations in the pretax income distribution *within* the top 10% or bottom 50% shares, i.e., different distributions of *p90p100* or *p0p50* incomes that would still deliver the same *average* income for the top 10% or bottom 50% shares, respectively.

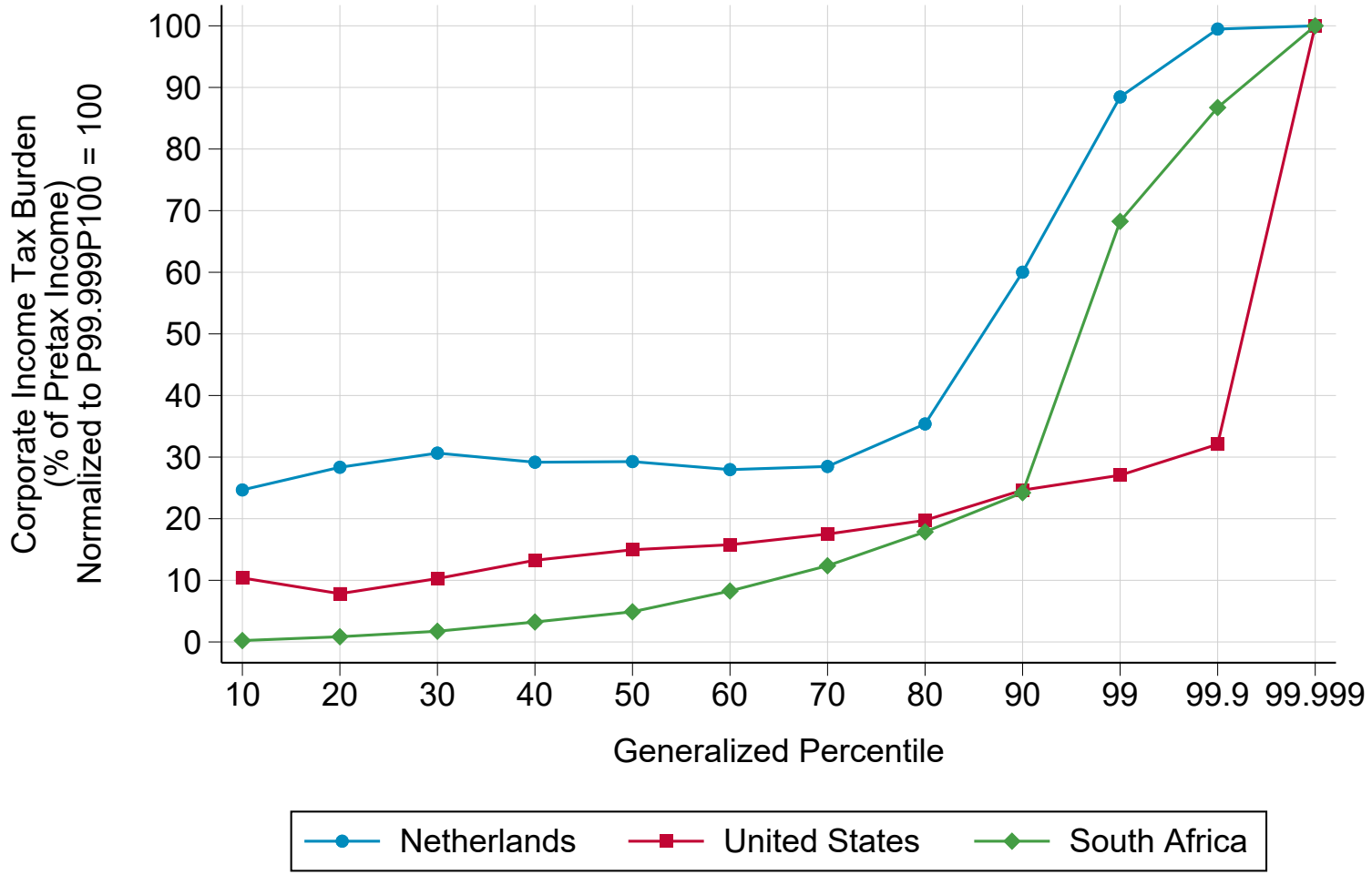
To see why, imagine a monotonically increasing ETR profile within the bottom 50% of earners, e.g., from $ETR = 0\%$ at *p0* to $ETR = 10\%$ at *p50*, and a steeply increasing income profile within the same bottom 50% of earners, such that most of the income of the bottom 50% is near *p50*. In this case, the average ETR of the bottom 50% of earners would be close to 10% (the ETR at *p50*). By contrast, if the income distribution were closer to flat within the bottom 50%, the same ETR profile would deliver an average ETR closer to 5%. The redistribution ratio would be higher in latter case (where the average ETR of the bottom 50% is lower). The same idea holds for the top of the distribution *p90p100*. Intuitively, we would prefer a progressivity statistic that delivers the same results when applying a given ETR profile to any pretax income distribution—and even robust to distributional variance within *p0p50* or *p90p100*.

To test sensitivity and resolve this potential source of bias, we normalize pretax income distributions across all countries and years. Following the literature from Kakwani (1977) through Gerber et al. (2020), we assign the arbitrary income distribution $y_p = p^2$, a distribution whose inequality ratio r_{pre} happens to be close to the median value observed in our data. From this normalized pretax distribution, we calculate the net-of-tax distribution, as always, by subtracting taxes according to each country-year's observed ETR profile. Appendix Figure A13 presents the results of this exercise. The results are almost identical to those of Figure 6.

B. Additional Figures and Tables

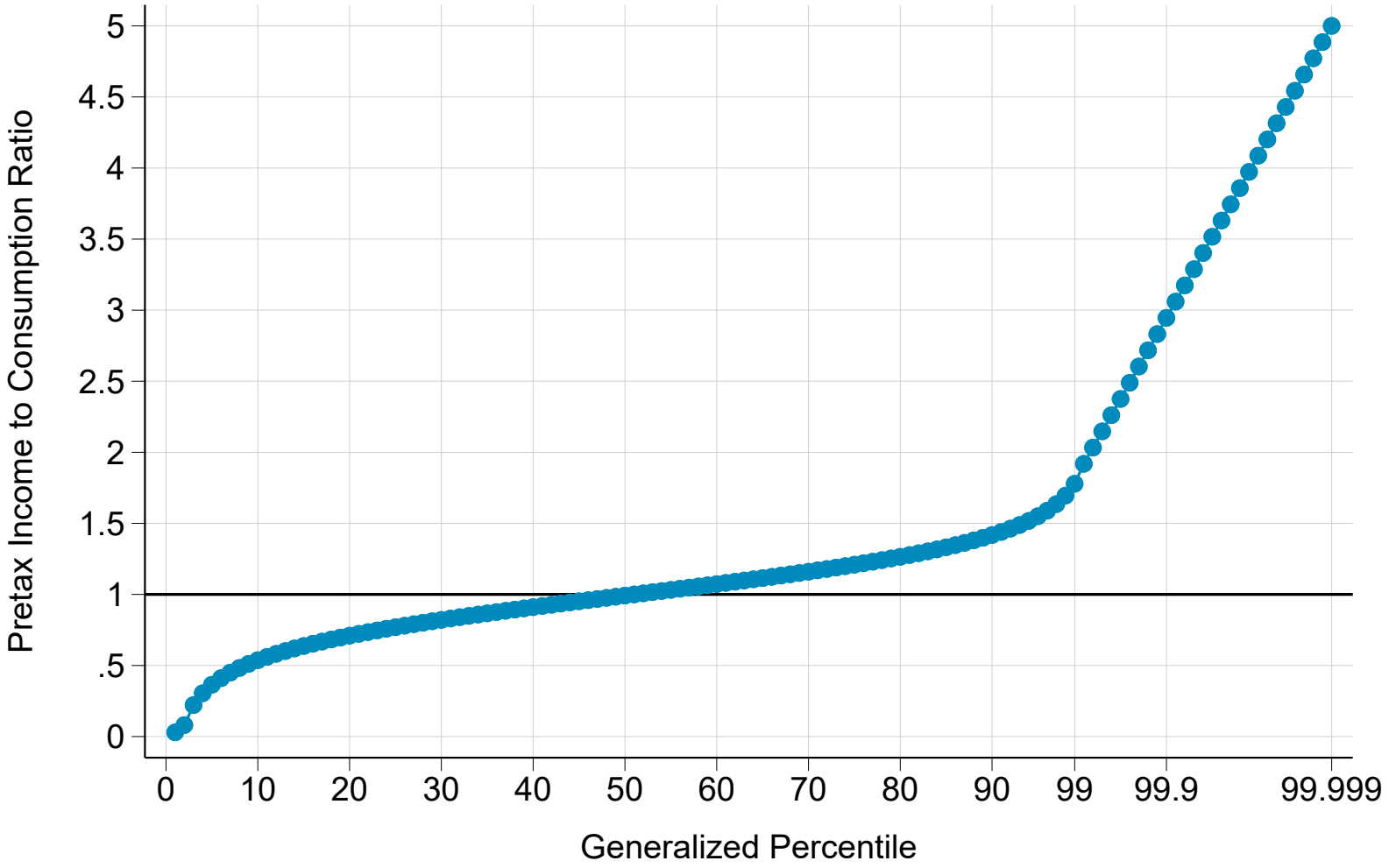
B.1. Methodology

Figure A1 – Corporate Income Tax: Selected Estimates of Corporate Income Tax Progressivity



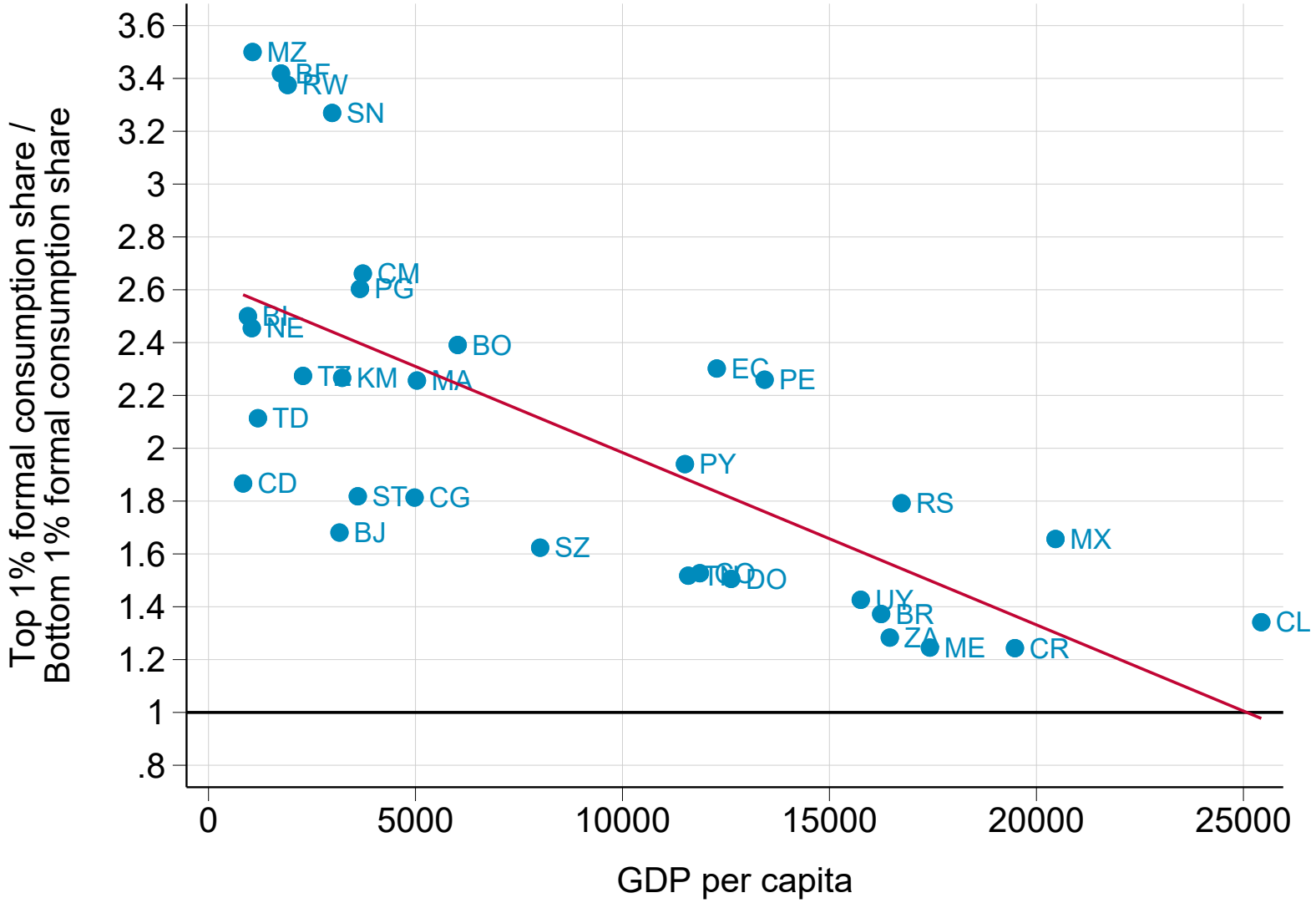
Notes. Netherlands: data from Bruil et al. (2022), 2016. United States: data from Piketty, Saez, and Zucman (2018), 2023. South Africa: data from Chatterjee, Czajka, and Gethin (2021), 2010-2023 average.

Figure A2 – Distributional Incidence Profiles: Income to Consumption Ratio



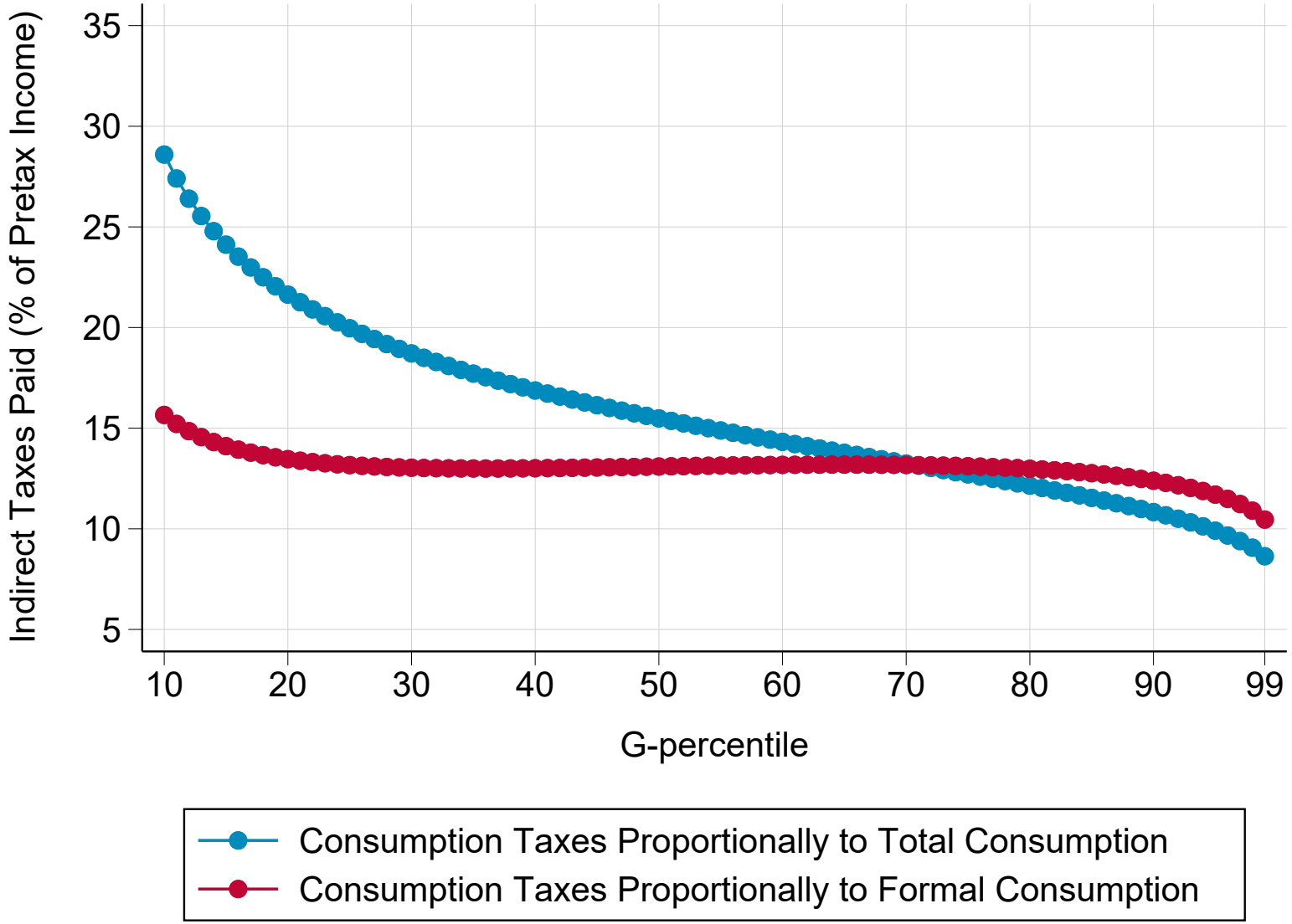
Notes. The figure plots the stylized profile used to estimate consumption from pretax income in each country. See Chancel et al. (2023) for more details.

