

Eco L3 - Globalization, Inequality, and Redistribution

Lecture 3: Global Income and Global Capital Inequality

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Roadmap

1. Data sources to study inequality between individuals
2. Metrics: Gini coefficient, Pareto-Lorenz coefficient, top shares
3. Global income inequality
4. Global wealth inequality

1 Data sources for interpersonal inequality

1.1 Survey data

- Surveys are a popular data source to study inequality:
- Useful, but insufficient:
 - Large gap between surveys and macro totals
 - Practical pbs: non-response & under-reporting at the top

1.2 Tax data

- Tax administrations have published tabulations of income by size of income since beginning of income tax (usually early 20th century)
- In recent decades, availability of micro-samples of tax returns
- Limits of tax data:
 - Miss tax evasion
 - Miss legally tax-exempt income

1.3 Distributional national accounts

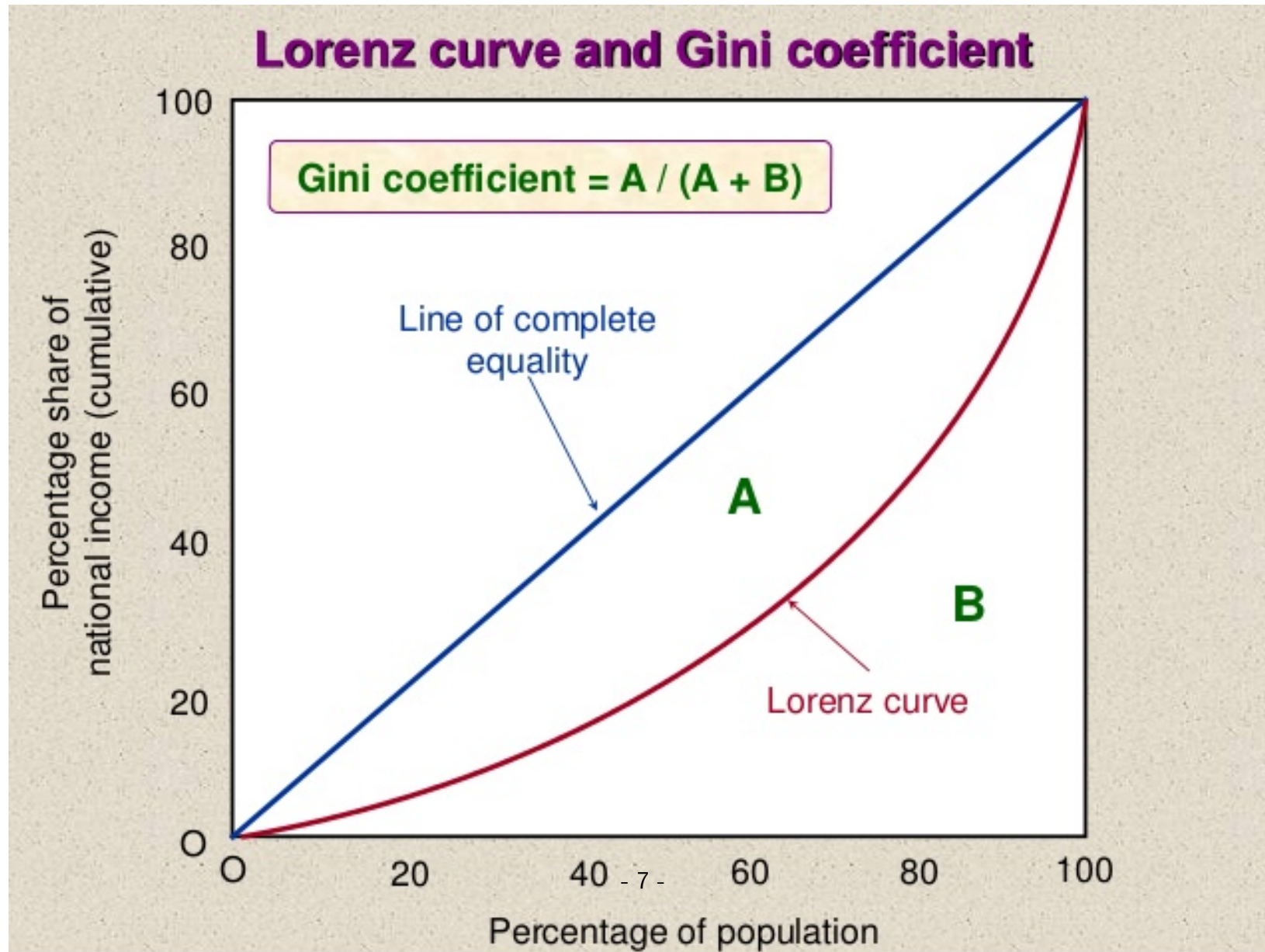
DINAs = decompositions of national account aggregates such that:

- Distributions of income, wealth, saving, taxes, transfers... are consistent with what survey/tax data show
- Totals match macro aggregates
- World Inequality Database: ongoing attempt to create DINAs throughout the world: <http://WID.world>

2 How to quantify inequality?

2.1 Gini coefficient

- Inequality often summarized by Gini coefficient G
- Lorenz curve shows % of income earned by people below fractile p
- $G = 2 \times$ area between 45 degree line and Lorenz curve
- $G = 0$ means Lorenz curve is the 45 degree line = perfect equality



2.2 Income and wealth shares

- Problem of Gini: quite abstract & requires lots of data
- Shares are more concrete (“the top 1% income share”)

2.3 Pareto coefficients

- Another useful metric of inequality is the Pareto coefficient
- At the top, income & wealth well approx. by Pareto distributions

- Pareto distributions have a probability density function

$$f(y) = \frac{ac^a}{y^{1+a}}$$

- and a cumulative distribution function $1 - F(y) = (c/y)^a$
- with $c =$ constant and $a =$ Pareto coefficient
- Key property of Pareto distributions: ratio average/threshold = constant
- Note $y^*(y)$ average income of pop. above threshold y . Then:

$$y^*(y) = y \frac{a}{a-1} = yb$$

- b is called the inverted Pareto-Lorenz coefficient
- If $a=2$, $b=2$: average income above \$100,000 = \$200,000; average income above \$1 million = \$2 million, etc.
- US 1970s, income: $b = 1.7-1.8$ ($a = 2.2-2.3$)
- US 2010s, income: $b = 2.2-2.5$ ($a = 1.7-1.8$)
- For wealth distributions, b can be larger than 3

2.4 Unit of observation

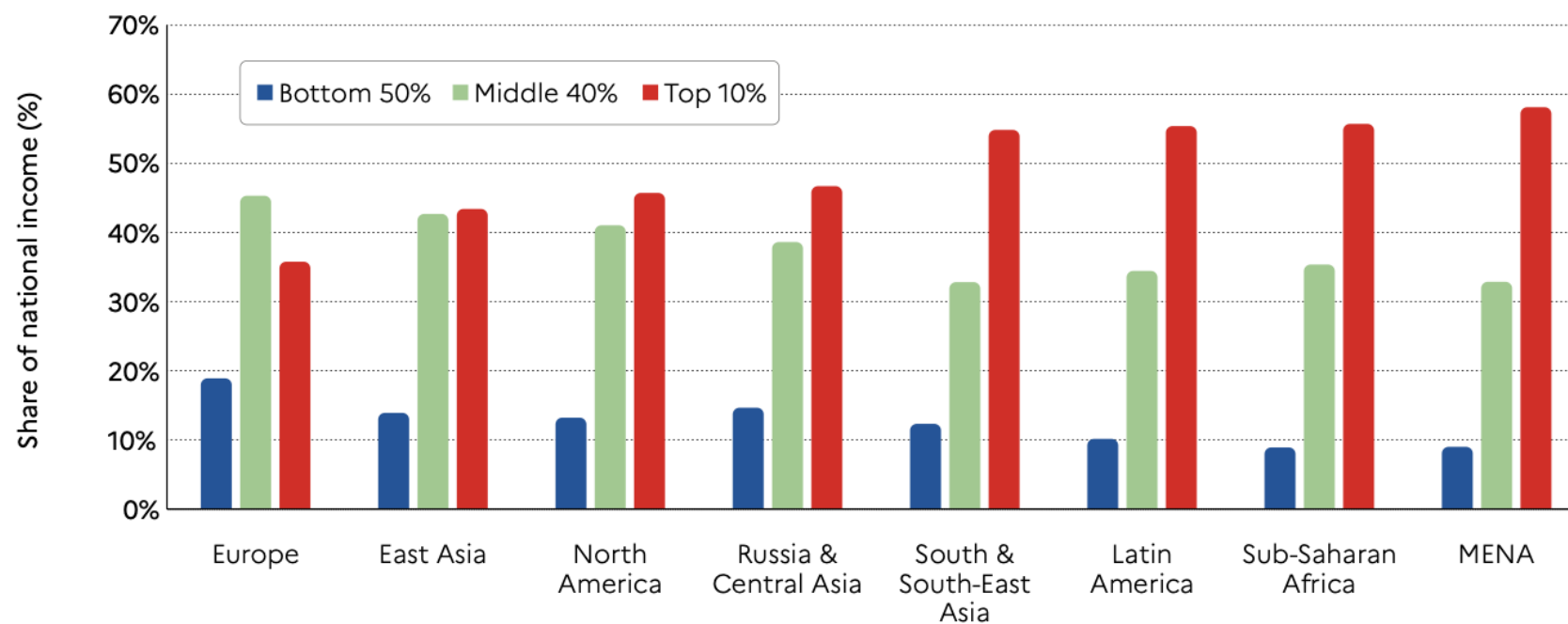
- Tax unit \approx households
- Individual adult: assumes no sharing of resources between spouses
- Equal-split adults: assumes full sharing of resources

