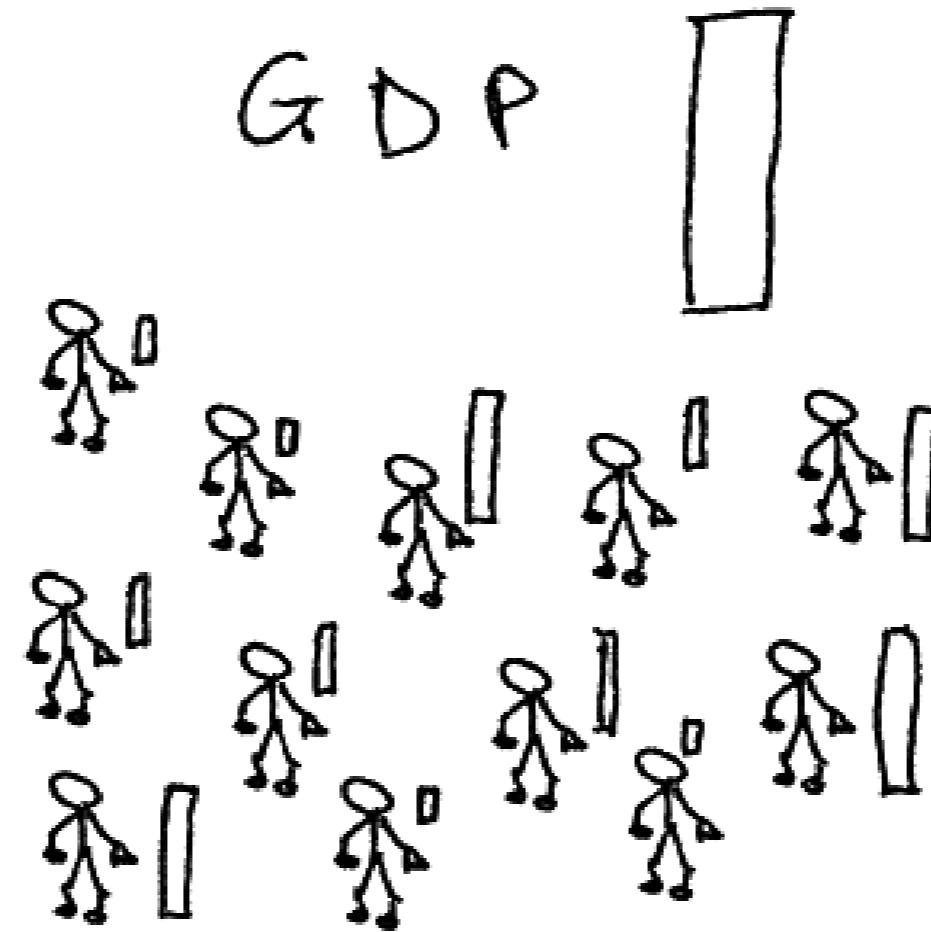


# **INEQUALITIES**

**PABLO WINANT, ESCP BUSINESS SCHOOL**

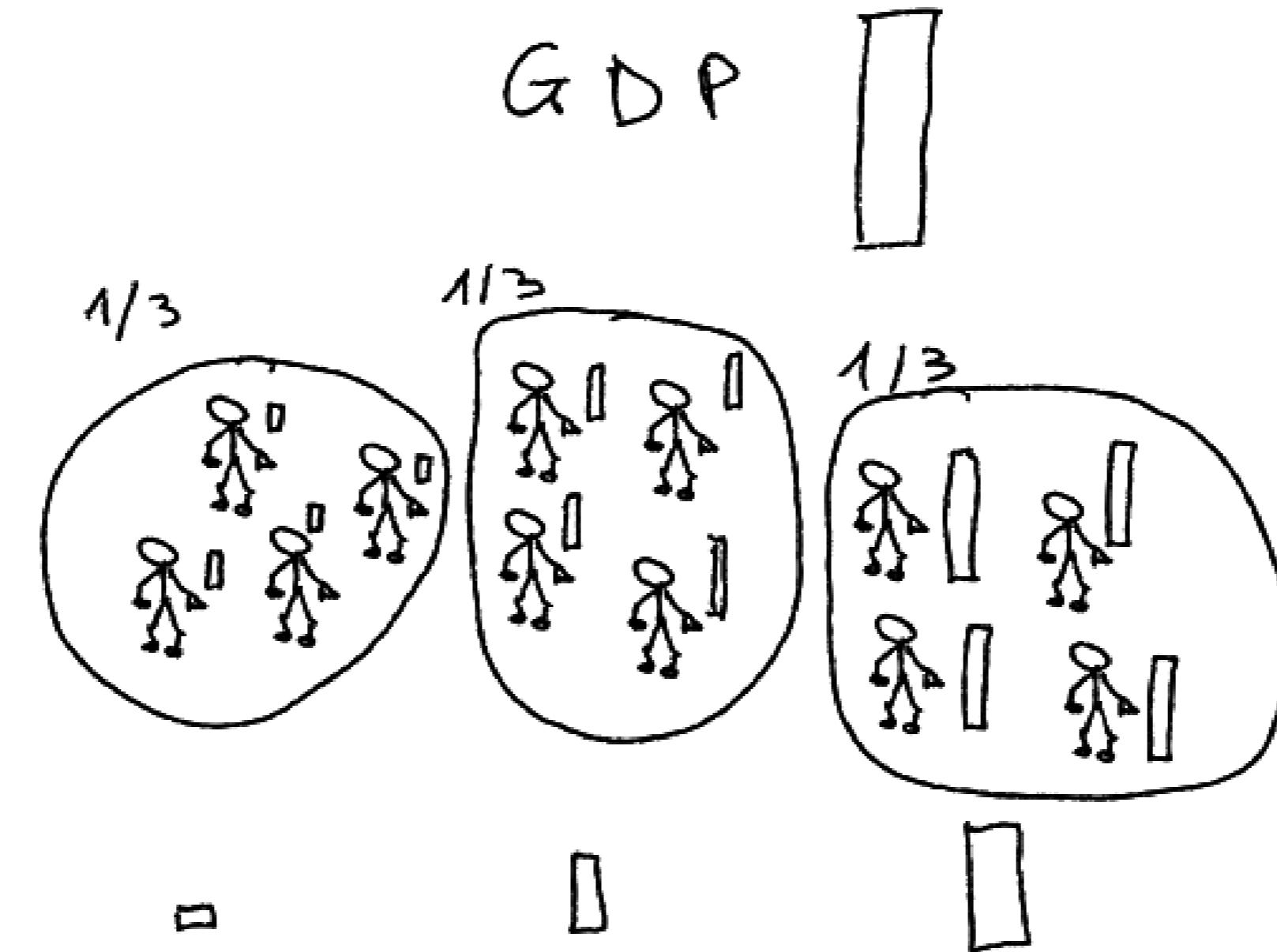
**GDP**

# GDP



- GDP = *Total* Revenue
- a proxy for well-being
- But GDP says nothing about distribution
- Though there is data about it...

