Inequality and Institutions:
Global Inequality

Ignacio Flores

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Roadmap (1/2)

1. Global inequality trends

1.1 Global income

- Regional incomes over a century
- Foreign income flows
- The functional distribution

1.2 Global wealth

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- The Wealth-to-income ratio
- Wealth composition in the long run
- The rise of private capital

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- Present levels of inequality

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Roadmap (2/2)

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Global inequality trends

Global income

Income in an international perspective

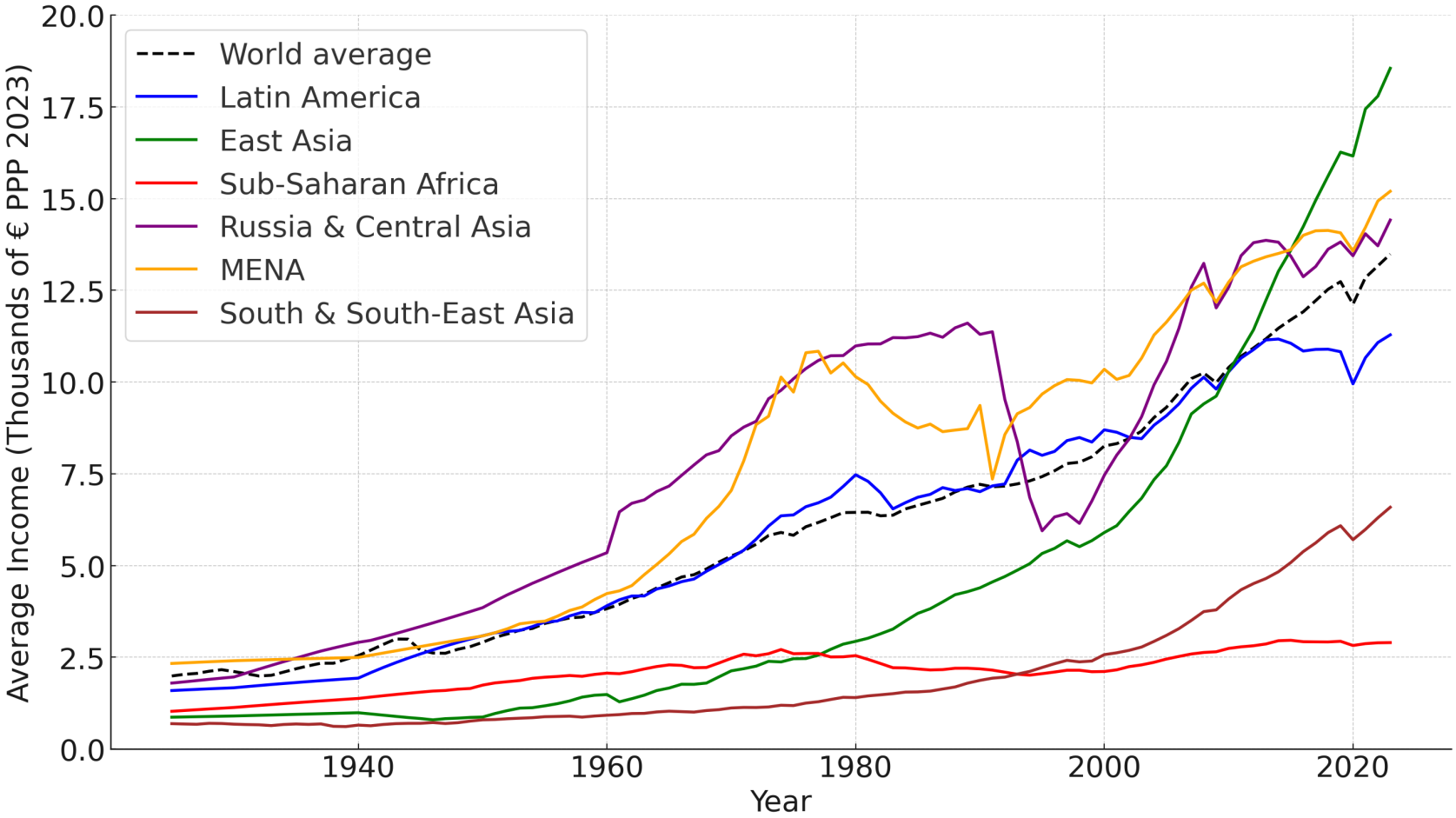
National level

- Income = net domestic output + net foreign income
- $Y = Y_D + NFI$

Global level

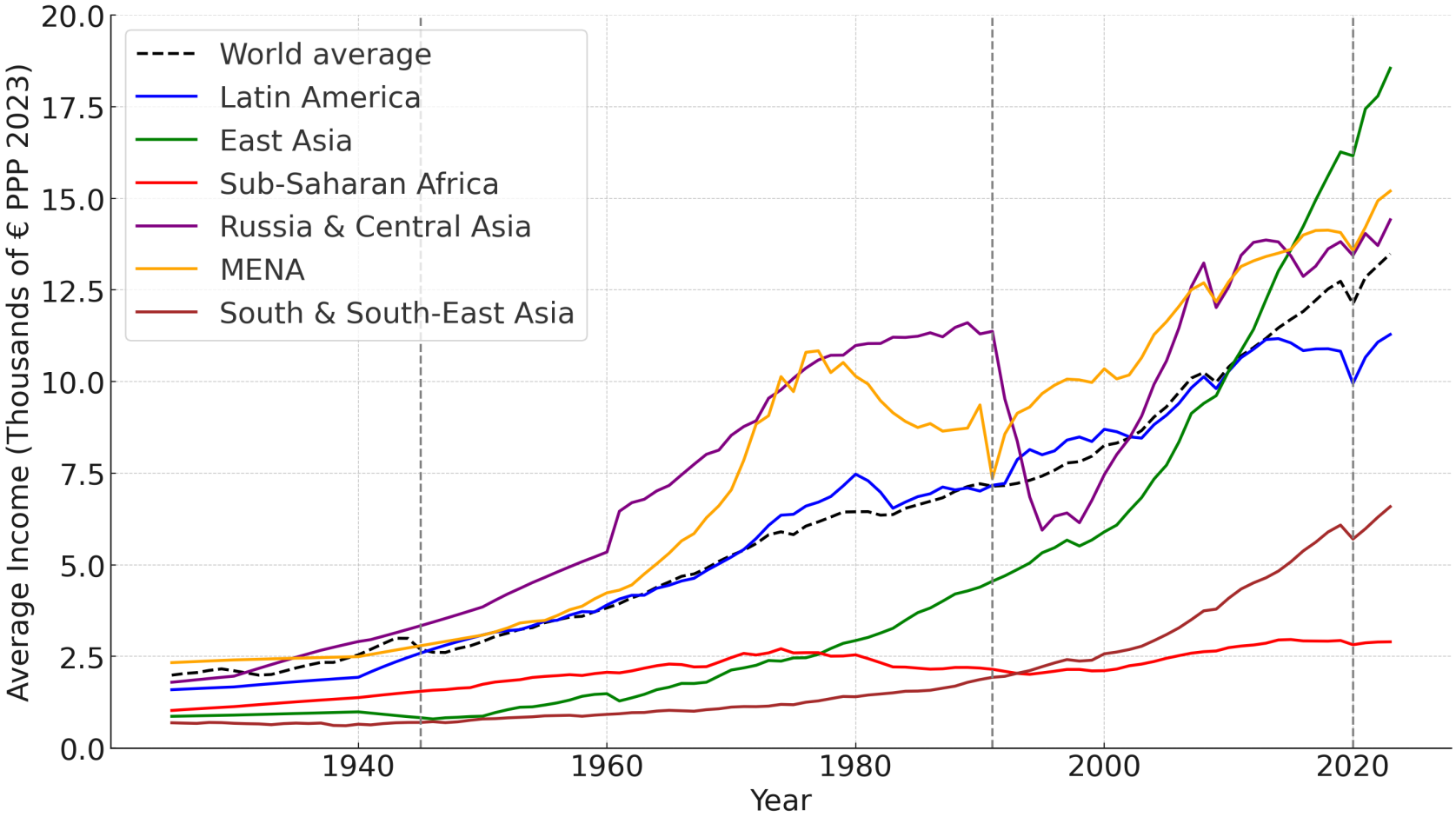
- $Y = Y_D$
- The sum of NFI is 0

Incomes in the global south, over a century



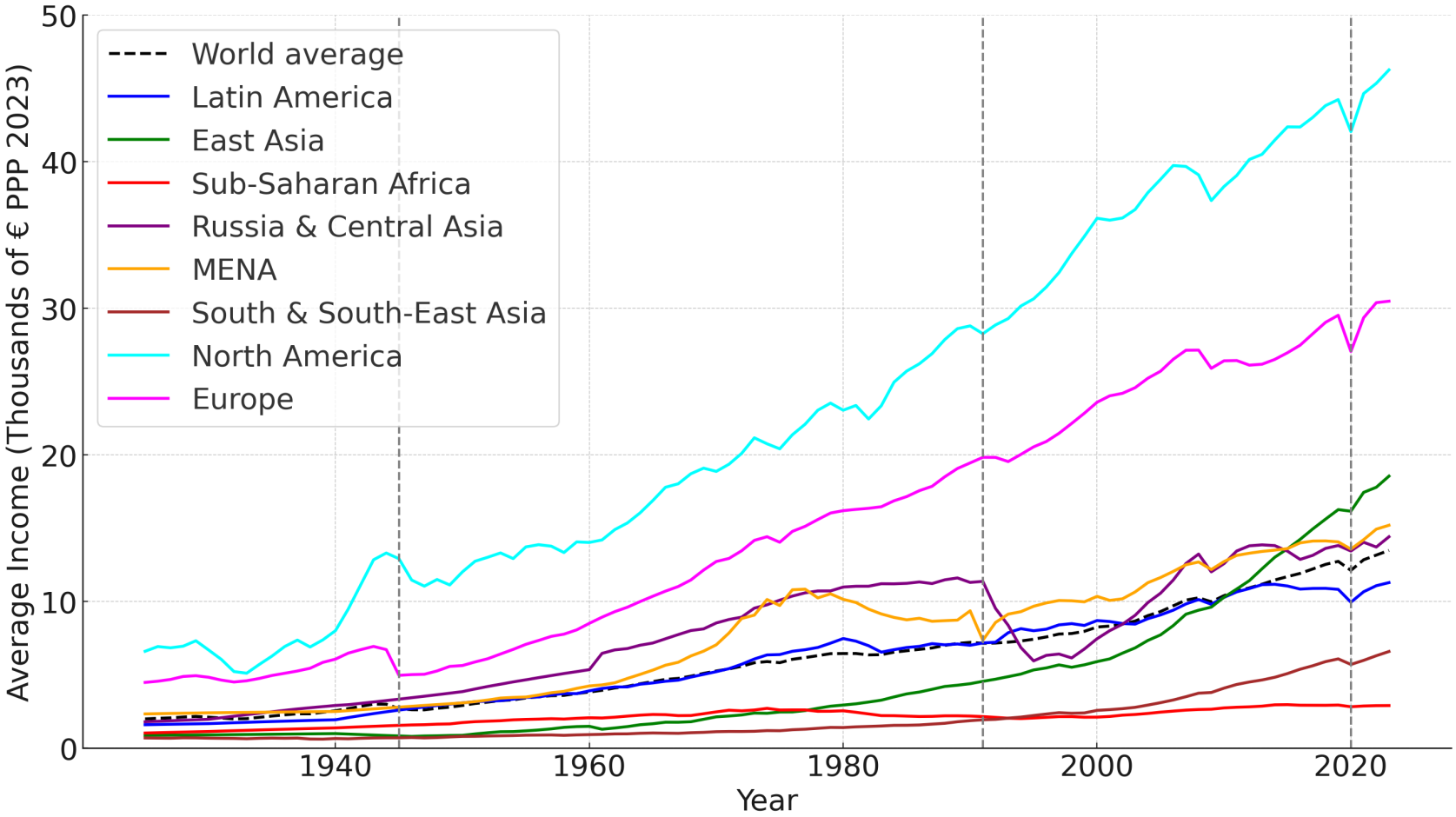
- **Notes.** The global average was multiplied by 5 in a century. East Asia saw the fastest increase while sub-Saharan Africa stagnates. Latin America follows the average closely, but recently decoupled. Based on WID.world

Global events setting the pace



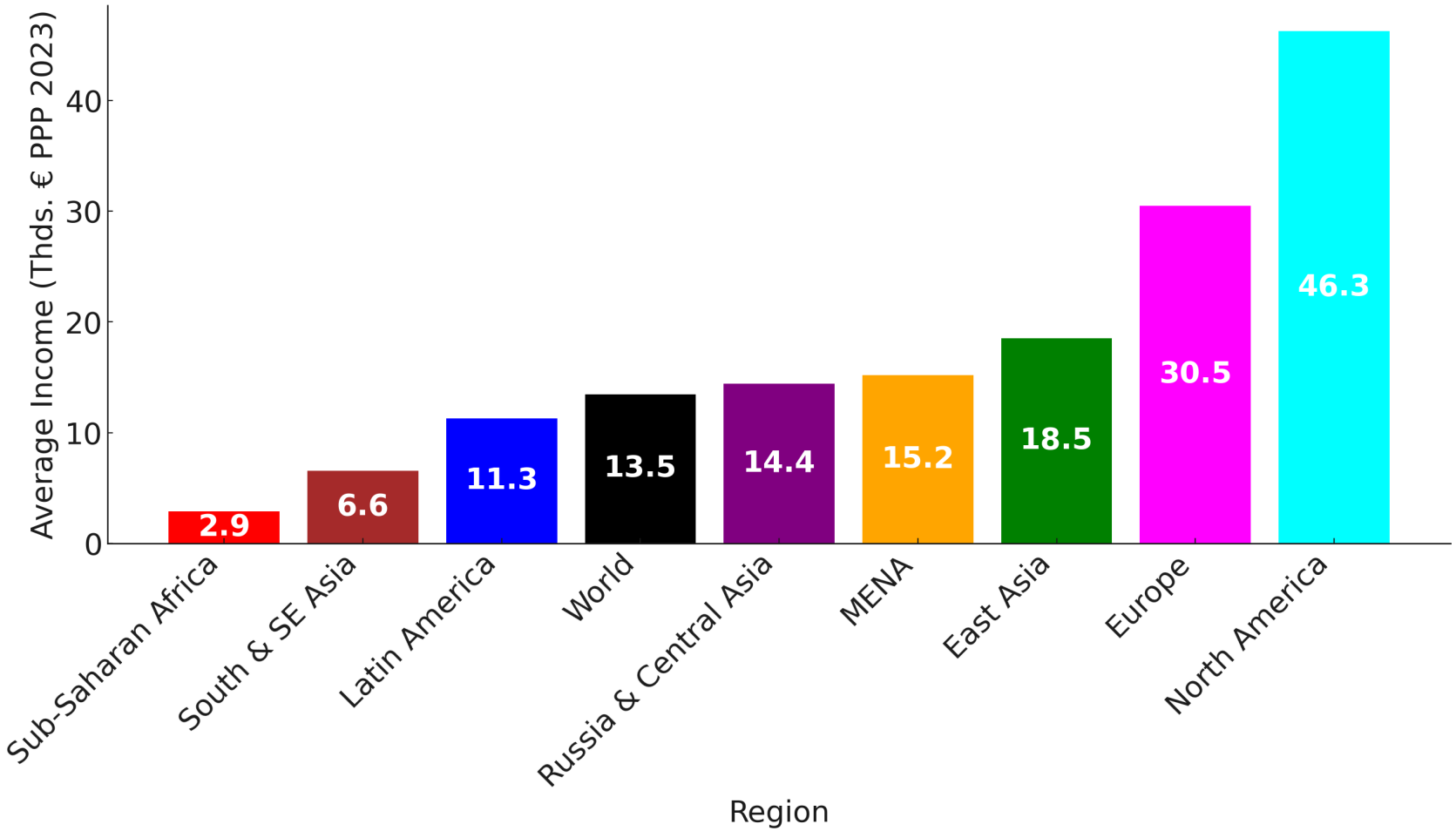
- **Notes.** The dashed vertical lines refer to the end of WW2, the fall of the Berlin wall and COVID-19. Based on WID.world.