Figure A3 – Informal Consumption Elasticity and Economic Development



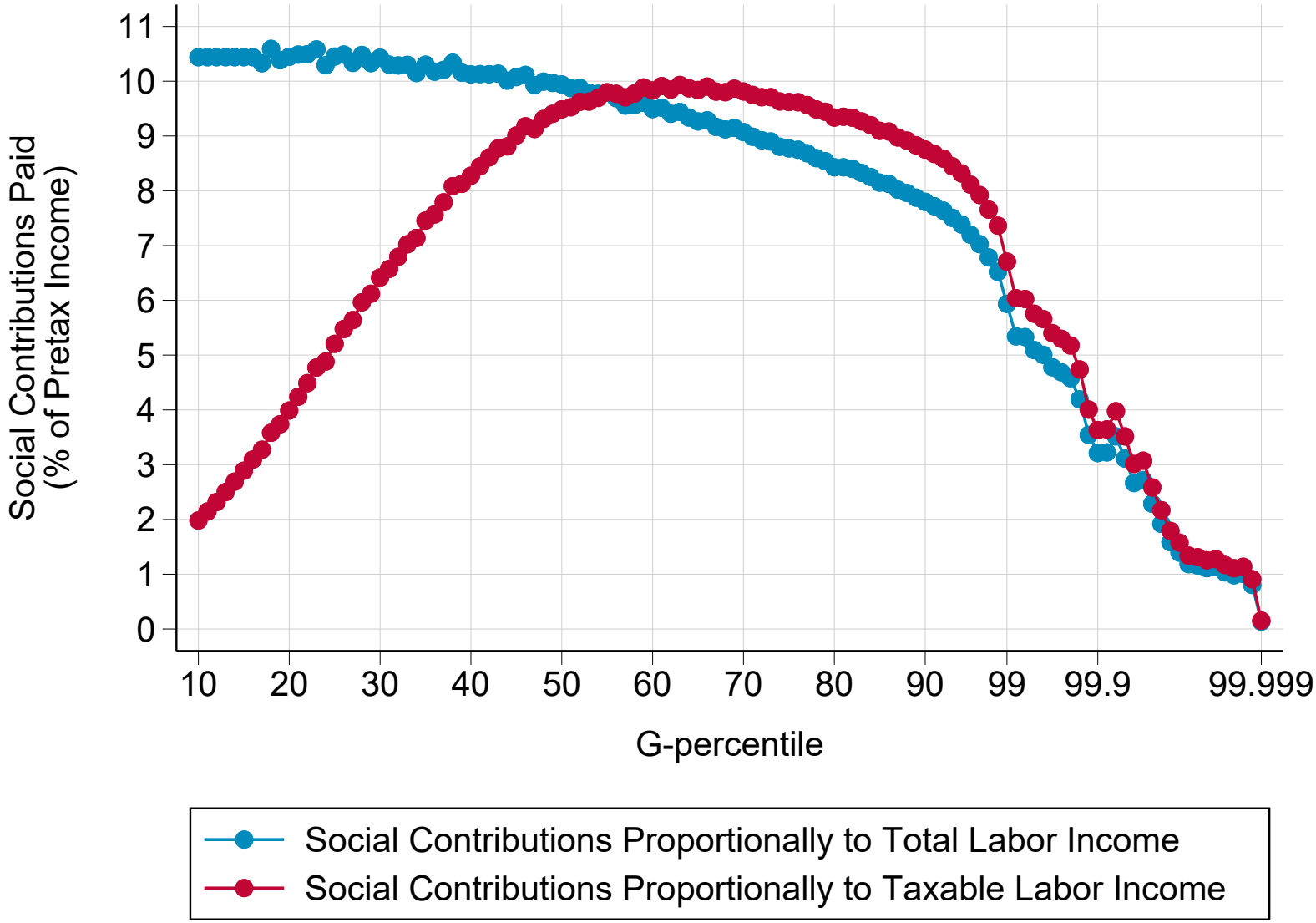
Notes. Authors' elaboration combining data from the World Inequality Database (GDP per capita) and Bachas, Gadenne, and Jensen, 2022 (informality). The figure plots the relationship between GDP per capita expressed in 2021 PPP USD and the gap in informal consumption between top and bottom income groups. In poorer countries, low-income households purchase more goods and services in informal markets than high-income households to a greater extent than in high-income countries.

Figure A4 – Incidence of Indirect Taxes and Informality: Niger, 2023



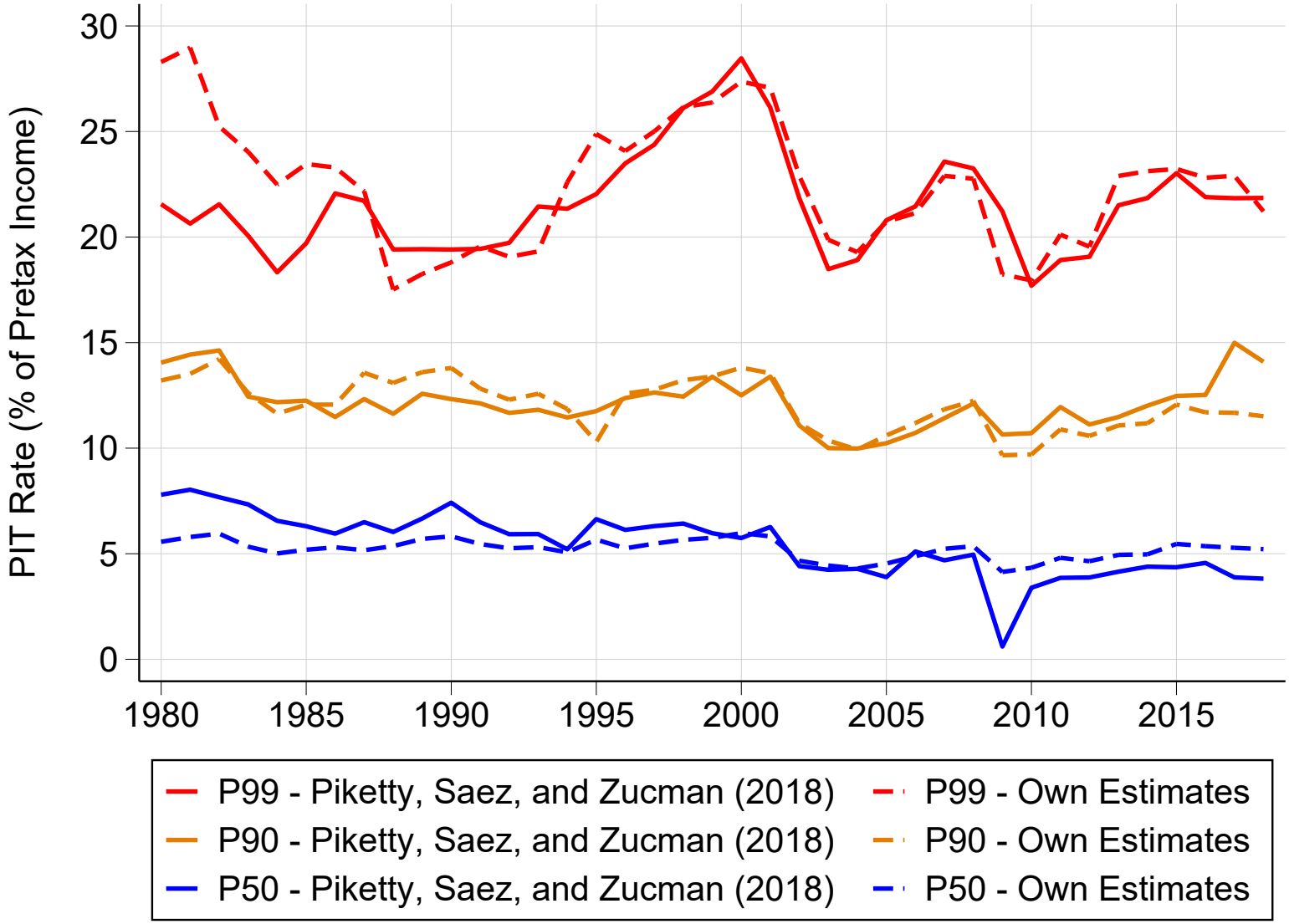
Notes. The figure plots estimates of the distributional incidence of indirect taxes in Niger in 2023, before and after accounting for informal consumption. Before accounting for informal consumption, consumption taxes are very regressive, because low-income households tend to dissave, while high-income households display large positive savings. After accounting for the fact that low-income households tend to more intensively consume in informal markets, however, consumption taxes appear to only be mildly regressive.

Figure A5 – Incidence of Social Contributions and Informality: Argentina, 2023



Notes. Authors' elaboration. The figure compares the distributional incidence of social contributions in Argentina before and after accounting for the fact that contribution payments differ alongside the wage distribution. Distributing contributions proportionally to total labor income (blue line) implies a much more regressive profile than when distributing them proportionally to taxable labor income (red line), that is, accounting for the fact that a large share of low-wage earners do not pay social contributions.

Figure A6 – Validation: Distributional Incidence of Personal Income Tax, United States, 1980-2018



Notes. Authors' elaboration combining own estimates and data from Piketty, Saez, and Zucman (2018). The figure compares our simplified estimates of personal income tax effective tax rates with those of Piketty, Saez, and Zucman (2018), focusing on percentile p50, p90, and p50. Our estimates fall very close from those of Piketty, Saez, and Zucman (2018).

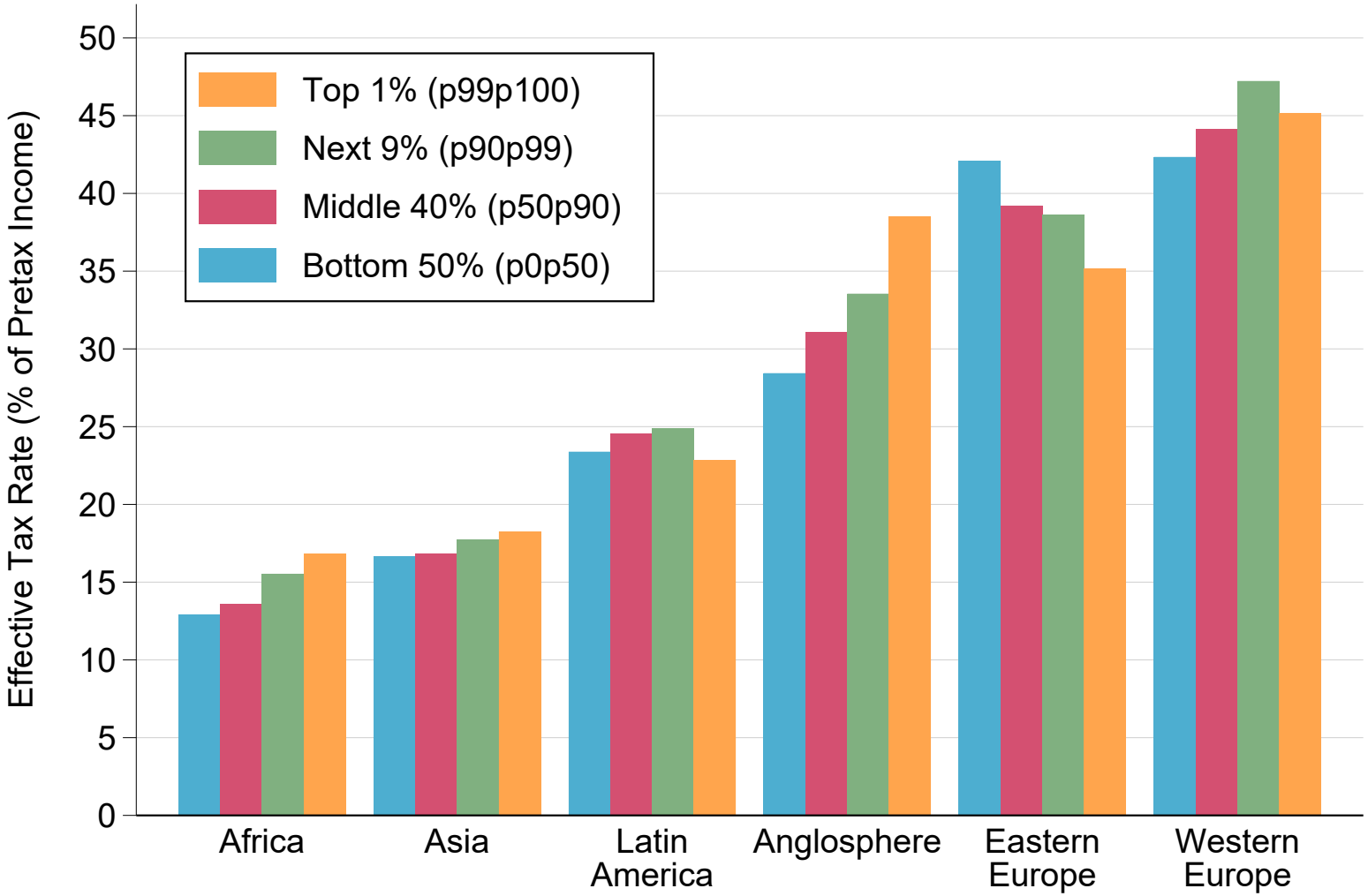
Table A1 – Country and Time Coverage of Fiscal Incidence Estimates in Existing DINA Studies

Study	Countries	Years
Piketty, Saez, and Zucman (2018)	United States of America	1962-2019
Chatterjee, Czajka, and Gethin (2021)	South Africa	1993-2019
Bozio et al. (2018)	France	1990-2018
Fisher-Post, Herault, and Wilkins (2022)	Australia	1991-2018
Bruil et al. (2022)	Netherlands	2016
Flores, De Rosa, and Morgan (2022)	Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Mexico, Peru, Uruguay	2000-2020*
Blanchet, Chancel, and Gethin (2022)	Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, United Kingdom	2007-2017*

Notes. *: unbalanced panel.

B.2. Main Results: Taxes

Figure A7 – Effective Tax Rate by Income Group and World Region, 2023 (With Social Contributions)



Notes. The figure plots taxes paid as a share of pretax income by income group and world region in 2023. Taxes paid by the top 10% amounted to about 35% of pretax income in the average Western European country. Population-weighted averages of effective tax rates by percentile in each country. Taxes include social contributions.

Figure A8 – Tax Progressivity Around the World:
Percent Reduction in Top 10% to Bottom 50% Average Income Ratio (Pretax versus Net-of-tax Income)