3 Global income inequality

3.1 Inequality today

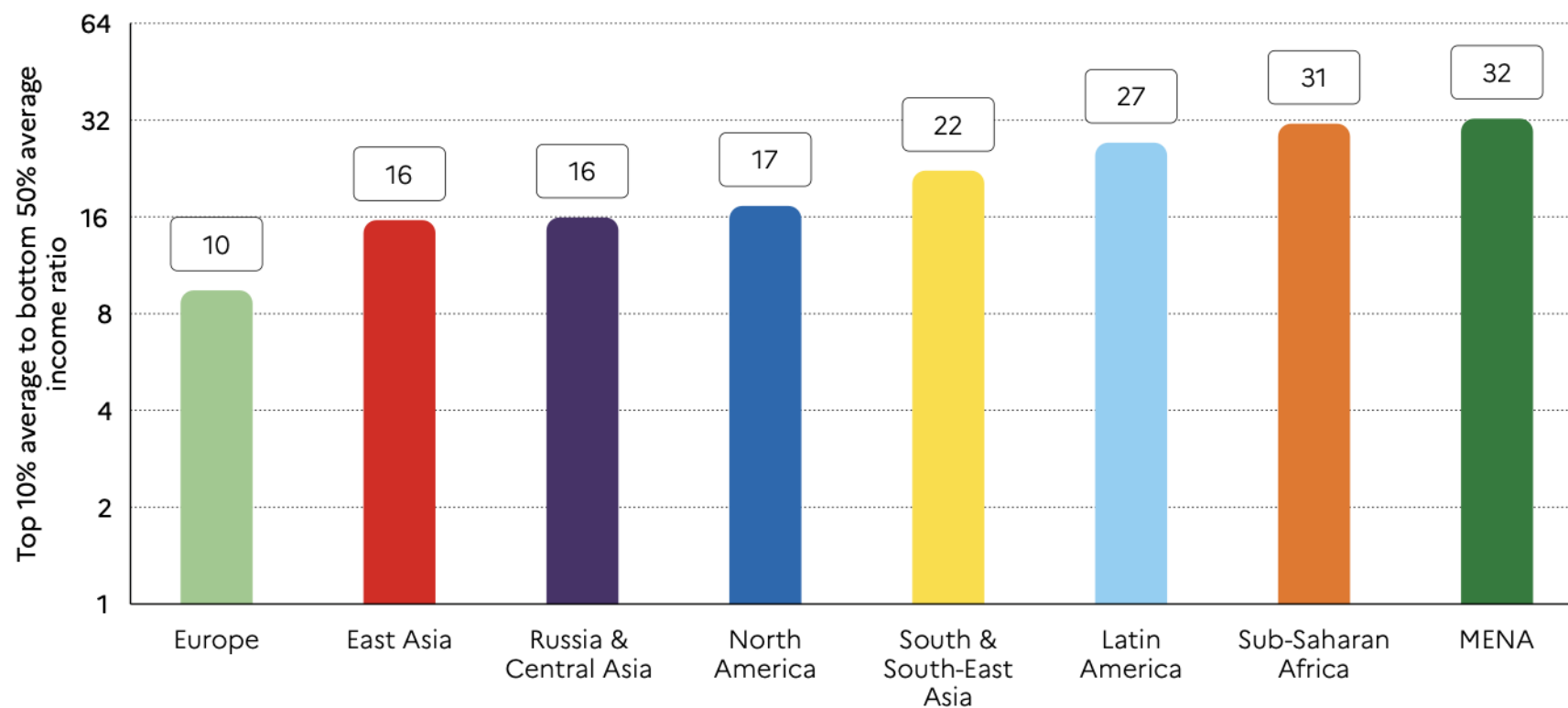
- Most unequal countries: Middle-East, sub-Saharan Africa, Brazil, India = top 10% share 55%–60%
- Legacy of status-based inequality systems (slavery, castes, colonial system)
- Less unequal countries: Continental Europe = top 10% \approx 35%

Figure 2 *The poorest half lags behind: Bottom 50%, middle 40% and top 10% income shares across the world in 2021*



Interpretation: In Latin America, the top 10% captures 55% of national income, compared to 36% in Europe. Income is measured after pension and unemployment contributions and benefits paid and received by individuals but before income taxes and other transfers.

Sources and series: www.wir2022.wid.world/methodology.

Figure 1.4 Income gaps across the world: Top 10 % vs. Bottom 50%, 2021

Interpretation: In Latin America, the bottom 50% earns 27 times less than the top 10%. The value is 9 in Europe. Income is measured after pension and unemployment benefits are received by individuals, but before other taxes they pay and transfers they receive. **Sources and series:** wir2022.wid.world/methodology