The clear dominance of the global north



- **Notes.** Europe and North America stand at a different order of magnitude. Based on WID.world

Average incomes in 2023



- **Notes.** The North American average is 50% higher than the European. It is almost 16 times higher than in Sub-Saharan Africa. Based on WID.world, june 2024

More detail on foreign incomes

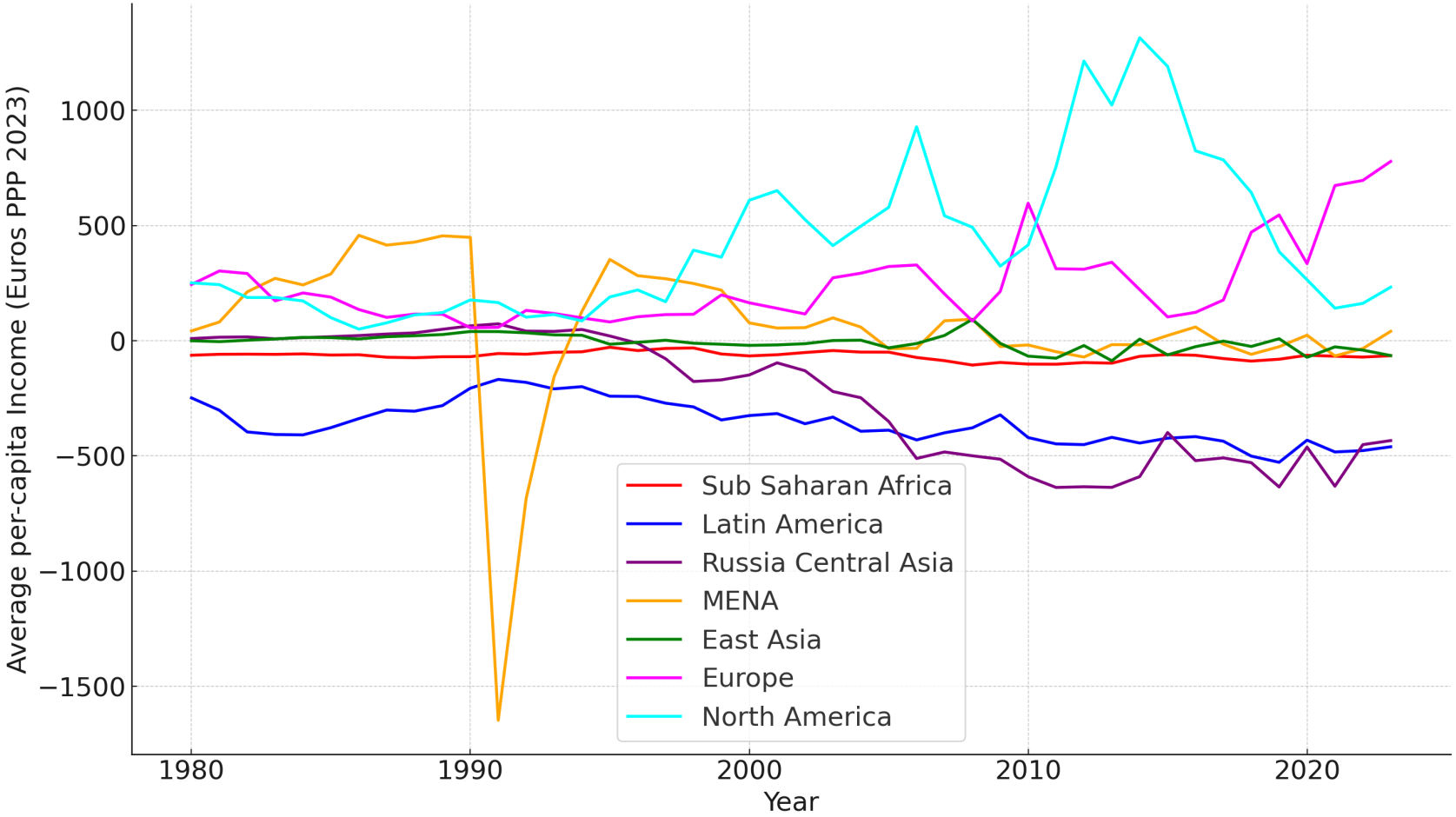
Net domestic output

- Domestic output = GDP - capital depreciation
- $Y_D = GDP - d$
- Depreciation is asset- and country-specific

Net foreign income

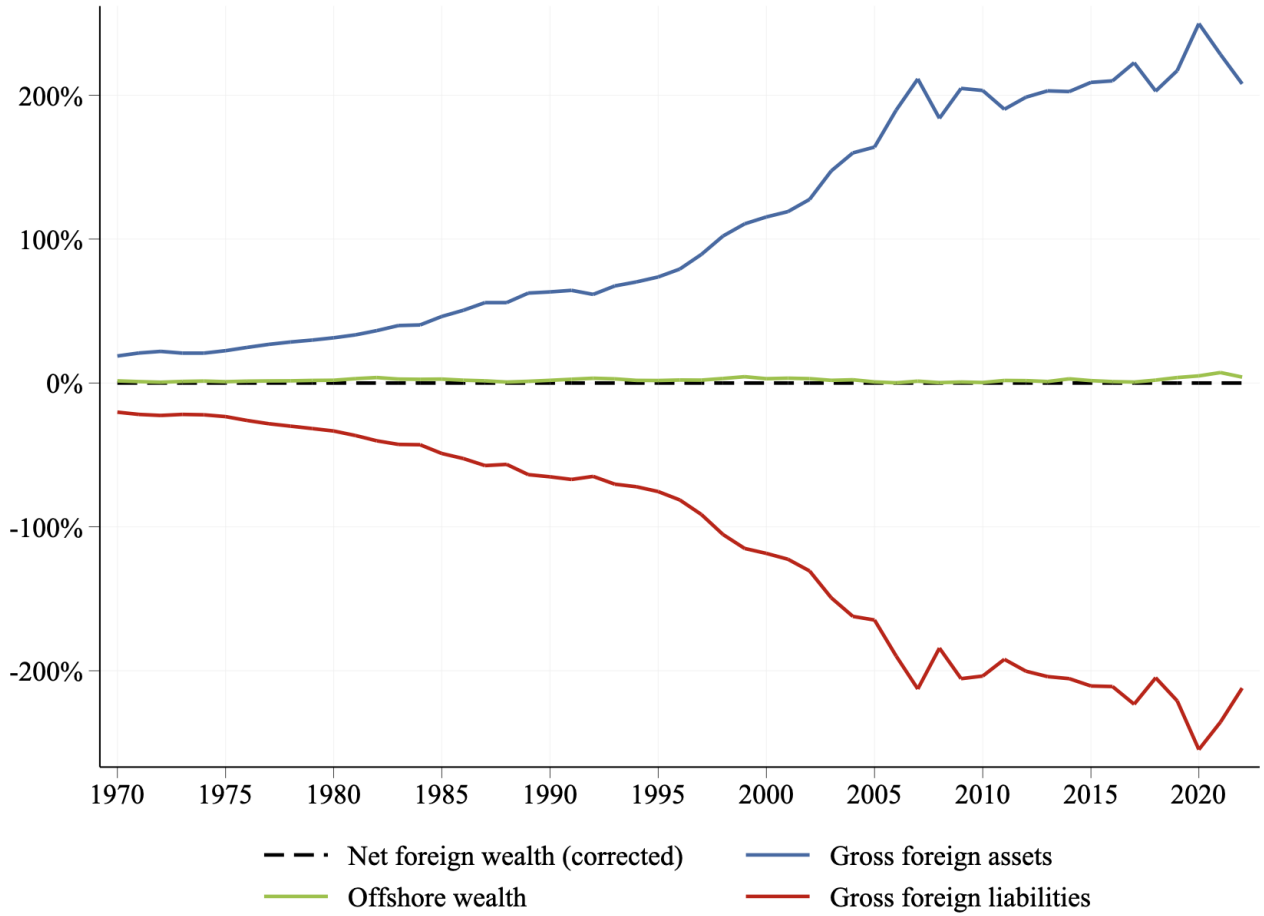
- Net foreign income = NFI from labor + NFI from Capital
- $NFI = NFI_L + NFI_K$
- Can be positive or negative
- $NFI_K = FA \times r_A - FL \times r_L$

Net foreign income flows



- **Notes.** Foreign income flows have increased since the 1990s. Some regions send more than what they receive (Latin America, Russia, S.S. Africa), while others receive more (Europe and North America). Based on WID.world

Foreign capital accumulation, in the recent decades



- **Notes.** Foreing Capital income flows are attached to foreign assets, which now accrue to 2 times the world GDP. Source: Nievas and Sodano, 2024

The functional distribution of income

Net domestic output

- Income = labor income + capital income
- $Y_D = Y_L + Y_K$

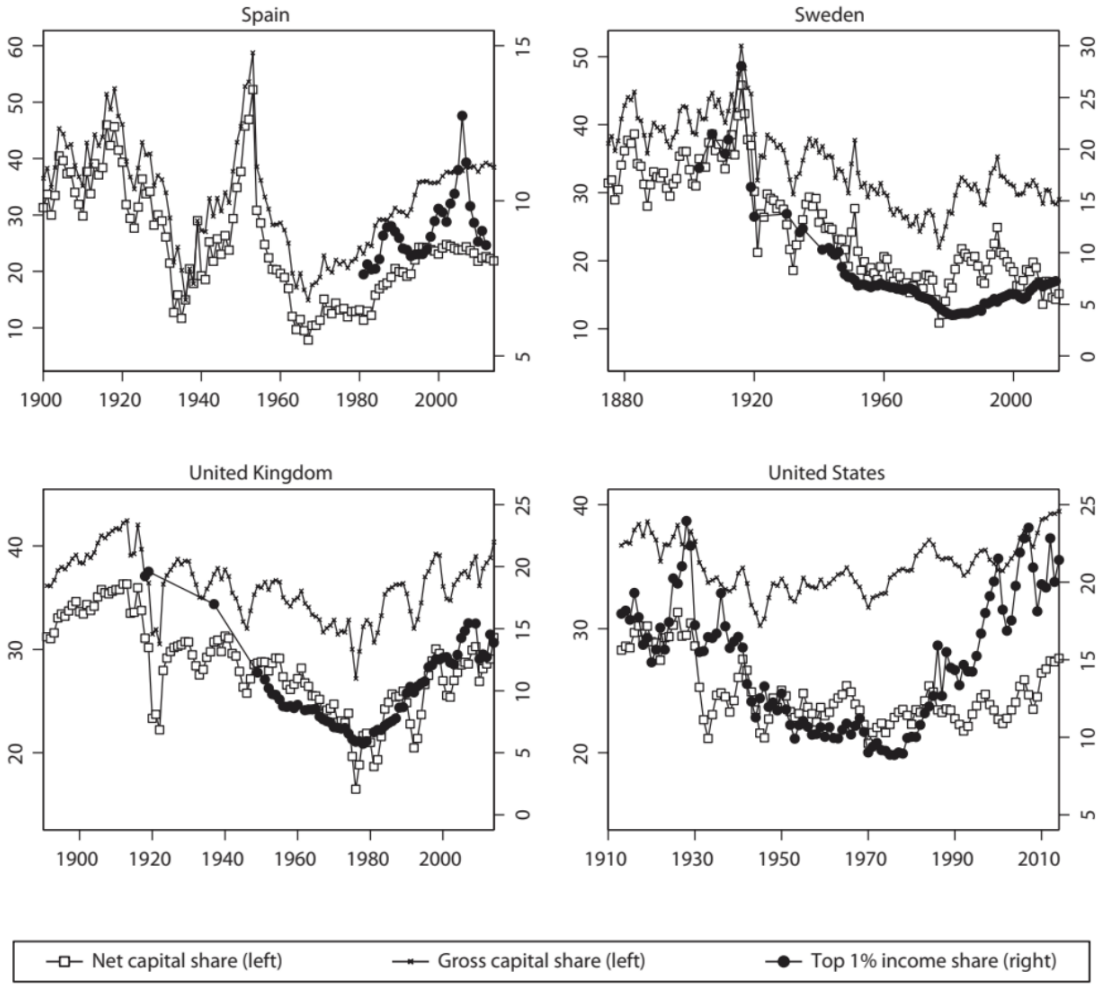
Capital income (domestic + foreign)

- Incl. corporate profits, rents, interest, K component of mixed income
- The capital share: $\alpha = Y_K / Y_D$

Labor income (domestic + foreign)

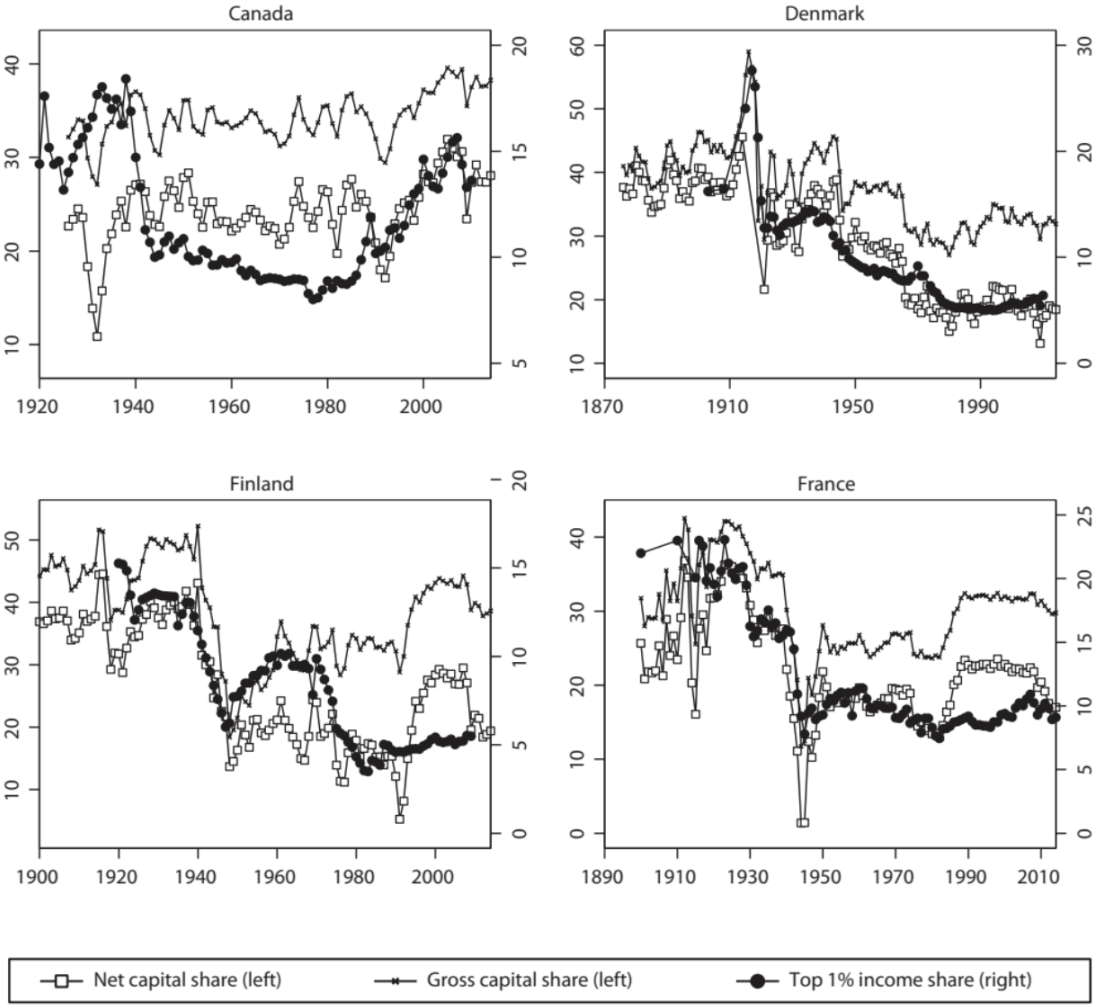
- Incl. wages, supplements, labor component of mixed income
- The labor share: $(1 - \alpha) = Y_L / Y_D$

Long run capital shares and the top 1% (1/2)



- **Notes.** The capital share of income α is not constant, as hypothetized by the Kaldorian stylized facts. They vary and are correlated with top incomes. Source: Bengtsson and Waldenström, 2018

Long run capital shares and the top 1% (2/2)



- **Notes.** The capital share of income α is not constant, as hypothetized by the Kaldorian stylized facts. They vary and are correlated with top incomes. Source: Bengtsson and Waldenström, 2018

The link between capital income and wealth

- Define r = average rate of return to wealth:

$$r = \frac{Y_K}{W}$$

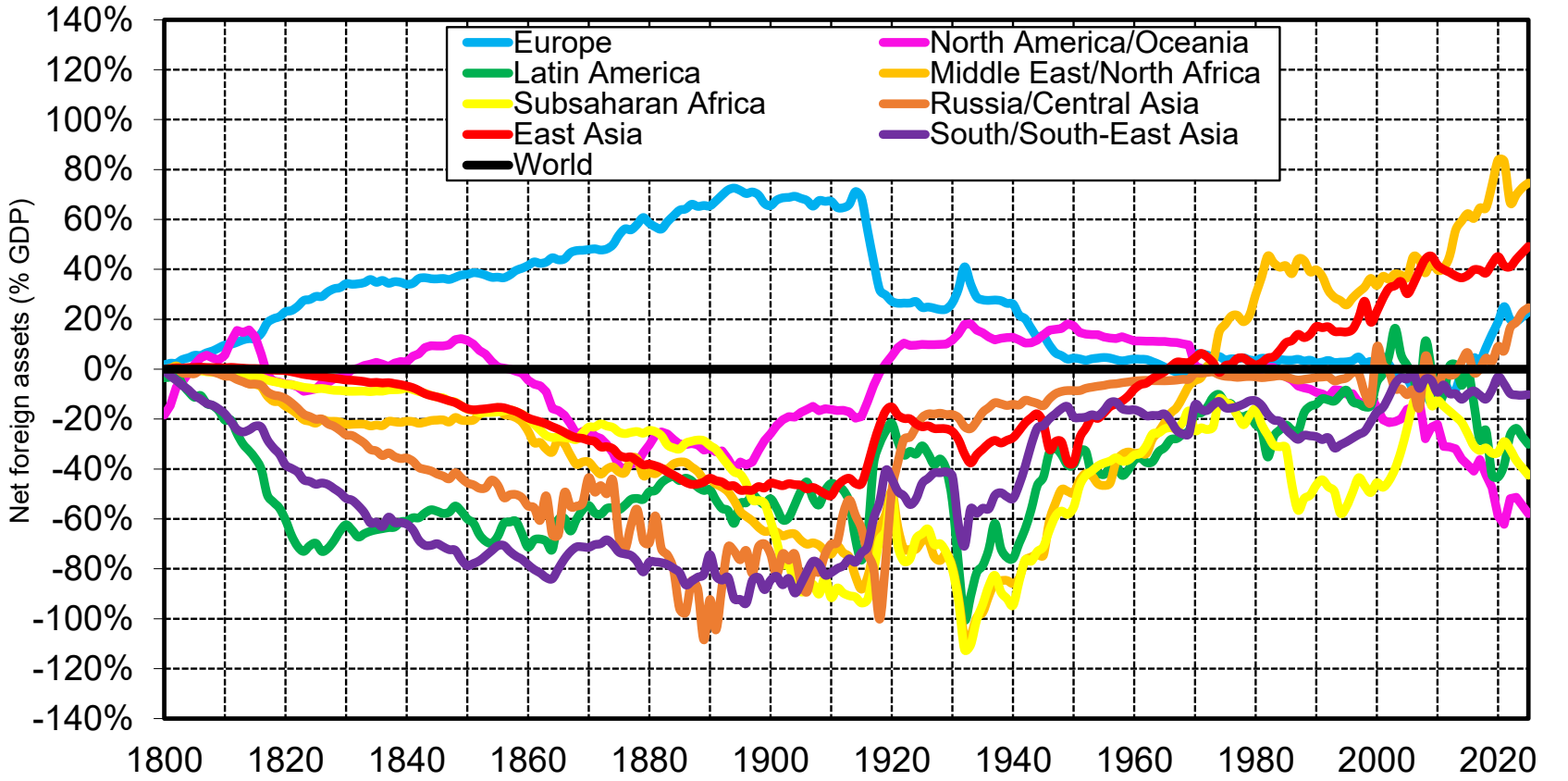
- **Basic accounting relationship:**

$$\alpha = r \times \beta$$

- **Typical values:** $\beta = 600\%$, $r = 5\%$, $\alpha = 30\%$
- In practice, the average rate of return to capital r varies substantially across asset classes and individuals.