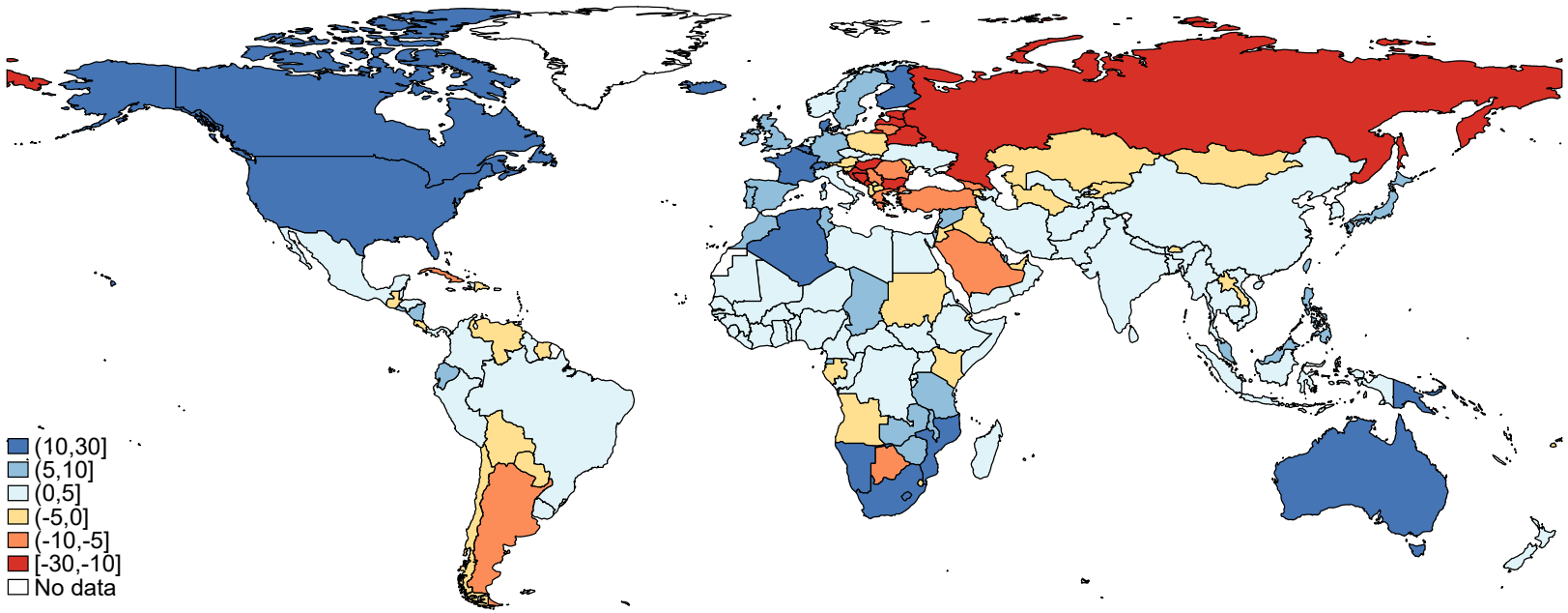
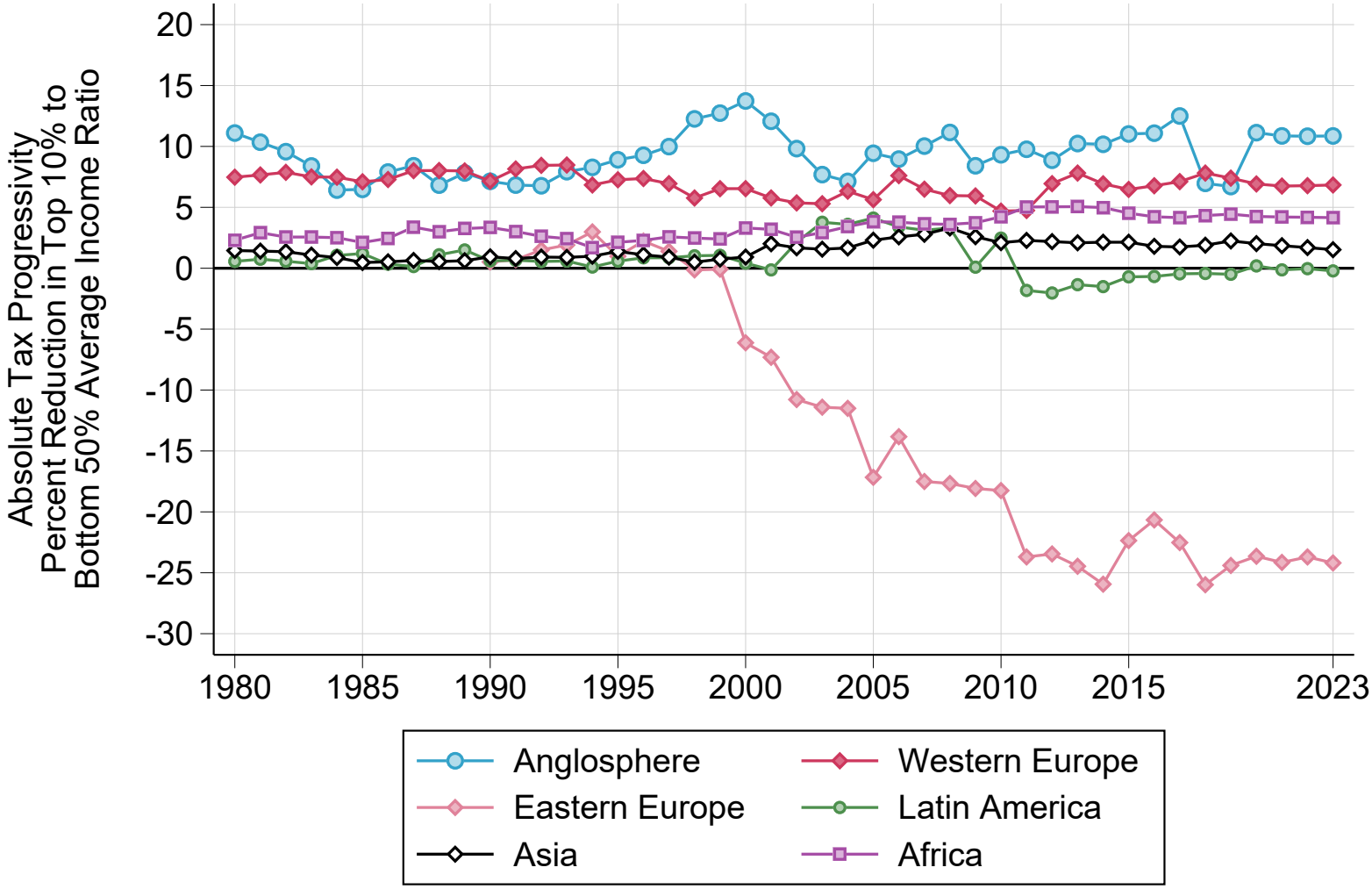


Figure A9 – Tax Progressivity by World Region, 1980-2023:
Percent Reduction in Top 10% to Bottom 50% Average Income Ratio
(Pretax versus Net-of-tax Income, With Social Contributions)



Notes. The figure plots the evolution of tax progressivity by world region, measured as the percent reduction in the top 10% to bottom 50% average income ratio before versus after removing taxes from pretax incomes. In 2023, taxes reduced inequality by about 10% in Western Europe, while they increased inequality by 10% in Eastern Europe. Taxes exclude social contributions. Population-weighted averages of tax progressivity in each country.

Figure A10 – Top 1% Effective Tax Rate

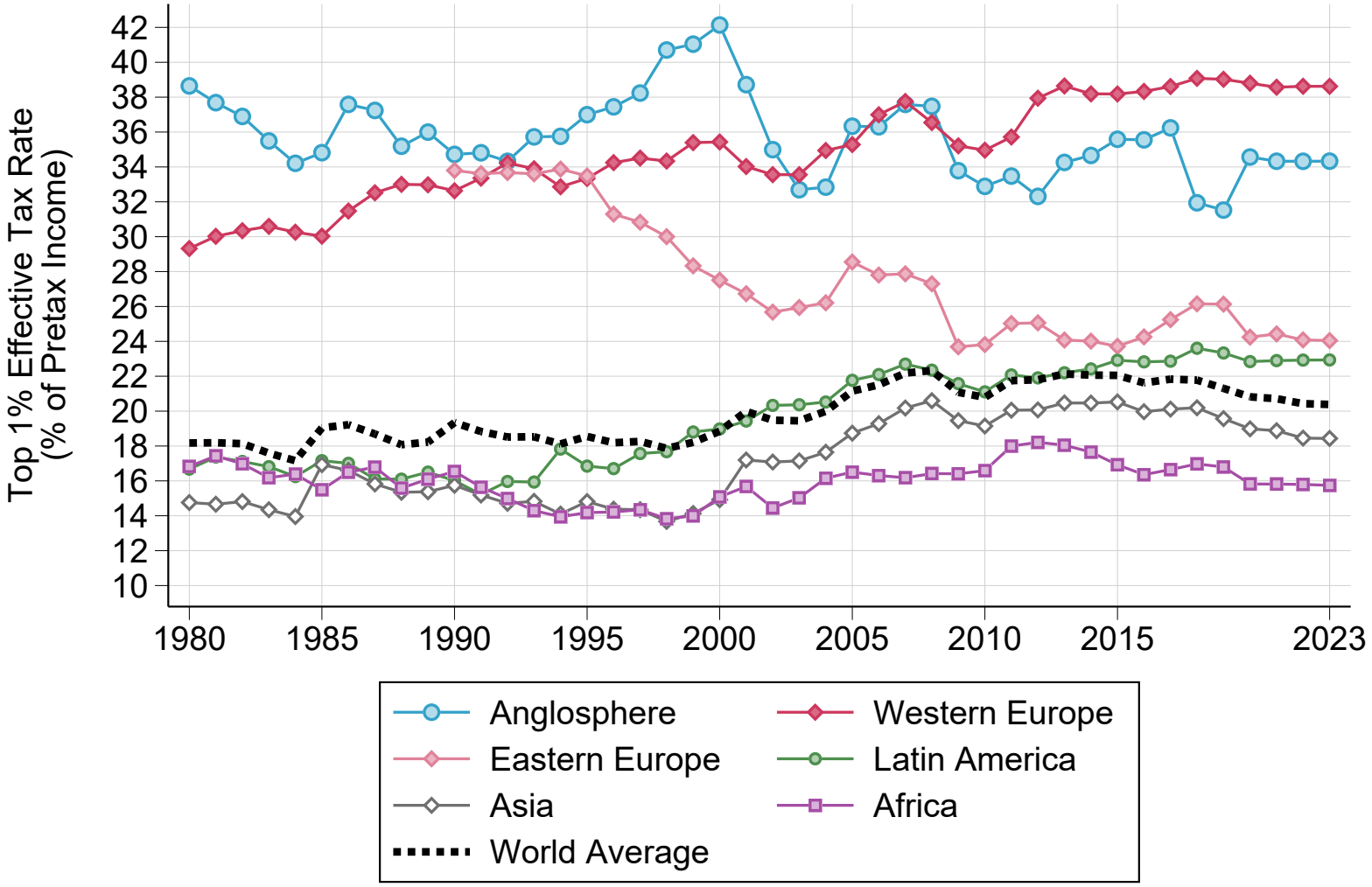


Figure A11 – Top 10% Effective Tax Rate

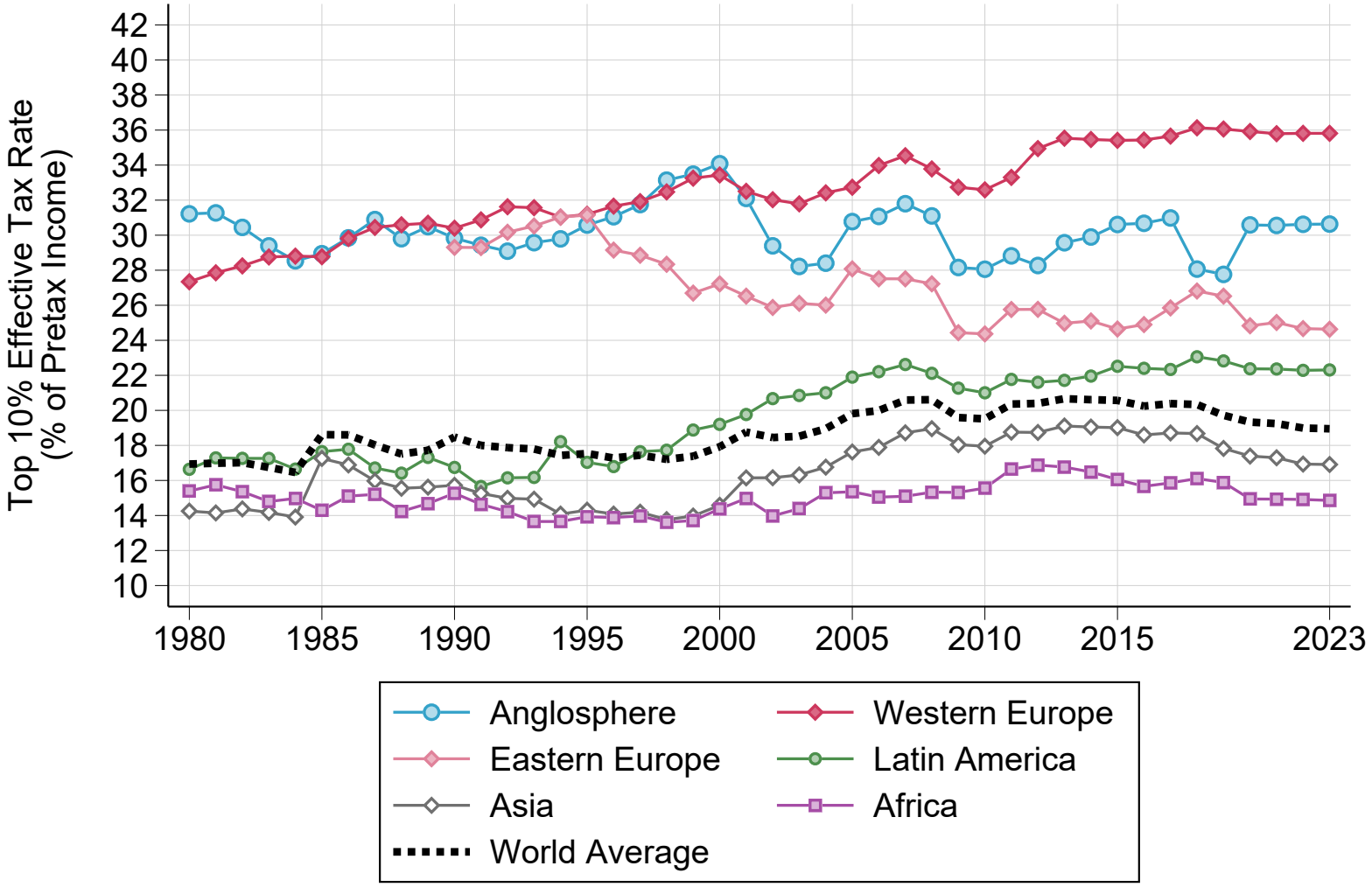


Figure A12 – Bottom 50% Effective Tax Rate

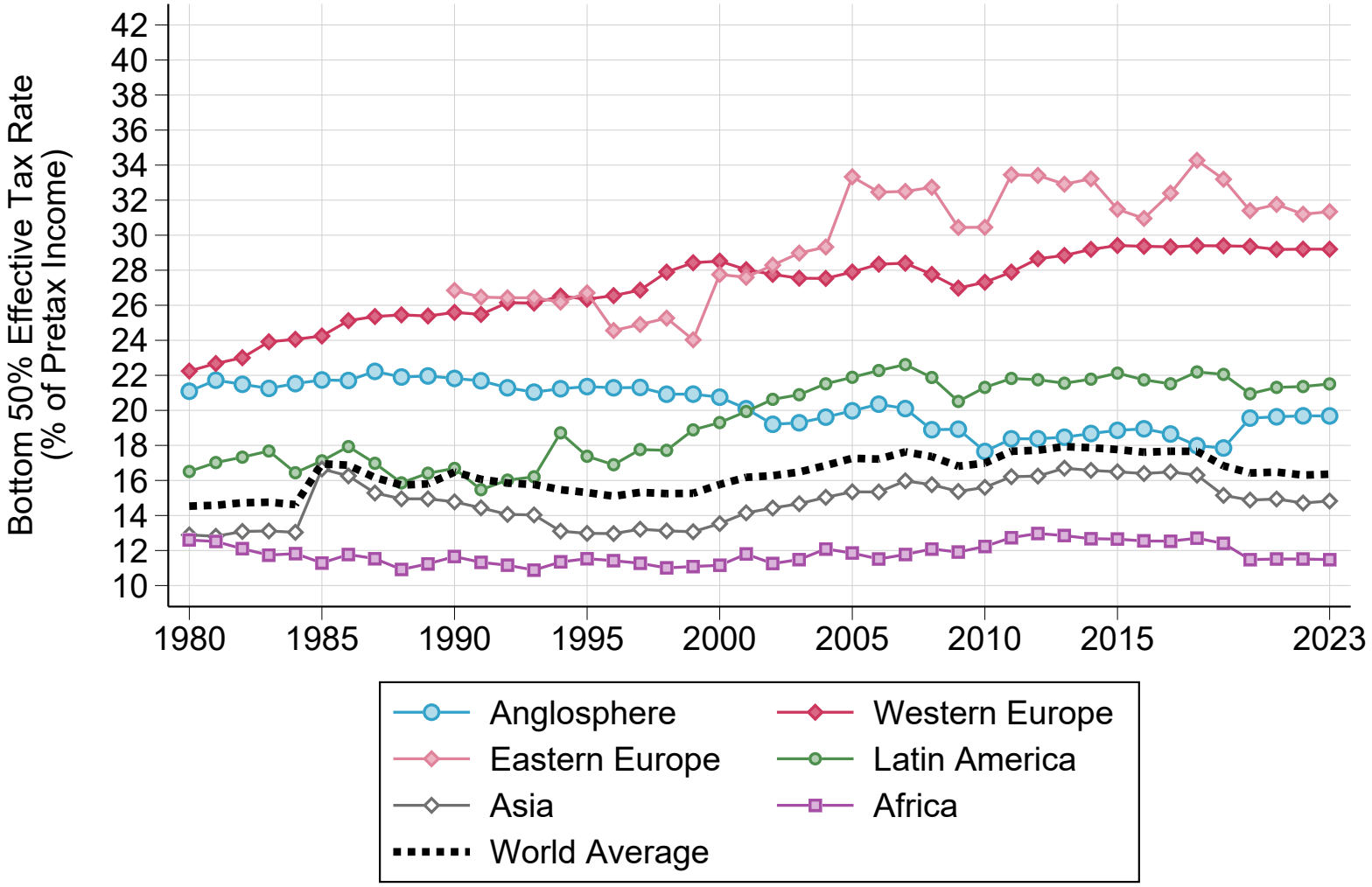
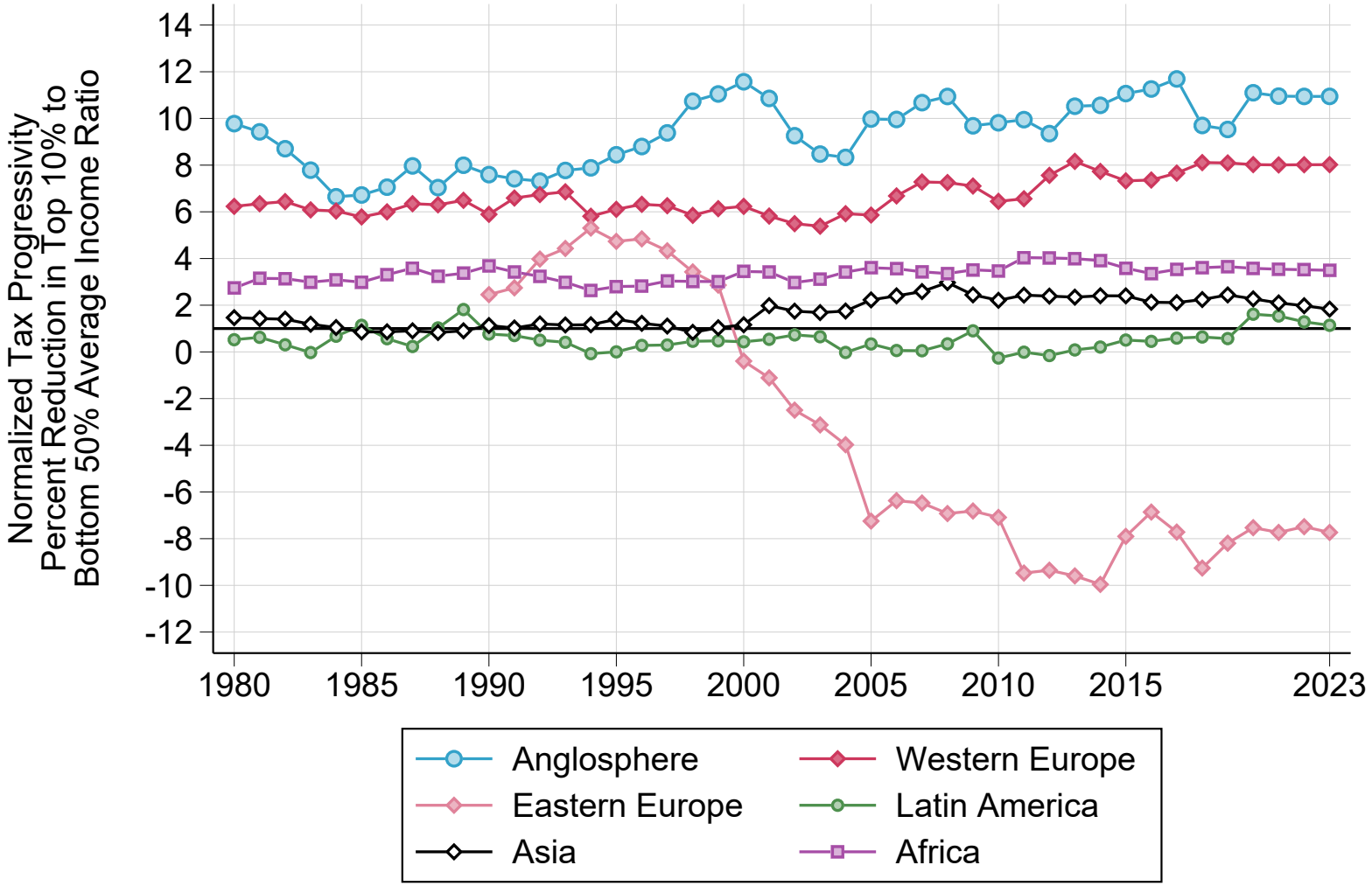