3.2 Labor vs. capital income inequality

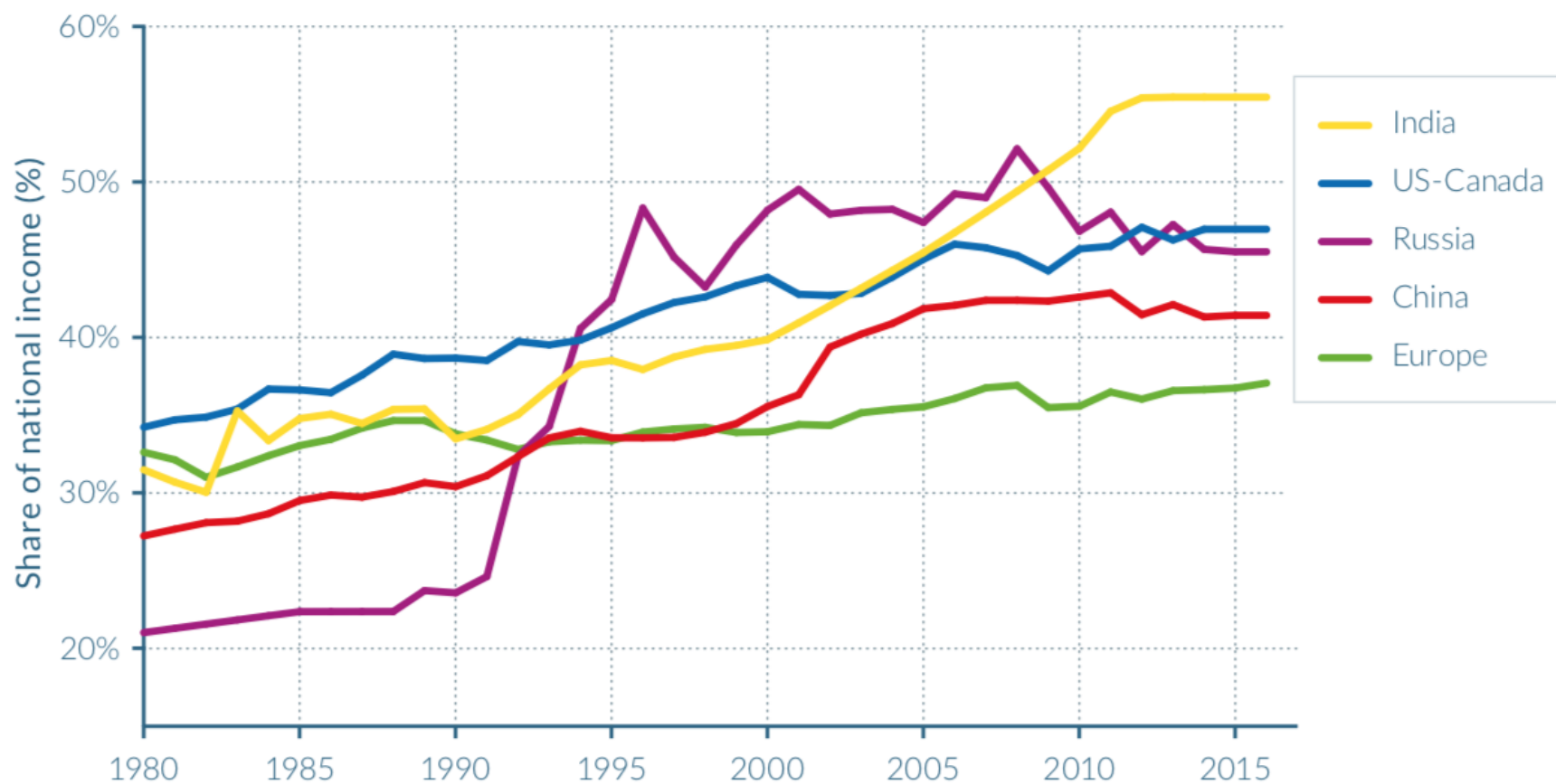
Labor income Y_L always less concentrated than capital income Y_K :

- Top 10% share is 20-30% for labor income, 50-90% for capital
- Bottom 50% share is 20-30% for labor income, 0-10% for capital
- Gini coefficients: 0.2 – 0.4 for labor income, 0.6 – 0.8 for capital

3.3 Evolution since the 1980s

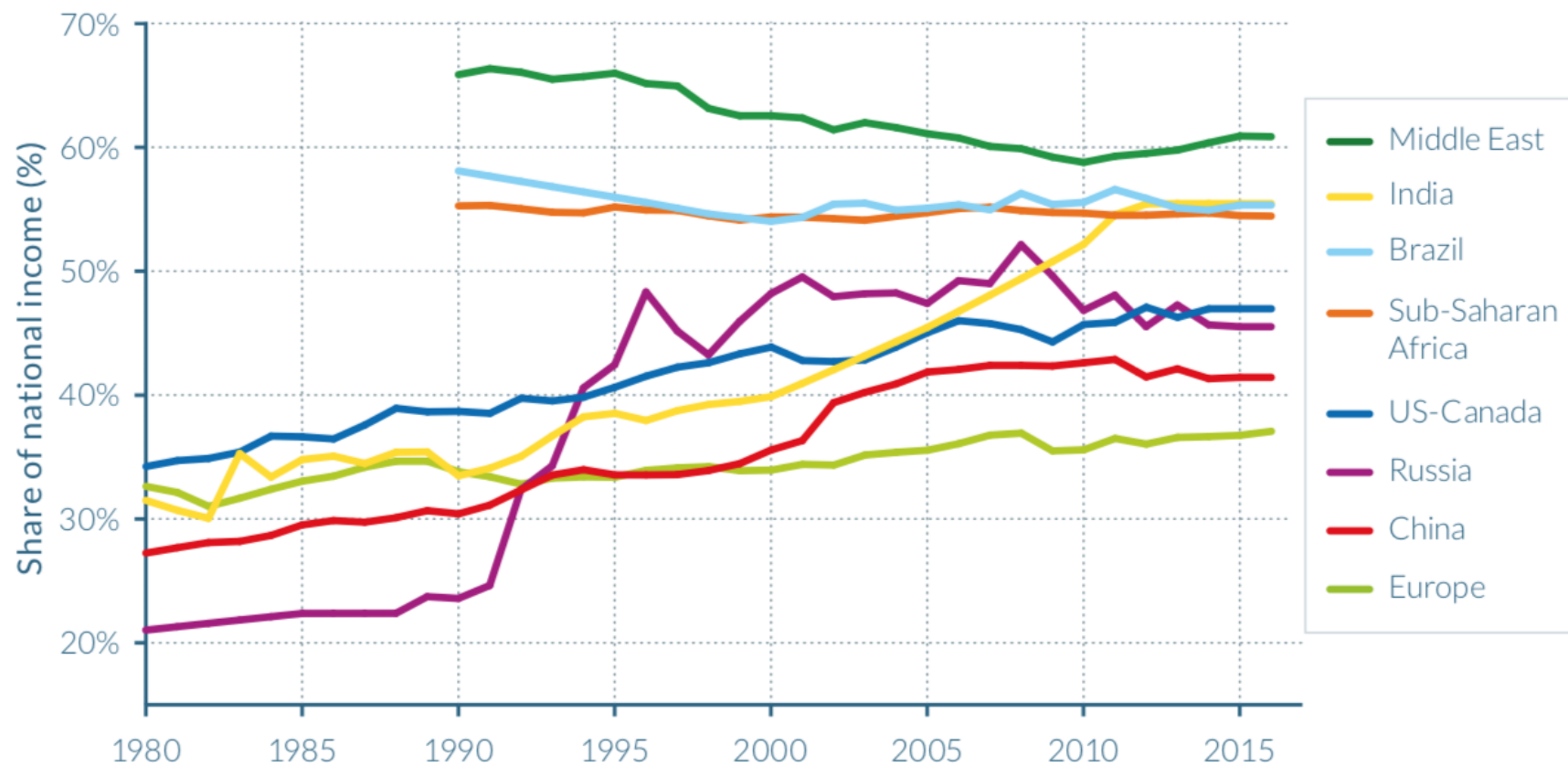
- Rising inequality is a global phenomenon
- But increase at different speeds, reflecting diversity of national institutions and policies
- Among developed countries: faster rise in English-speaking countries
- Among emerging countries: strongest rise in ex-communist countries

Top 10% income shares across the world, 1980–2016: Rising inequality almost everywhere, but at different speeds




Source: WID.world (2017). See wir2018.wid.world for data series and notes.

Top 10% income shares across the world, 1980–2016: Is world inequality moving towards the high-inequality frontier?