# GDP

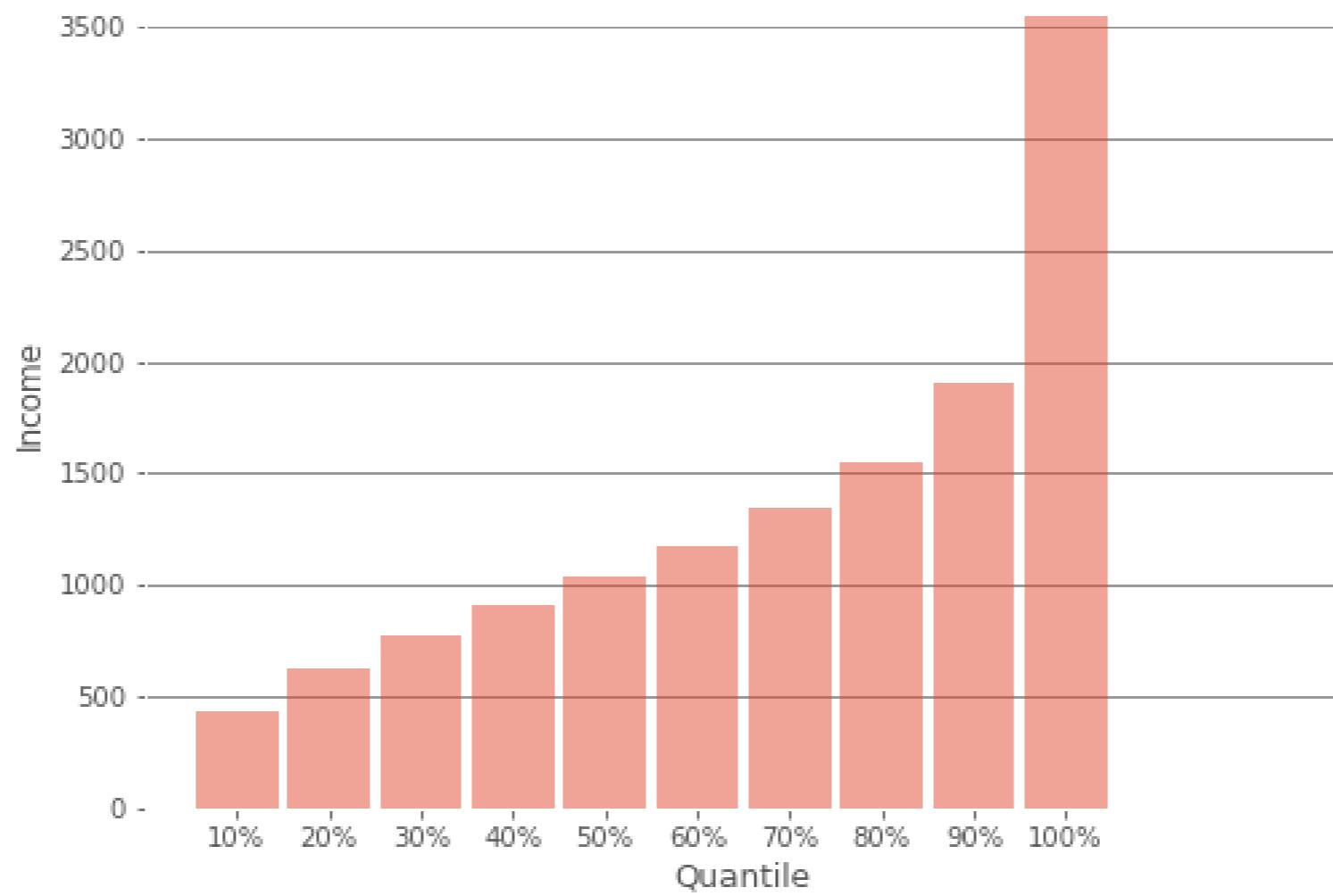


- Sort agents by revenue levels, in equal groups
- Those groups are called **quantiles**
- Take the average per quantile