Global wealth

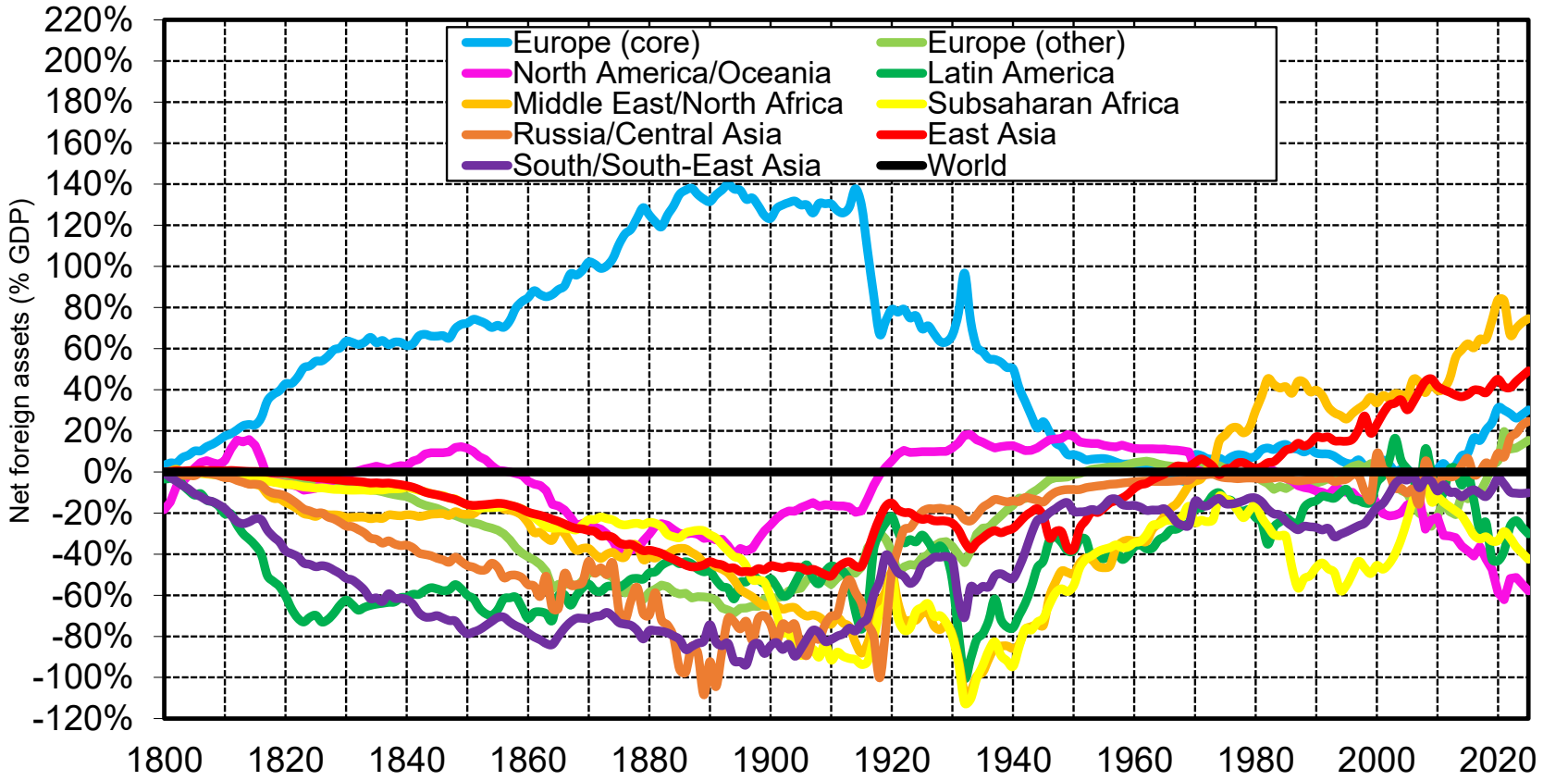
Foreign Wealth in a historical perspective (1/2)



Interpretation. Between 1800 & 1914, Europe owns a rising fraction of the rest of the world. In 1914, Europe's foreign wealth (i.e. net foreign assets held by European residents in the rest of the world) reach about 70% of Europe's GDP. These foreign assets vanish between 1914 and 1950. They are partly replaced by foreign assets owned by the US between 1920 and 1970 and by oil countries (particularly in the Middle East) and East Asia since the 1970s-1980s. **Sources and series**: wid.world

- **Source.** Nievas and Piketty, 2025

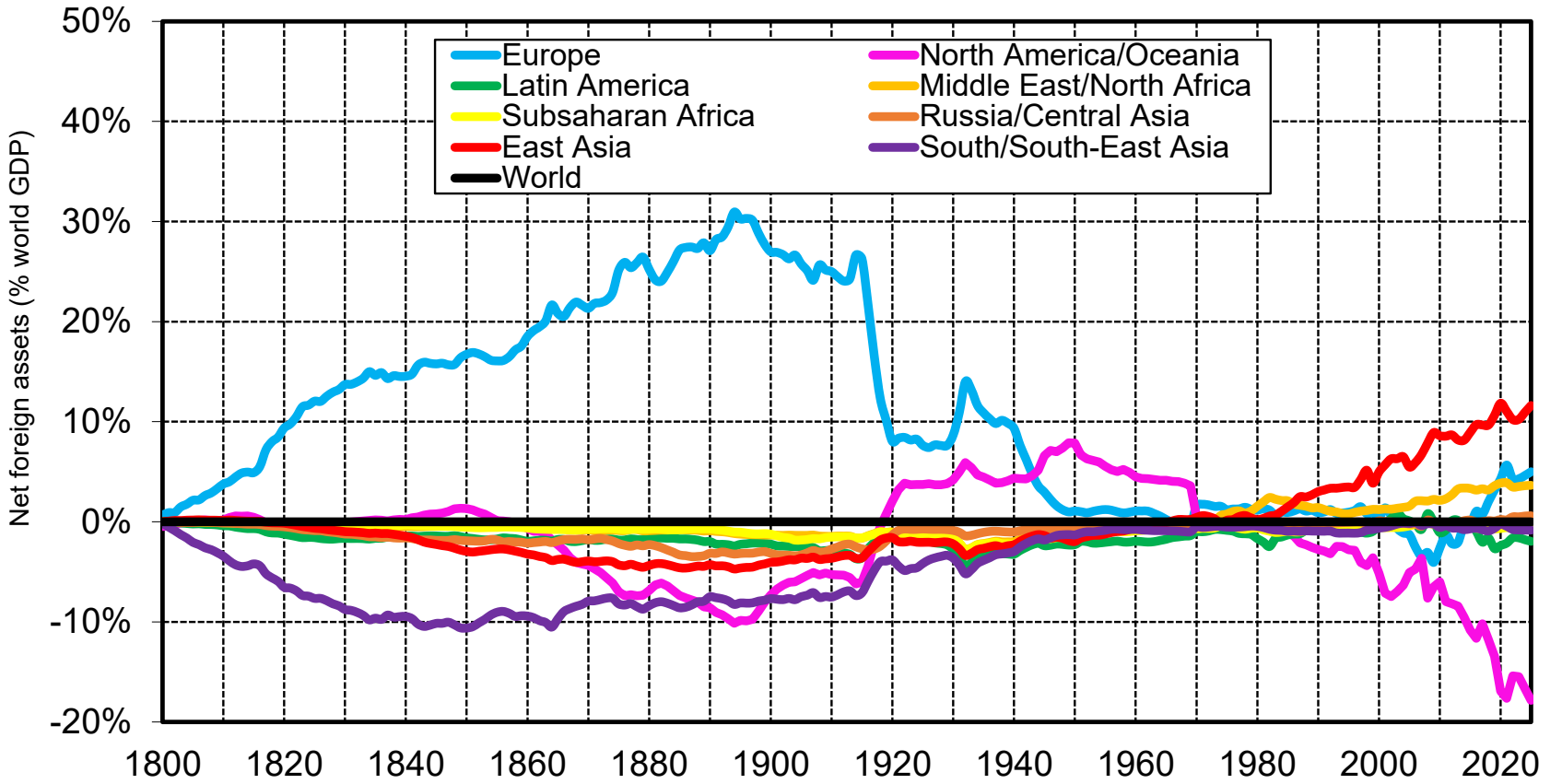
Foreign Wealth in a historical perspective (2/2)



Interpretation. If we look at core European colonial powers (Britain, France, Germany, Netherlands, making 68% of Europe's GDP in 1914), we find that their net foreign assets reach almost 140% of their GDP in 1914. In contrast other European countries have large negative foreign wealth (approximately of the same magnitude as other parts of the world). I.e. core European powers own assets in South Europe, Eastern Europe and Nordic Europe with approximately the same proportions as in the rest of the world. **Sources and series**: wid.world

- **Source.** Nievas and Piketty, 2025

Foreign Wealth as % World GDP



Interpretation. If we express net foreign assets as a fraction of world GDP (rather than as a fraction of the GDP of each country or region), then we find that Europe's pre-WW1 foreign wealth is about 2.5-3 times larger than East Asia's foreign wealth today (and 5-6 times larger than Middle East's foreign wealth today). **Sources and series**: wid.world

- **Source.** Nievas and Piketty, 2025

Measuring wealth stocks

Capital vs. Wealth

- Capital is mostly produced and generates profit (machines, buildings, sometimes human capital too)
- Wealth can be a broader concept: it also incorporates non-produced assets (land, subsoil assets) and financial assets (equity, bonds), which produce economic rents and can be traded

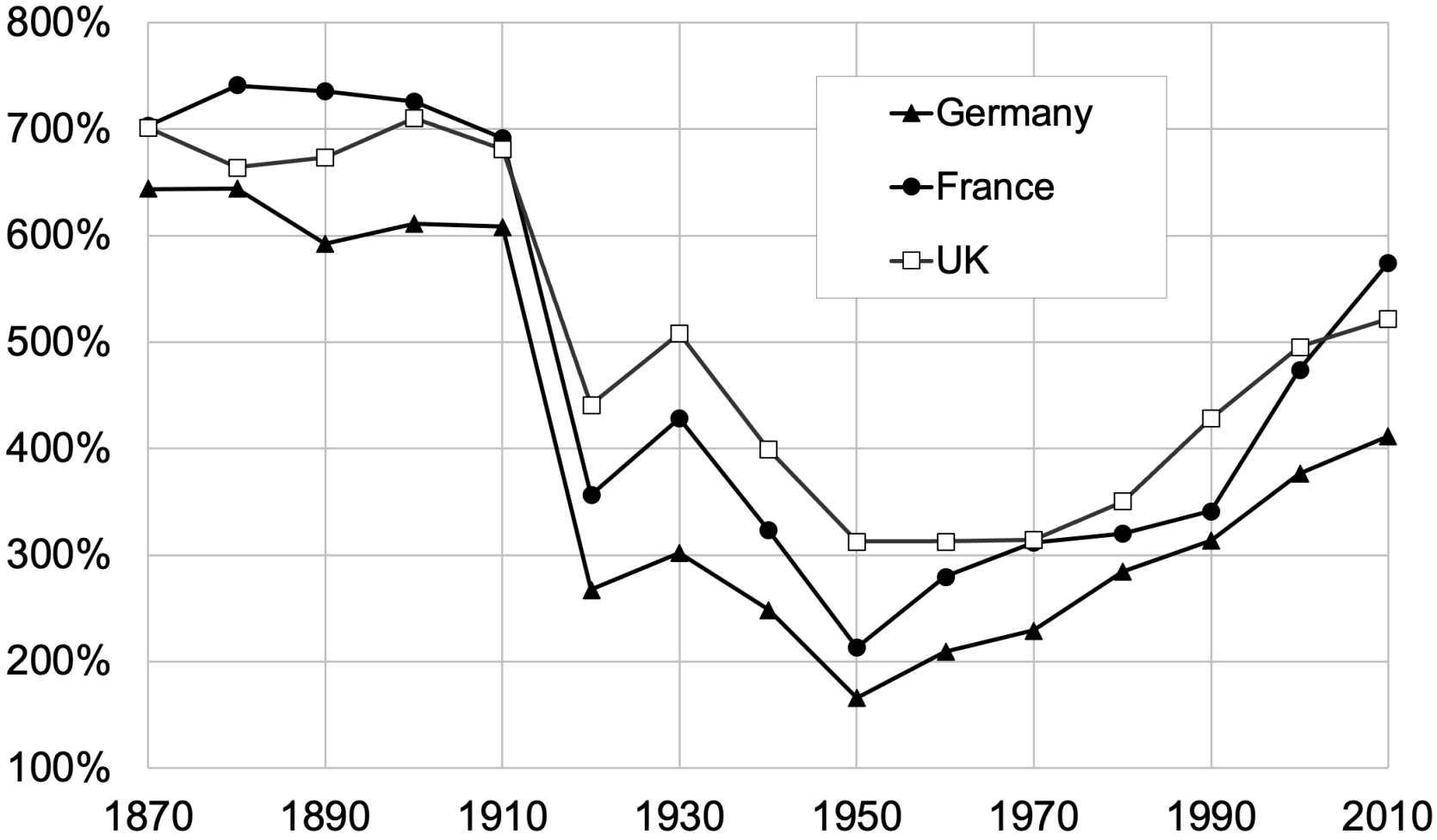
Net national wealth

- $W = W_P + W_G$
- National wealth = private wealth + public wealth

The wealth-to-income ratio

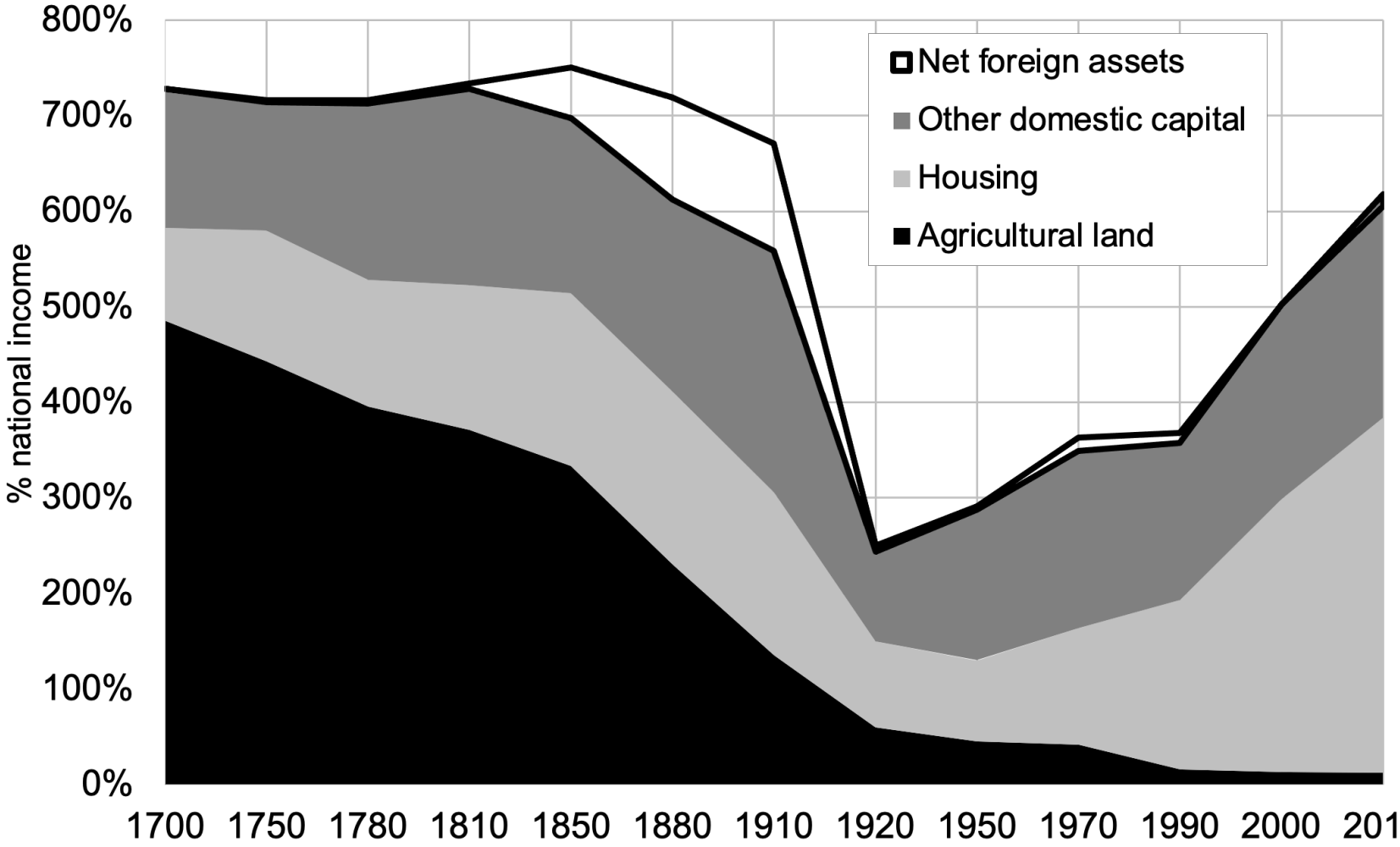
- $W/Y_D = \beta$

Long-run national wealth in Europe (β)