Figure A13 – Normalized Tax Progressivity by World Region, 1980-2023



B.3. Main Results: Transfers

Figure A14 – Government Transfers Received by Income Quintile and World Region, 2023
(Expenditure Other than Social Assistance, Education, and Healthcare Distributed Proportionally to Disposable Income)

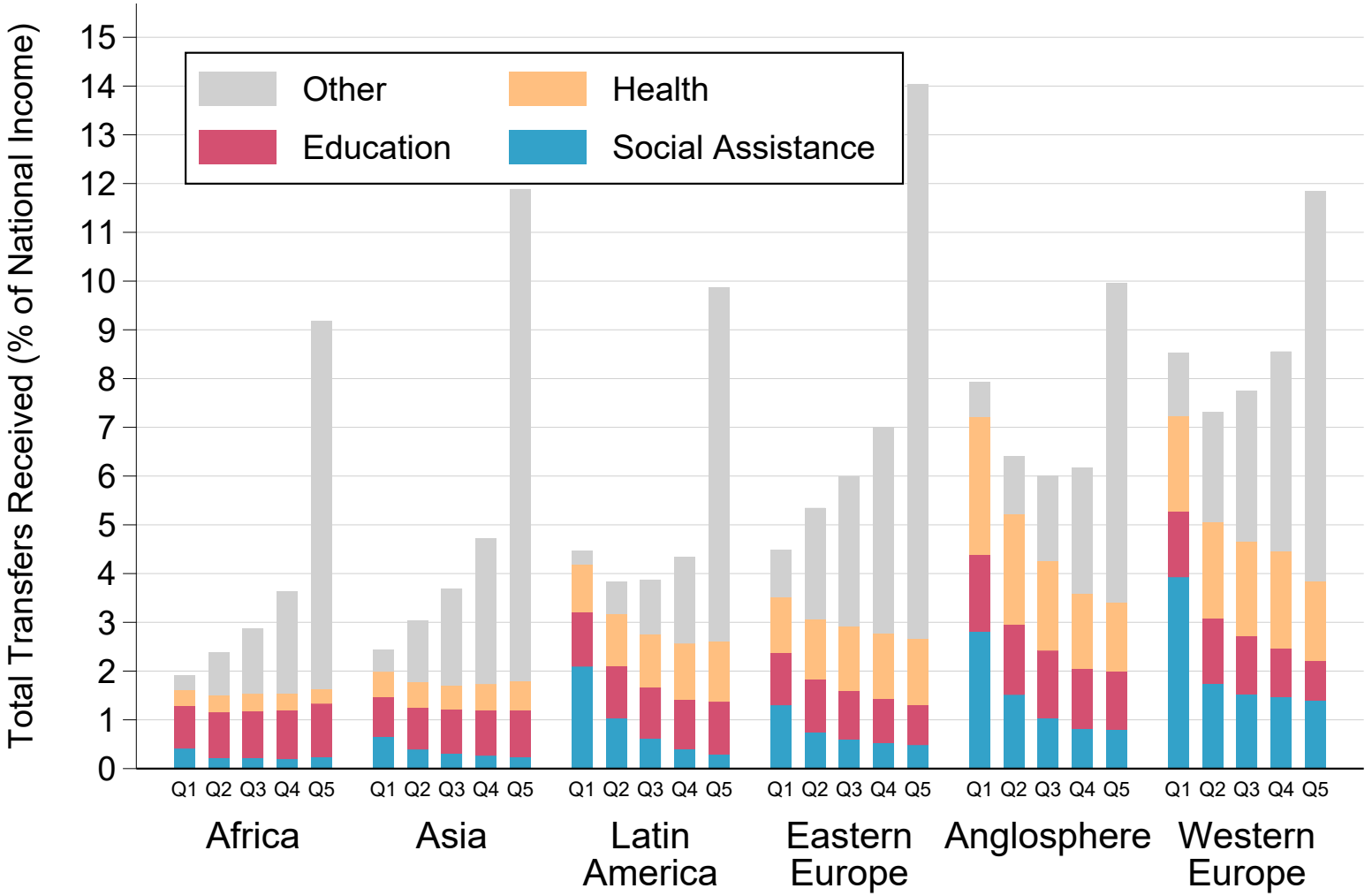


Figure A15 – Government Transfers Received by Income Quintile and World Region, 2023
(Expenditure Other than Social Assistance, Education, and Healthcare Distributed as a Lump Sum)

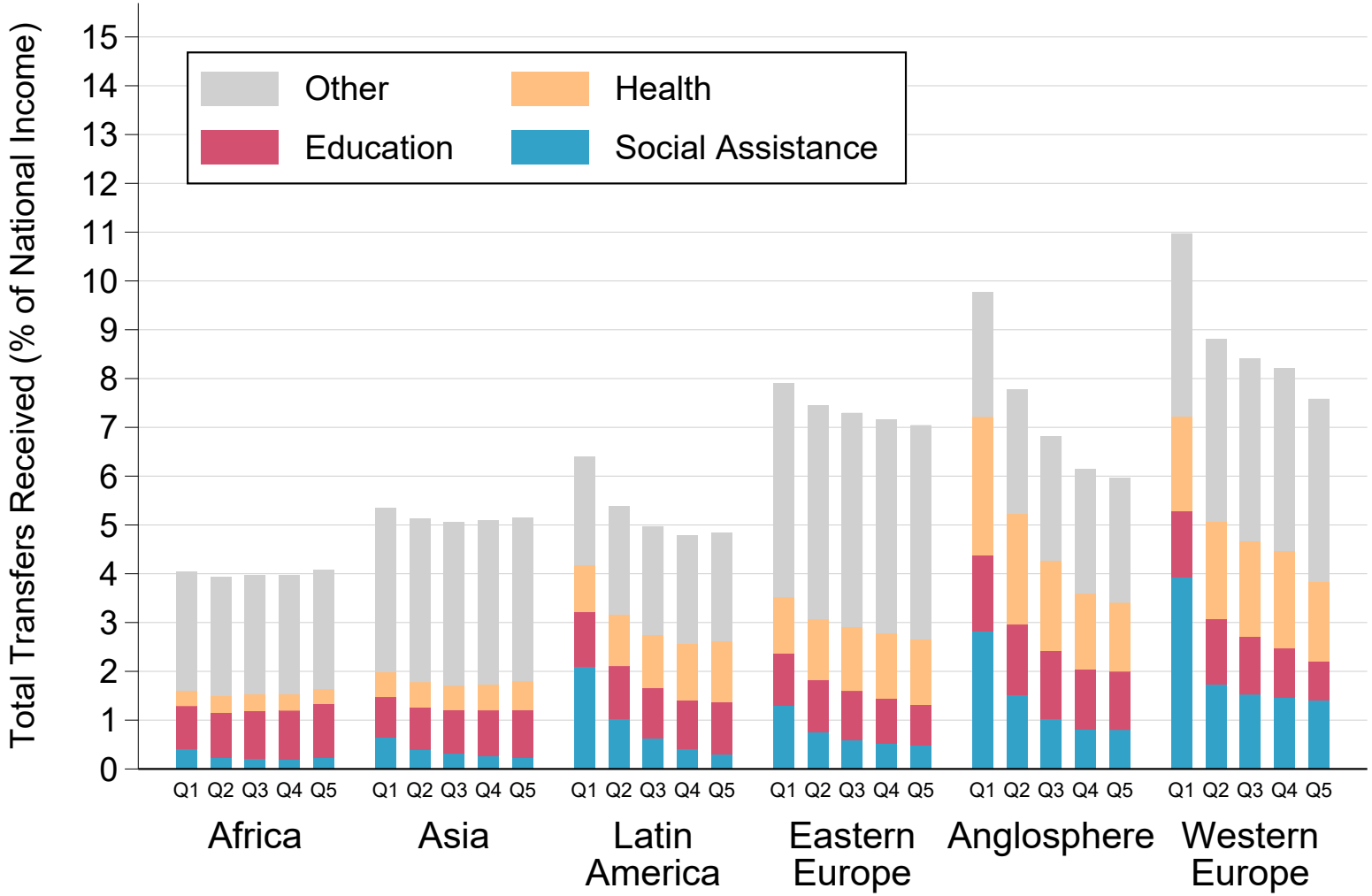
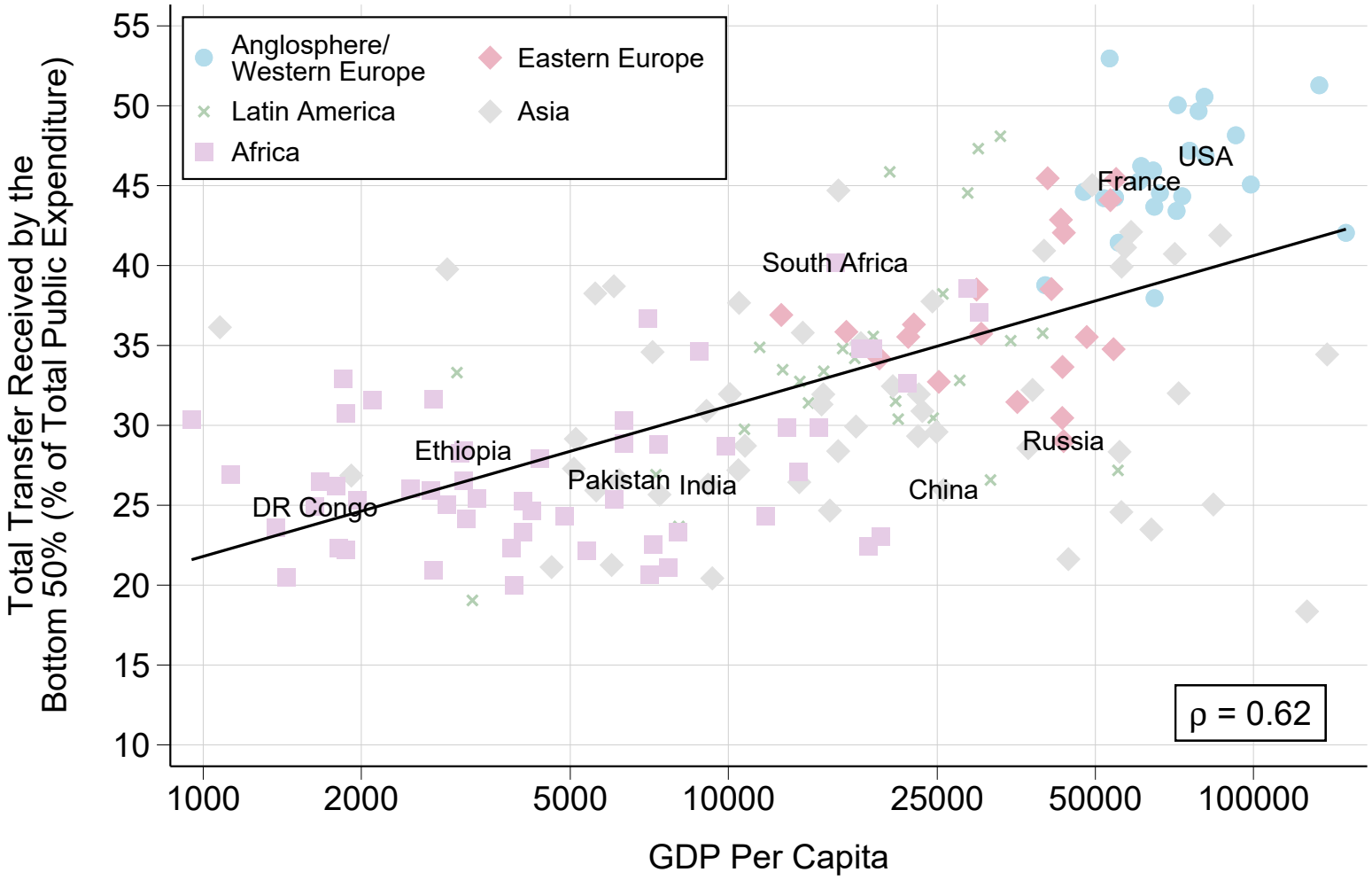


Figure A16 – Transfer Progressivity Over the Course of Development:
Total Transfer Received by the Bottom 50% (% of Total Public Spending)



Notes. The figure plots the total transfer received by the bottom 50% expressed as share of total general government expenditure. In France, about 45% of all government transfers are received by the bottom 50%. Expenditure other than social assistance, education, and healthcare is distributed proportionally to posttax disposable income.

B.4. Main Results: Net Redistribution

Figure A17 – Net Redistribution Over the Course of Development:
Percent Reduction in Top 10% to Bottom 50% Income Ratio, Pretax - Posttax

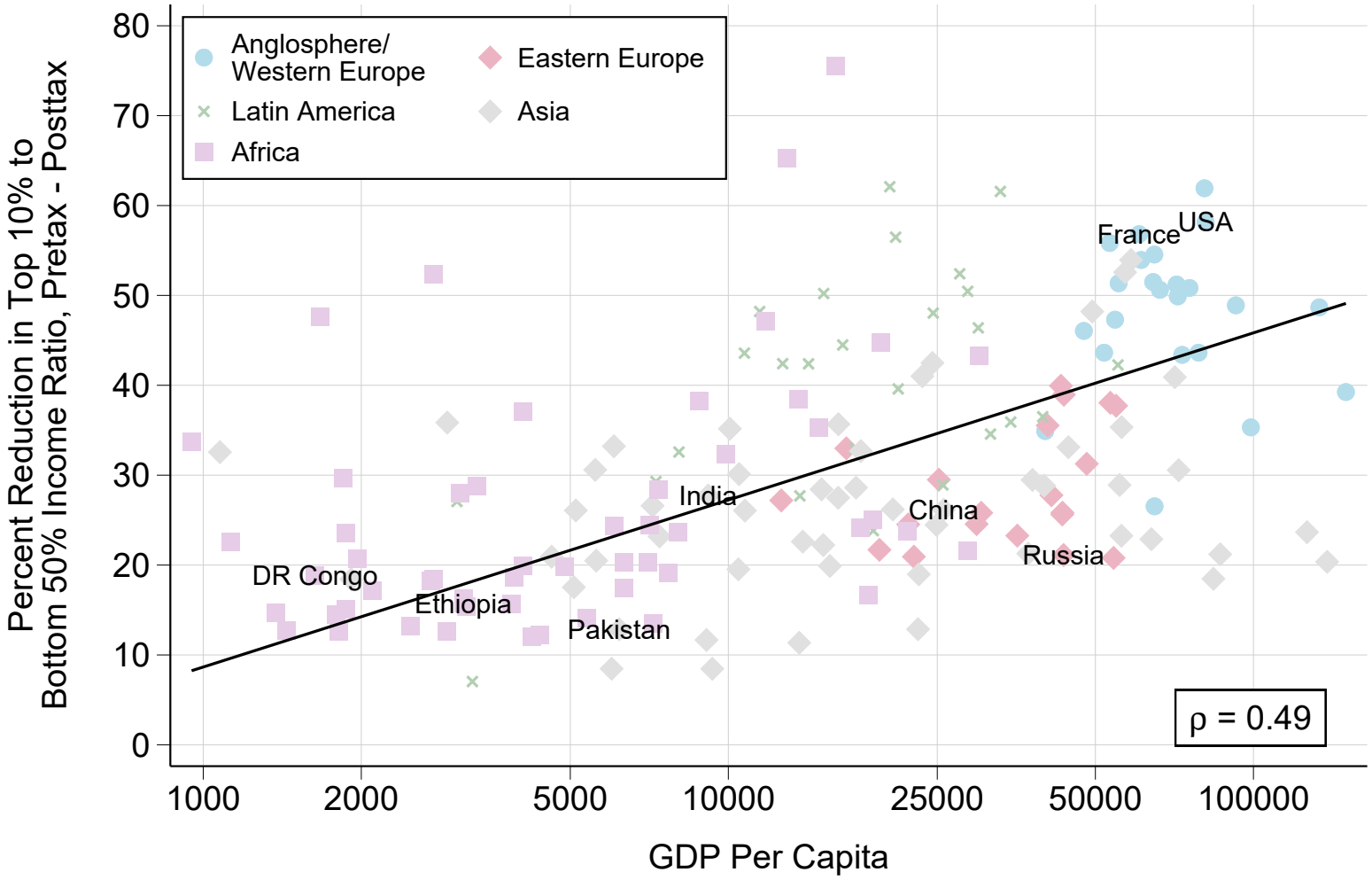


Figure A18 – Extent of Redistribution by World Region, 1980-2023:
Percent Reduction in Top 10% to Bottom 50% Income Ratio, Pretax - Posttax