# INCOME INEQUALITY



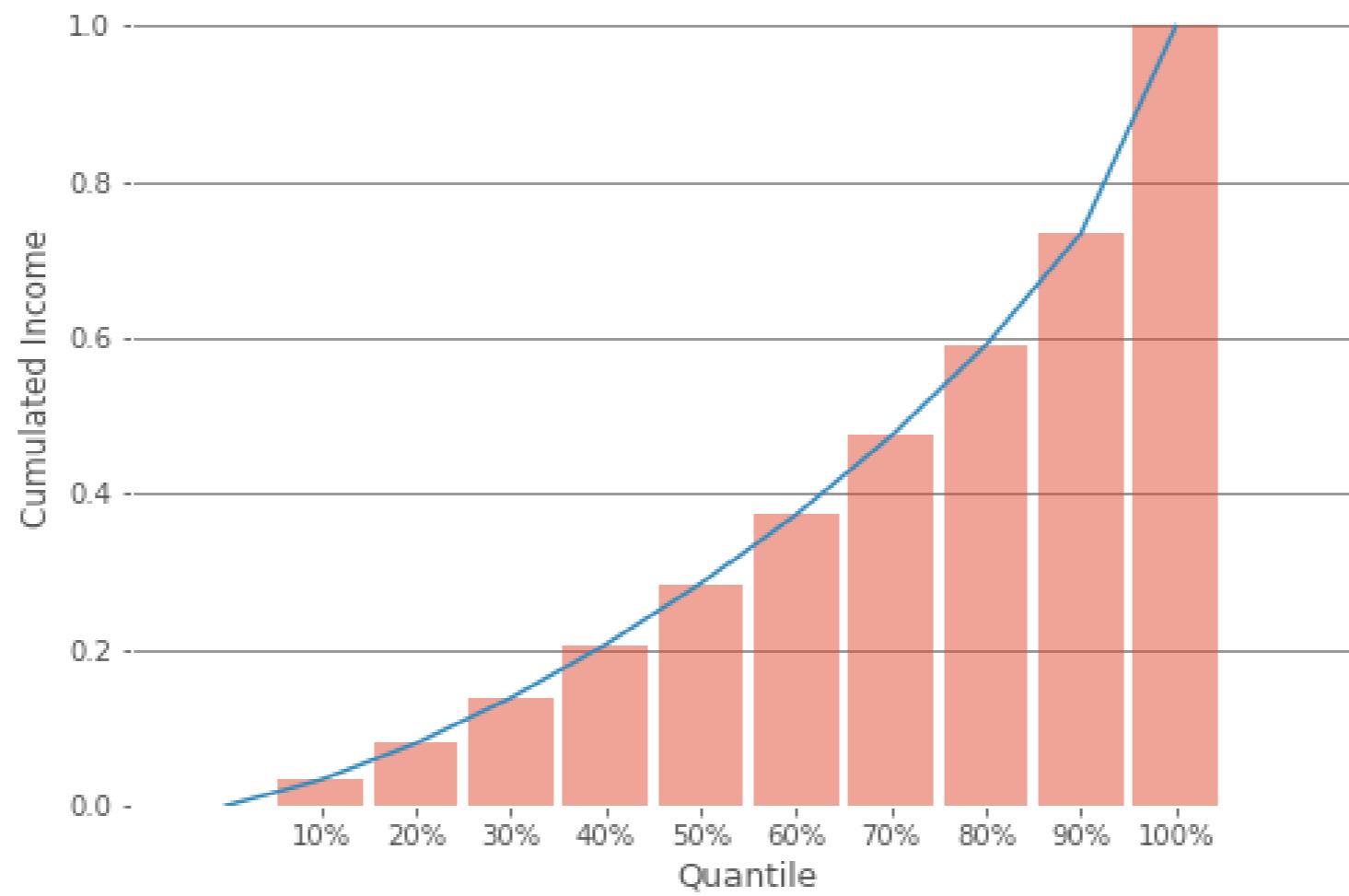
# INCOME INEQUALITY



Here is the result for France with 10 quantiles (deciles)

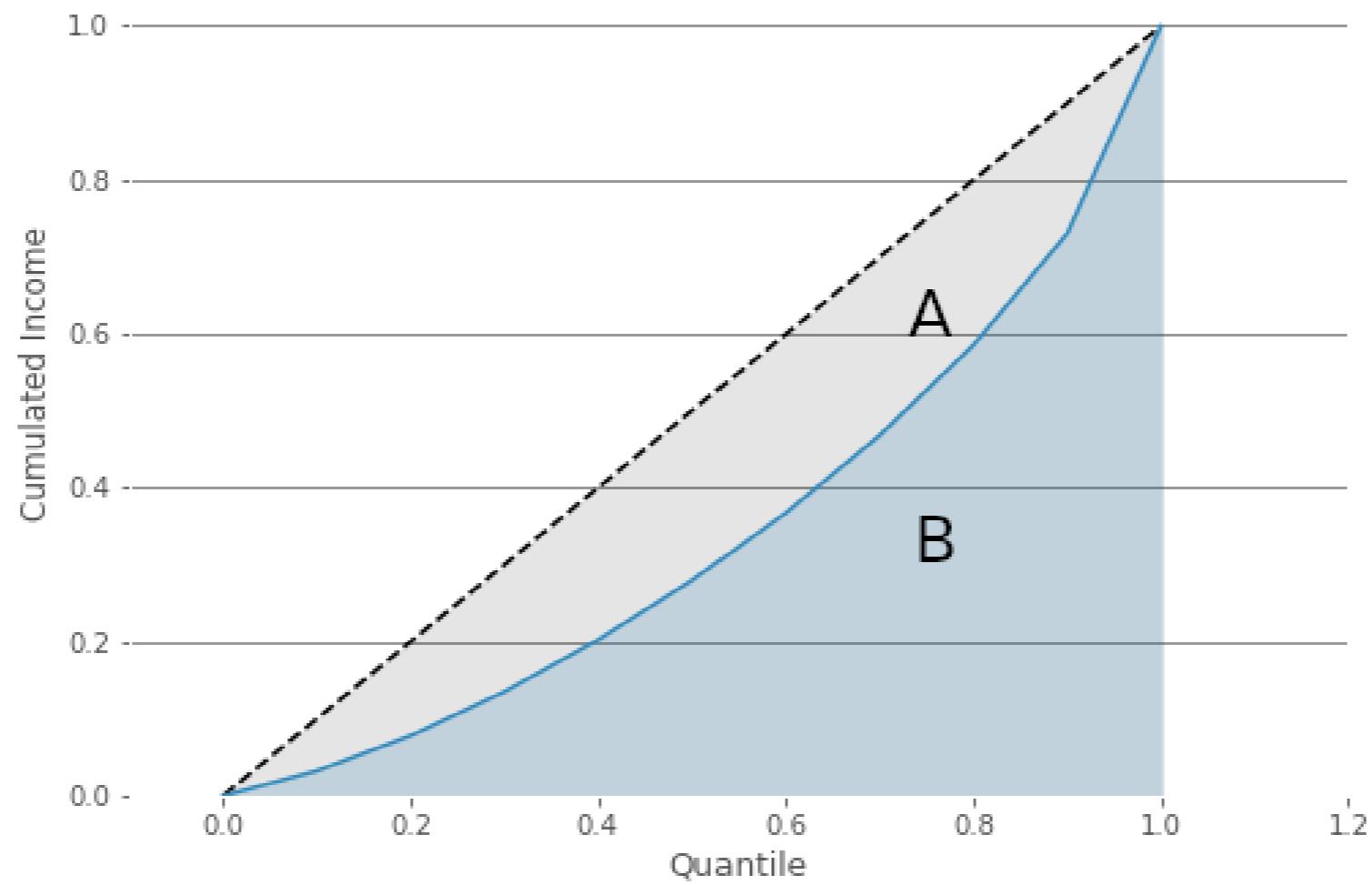
- After-tax revenue for France in 2011:
  - lower decile (bottom 10): 522 dollars/month in average
  - higher decile (top 10): 4226 dollars/month in average
- Ratio top 10 / bottom 10: 8
  - ratios between quantile neutralize average revenue allowing for international comparisons