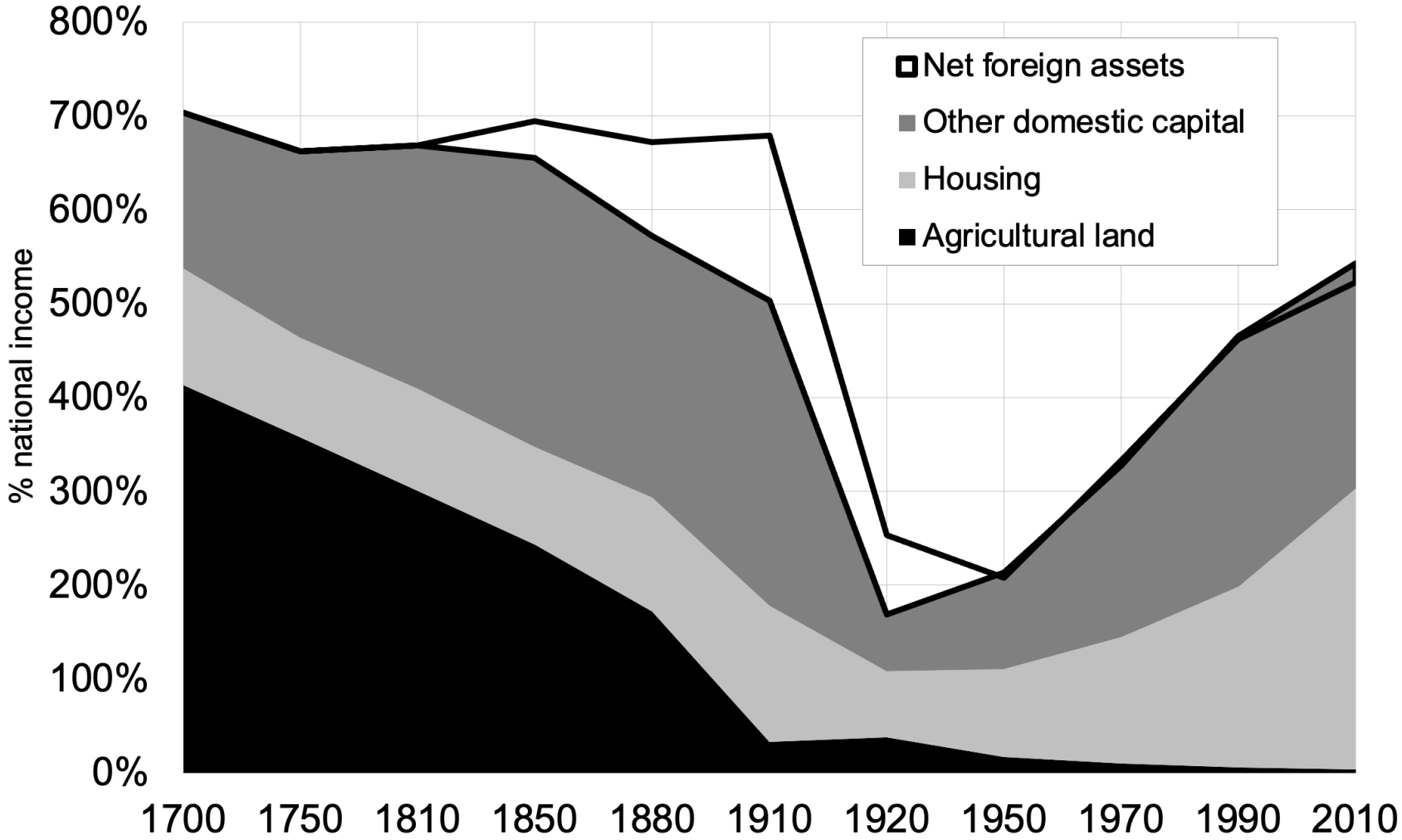
- **Notes.** National wealth was 6-7 times the national income by the end of the XIX century. Most of it was destroyed during the WW, then recovered slowly through decades. Source: Piketty and Zucman, 2014

National wealth composition in France



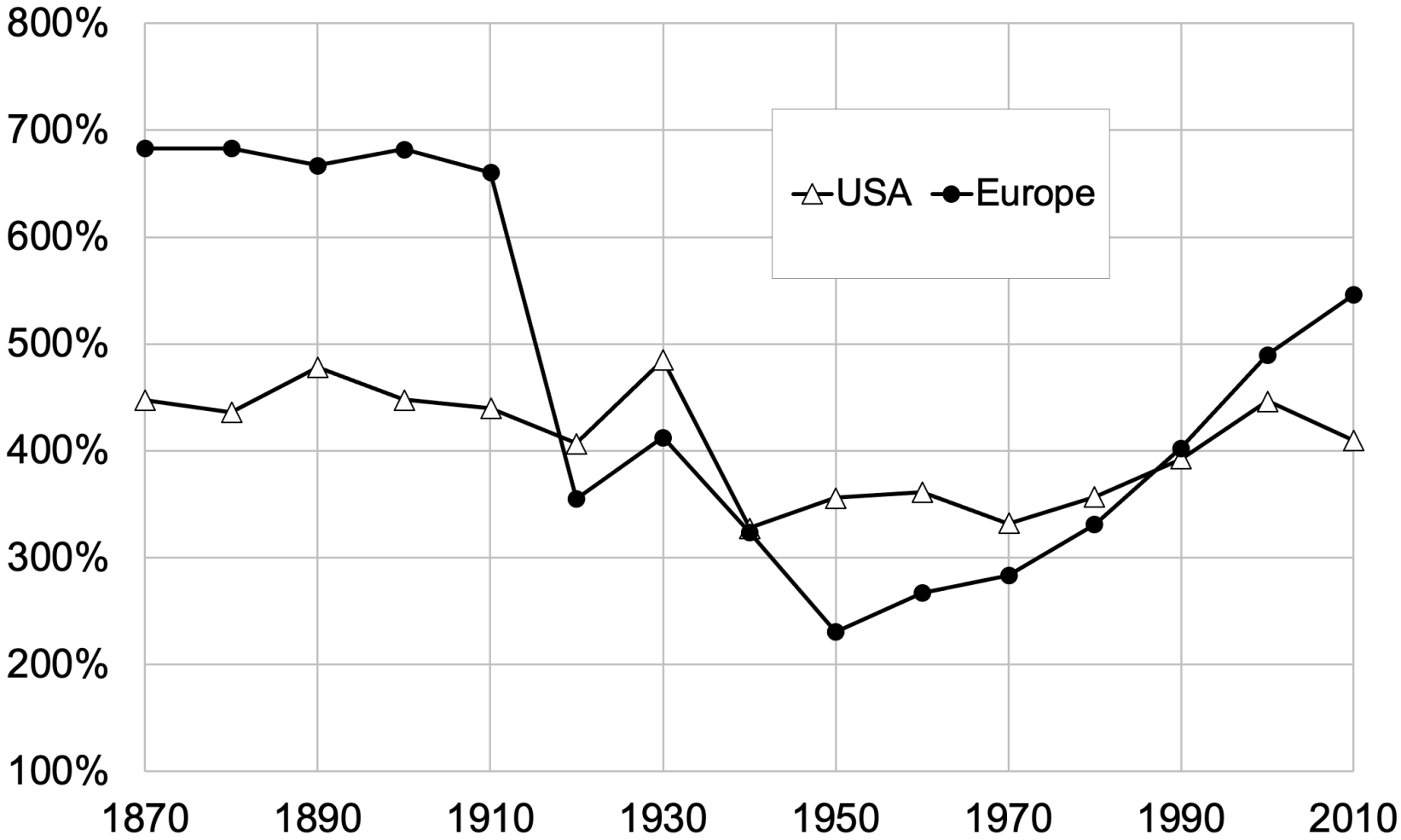
- **Notes.** Agricultural land was the most important asset during the XVIII and XIX centuries. The colonial period saw an increase in foreign assets. Housing assets rose during the XX century. Source: Piketty and Zucman, 2014

National wealth composition in the UK



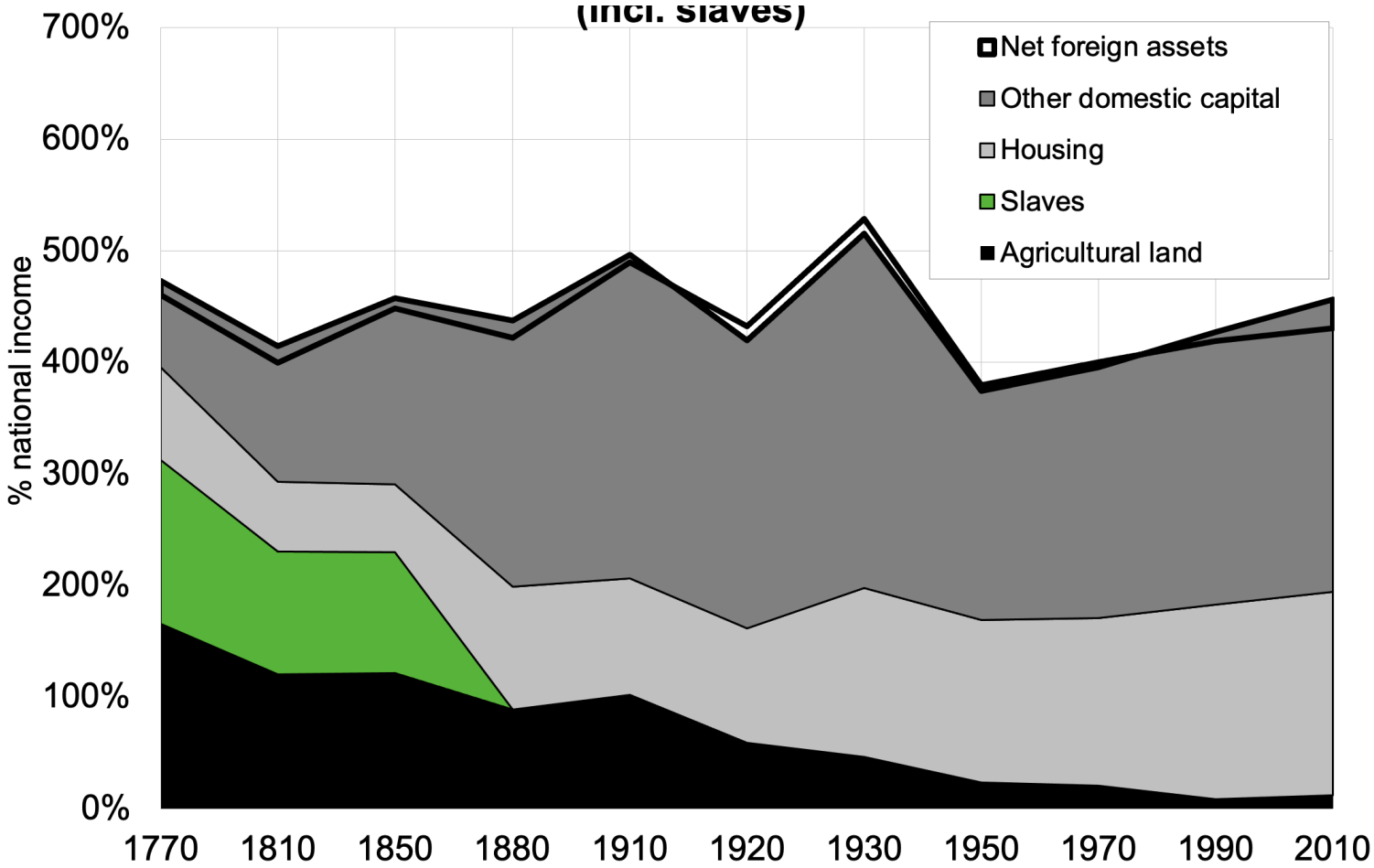
- **Notes.** Wealth experienced similar transformation in the United Kingdom and France since 1700. Source: Piketty and Zucman, 2014

National wealth in Europe vs. the USA



- **Notes.** Wealth accumulation was lower in the USA at the end of the XIX century. It remained relatively more stable throughout the century. Source: Piketty and Zucman, 2014

National wealth in the United States



- **Notes.** Before the end of the civil war, slaves were counted as wealth, which made a substantial part of the total. Other domestic capital (corporate assets, infrastructure) was relatively larger than in Europe. Source: Piketty and Zucman, 2014

Private vs. Public wealth

Private wealth

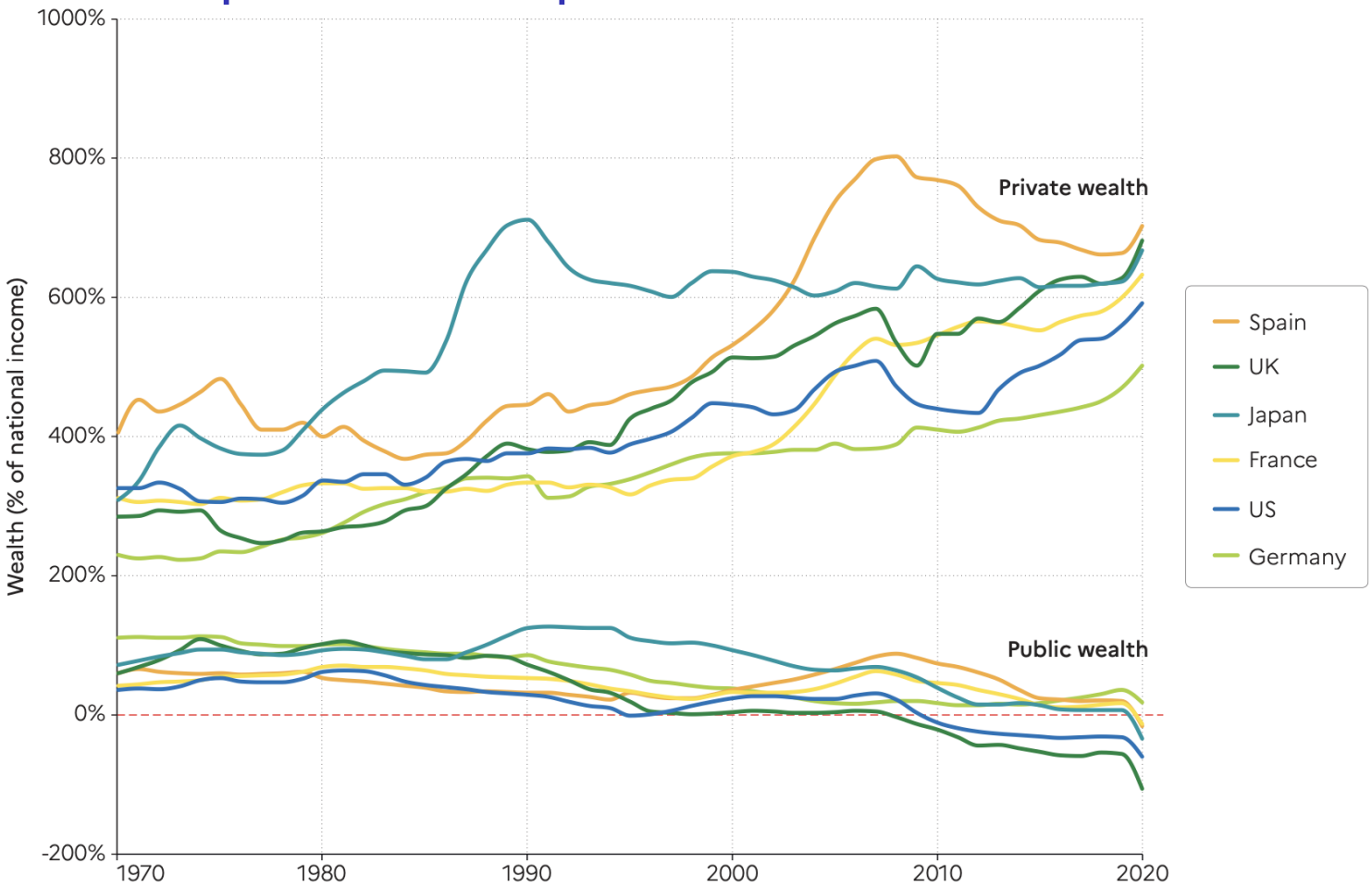
- $W_P = A_H - L_H$
- Private wealth = Households' Assets - Households' Liabilities
- Assets are financial (stock, deposits, bonds) and non-financial (land, housing)

Public wealth

- $W_G = A_G - L_G$
- Public wealth = Public Assets - Public Liabilities
- Assets are financial and non-financial

More recent estimates are more detailed

The rise of private capital



- **Notes.** In the UK, public wealth dropped from 60% of national income to -106%, while private capital keeps rising. The trend is common to most countries with data. More on this in the following sections. Source: The world inequality report (2022)

The long-run Wealth-Income ratio

In the long-run, the wealth-to-income ratio β is equal to the ratio of the saving rate s to the growth rate g.