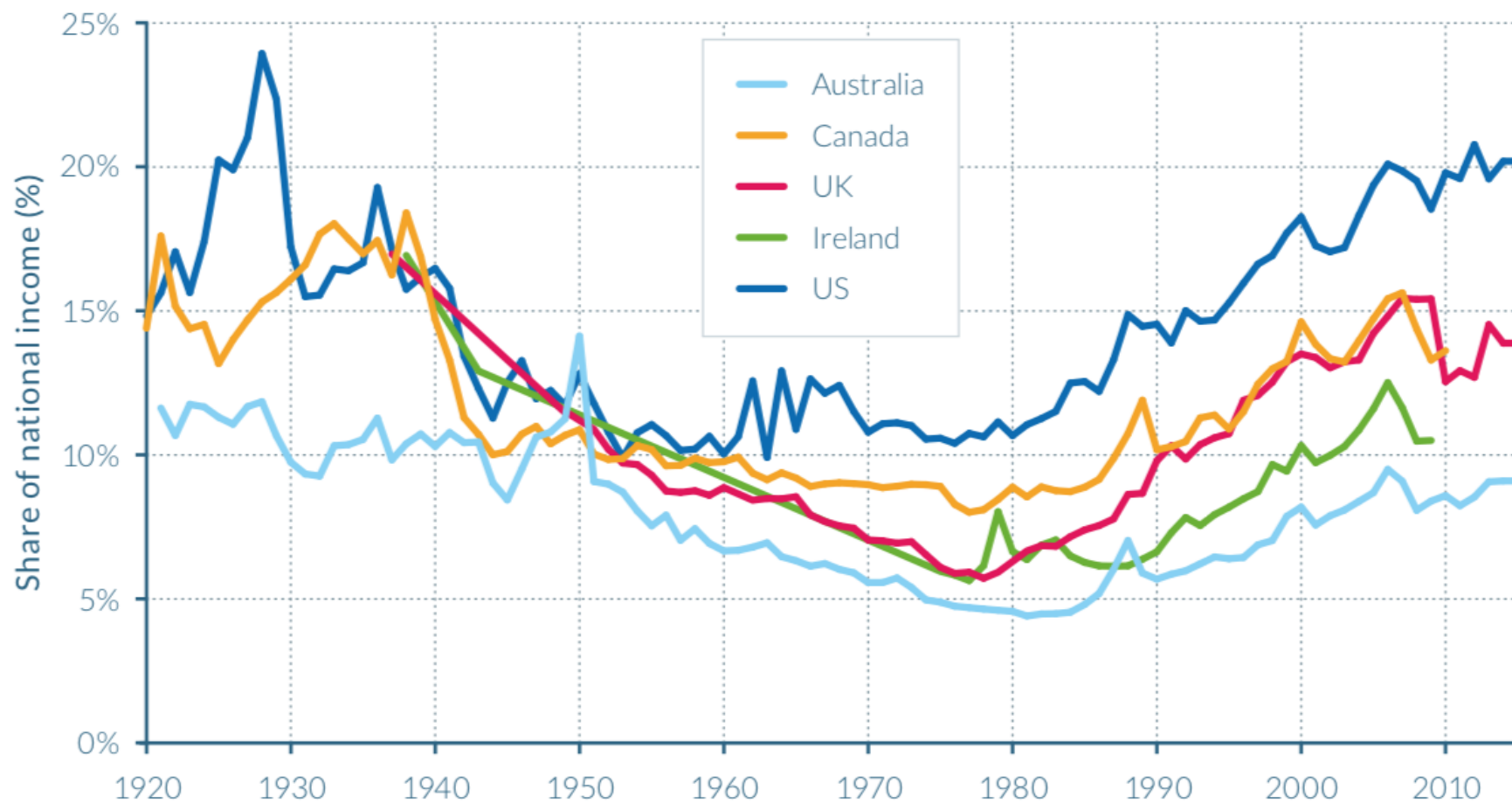
Source: WID.world (2017). See wir2018.wid.world for data series and notes.

3.4 The decline of income inequality 1920s–1970s

Rise in inequality since 1980 contrast sharply with general  in inequality between 1920s and 1970s

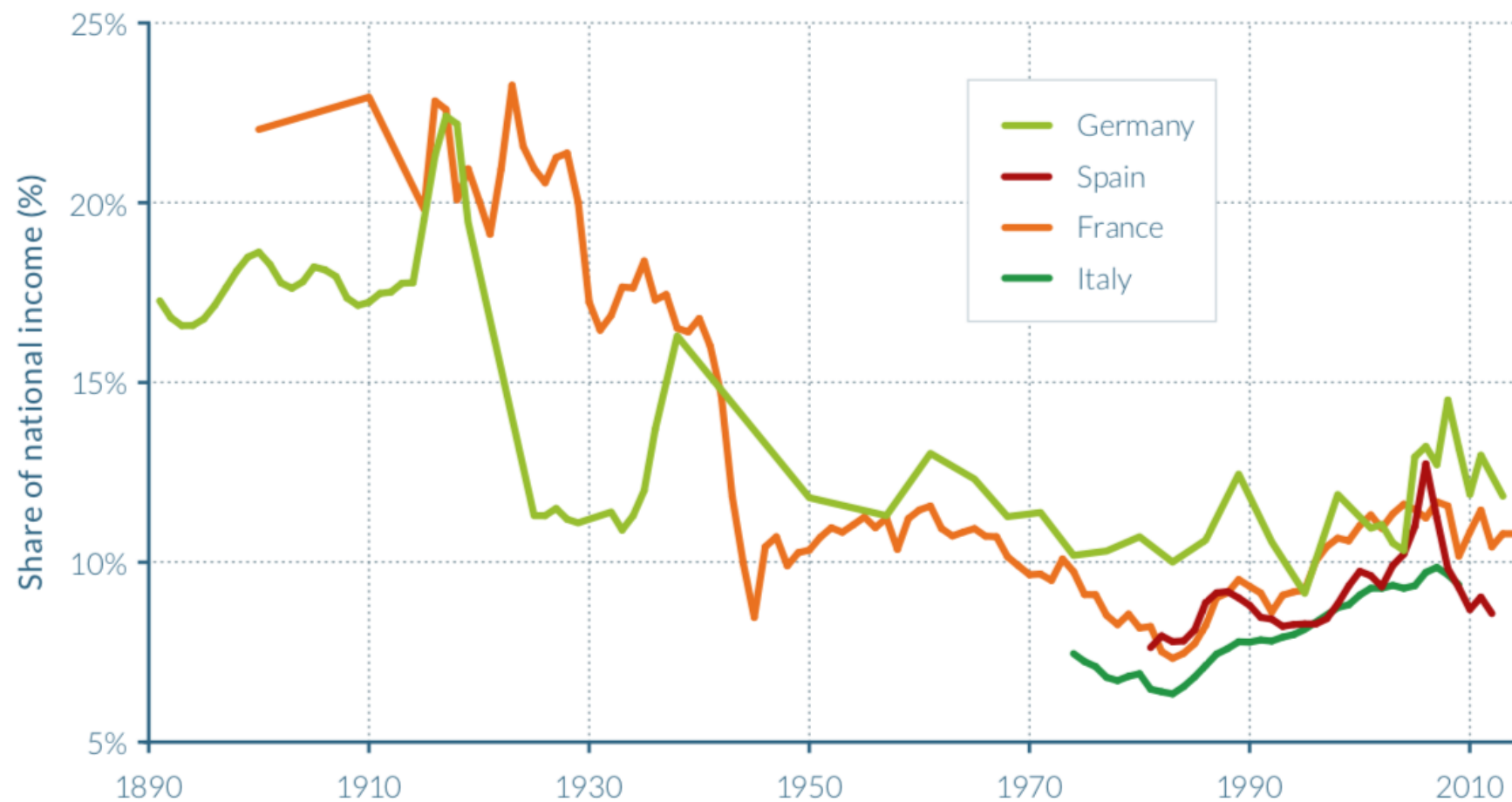
- 1920s-1970s combination of political, social, and economic shocks
- Followed by egalitarian policies: Social Security, public education, pro-labor policies, progressive taxation
- Decline in inequality largely a capital phenomenon
 - Large shocks to top fortunes 1913-1945
 - Rise of patrimonial middle-class