# INCOME INEQUALITY



- *Lorenz Curve*
  - Cumulative Distribution, Normalized (sums to 1) of income

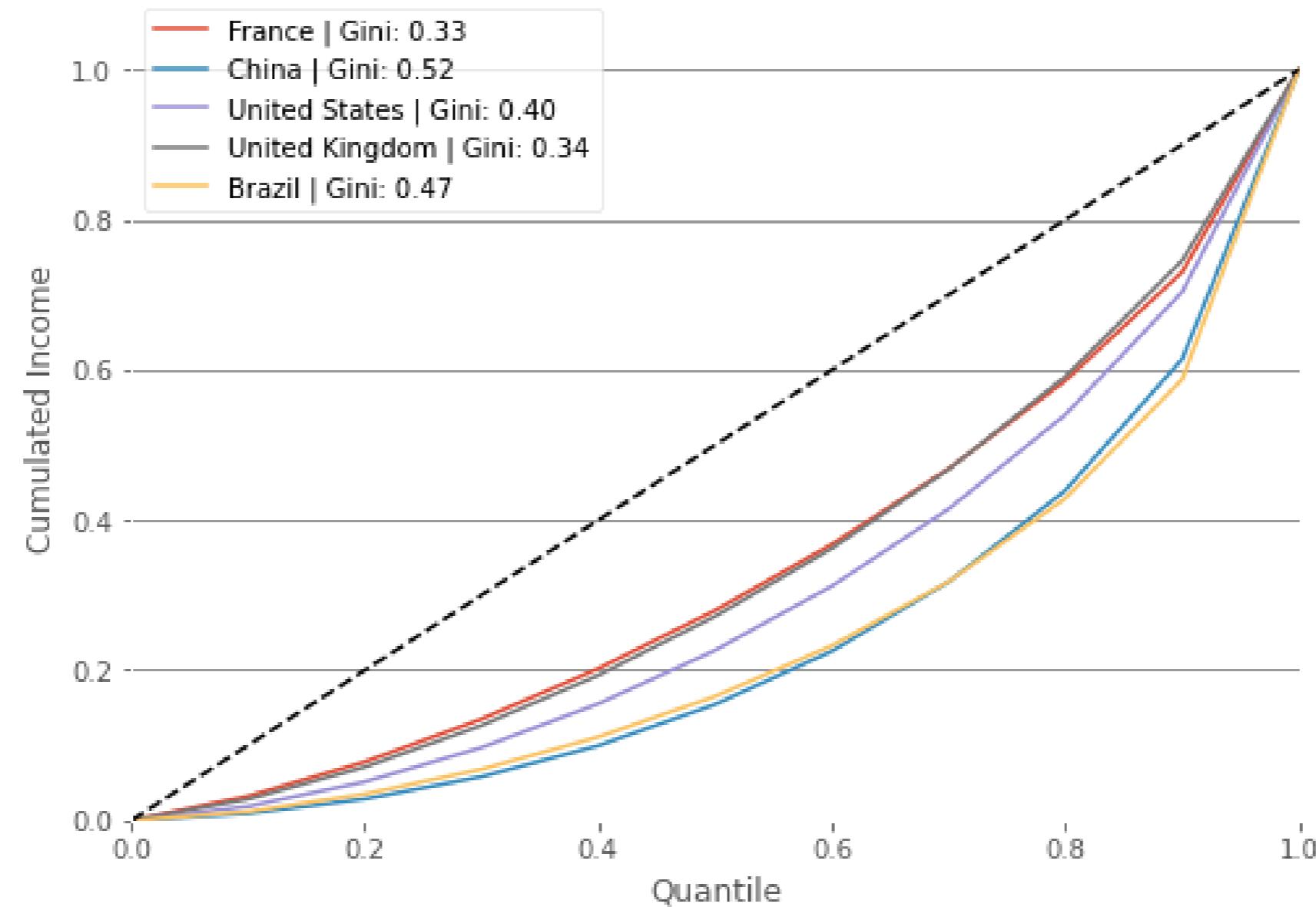
# INCOME INEQUALITY



- The Lorenz curve shows graphically the deviation of the distribution from an equal benchmark
- Gini Index:  $A/(A+B)$ 
  - Gini=0: perfect equality
  - Gini=1: perfect inequality
- Remark: there is a formula for the Gini index, as a function of cumulative quantiles ( $X_k$ ) and cumulative revenues ( $Y_k$ )

$$G = 1 - \sum_{k=0}^{n-1} (X_{k+1} - X_k)(Y_{k+1} + Y_k)$$

# INCOME INEQUALITY



- A first international comparison:
  - France and UK have (today) similar levels of inequality
  - United States: a more unequal country
  - China and Brasil: very unequal

More gini indices:  
which do you think are the most unequal countries?

<https://www.statista.com/statistics/264627/ranking-of-the-20-countries-with-the-biggest-inequality-in-income-distribution/>

# **THE BIG PICTURE**

Do you think inequalities are rising?

# SOURCE

- Where to find historical Data about inequality ?
- The best source: [World Inequality Database](#)
  - Thomas Piketty
  - Lucas Chancel
  - Emmanuel Saez
  - Gabriel Zucman
  - ...
- A team of very serious researchers behind [World Inequality Lab](#)

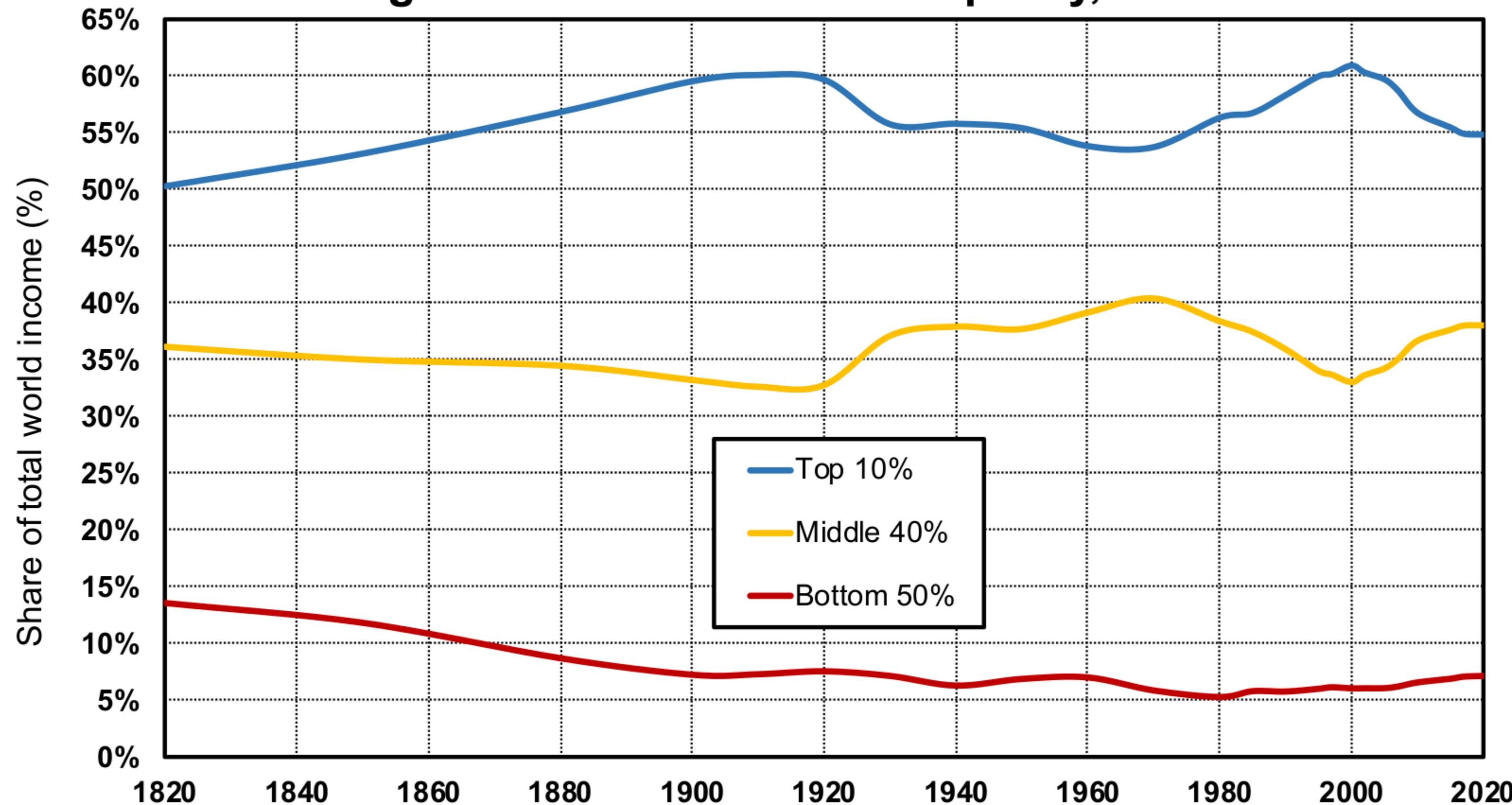
(page 2)