Proof of the formula $\beta = s/g$:

- Future wealth: $W_{t+1} = W_t + s_t Y_t$
- Future income: $Y_{t+1} = Y_t(1 + g_t)$:

$$\beta_{t+1} = \frac{W_t + s_t Y_t}{Y_t(1 + g_t)} = \frac{\beta_t + s_t}{1 + g_t}$$

Steady-state Wealth-Income ratio

In steady state:

$$\beta_t = \beta_{t+1}, \quad s_t = s_{t+1}, \quad g_t = g_{t+1}$$

Substituting into the dynamic equation:

$$\beta = \frac{\beta + s}{1 + g} \quad \Rightarrow \quad \beta = \frac{s}{g}$$

Numerical illustration and assumptions

Examples:

- If $s = 10\%$ and $g = 3\%$, then $\beta = \frac{10\%}{3\%} = 333\%$
- If $s = 10\%$ and $g = 1.5\%$, then $\beta = \frac{10\%}{1.5\%} = 666\%$

Underlying assumption:

$$W_{t+1} = W_t + s_t Y_t$$

i.e., no capital gains or losses (no asset price effects).

Inequality across households

A short story of the World Inequality Lab

World Top Incomes Database (WTID) - 2011:

- Accessible series on income inequality for over 30 countries
- Relied solely on tax data, with limitations on scope

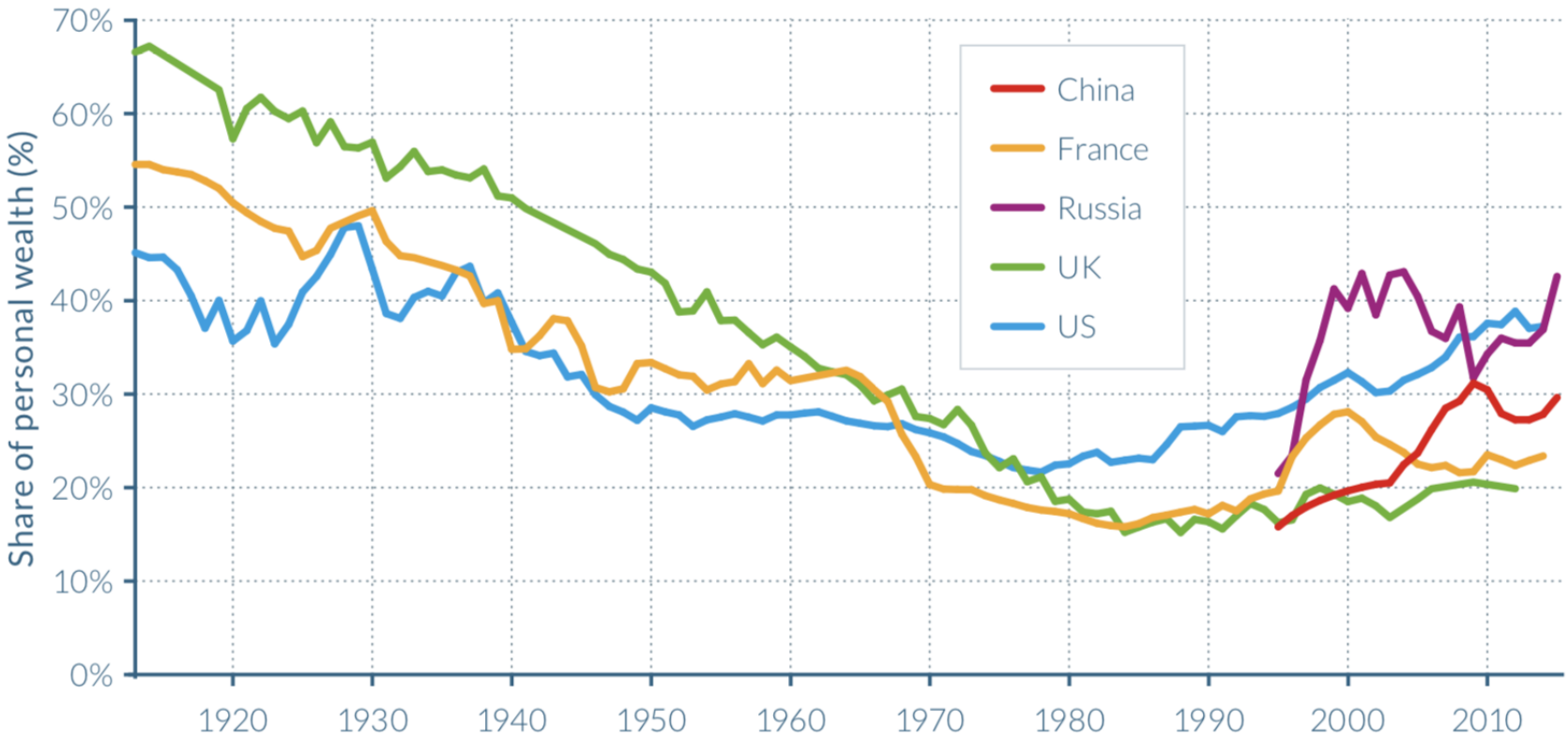
WTID evolves into WID - 2015

- Inclusion of wealth data and extended national income series.
- Adoption of System of National Accounts (SNA)

WID.world - 2017

- Launch of the WID website with advanced data visualization.
- Universal coverage, combining tax data and surveys, and detailed distributional accounts for all income and wealth. Annual distributional national accounts.

The fall and rise of private wealth concentration



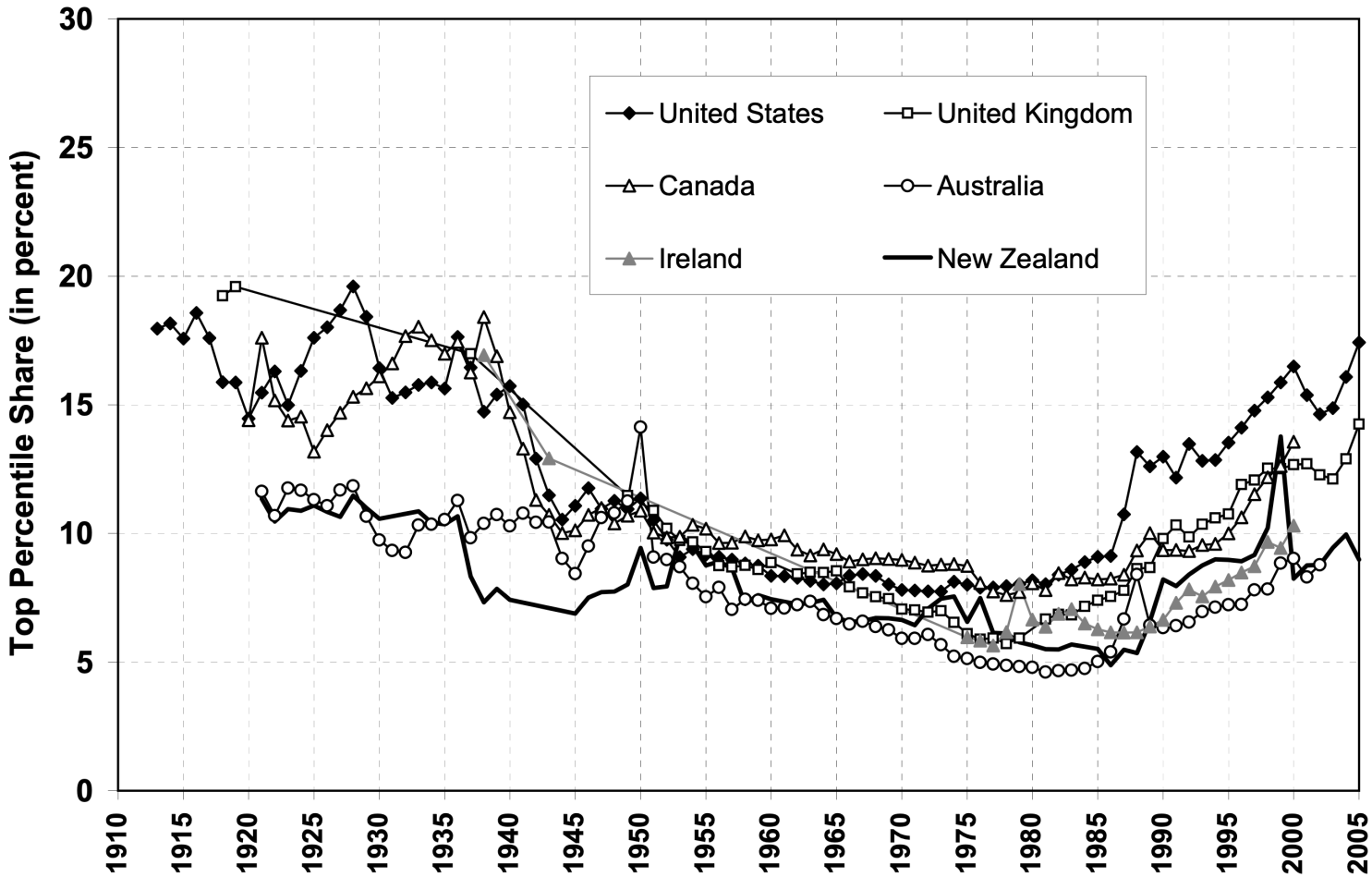
- **Notes.** The share held by the richest 1% of the population follows a U-shaped or L-shaped evolution. Concentration rises at different paces since the 1990s-2000s. Distributional wealth data is scarce. Source: The world inequality report (2022)

Top incomes in the long run

Fiscal income series

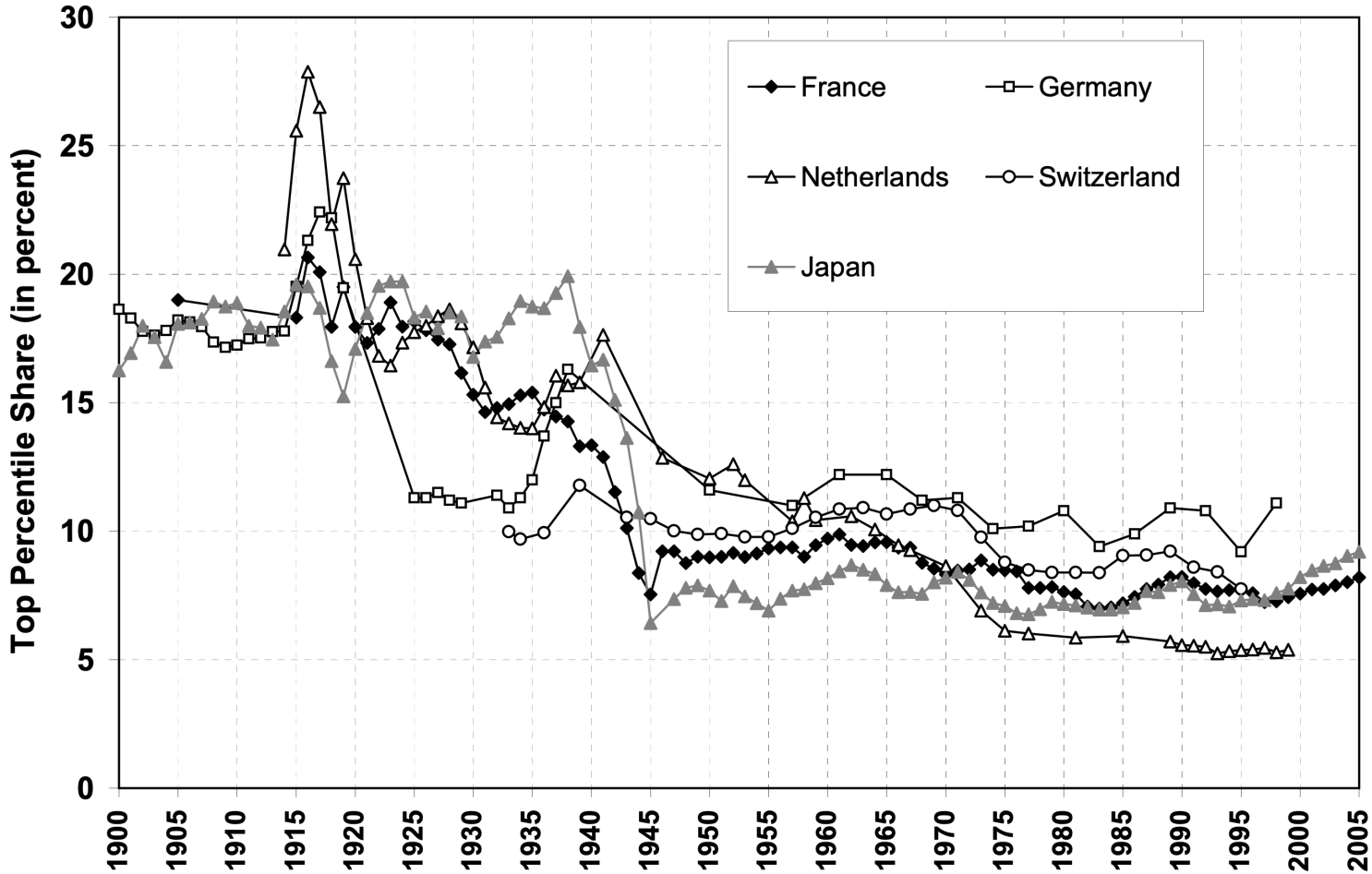
- A mix of adminsitrative sources and national accounts
- Pioneering methods by Kuznets Kuznets and Jenks, 1953; Atkinson and Harrison, 1978; Piketty and Saez, 2003.
- Partial macro-economic consistency, but excellent historical coverage
- Only covers the very top of the distribution

Incresing top 1% in English speaking countries



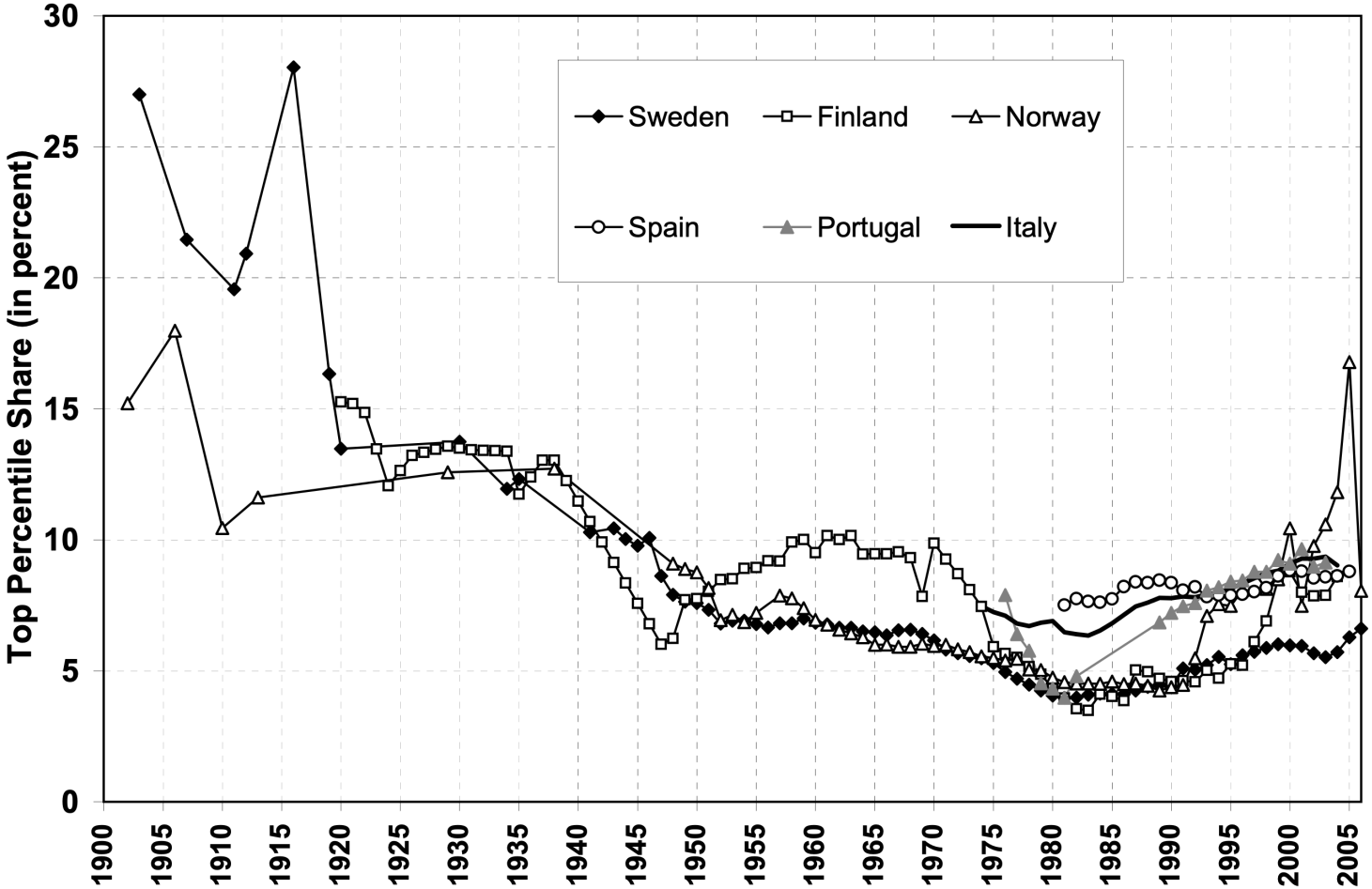
- **Notes.** Income concentration is U-shaped over the last century in English speaking countries. In the 2020s, the USA surpassed its early-1900s levels (see updated plots in wid.world). Source: Atkinson, Piketty, and Saez, 2011