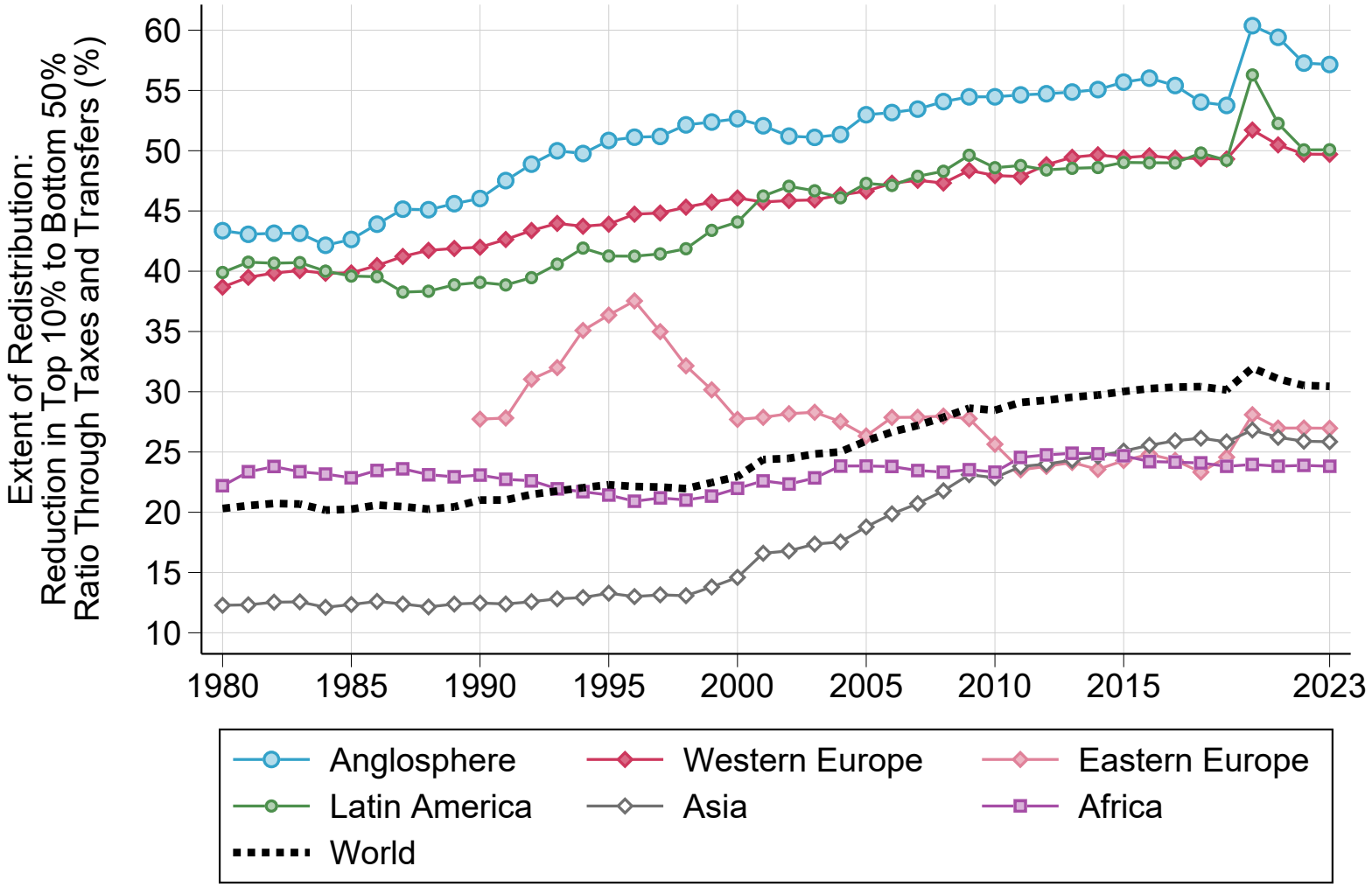
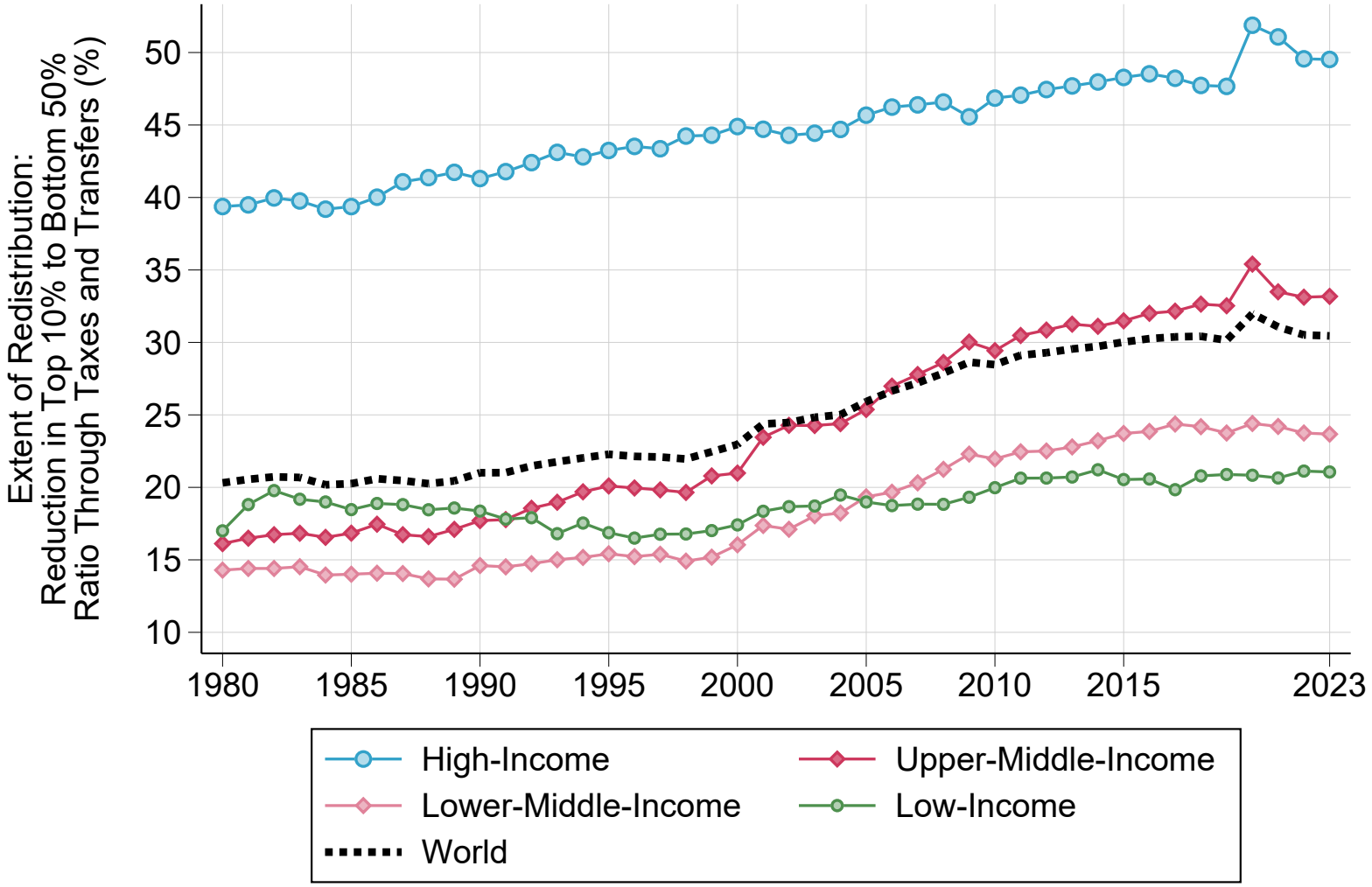
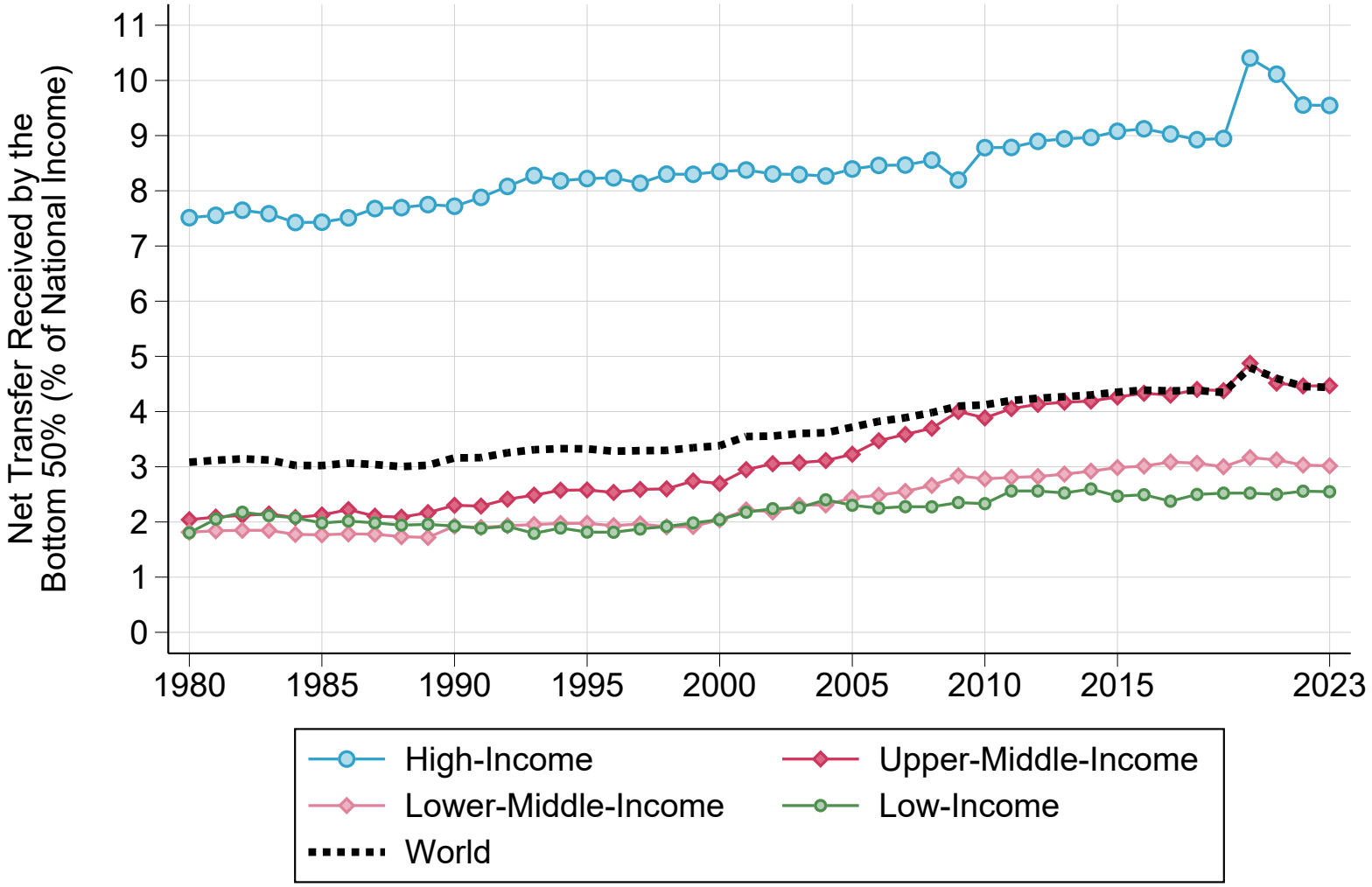


Figure A19 – Extent of Redistribution by Country Income Group, 1980-2023:
Percent Reduction in Top 10% to Bottom 50% Income Ratio, Pretax - Posttax



Notes. Population-weighted averages of estimates in each country. Country income groups from the World Bank.

Figure A20 – Extent of Redistribution by Country Income Group, 1980-2023:
Net Transfer Received by the Bottom 50% (% of National Income)



Notes. Population-weighted averages of estimates in each country. Country income groups from the World Bank.

Figure A21 – Top 10% to Bottom 50% Income Ratio: Pretax Versus Posttax

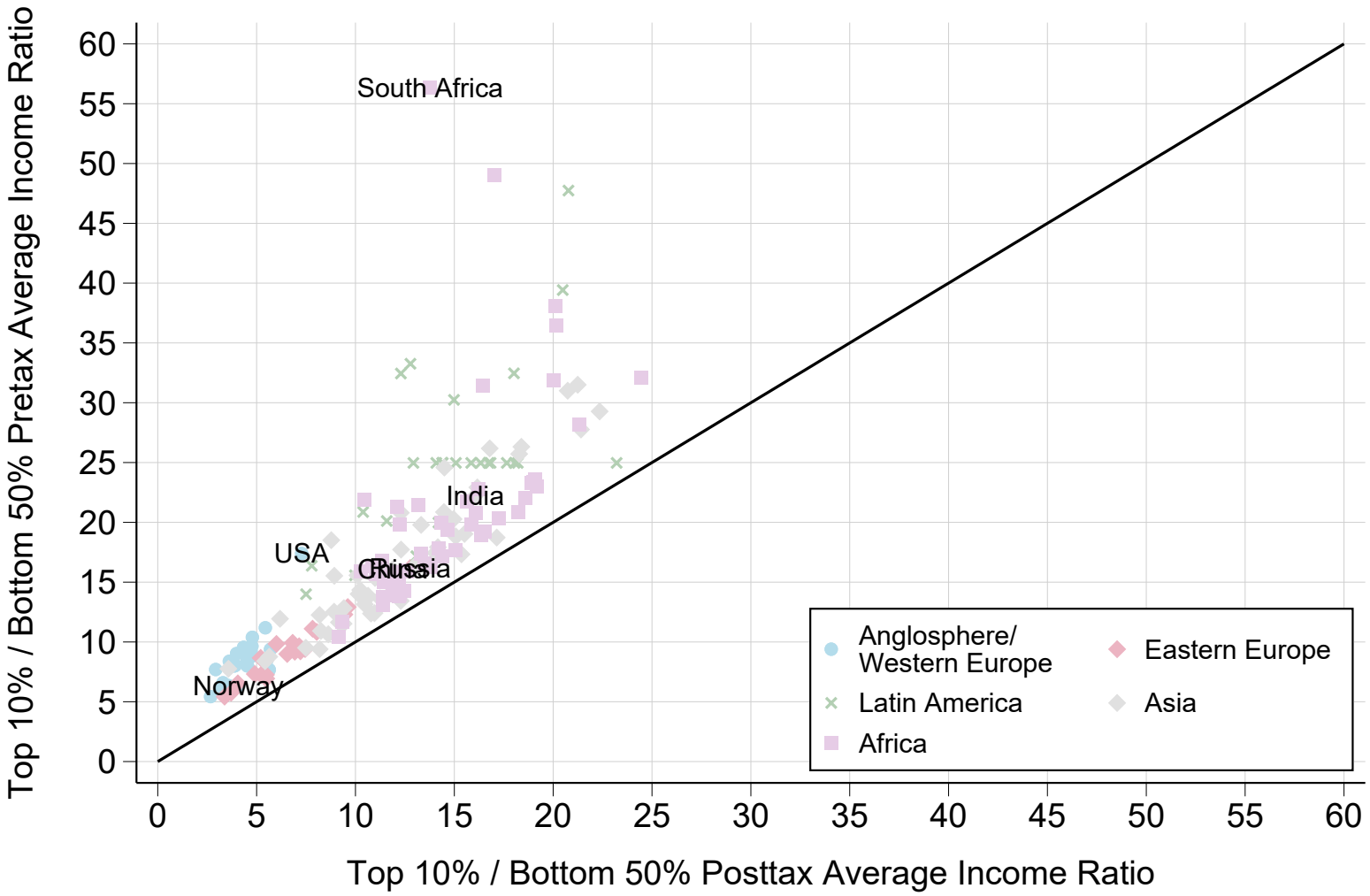


Figure A22 – Predistribution versus Redistribution:
Bottom 50% Pretax versus Posttax National Income Shares by World Region, 2023