A LIST or TAXES, made in and for the  
of *Hart & Warren*

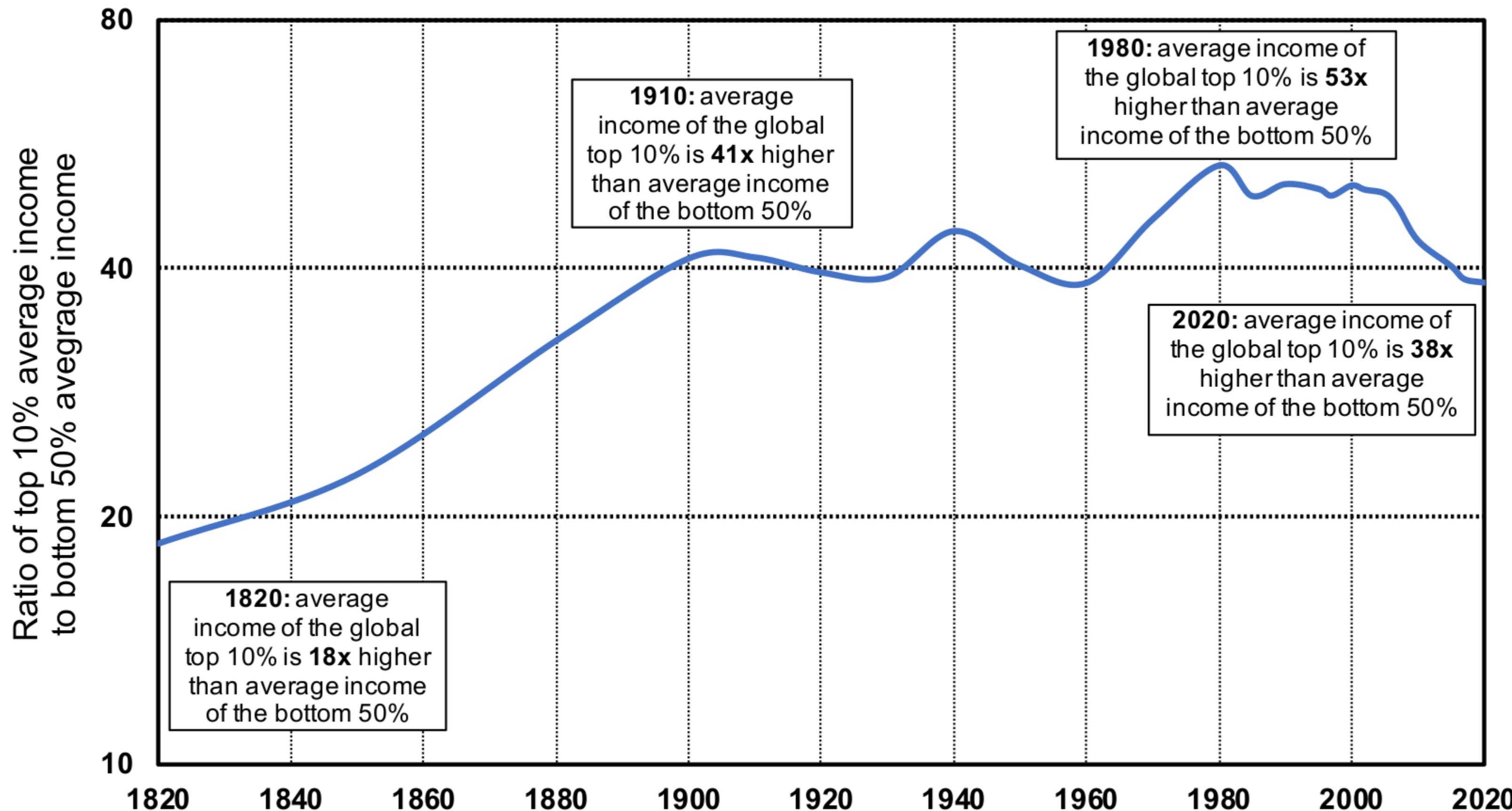
assessment and collection district in Connecticut, comprising the town  
pursuant to An Act to lay and collect a Direct Tax ; passed on the 14th day of July 1798.

Names.	Amount of Taxes assed,						Total amount assed When paid. Dollars. Cents. Ms.
	On Houses.			On Lands.		On Slaves.	
Dollars.	Cents.	Mills.	Dollars.	Cents.	Dollars.	Cents.	
Moses Eaton	21	2	1	62	"	"	1 83 2
Clarina Elliott	77	2	"	98	"	"	98 "
Richard Elliott	40		5	44	"	"	5 84 "
Matthew Elliott	1 95		3	1	"	"	4 96 "
Nathan Elliott	1 80		9	15	"	"	10 95 "
F.	"	"	"	"	"	"	"
Samuel Fairchild	"	60	"	27	"	"	87 "
Amasa Ferris	"		"	17	"	"	17 "
Gamaliel Fenn	"		"	40	"	"	40 "
Ebenezer Fuller	"	21	6	34	"	"	35 6
John G. Fuller	"		"	19	"	"	19 "
James Fuller	"	10	"	85	"	"	2 25 "
Jeremiah Fuller	2	40	17	25	"	"	19 65 "
G.	"	"	"	"	"	"	"
Revillo Fuller	"	"	"	4	87	"	4 87 "
Ephraim Fuller	"	80	"	9	10	"	9 90 "
Abraham Fuller	"	80	"	7	27	"	8 7 "
John Finch	"	"	"	"	66	"	66 "
Stephen Fairchild	"	"	"	"	23	"	23 "
Samuel Forbes	"	30	"	58	"	"	88 "
J.	"	"	"	"	"	"	"
John Gorham	40		3	56	"	"	3 56 "