L-shaped top 1% in Europe and Japan



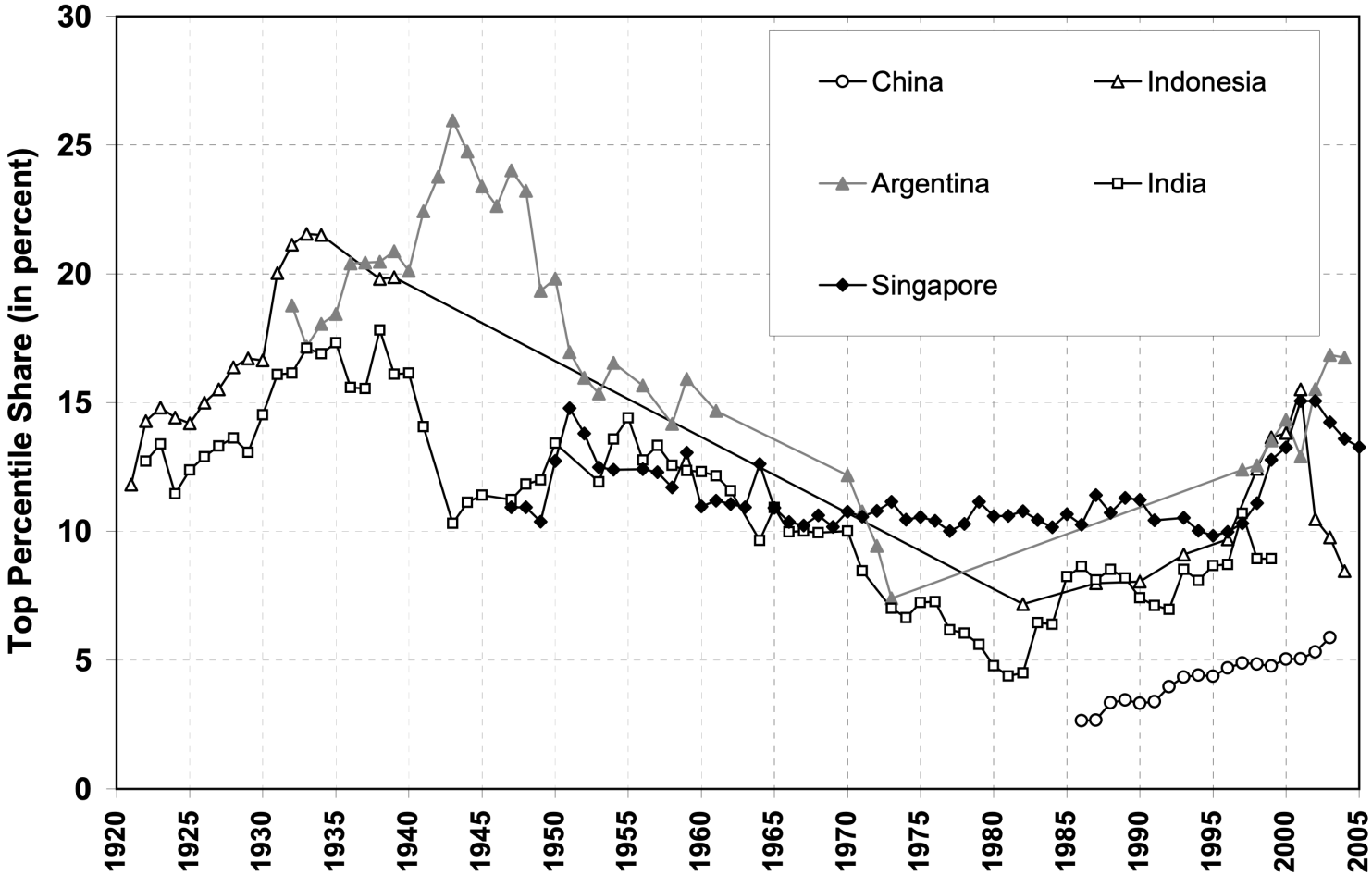
- **Notes.** Some countries experienced an L-shape over the last century with stagnating or slowly increasing level of concentration in recent decades (See France or Japan). Source: Atkinson, Piketty, and Saez, 2011

Top 1% in Northern and Southern Europe



- **Notes.** Scandinavian countries set the low income inequality frontier worldwide, describing an L-shaped pattern too. Some tax code related changes are visible in the data, showcasing potential sensitivity (see Norway). Source: Atkinson, Piketty, and Saez, 2011

Top 1% in developing countries



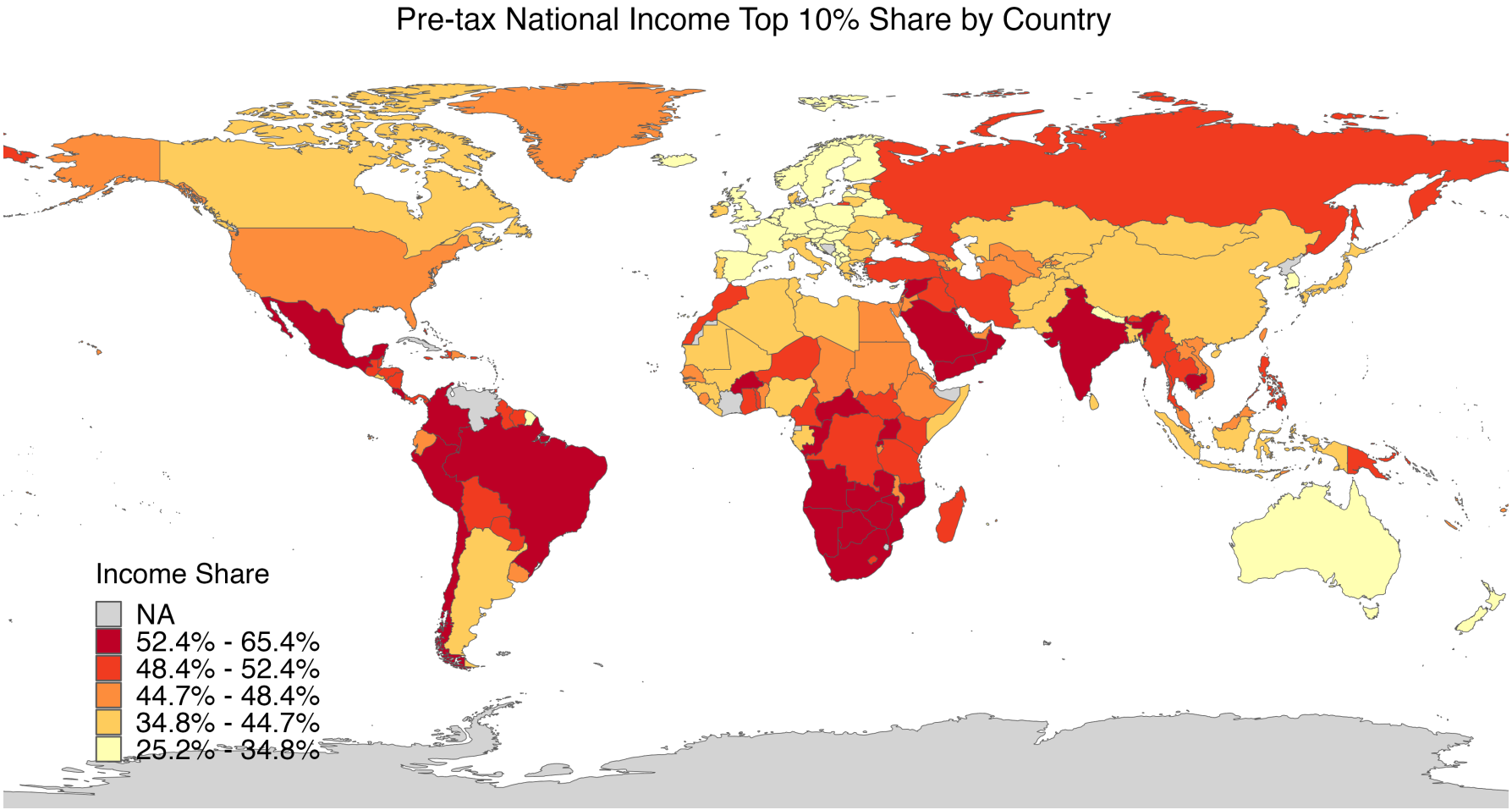
- **Notes.** The few developing countries with long run fiscal series also seem to have experienced a fall and comeback of inequality during the last century. This includes the giants: China and India. Source: Atkinson, Piketty, and Saez, 2011

Recent estimates: macro consistency

Distributional National Accounts (DINA)

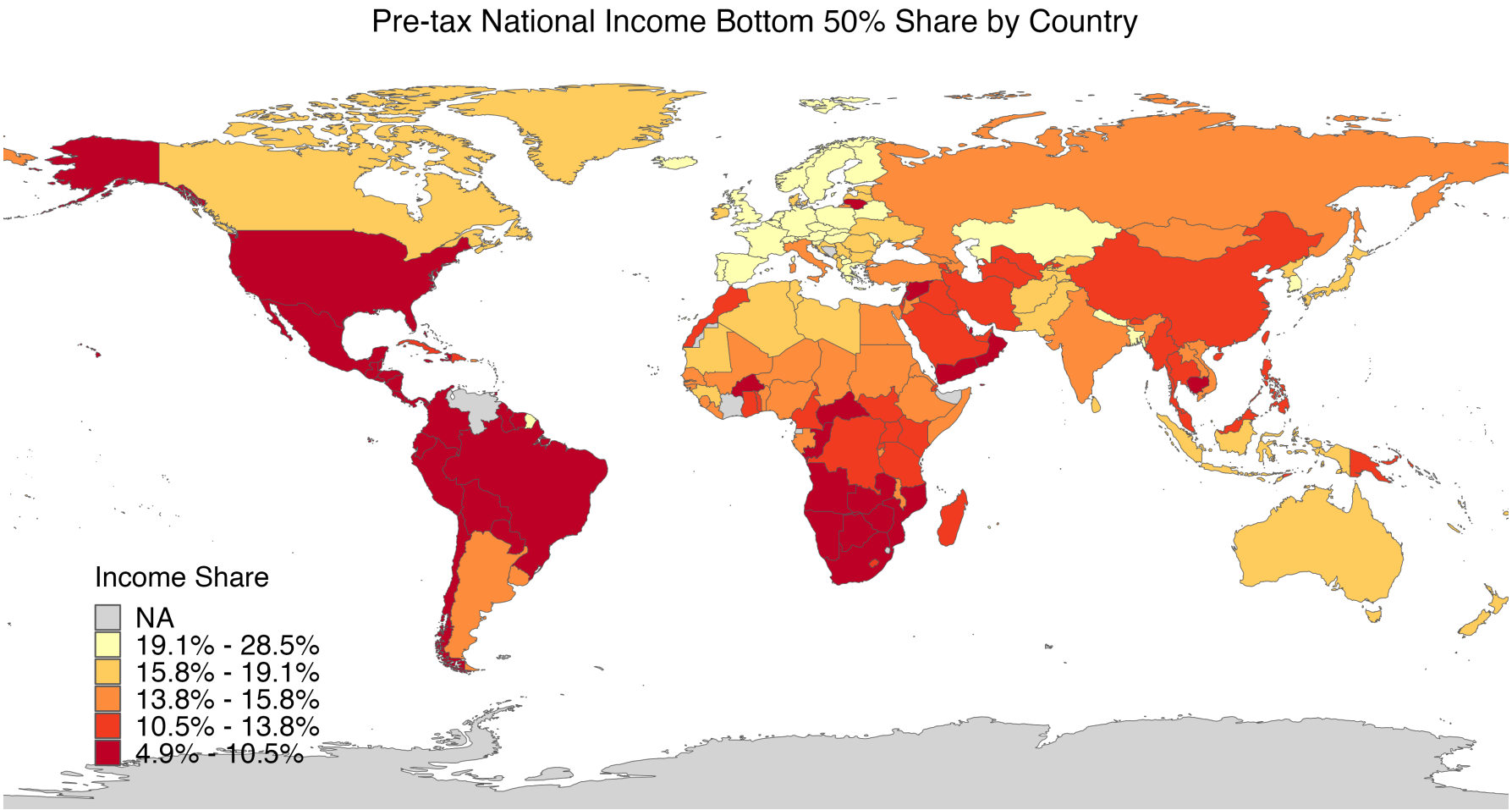
- In recent years, data availability allows for macro-consistency
- Time coverage is lower than with fiscal income series
- More details of methods and findings in following sections

Present levels of concentration - DINA Top 10%



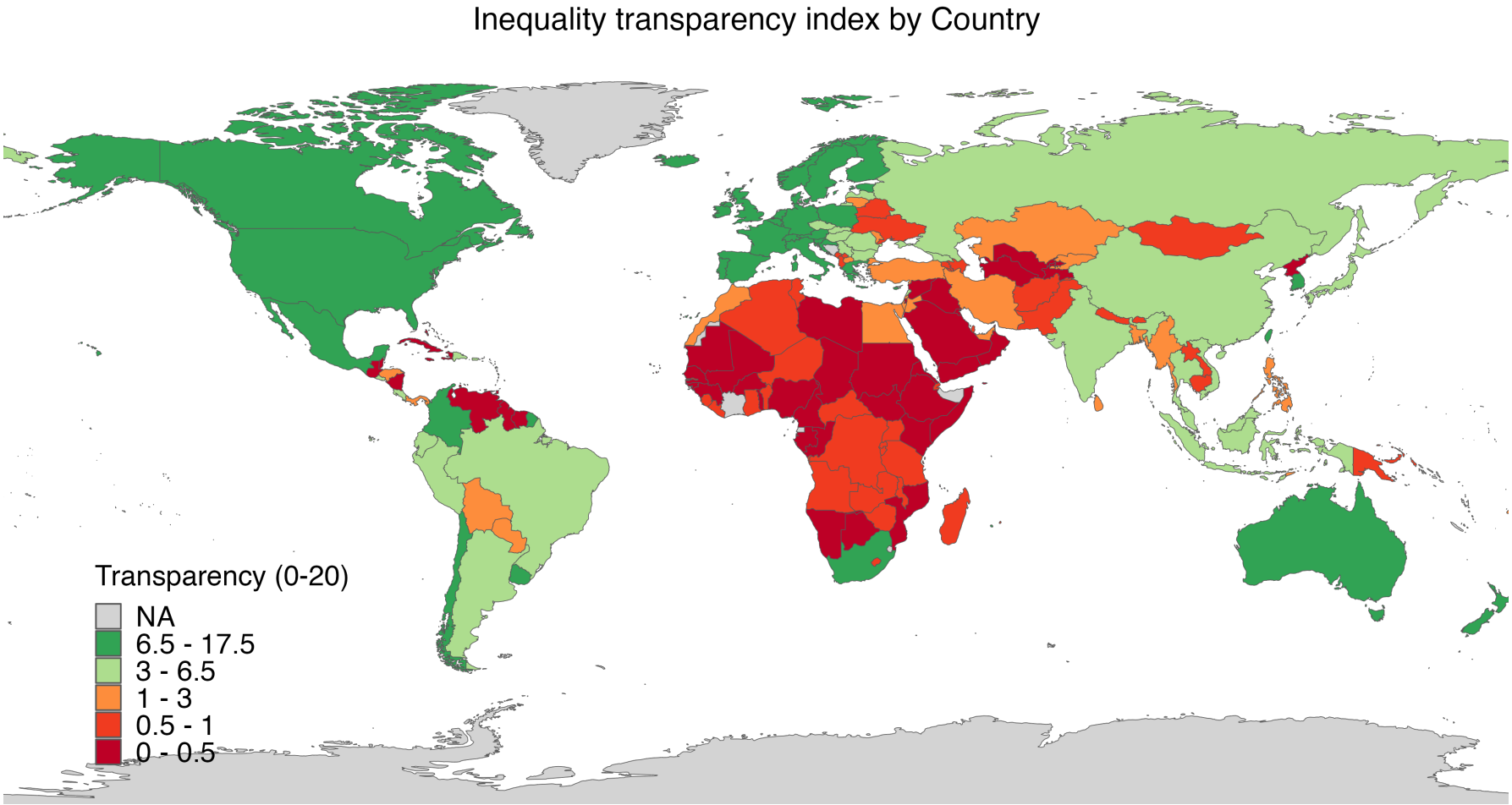
- **Notes.** Dark red areas indicate the global top quintile of income concentration, including regions such as Latin America, sub-Saharan Africa, India and the Gulf. The bottom quintile includes western Europe and Scandinavia.