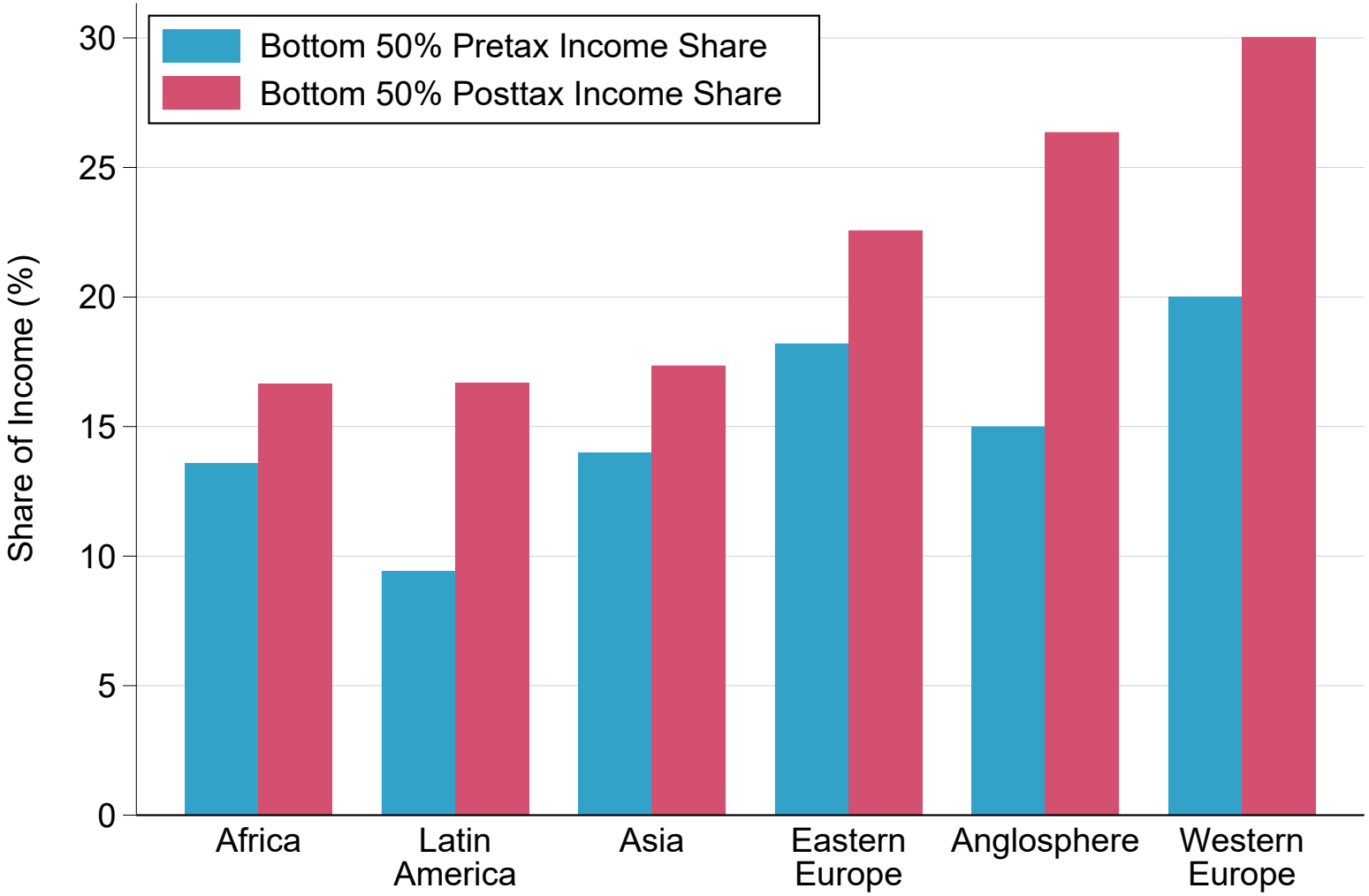


Figure A23 – Top 10% Pretax versus Posttax National Income Shares by World Region

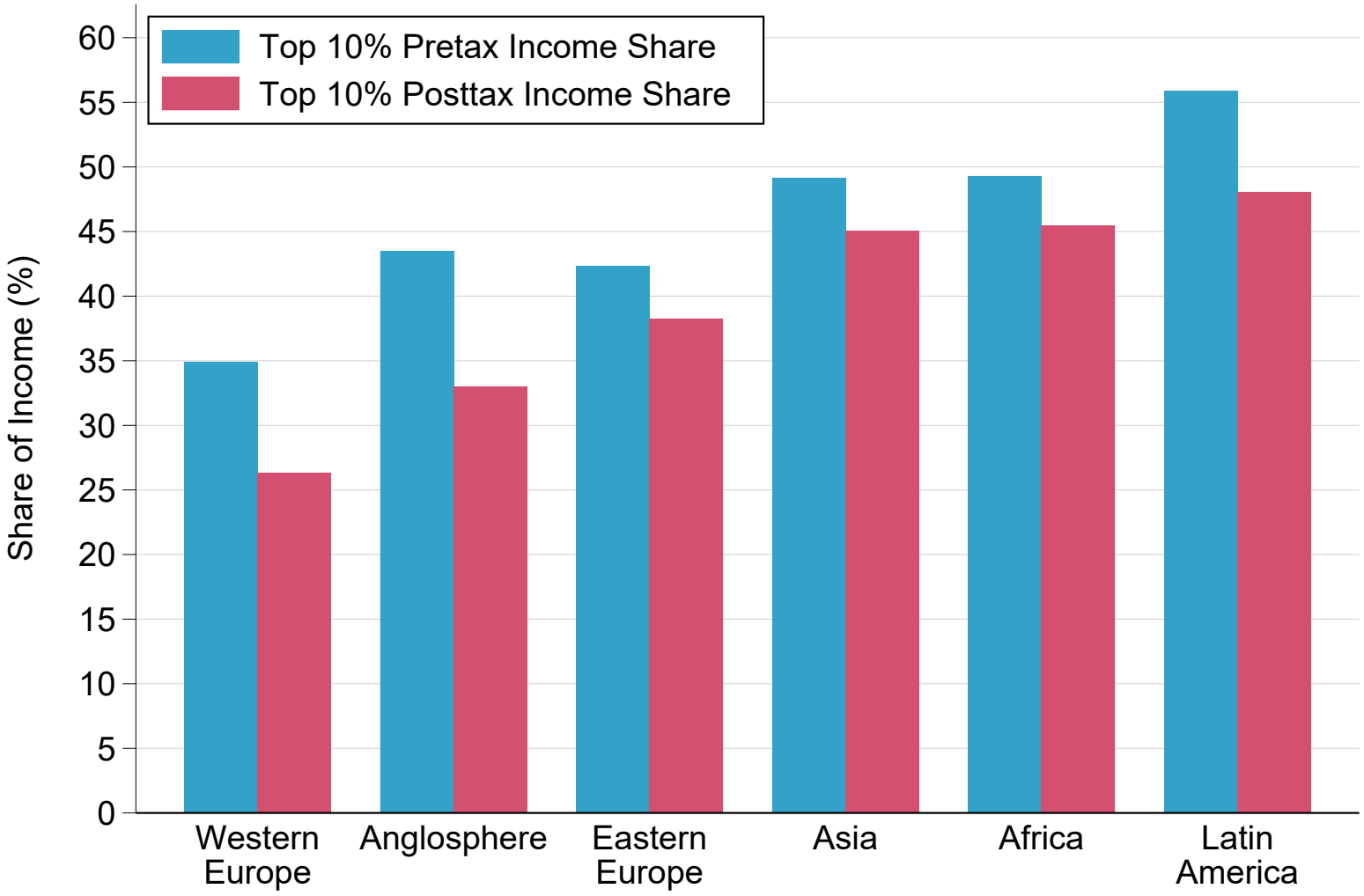


Figure A24 – Top 1% Pretax versus Posttax National Income Shares by World Region

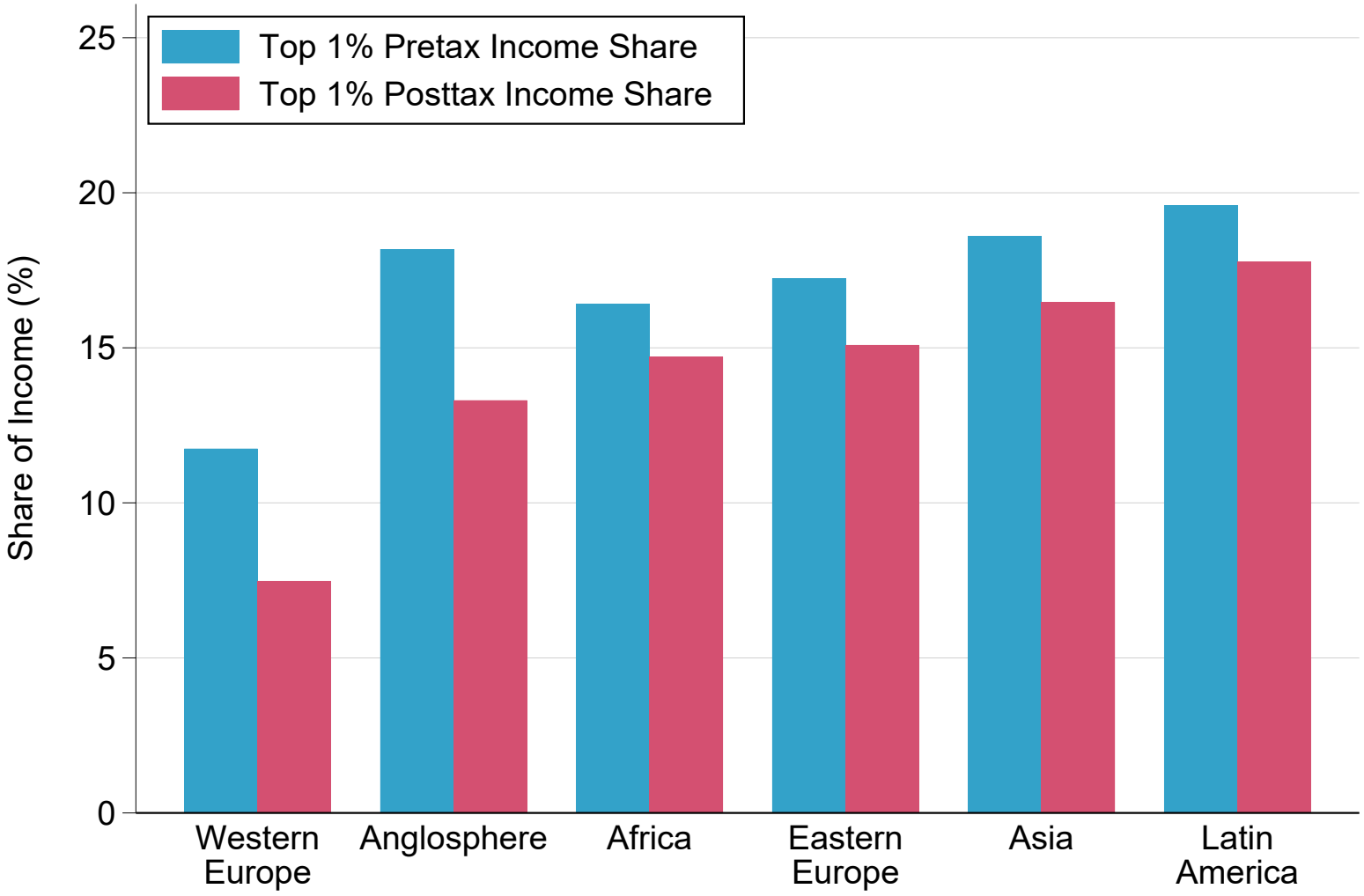


Figure A25 – Predistribution versus Redistribution:
Bottom 50% Pretax Income Share versus Net Transfer Received by the Bottom 50%, 2023

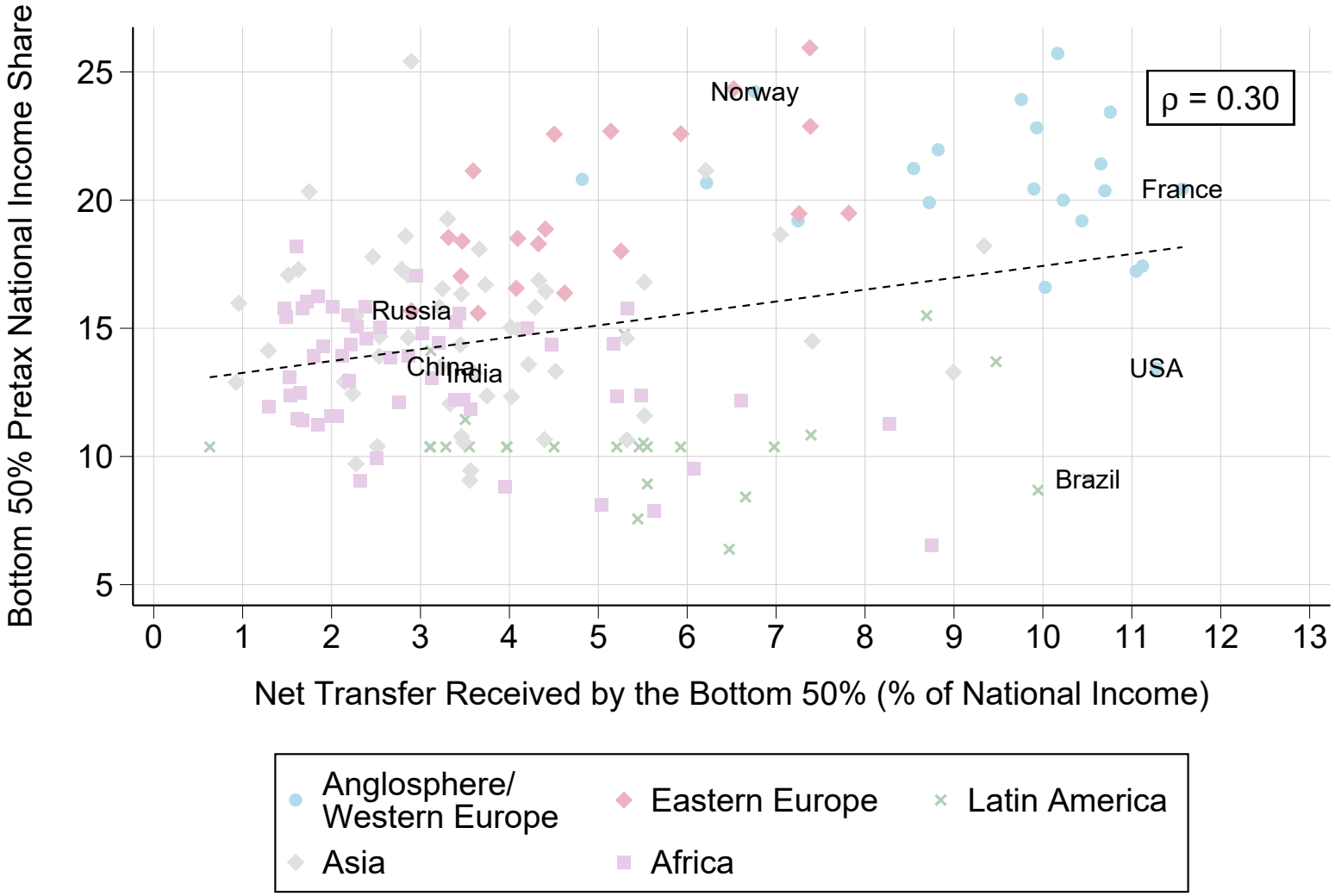


Figure A26 – Predistribution versus Redistribution:
Bottom 50% Pretax Income Share versus Extent of Redistribution, 2023

B.5. Results With Education Distributed Proportionally to Posttax Diposable Income

Figure A27 – A Global Map of Redistribution: Net Transfers Operated by the Tax-and-Transfer System Between Pretax Income Groups, 2023 (Education Distributed Proportionally to Disposable Income)