Top 1% national income share in Anglophone countries, 1920-2015



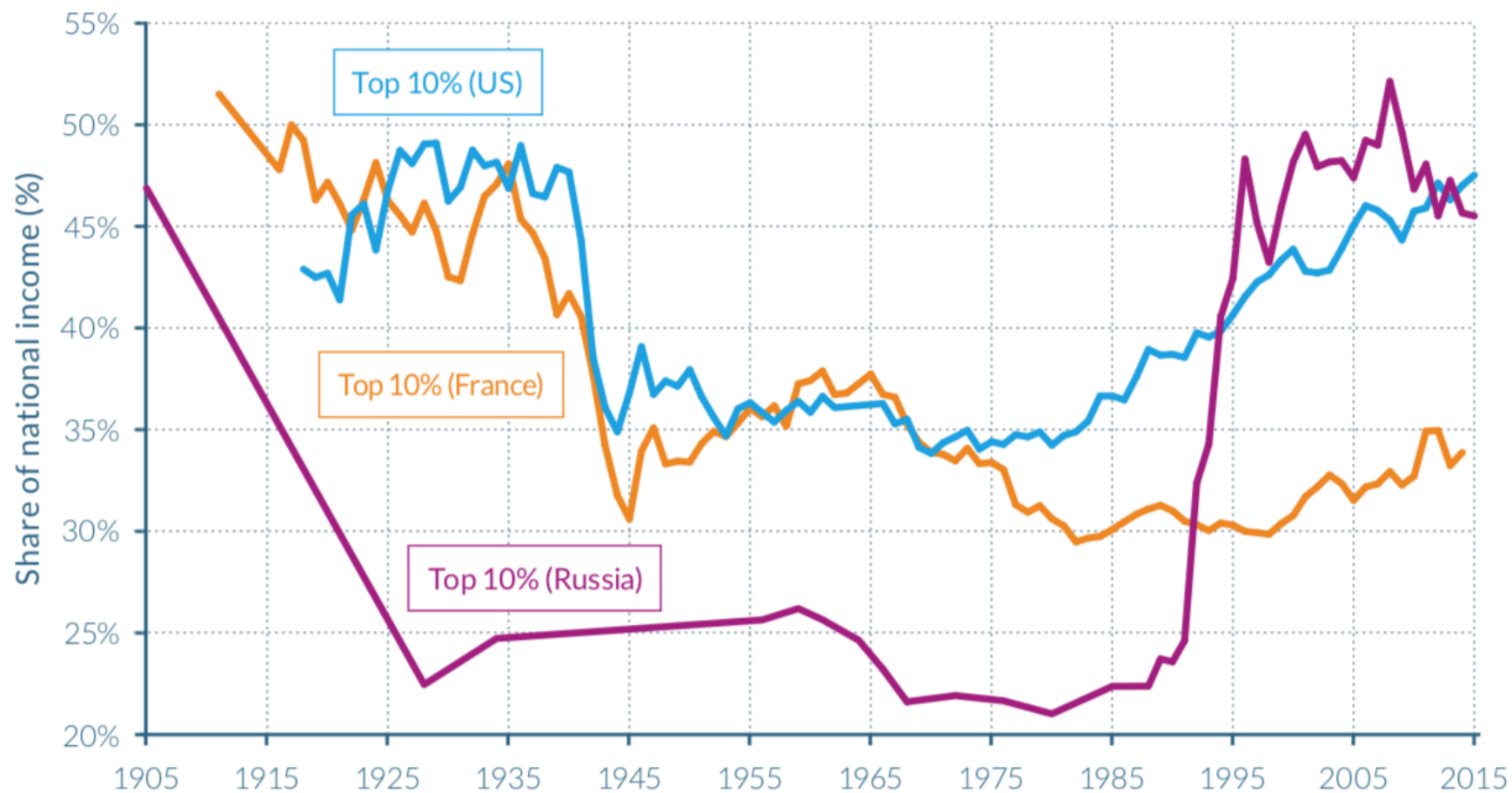
Source: Novokmet, Piketty & Zucman (2017). See [wir2018.wid.world](#) for data series and notes.

Top 1% national income share in European countries, 1890-2014



Source: WID.world (2017). See [wir2018.wid.world](#) for data series and notes.

Top 10% income share in France, Russia and the US, 1905–2015

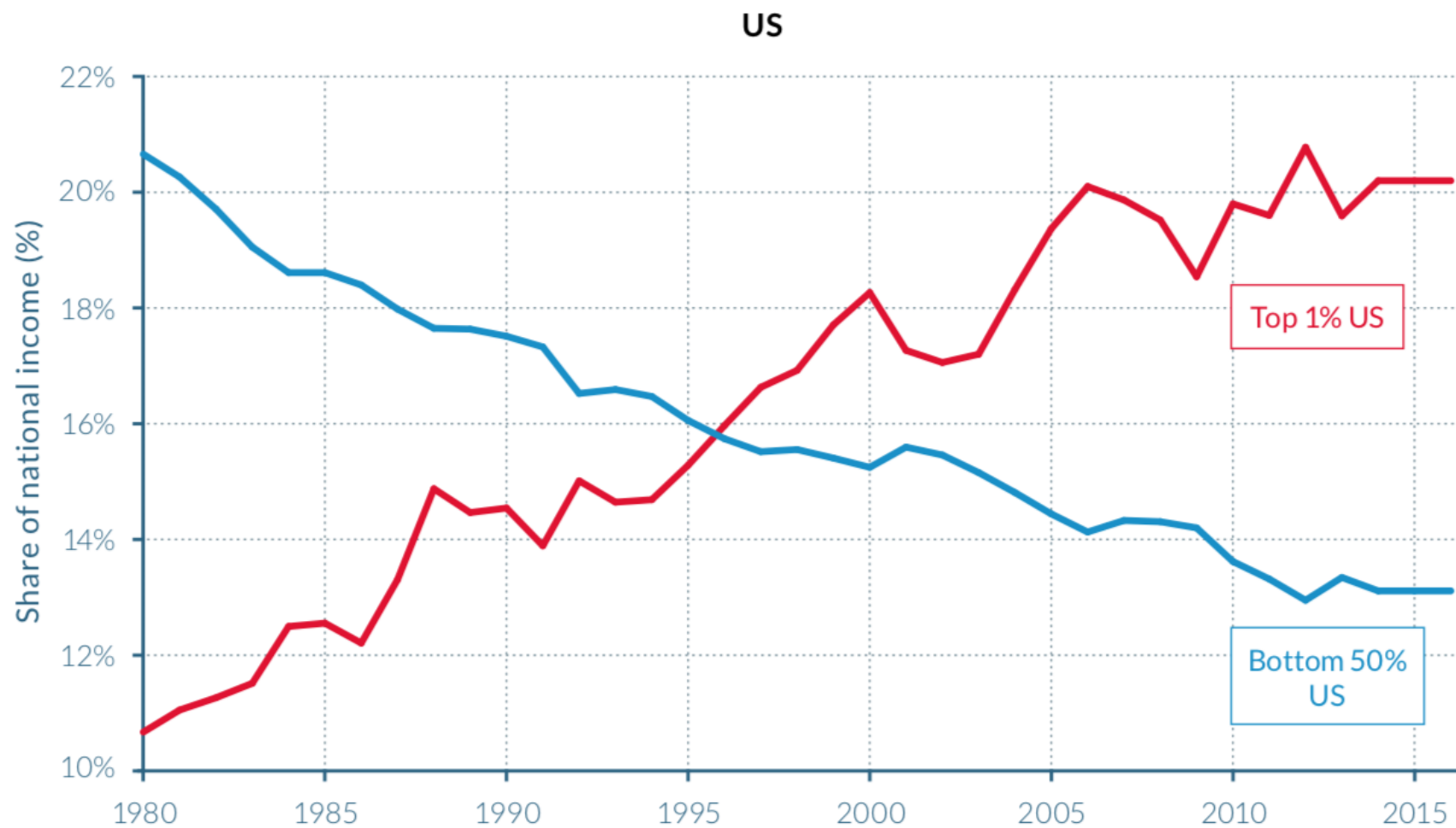


Source: Novokmet, Piketty and Zucman (2017). See wir2018.wid.world for data series and notes.