The symmetric Bottom 50% - DINA



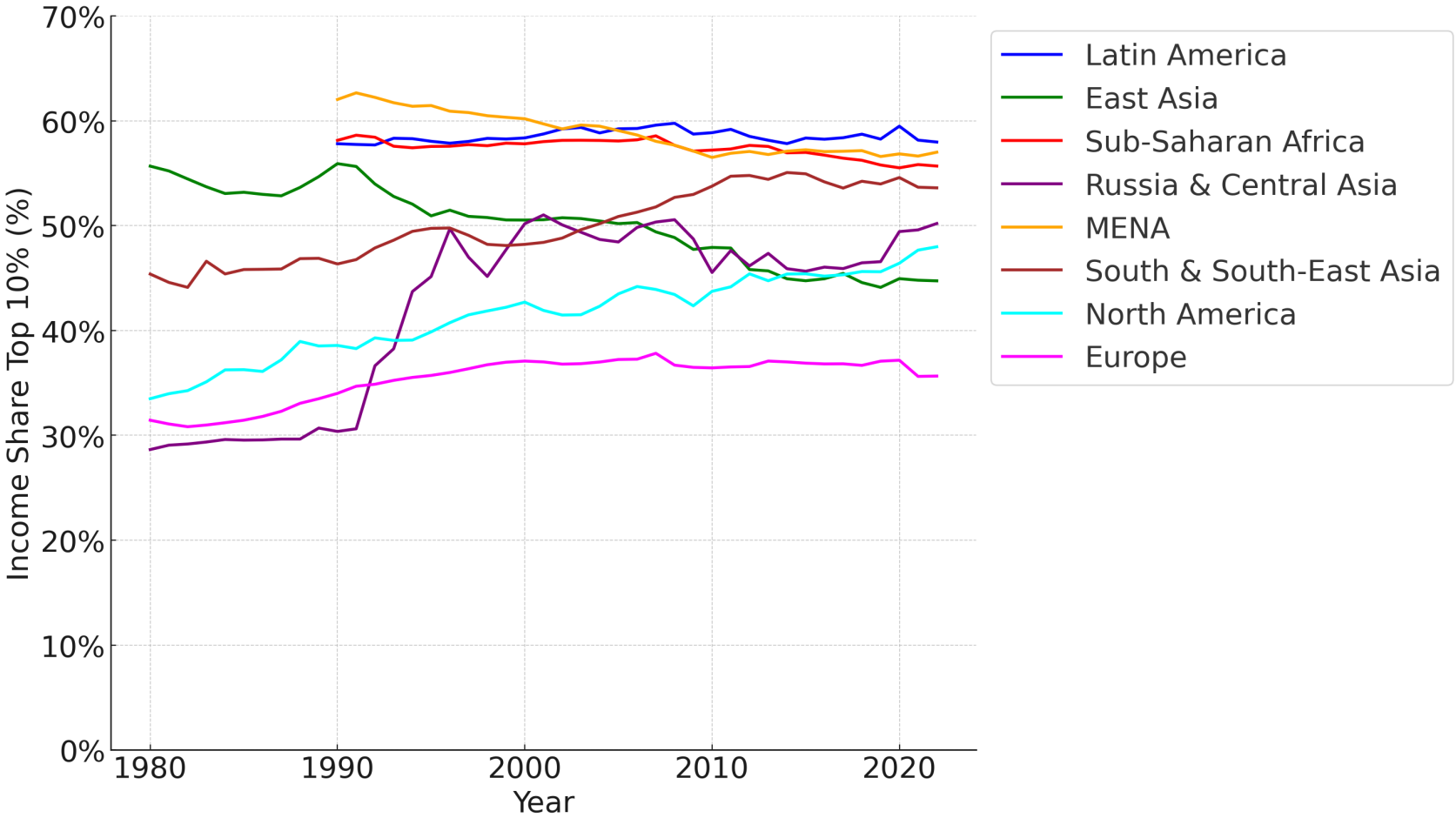
- **Notes.** Dark red areas indicate a lower share for the bottom half, including regions such as Latin America, sub-Saharan Africa, India and the Gulf. The higher quintile includes western Europe and Scandinavia.

Different levels of data quality



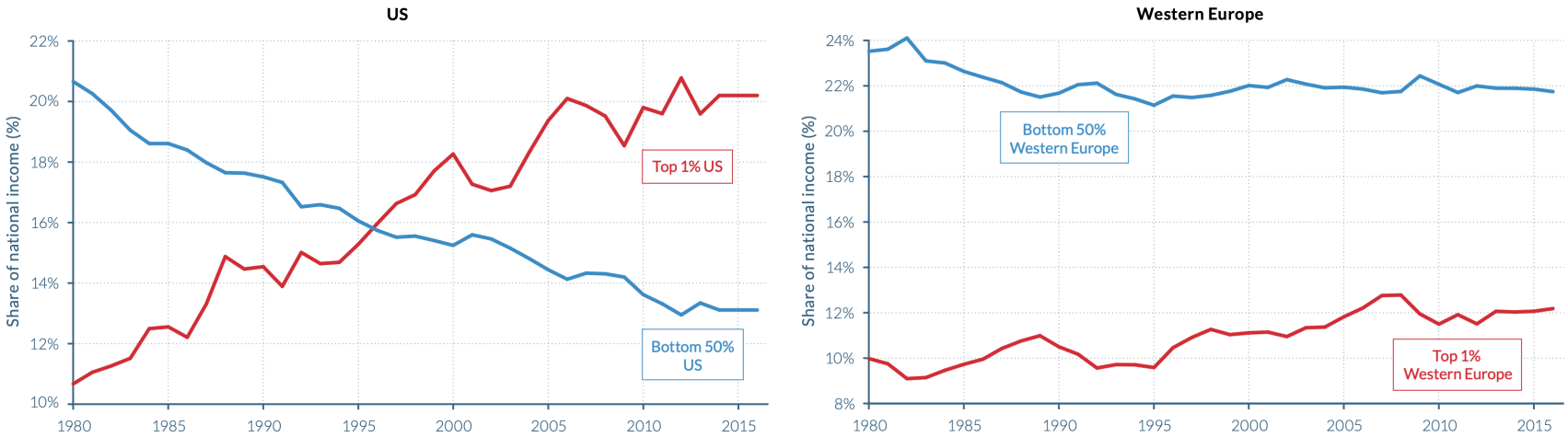
- **Notes.** Transparency levels are heterogeneous across continents. Dark red areas indicate the global bottom quintile, including regions such as sub-Saharan Africa, and MENA. The top quintile, includes scores lower than 10, signaling room for improvement even in Europe.

The great convergence? - Top 10%



- **Notes.** Since 1980, most regions intensified income concentration, yet at different speeds. They are now closer to the extreme inequality frontier, set by Latin America, MENA and sub-Saharan Africa, which have remained more stable.

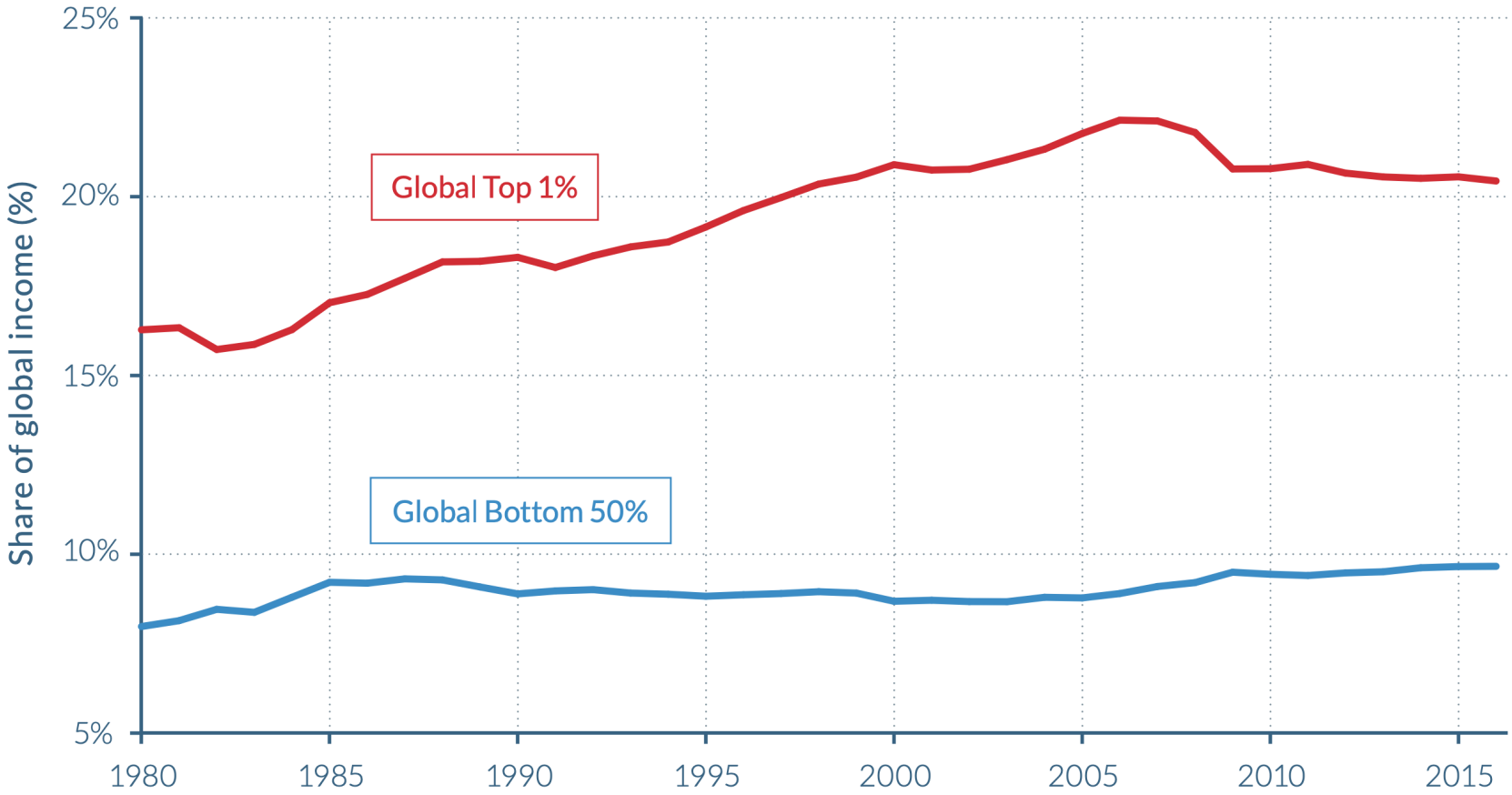
Within-country dynamics: US vs. Europe



- **Notes.** In the US the top 1% share has increased almost as much as the bottom 50% has decreased in their share of national income. In Europe, trends are much flatter, yet mostly going in the same direction

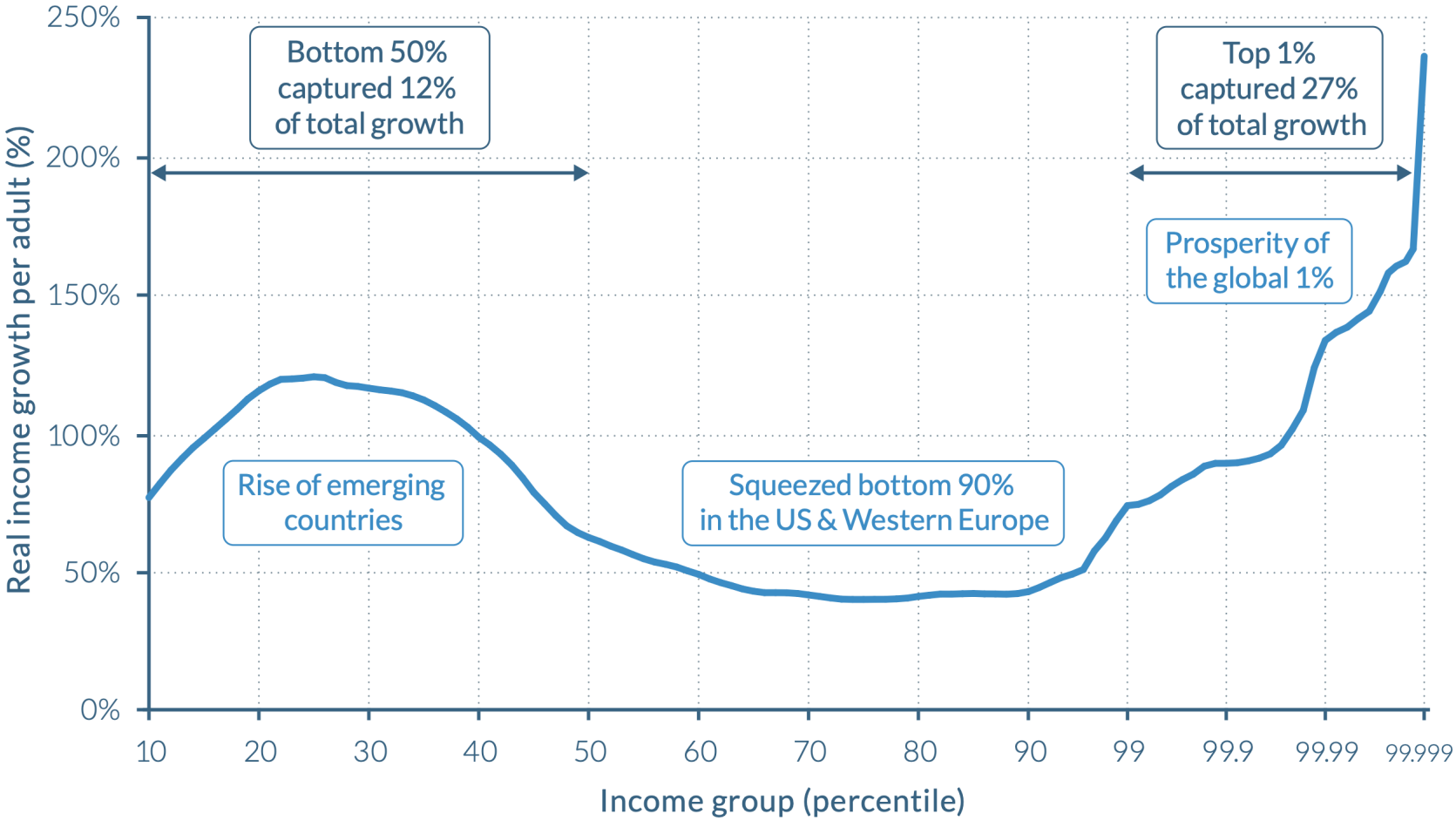
Inequality across borders

"One world" income inequality



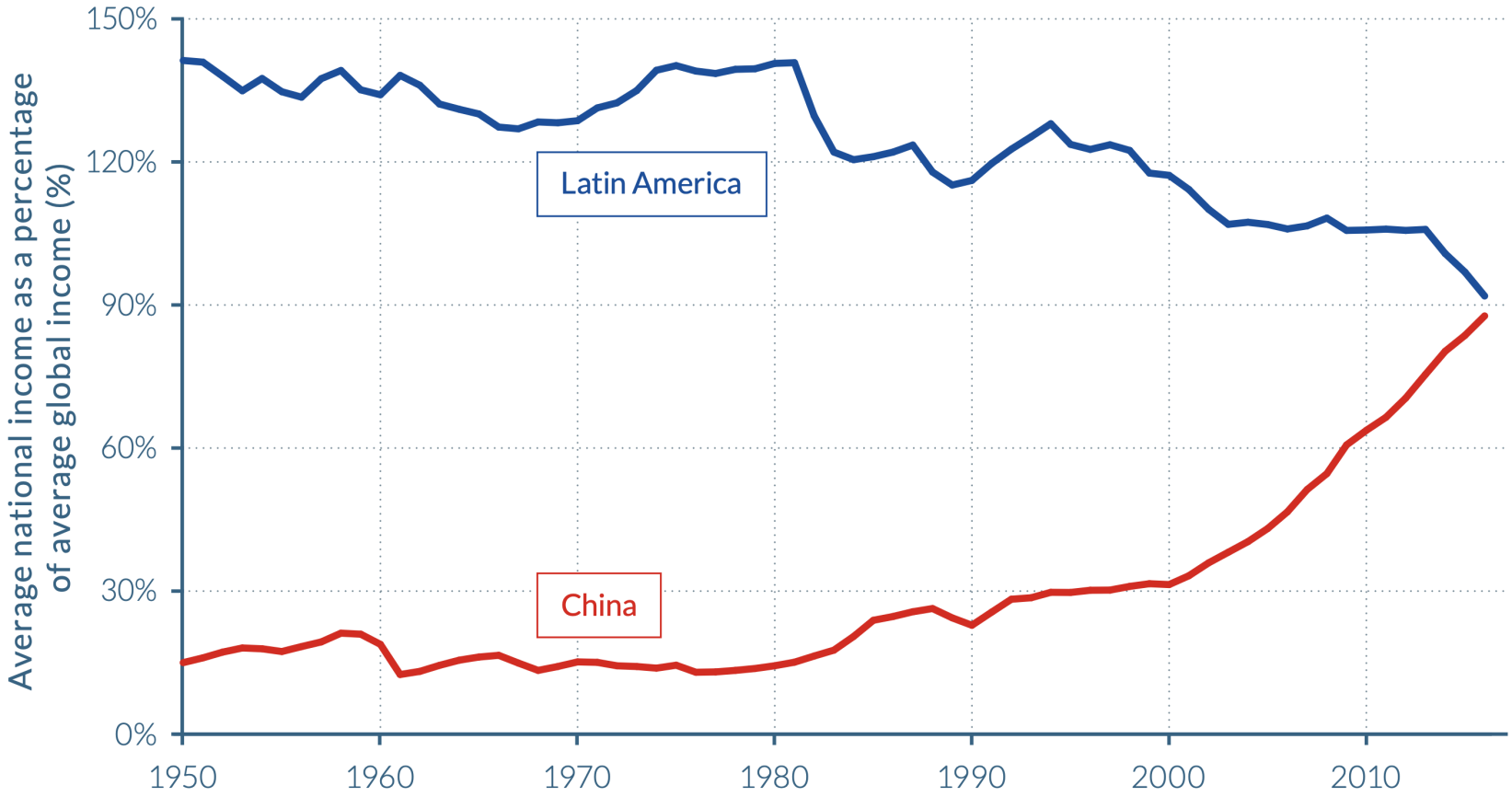
- **Notes.** Representing the world as a single big country, the global top 1% share increased considerably, from $\approx 16\%$ in 1980, to more than 20% in the second half of the 2010s. The bottom 50% experienced an increase, but more moderate in volume. Source: the world inequality report (2022)