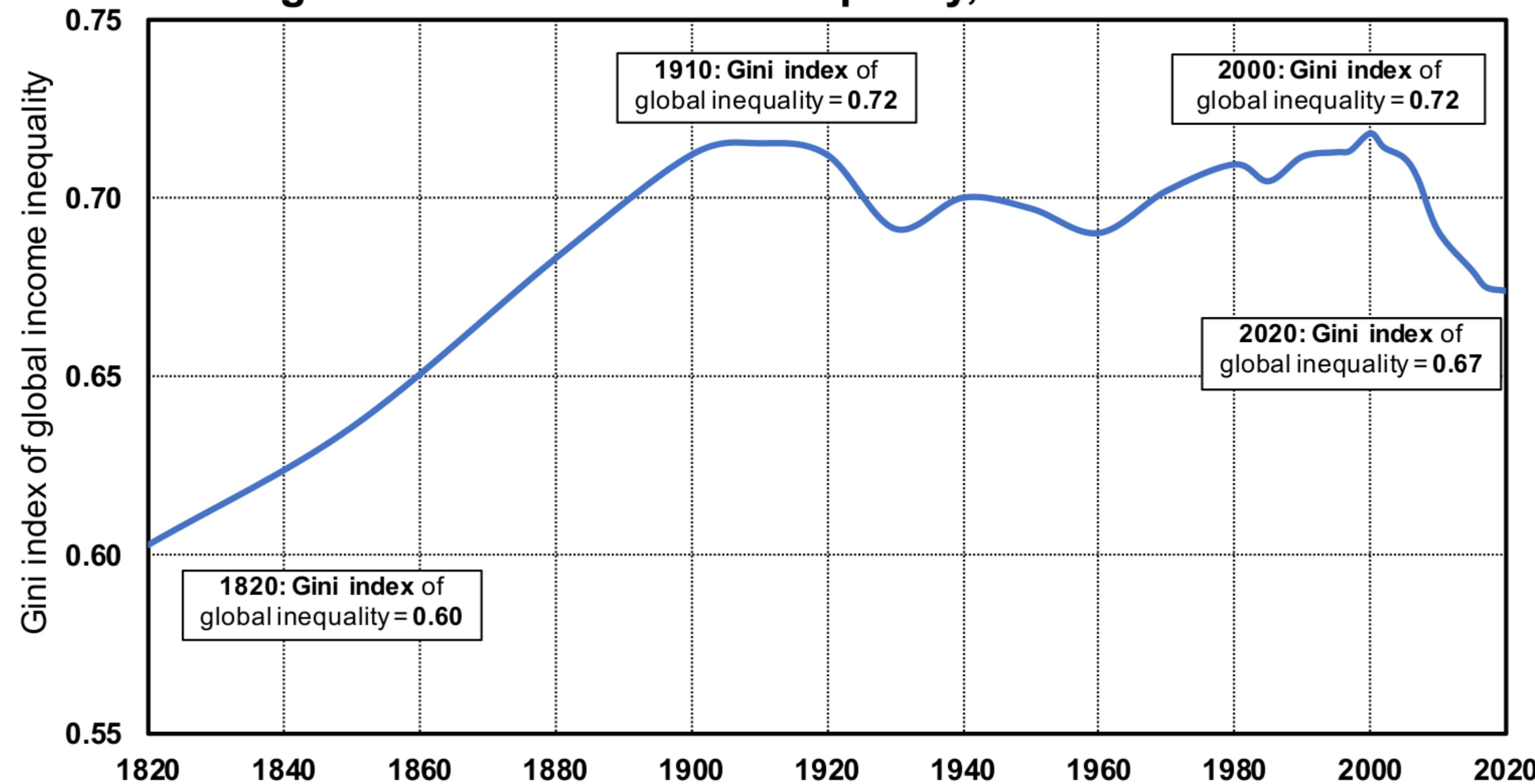
# Figure 1. Global income inequality, 1820-2020