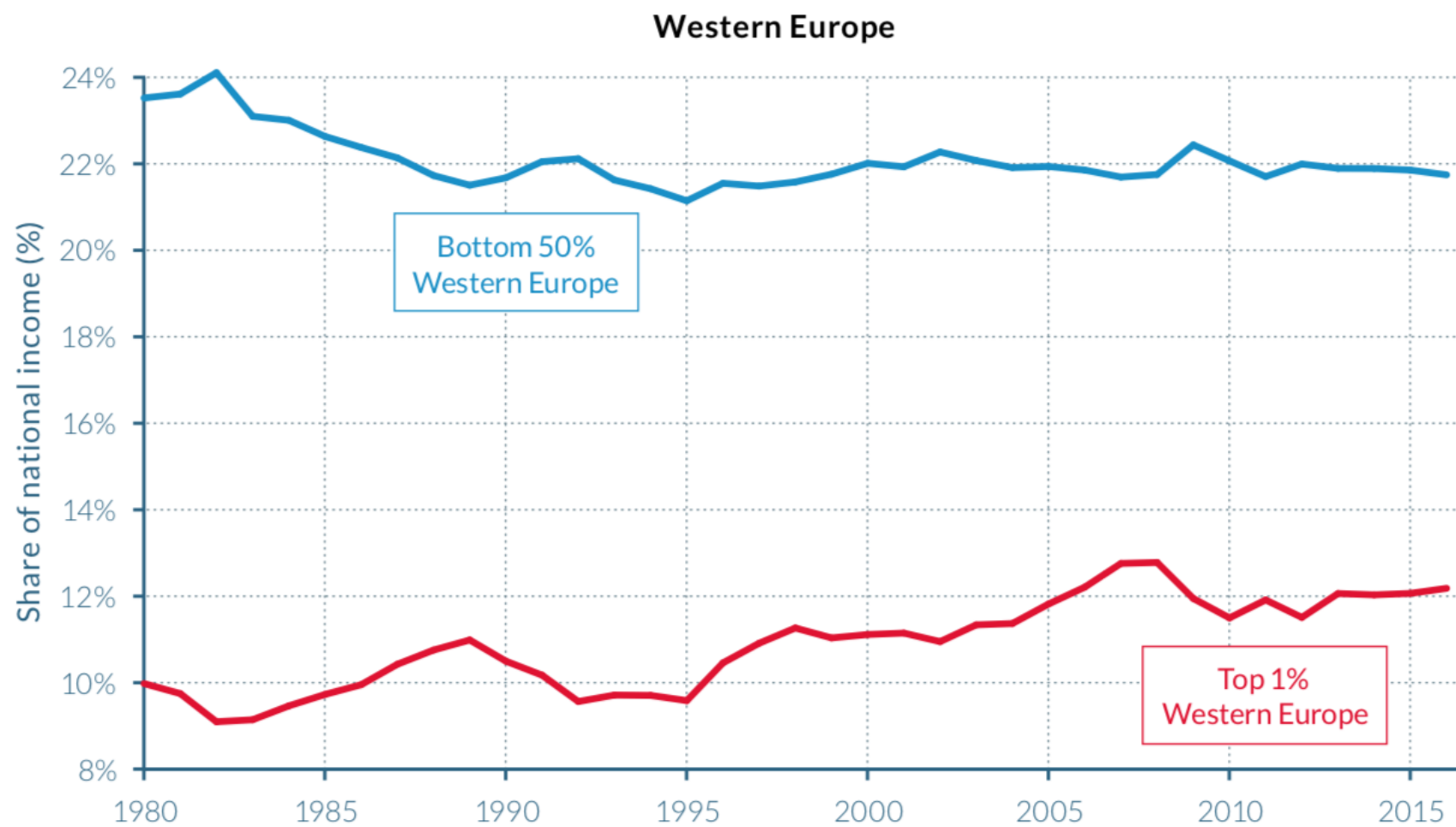
3.5 The U.S. vs. other developed countries

- Inequality has increased more in the US than other developed countries
- Technology, globalization cannot explain this pattern
- Domestic policies matter

Top 1% vs. Bottom 50% national income shares in the US and Western Europe, 1980-2016



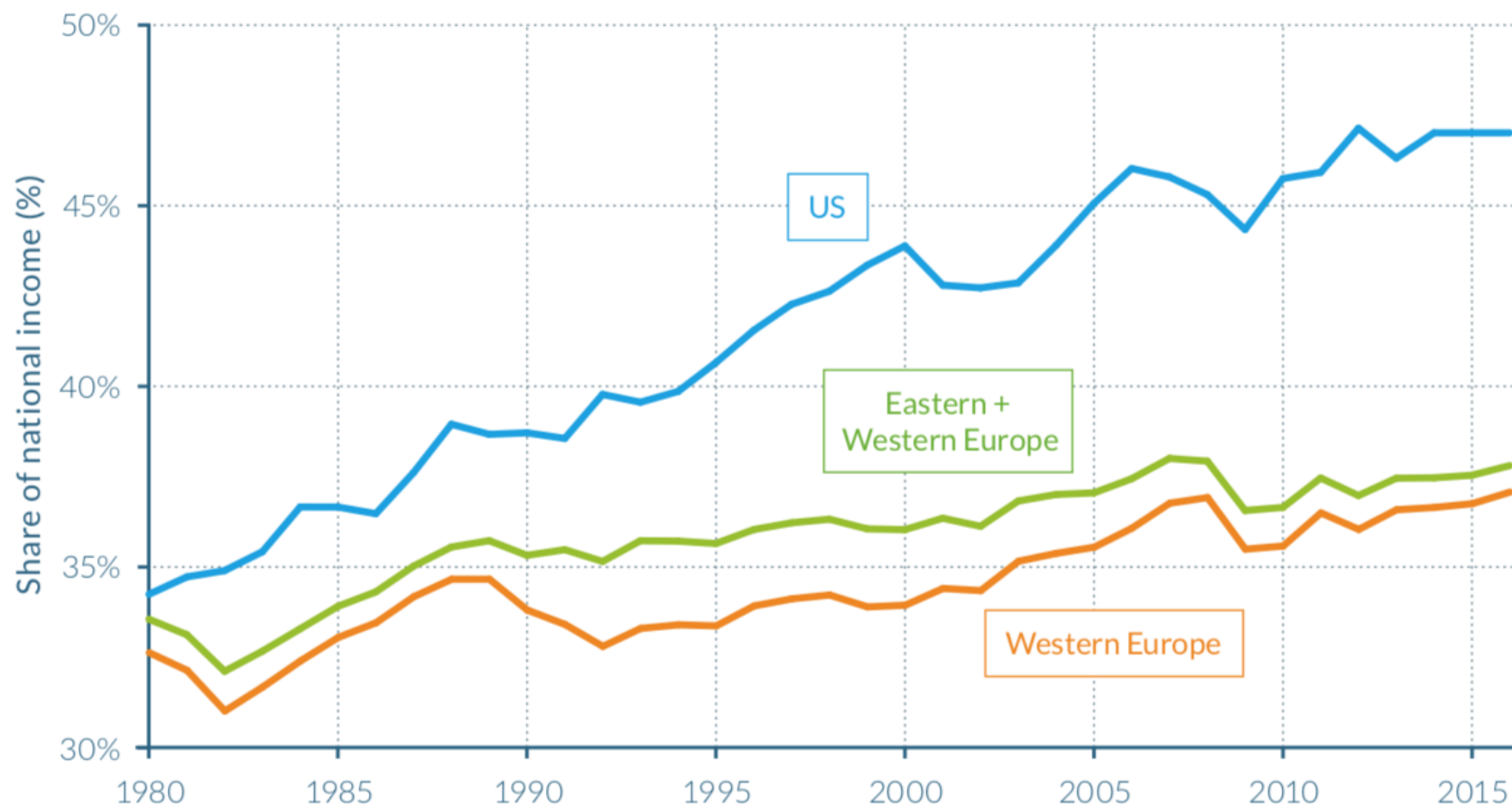
Source: WID.world (2017). See wir2018.wid.world for data series and notes.



Source: WID.world (2017). See wir2018.wid.world for data series and notes.

In 2016, 22% of national income was received by the Bottom 50% in Western Europe.

Top 10% national income share in Europe and the US, 1980-2016



Source: WID.world (2017). See [wir2018.wid.world](#) for data series and notes.

In 2016, 38% of national income was received by the Top 10% in Eastern and Western Europe.