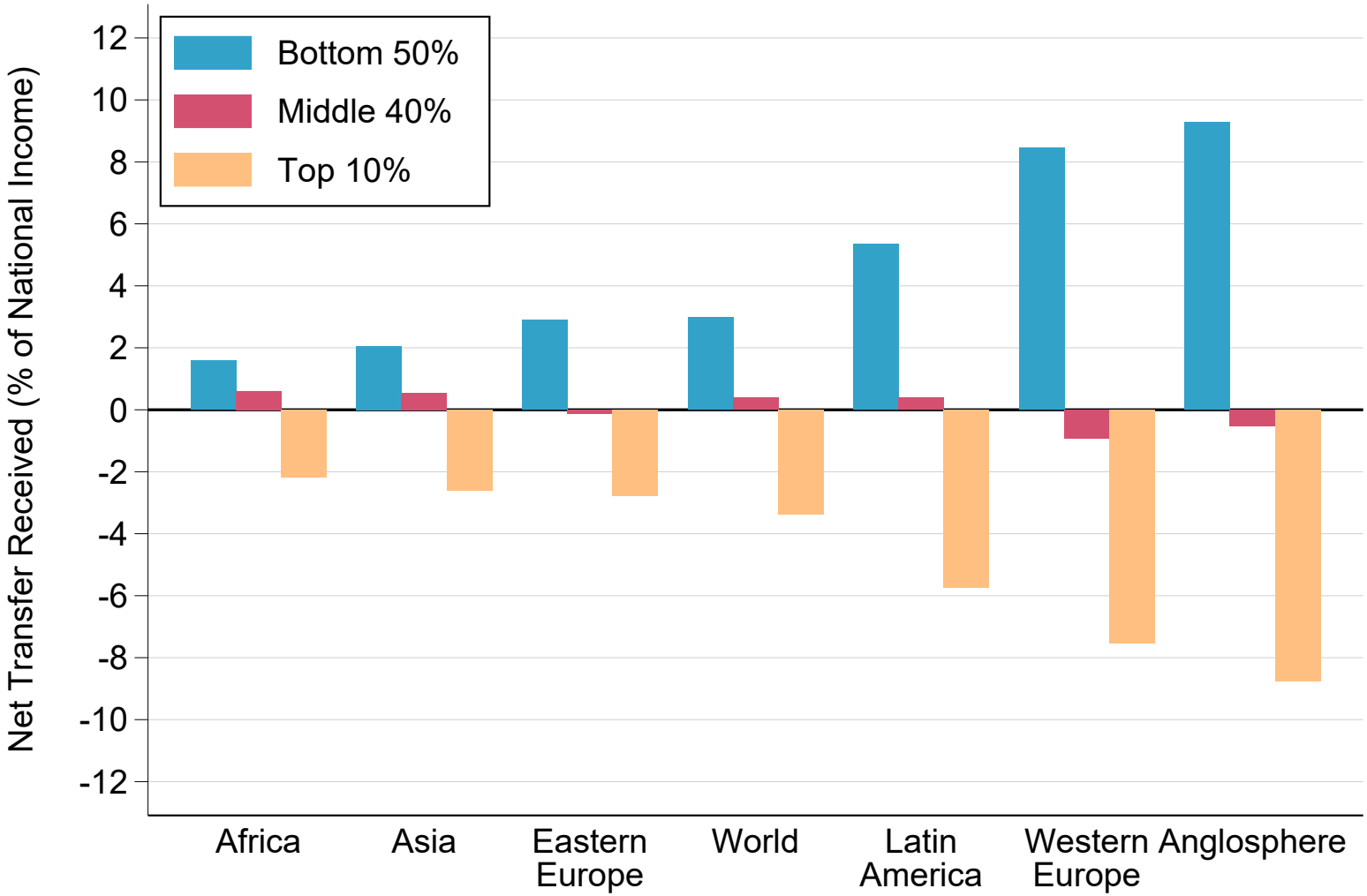


Figure A28 – Redistribution by World Region, 1980-2023:
Net Transfer Received by the Bottom 50% (% of National Income)
(Education Distributed Proportionally to Disposable Income)

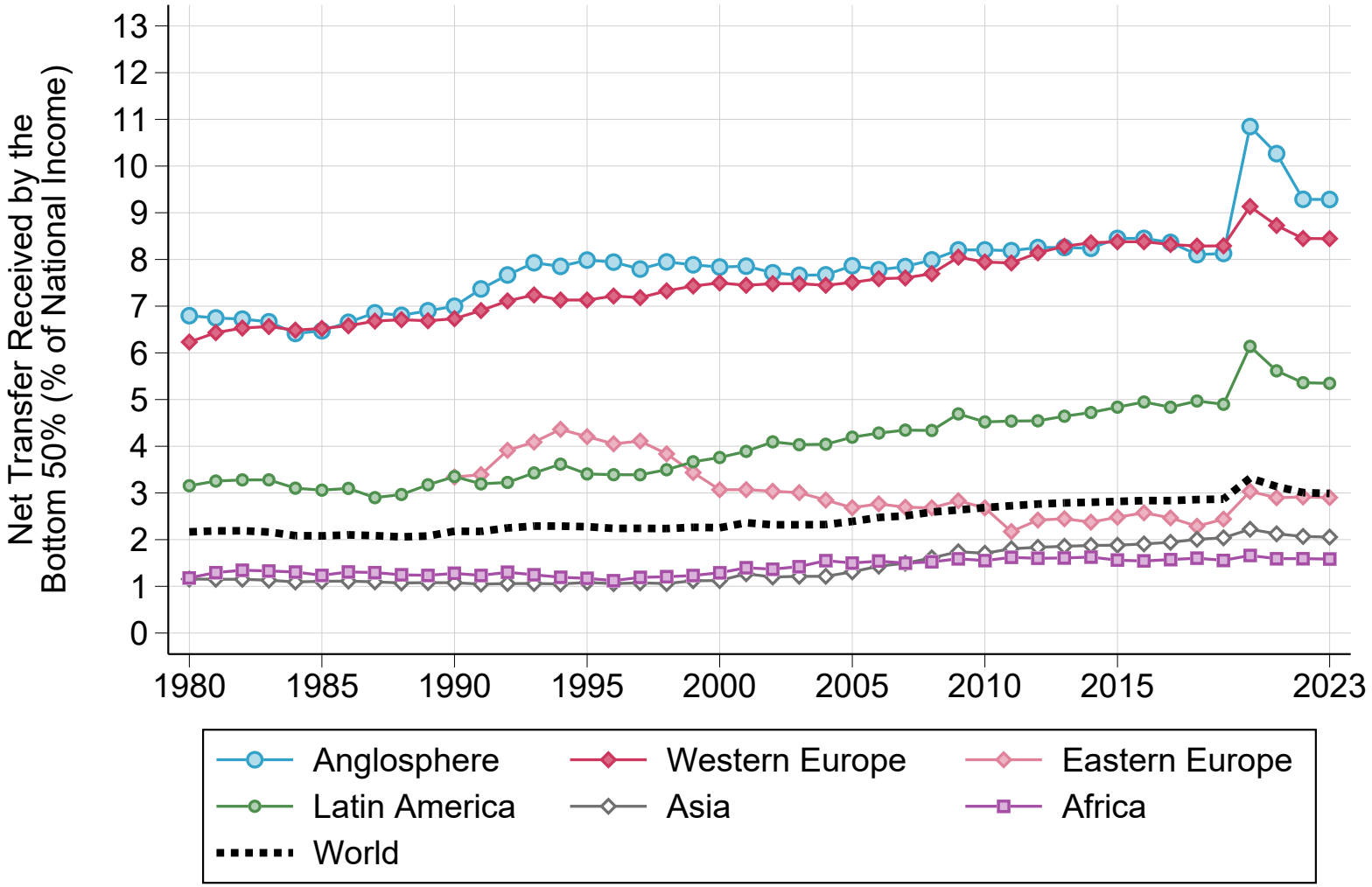


Figure A29 – Transfer Progressivity Over the Course of Development:
Total Transfer Received by the Bottom 50% (% of National Income)
(Education Distributed Proportionally to Disposable Income)

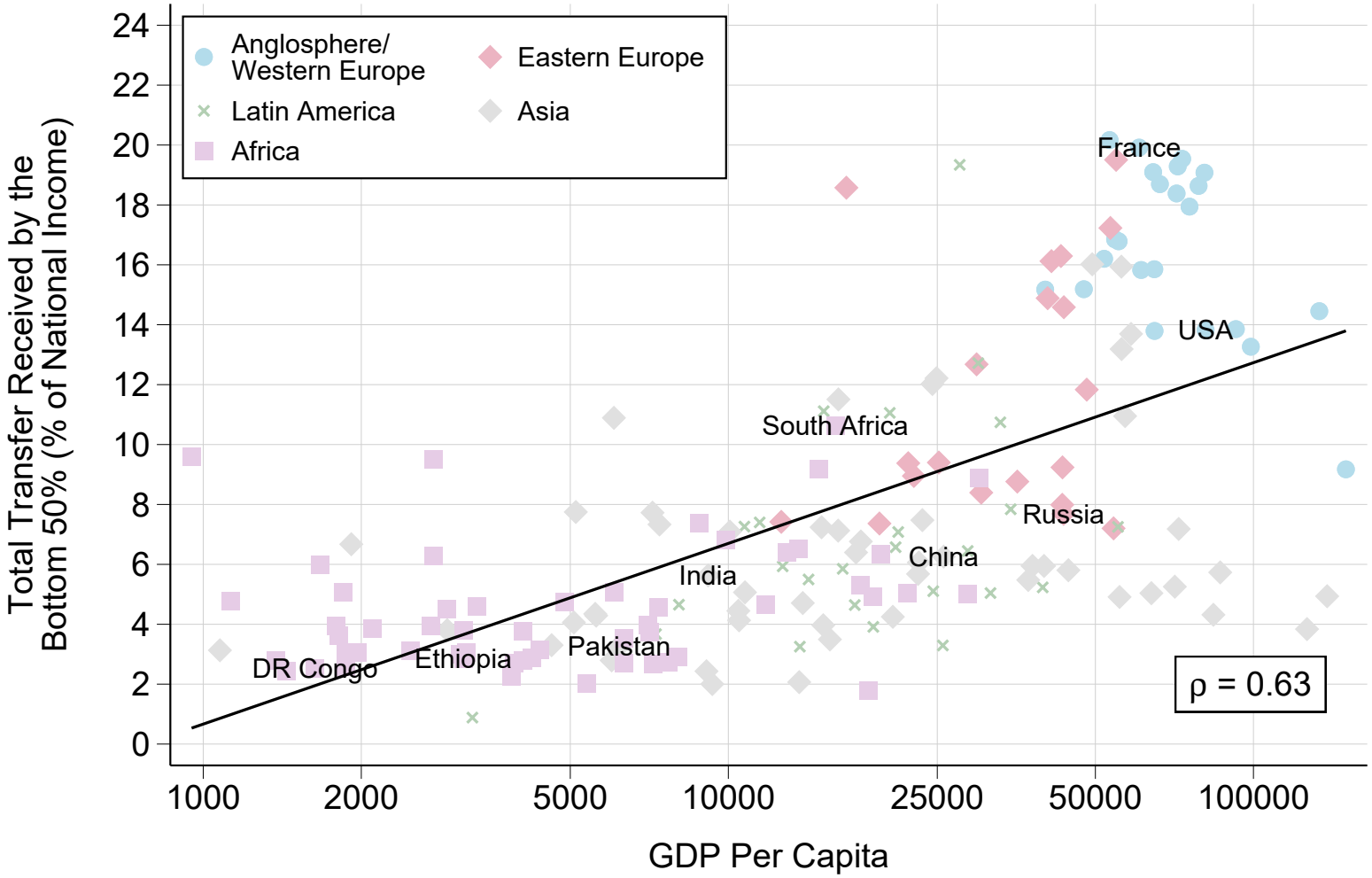


Figure A30 – Extent of Redistribution Over the Course of Development:
Net Transfer Received by the Bottom 50% (% of National Income)
(Education Distributed Proportionally to Disposable Income)

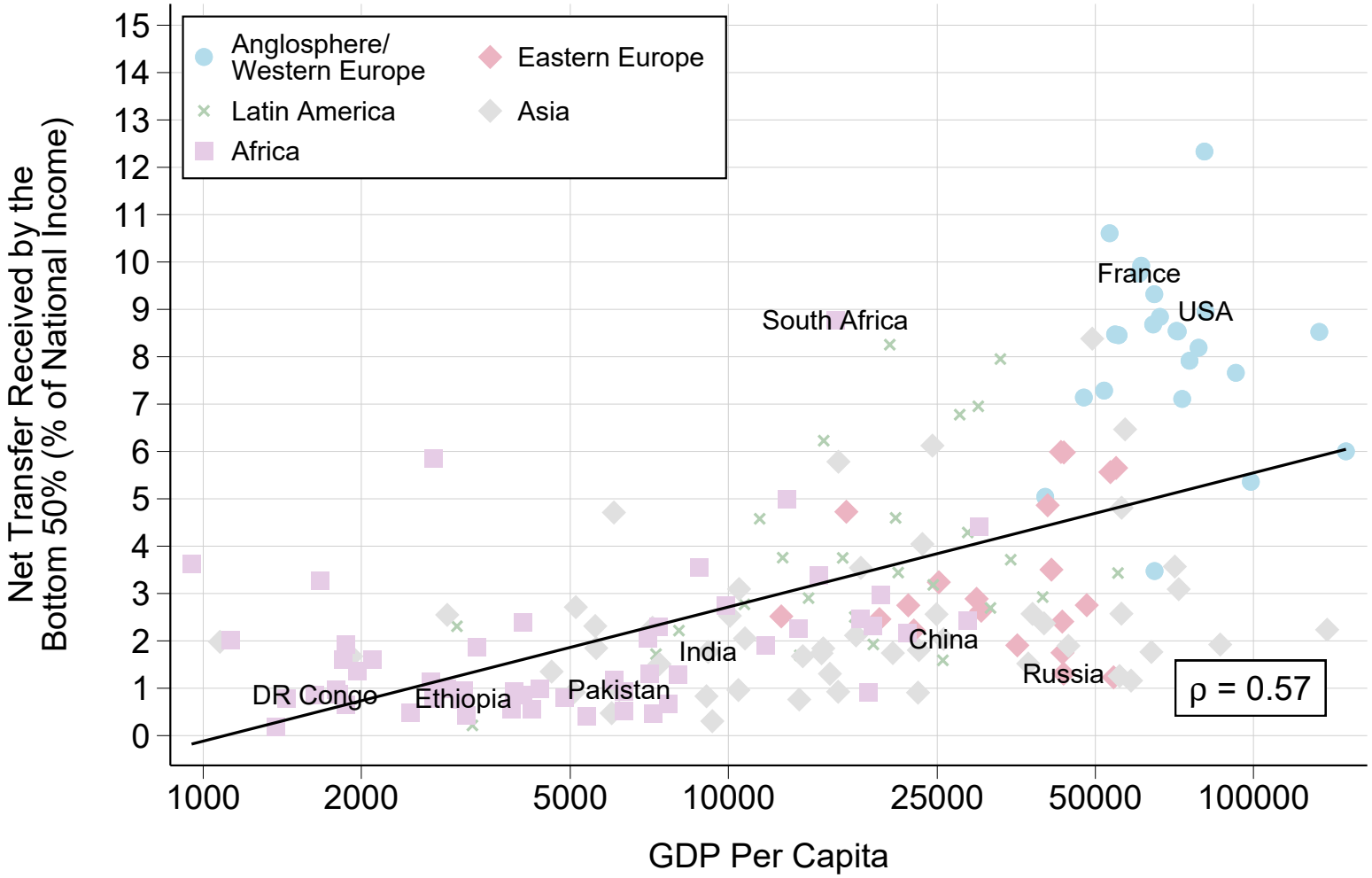
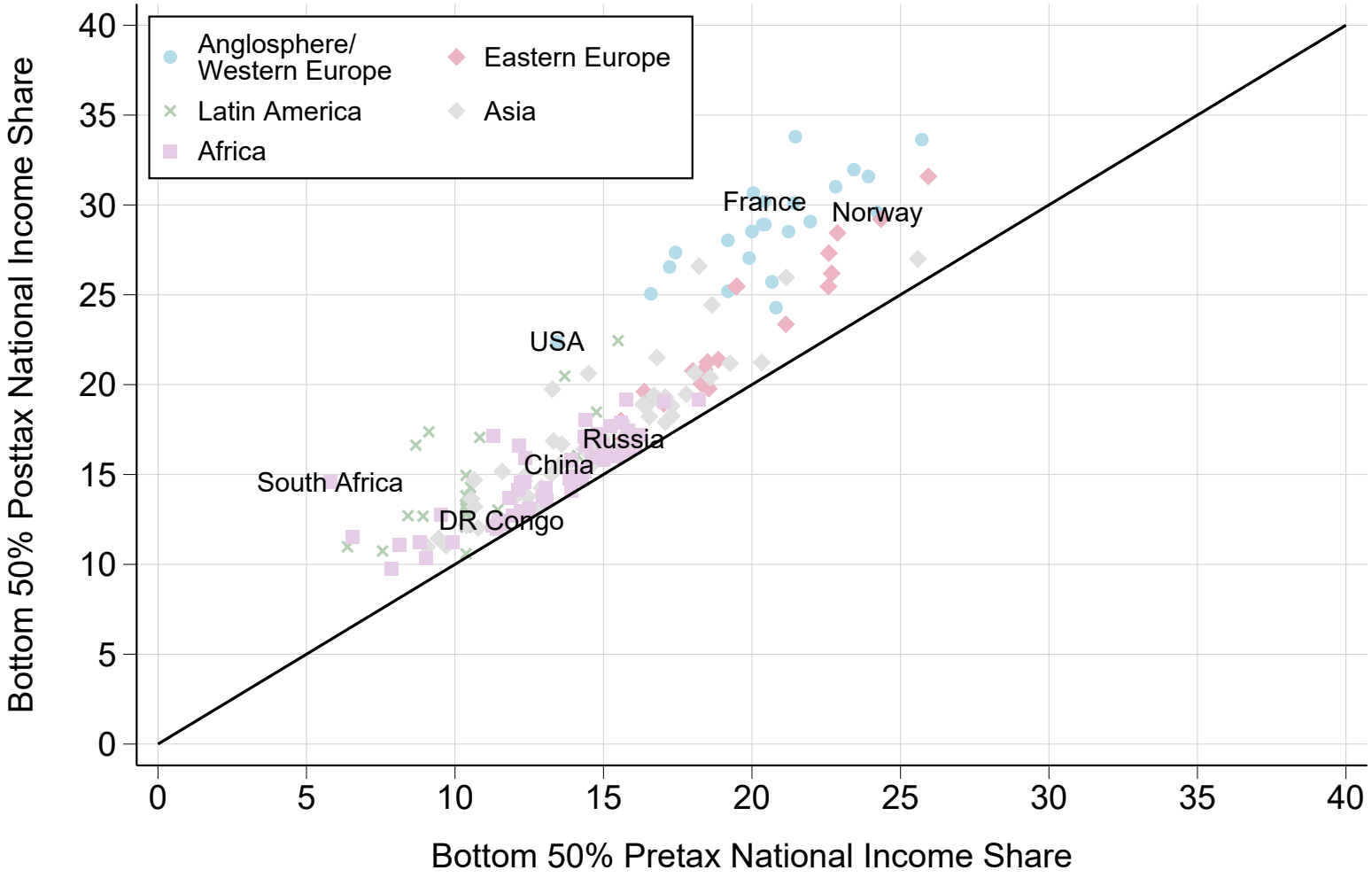