Growth incidence: the elephant curve



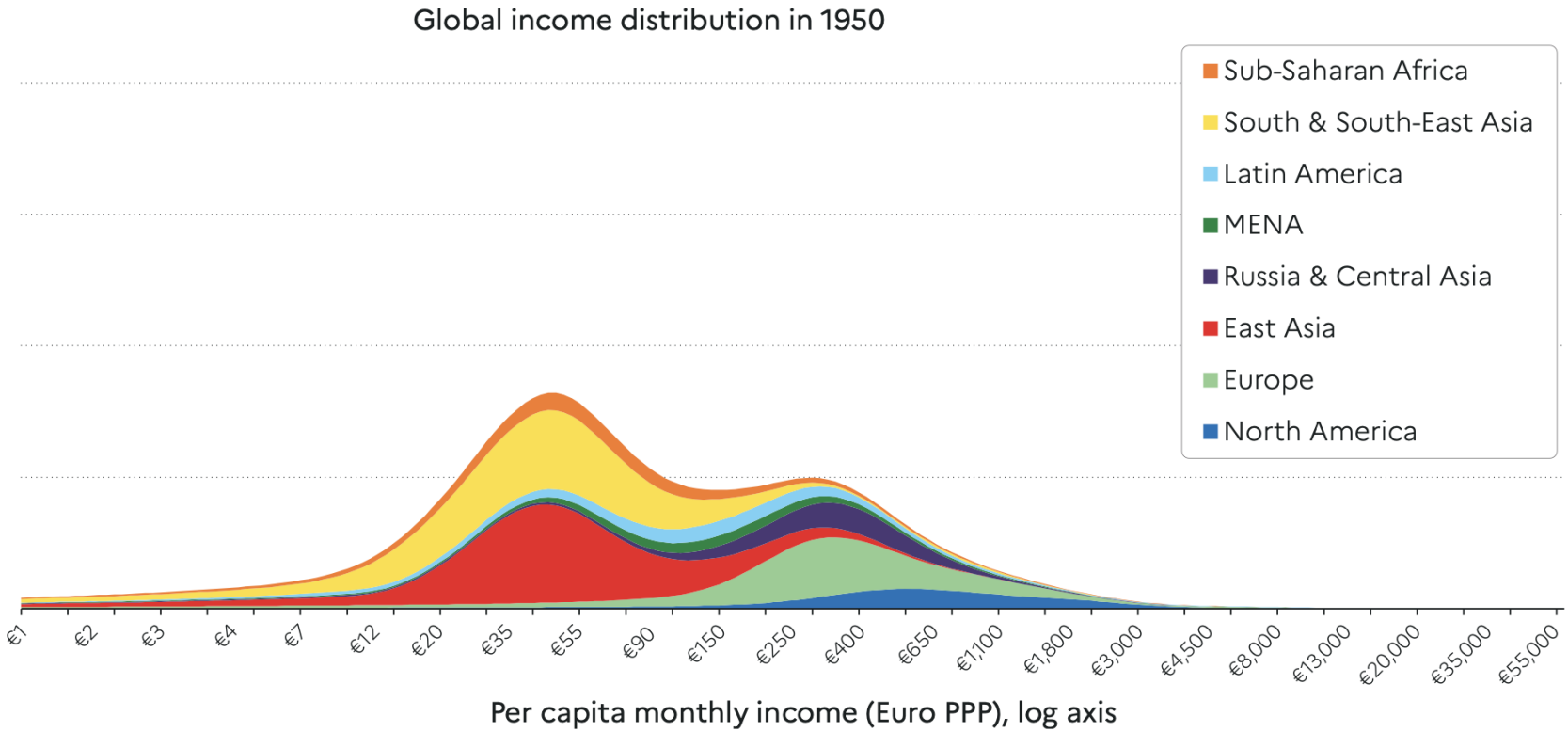
- **Notes.** The bottom 50% of the world's population doubled their incomes between 1980-2016, capturing 12% of total growth (not the same people). The top 1% saw a much faster increase, capturing 27%. Source: The world inequality report 2018. The elephant curve was first shown by using survey data Milanovic, 2016

The Rise of Asia: the Chinese catch-up



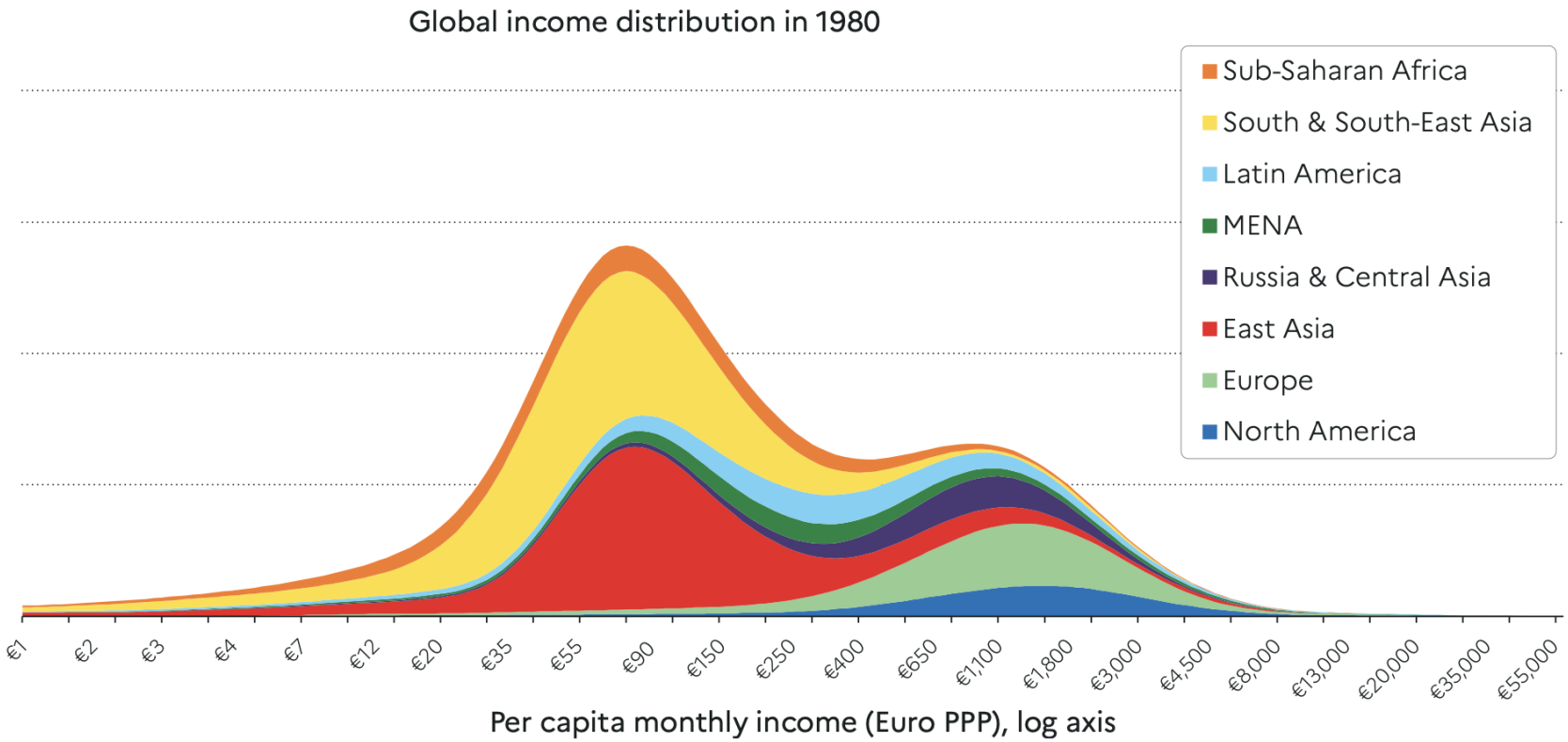
- **Notes.** As seen before, the Chinese economic catch-up is the most accelerated economic growth in the period. It explains most of the increase in the bottom incomes, globally. In 2024, China has already surpassed Latin America. Source: The world inequality report 2018.

The composition of Global Income (1950)



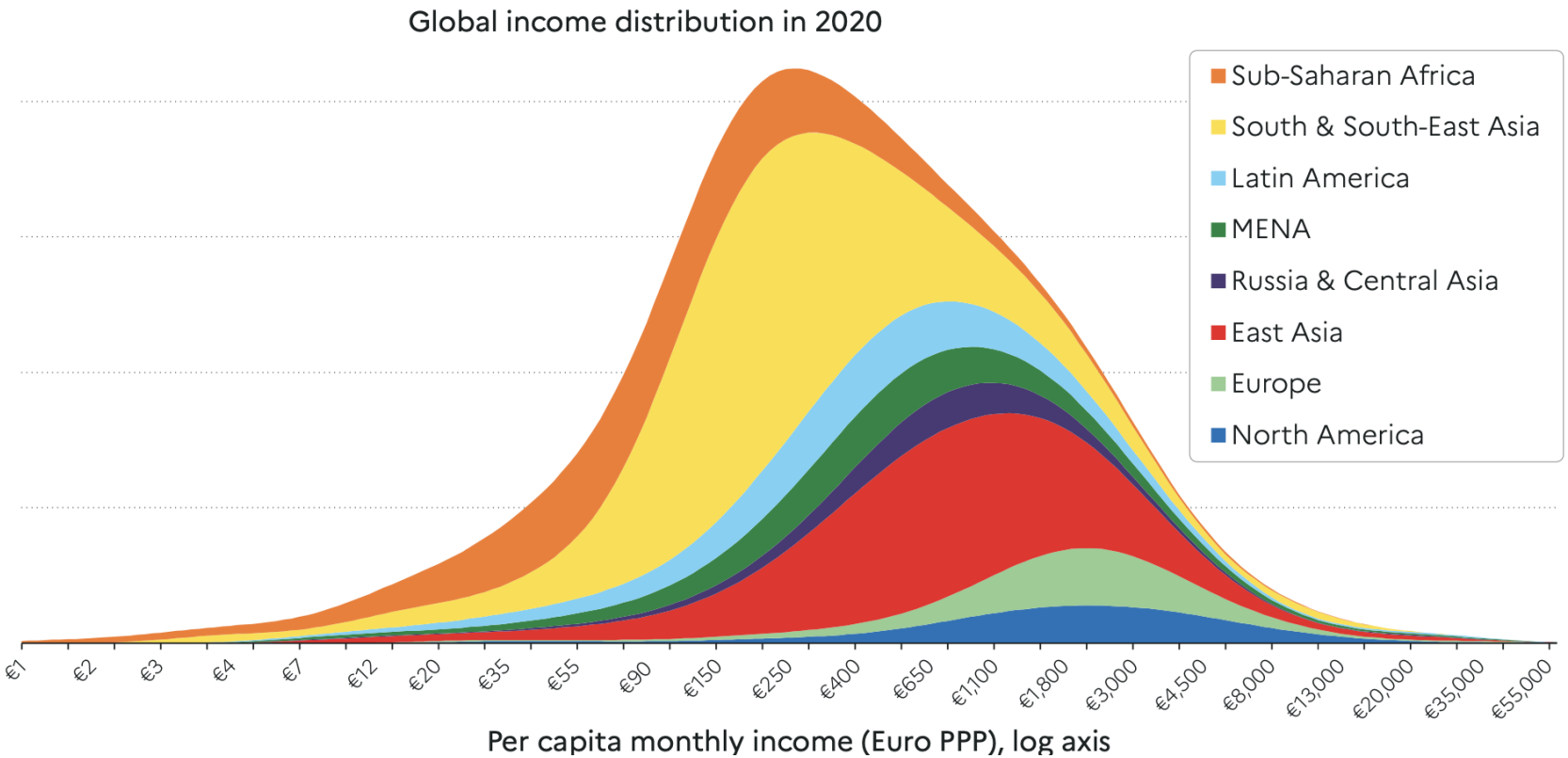
- **Notes.** Areas are proportional to the population. Source: The world inequality report (2022)

The composition of Global Income (1980)



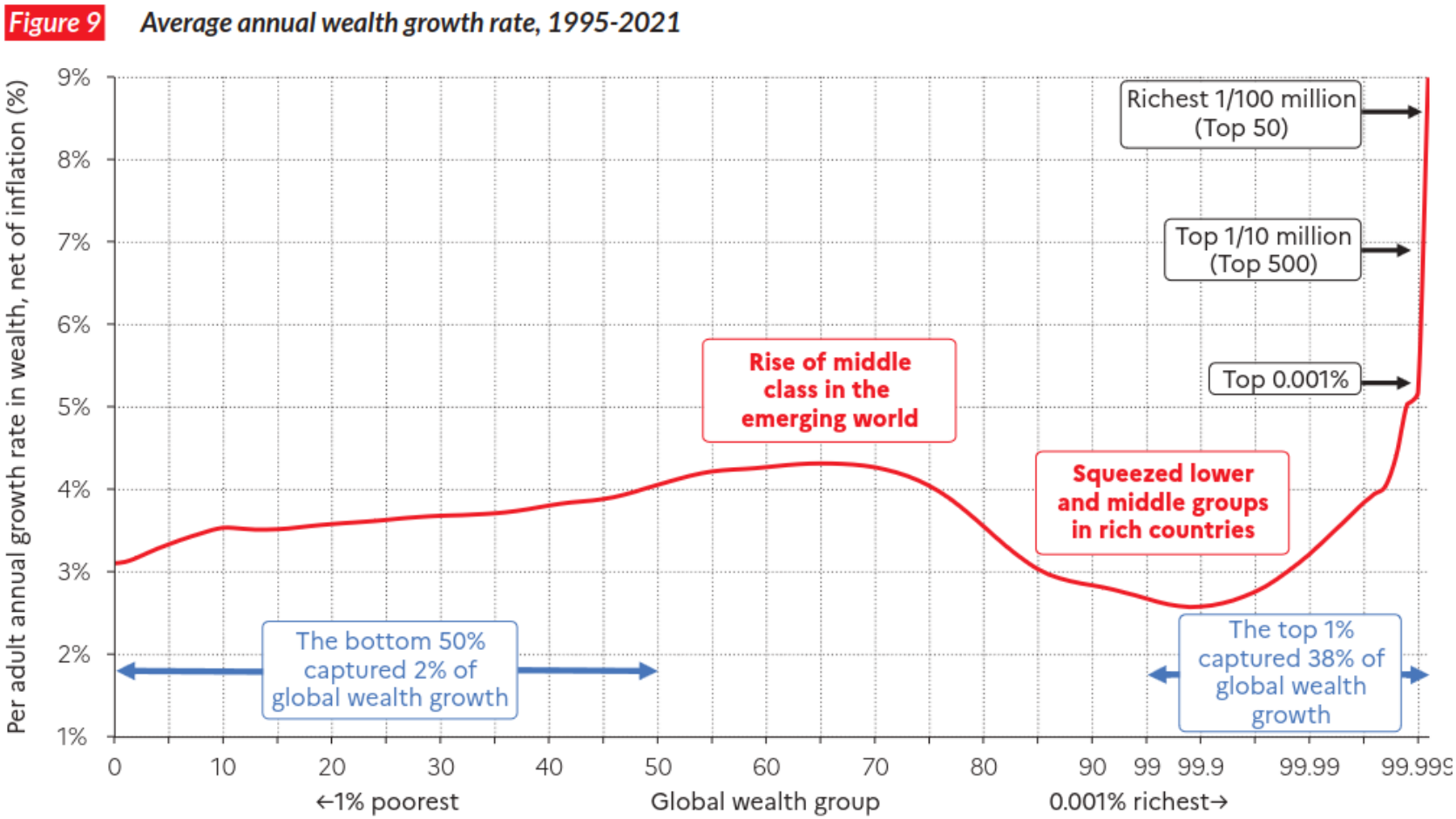
- **Notes.** Areas are proportional to the population. Source: The world inequality report (2022)

The composition of Global Income (2020)



- **Notes.** Areas are proportional to the population. Source: The world inequality report (2022)

Wealth growth incidence: the elephant(er) curve



- **Notes.** In recent decades, *wealth* growth has favored the top percentile of the global distribution, capturing 38% of total growth vs 2% for the bottom 50%. Source: The world inequality report (2022)