4 Global wealth inequality

4.1 Measuring wealth inequality

Wealth inequality more difficult to measure than income inequality

- Idea data source would be annual wealth tax declarations for the entire population
- But exist in very few countries only (eg, Norway)
- For most countries, need to use indirect methods and combine data sources

Estate tax multiplier method

- Start with wealth-at-death reported on estate tax returns
- Compute mortality rate by age and gender
- Then weight wealth-at-death by inverse of mortality rate
- Limit: need to assume that conditional on age and gender, death is a random event

Capitalization of investment income

- Start with capital income reported in personal income tax returns
- Compute rate of return on each asset class
- Multiply capital income by inverse of rate of return
- Limit: does not work well if taxable rates of return vary with wealth

4.2 Levels and Trends in wealth concentration

Levels

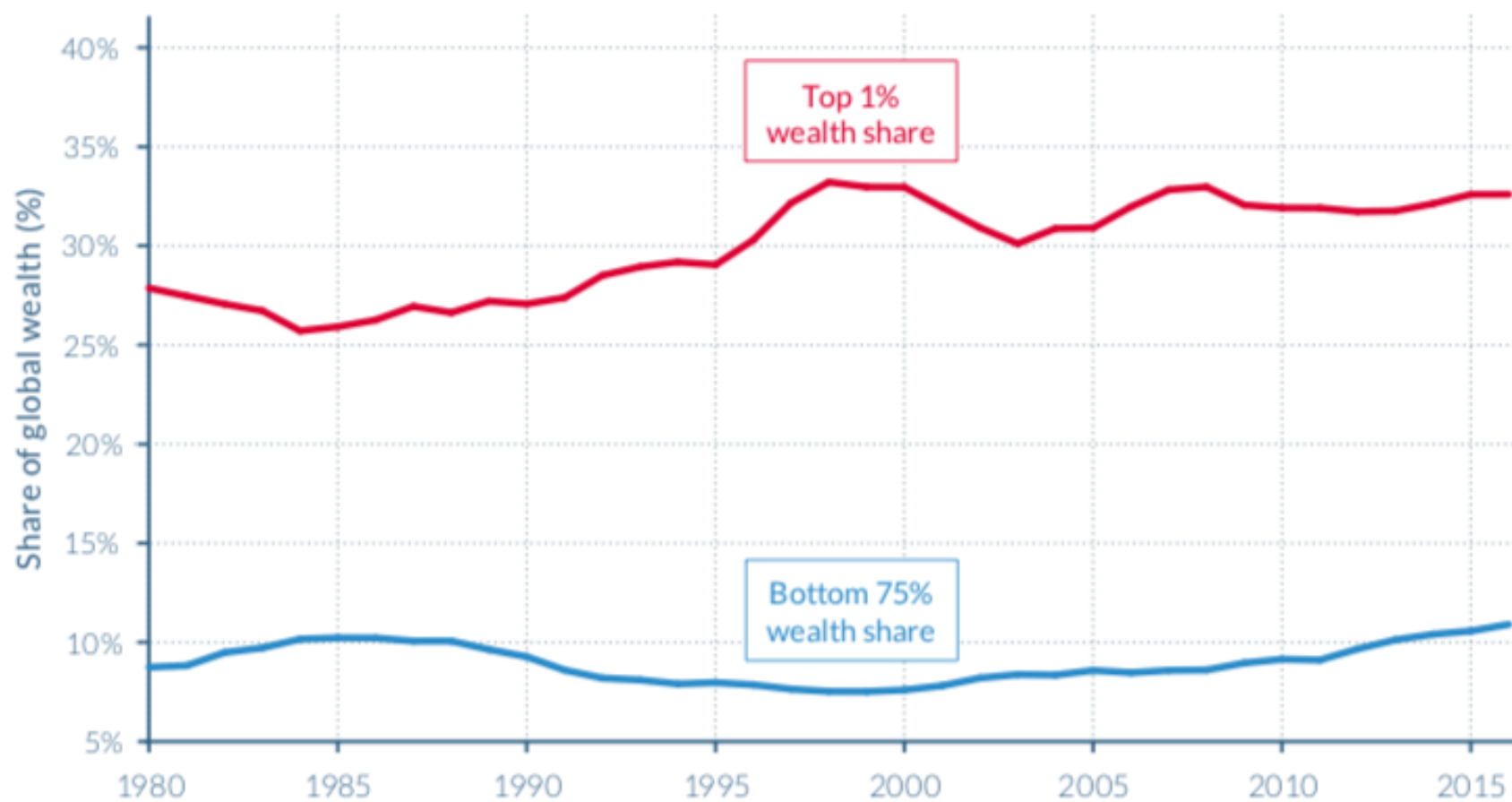
Private wealth always more concentrated than income

- Top 10% owns more than 50% of wealth in China, Europe, US
- Bottom 50% owns less than 10%; middle 40% owns 40% or less

Trends in world wealth inequality

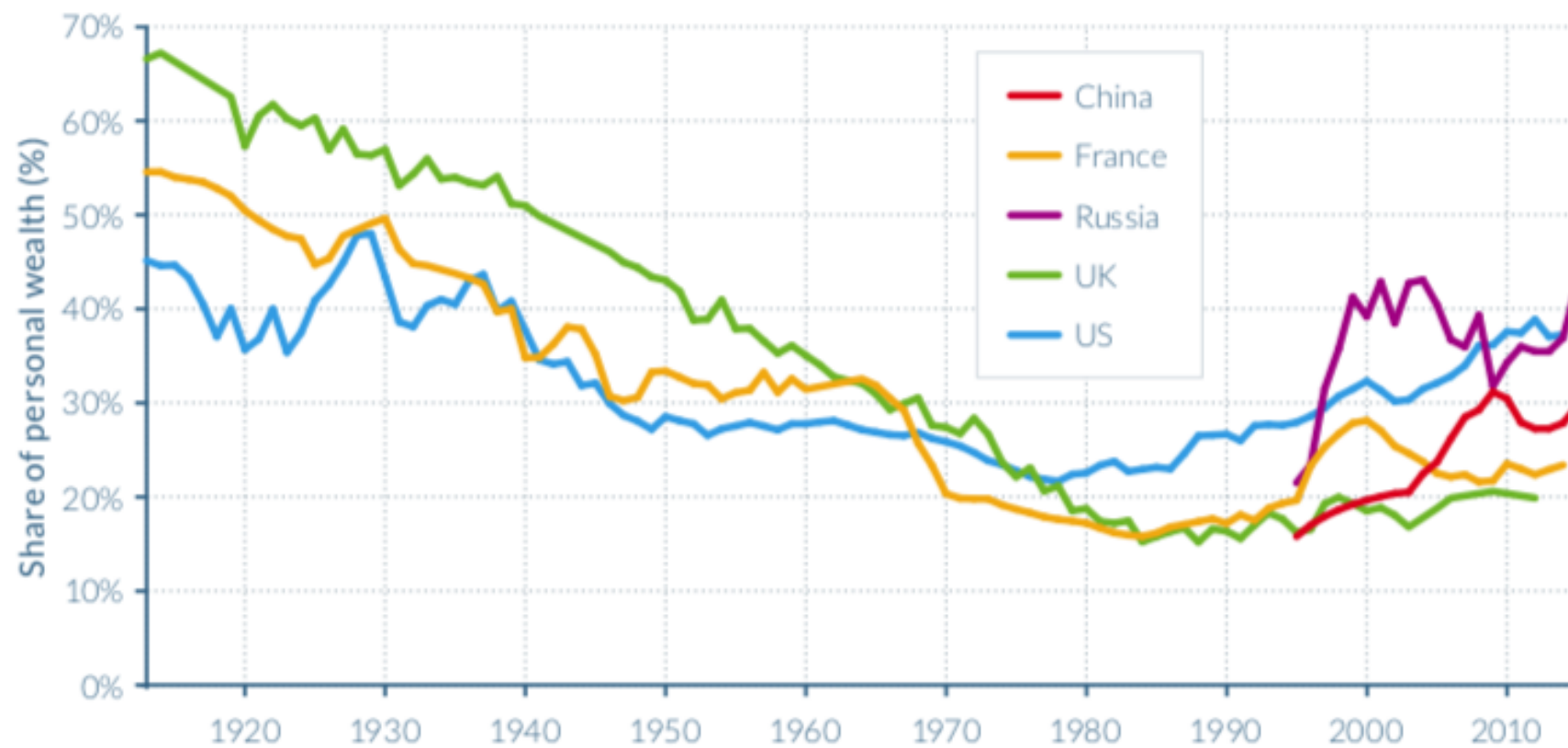
Evidence points toward rise in global wealth inequality over past decades

- Given data limitation, in what follows: world = Europe + China + US
- Global top 1% increased from 28% in 1980 to 33% today
- Bottom 75% share hovered around 10%

Figure 4.1.1**Top 1% and Bottom 75% shares of global wealth, 1980–2017: China, Europe and the US**

Source: WID.world (2017). See [wir 2018.widworld](#) for data series and notes.

In 2016, 33% of global wealth was owned by the Top 1%. The evolution of global wealth groups from 1980 to 2017 is represented by China, Europe and the US.

Figure E8**Top 1% wealth shares across the world, 1913–2015: the fall and rise of personal wealth inequality**

Source: WID.world (2017). See [wir2018.widworld](#) for data series and notes.