**Figure 2. Global income inequality, 1820-2020: ratio T10/B50**



### Figure 3. Global income inequality, 1820-2020: Gini index

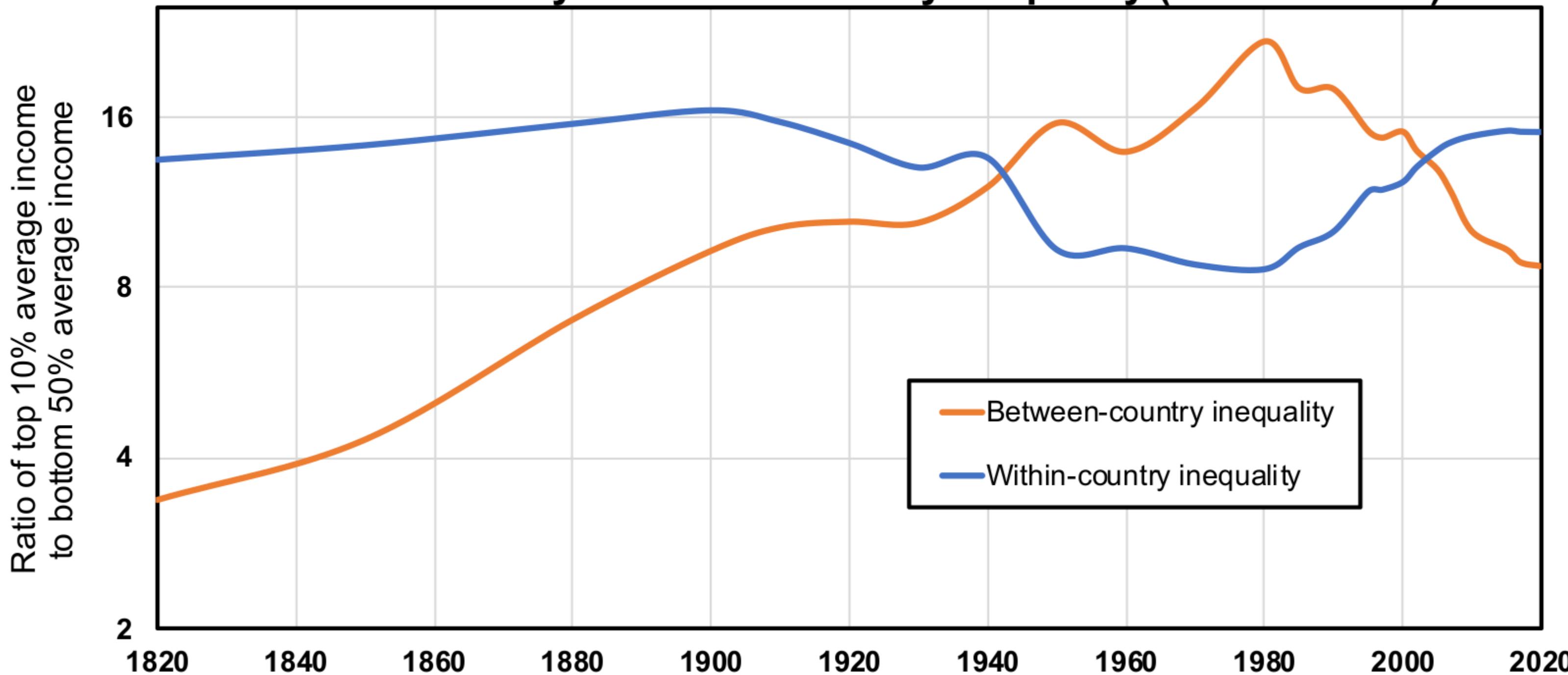


*Global inequality rose between 1820 and 1910, and stabilized at a high level since then*

*No difference between 1910 and now, except increase in middle 40%*

*level of inequality that we currently observe in the most unequal countries in the world, such as South Africa, Brazil, Mexico and the United Arab Emirates (see Chapter 1). In brief: in terms of inequality and concentration of resources and economic power, the world today is and has long been like a giant South Africa.*

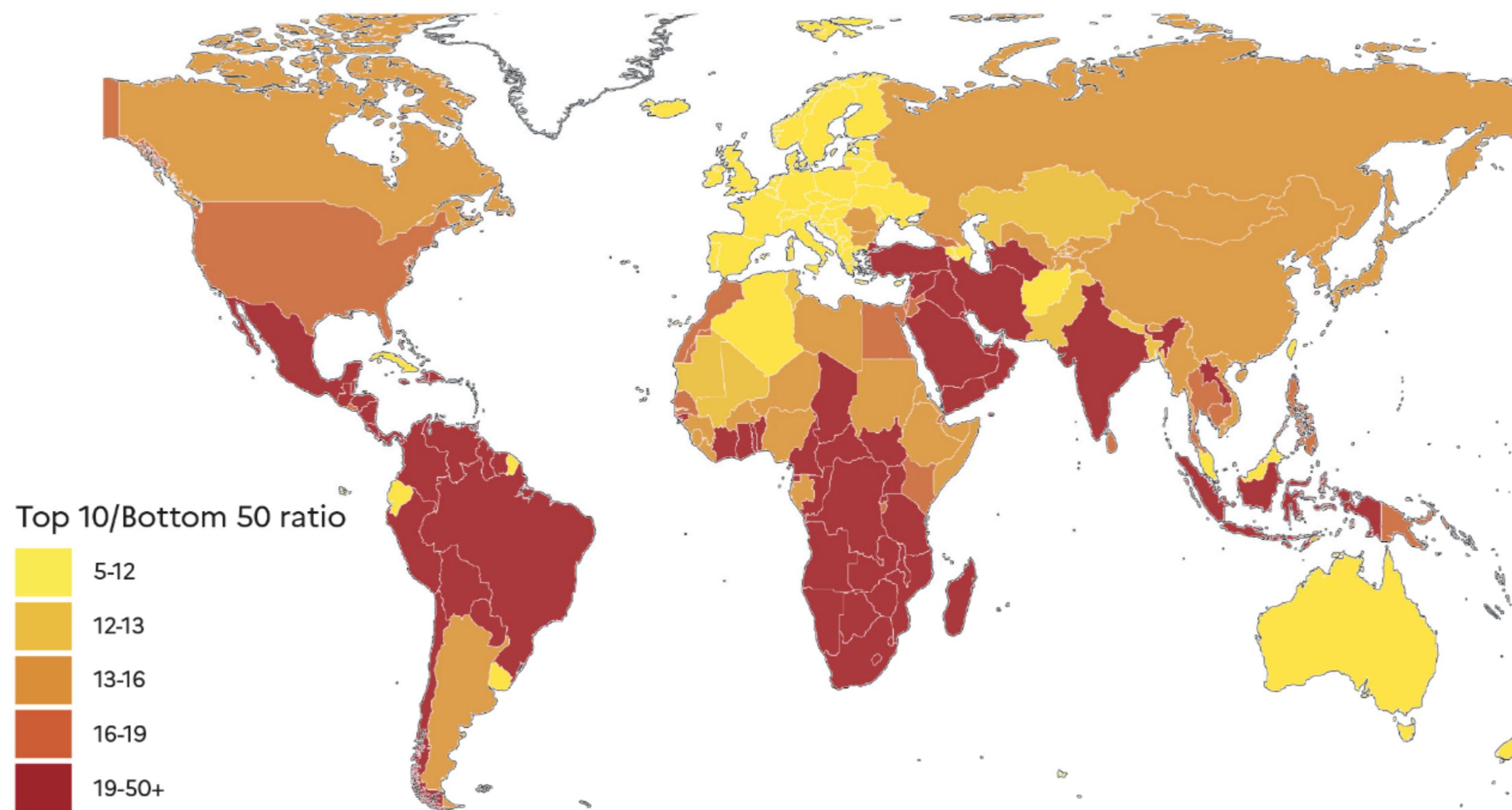
**Figure 4. Global income inequality, 1820-2020:  
Between-country vs. within-country inequality (ratio T10/B50)**



- Between-country: assume everybody in the country has the same income
- Within-country: averages between countries, weighted by country sizes