Figure A31 – Predistribution versus Redistribution:
Bottom 50% Pretax versus Posttax National Income Shares by Country, 2023
(Education Distributed Proportionally to Disposable Income)



B.6. Results With Other Government Expenditure Distributed as a Lump Sum

Figure A32 – A Global Map of Redistribution: Net Transfers Operated by the Tax-and-Transfer System Between Pretax Income Groups, 2023
(Expenditure Other than Social Assistance, Education, and Healthcare Distributed as a Lump Sum)

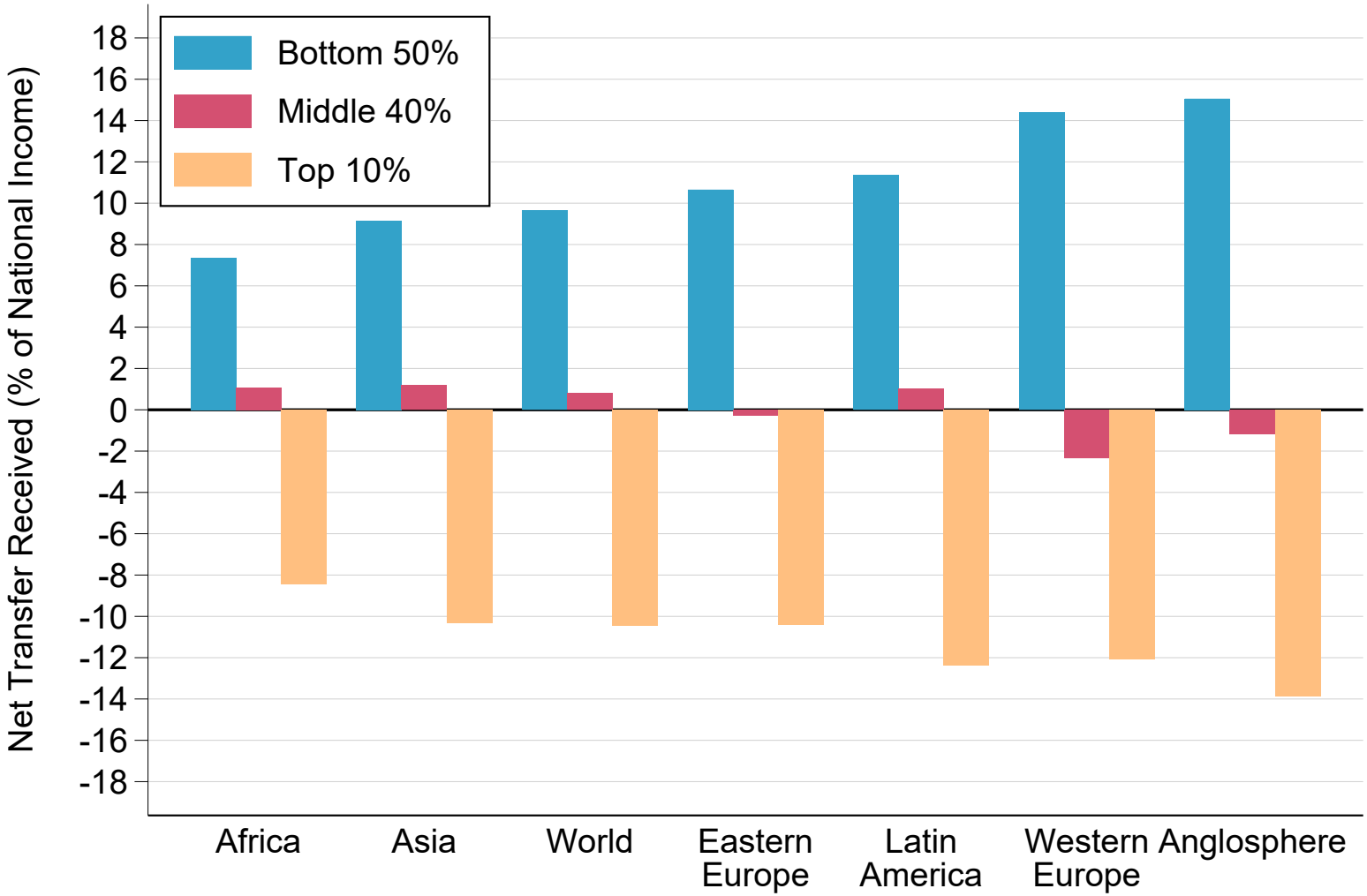


Figure A33 – Redistribution by World Region, 1980-2023:
Net Transfer Received by the Bottom 50% (% of National Income)
(Other Government Expenditure Distributed as a Lump Sum)

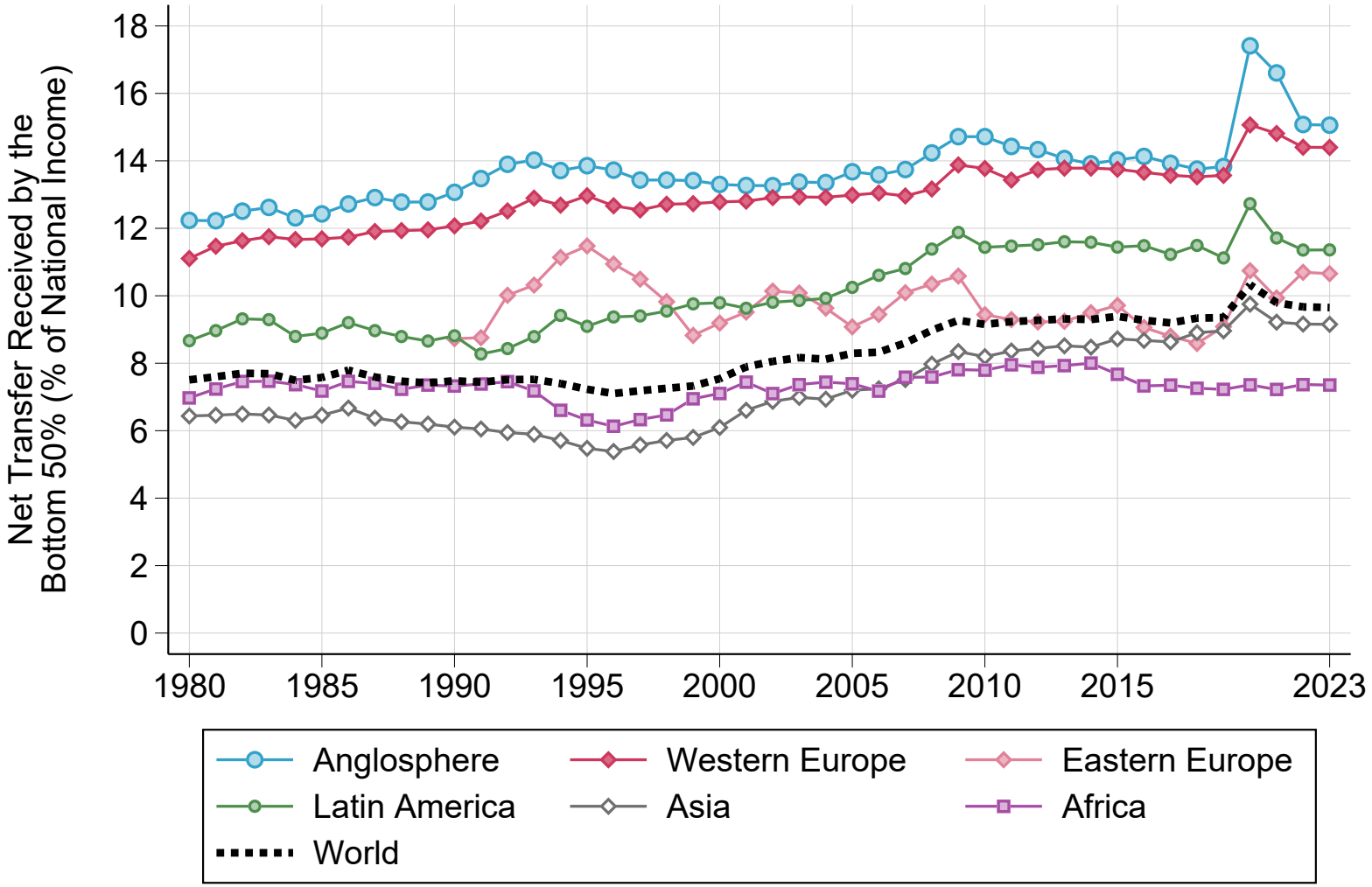


Figure A34 – Transfer Progressivity Over the Course of Development:
Total Transfer Received by the Bottom 50% (% of National Income)
(Expenditure Other than Social Assistance, Education, and Healthcare Distributed as a Lump Sum)

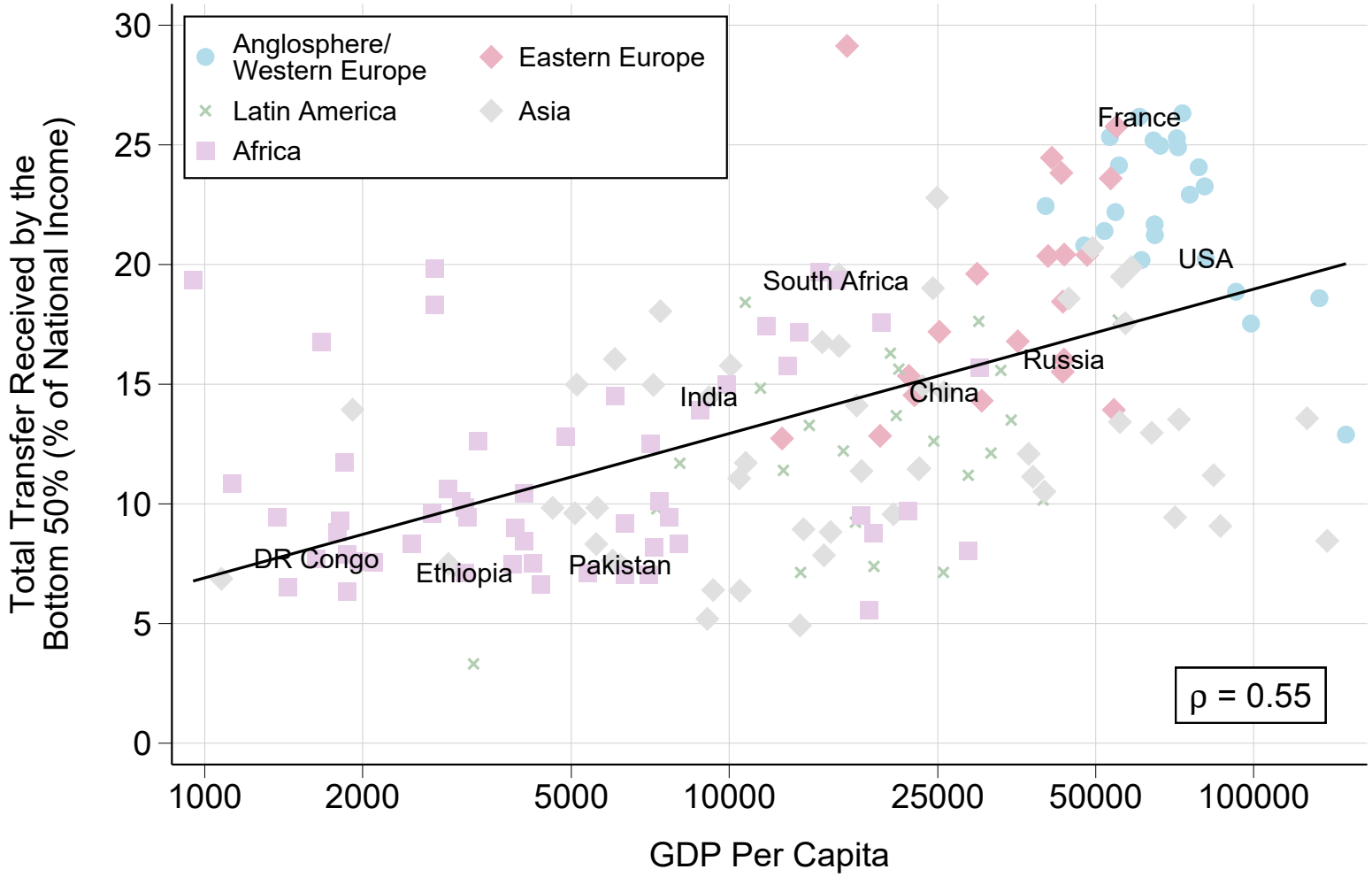


Figure A35 – Extent of Redistribution Over the Course of Development:
Net Transfer Received by the Bottom 50% (% of National Income)
(Expenditure Other than Social Assistance, Education, and Healthcare Distributed as a Lump Sum)

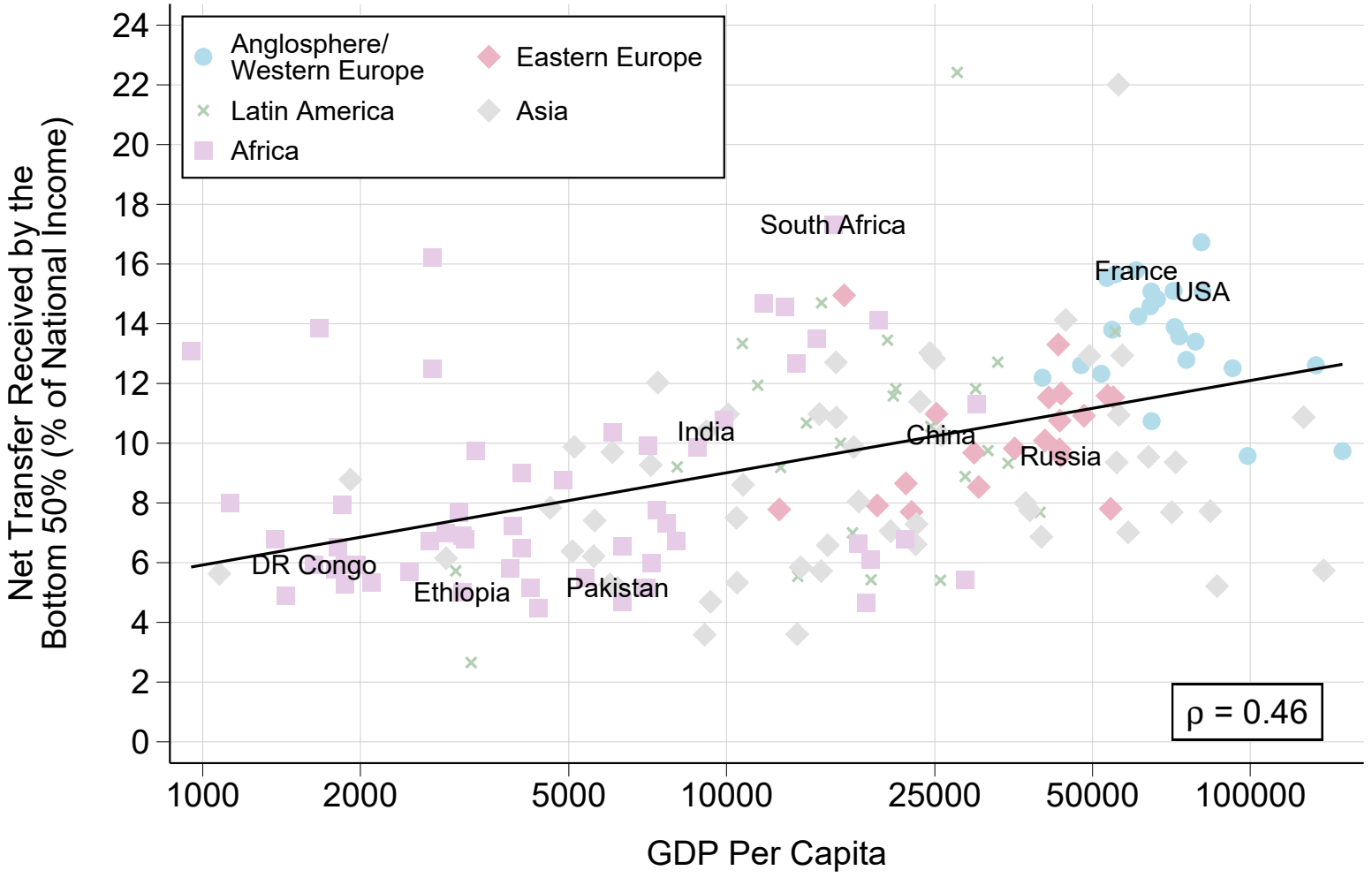


Figure A36 – Predistribution versus Redistribution:
Bottom 50% Pretax versus Posttax National Income Shares by Country, 2023
(Expenditure Other than Social Assistance, Education, and Healthcare Distributed as a Lump Sum)