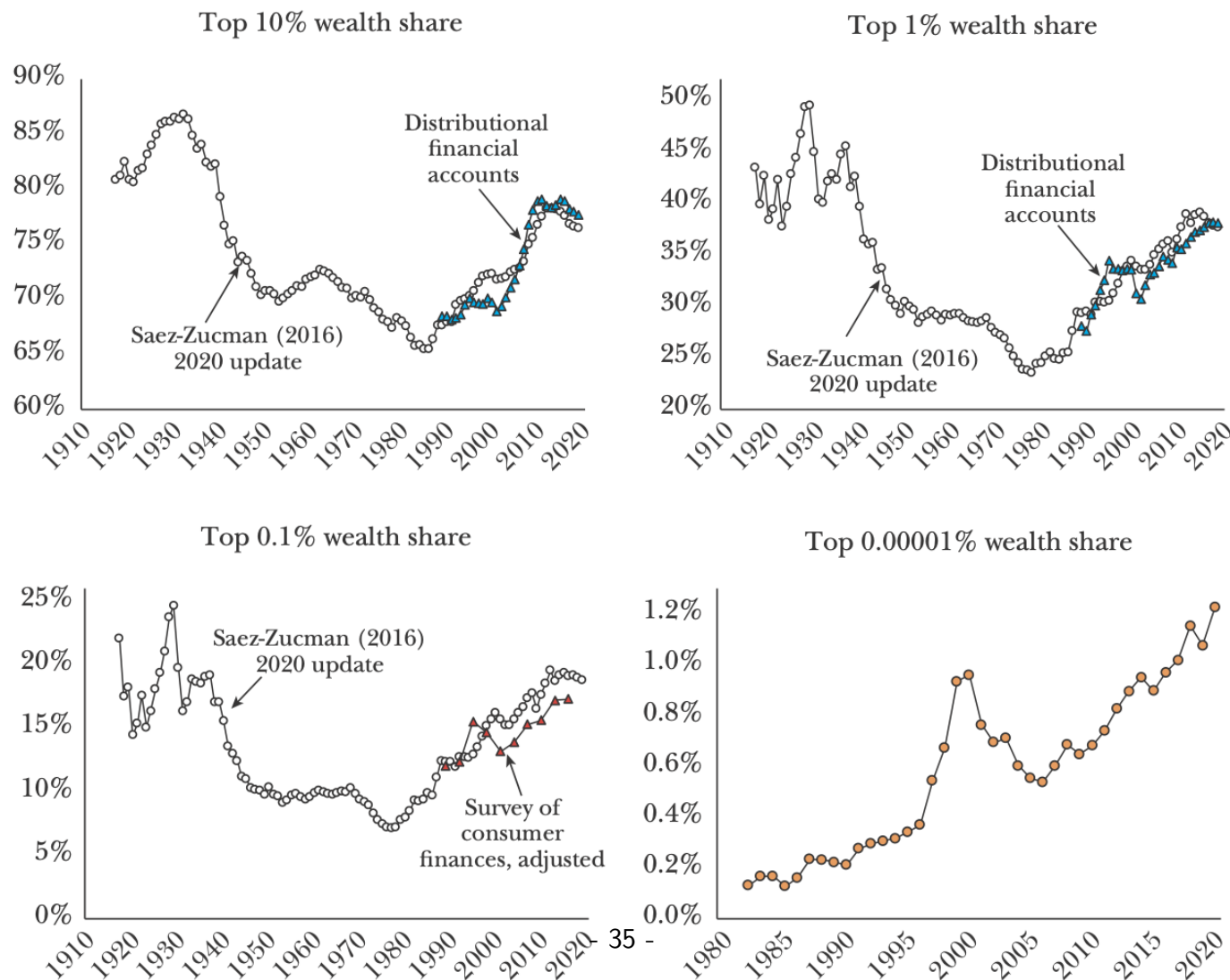
In 2015, the Top 1% wealth share was 43% in Russia against 22% in 1995.

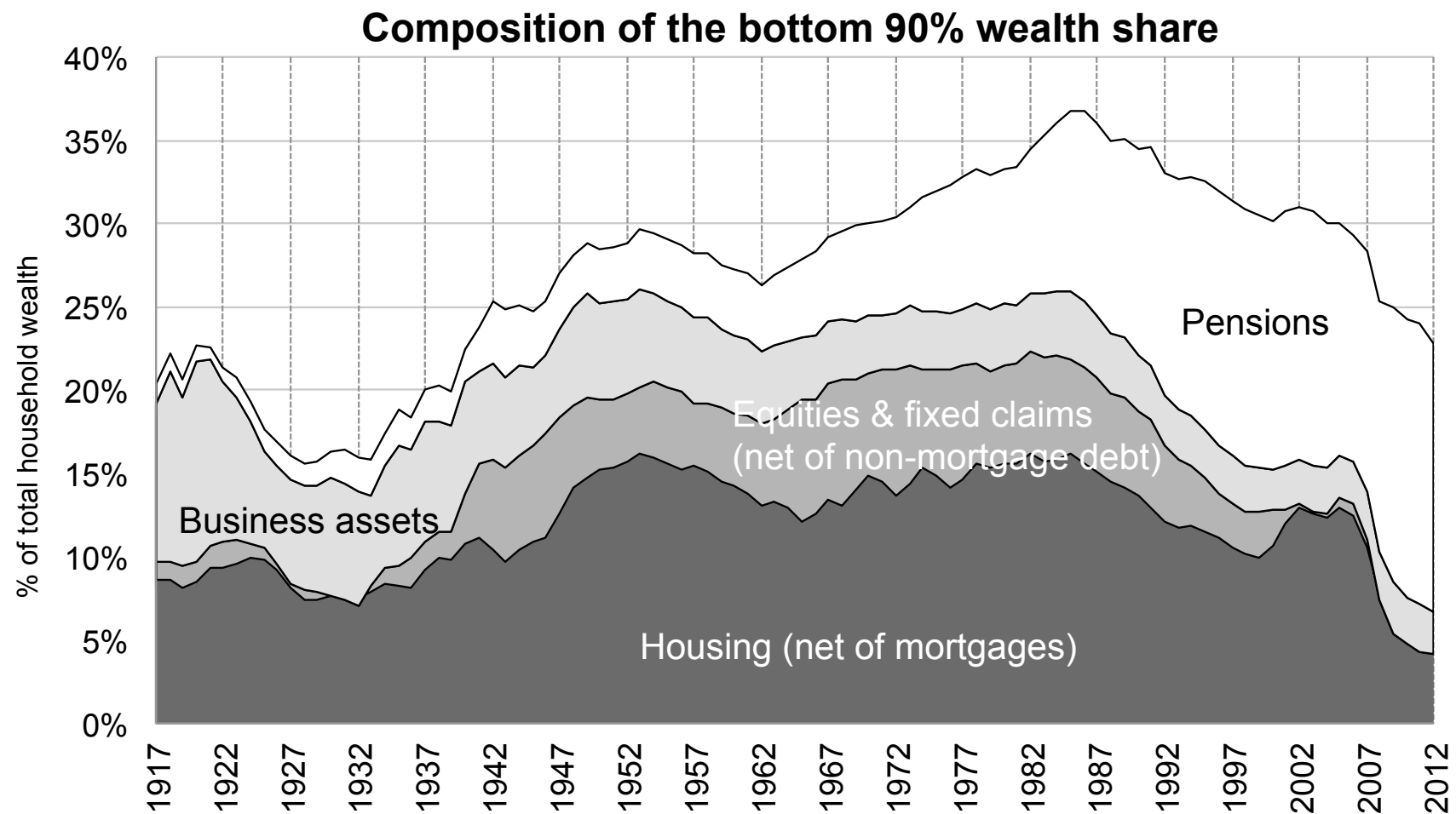
United States

- Great reversal: the US used to be much more equal than Europe, and now is much more unequal
- Before World War I, wealth was less concentrated in the US than in Europe
- Substantial fall in wealth inequality in the 1930s and 1940s
- Then gradual and dramatic increase since the late 1970s

Figure 1

Top Wealth Shares in the United States: Comparing Estimates





Source: Saez and Zucman (2016)