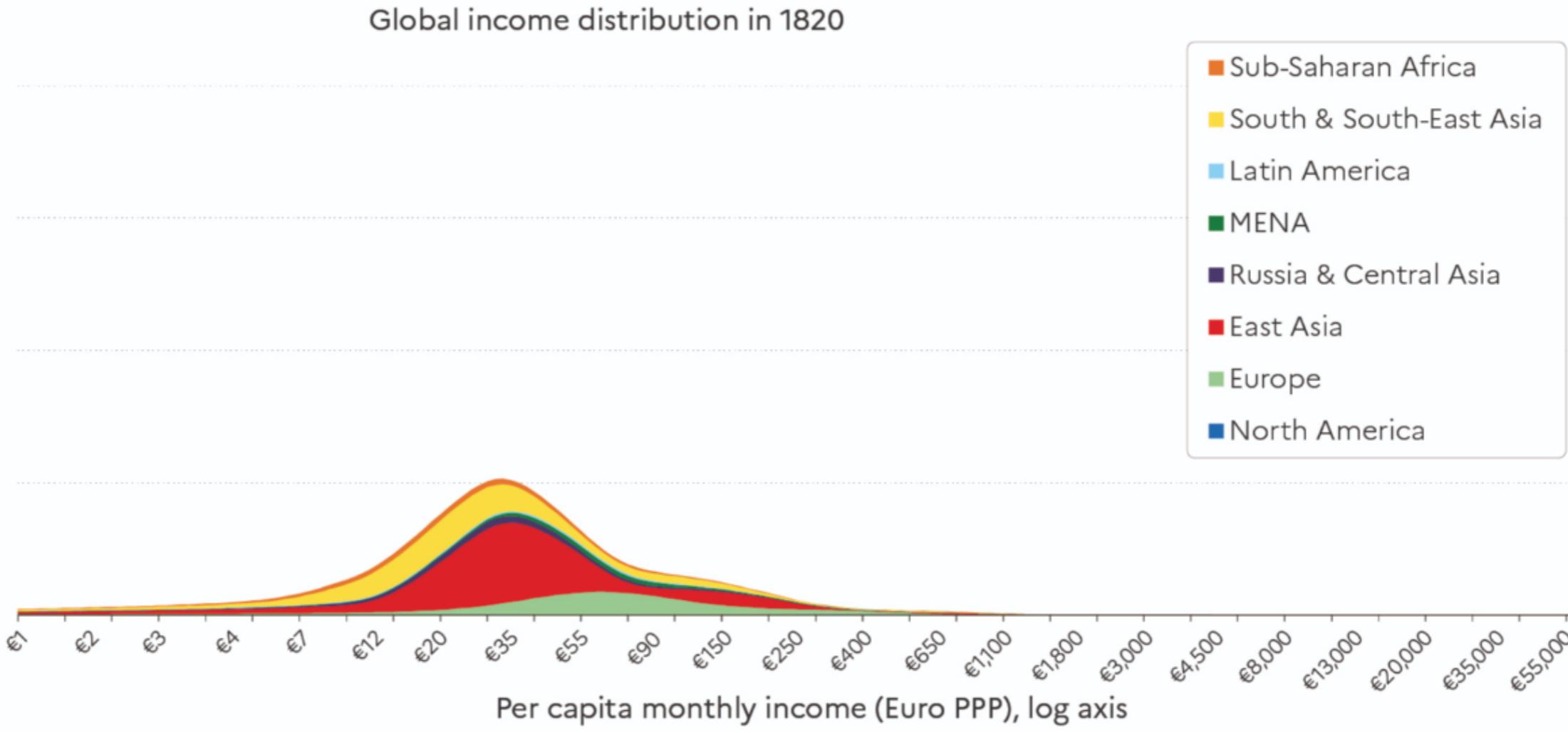
For both series: same level in 1920 as in 2020

**Figure 3** Top 10/Bottom 50 income gaps across the world, 2021



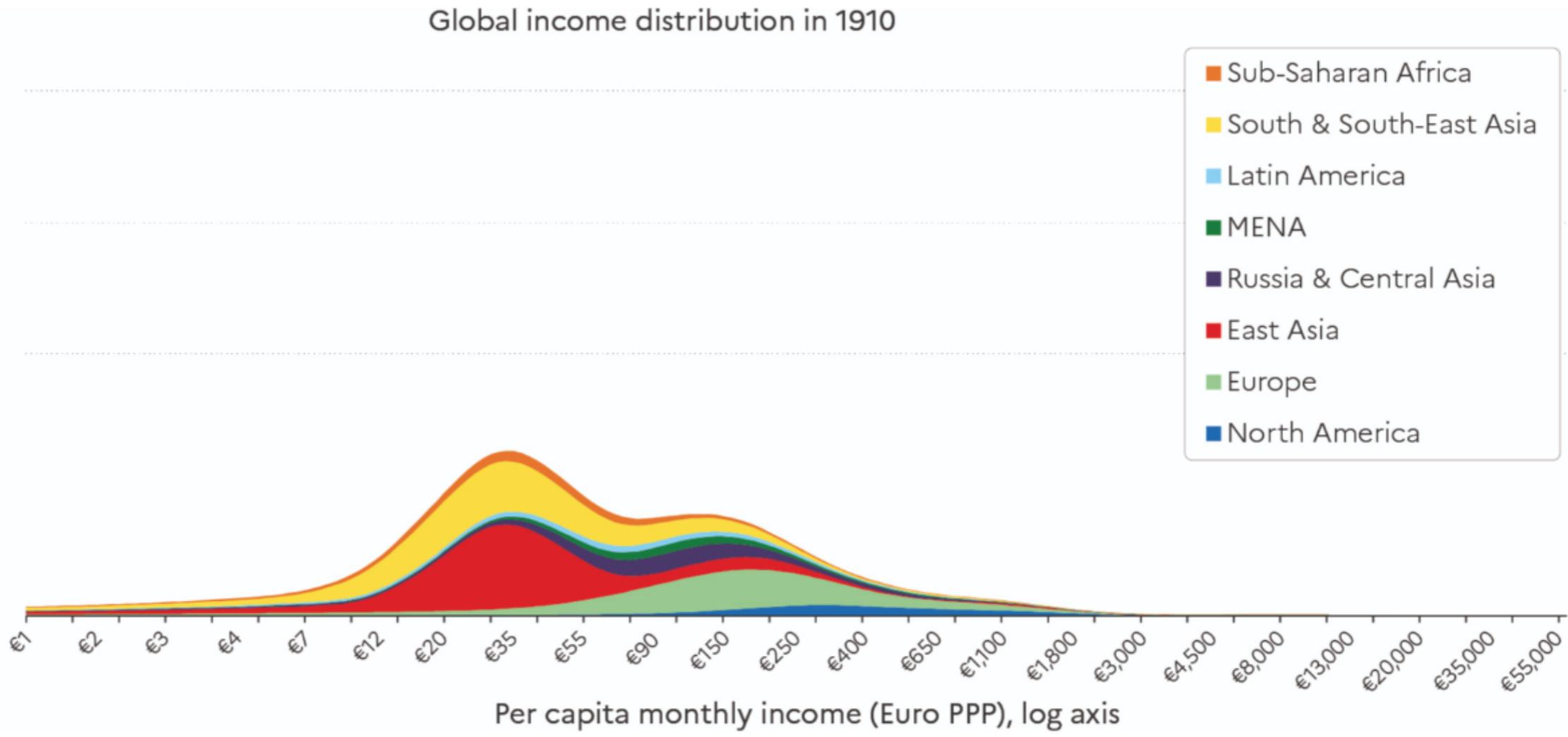
Evolution of the between dimension

The axis is scaled such that the colored areas correspond to the total population in each region



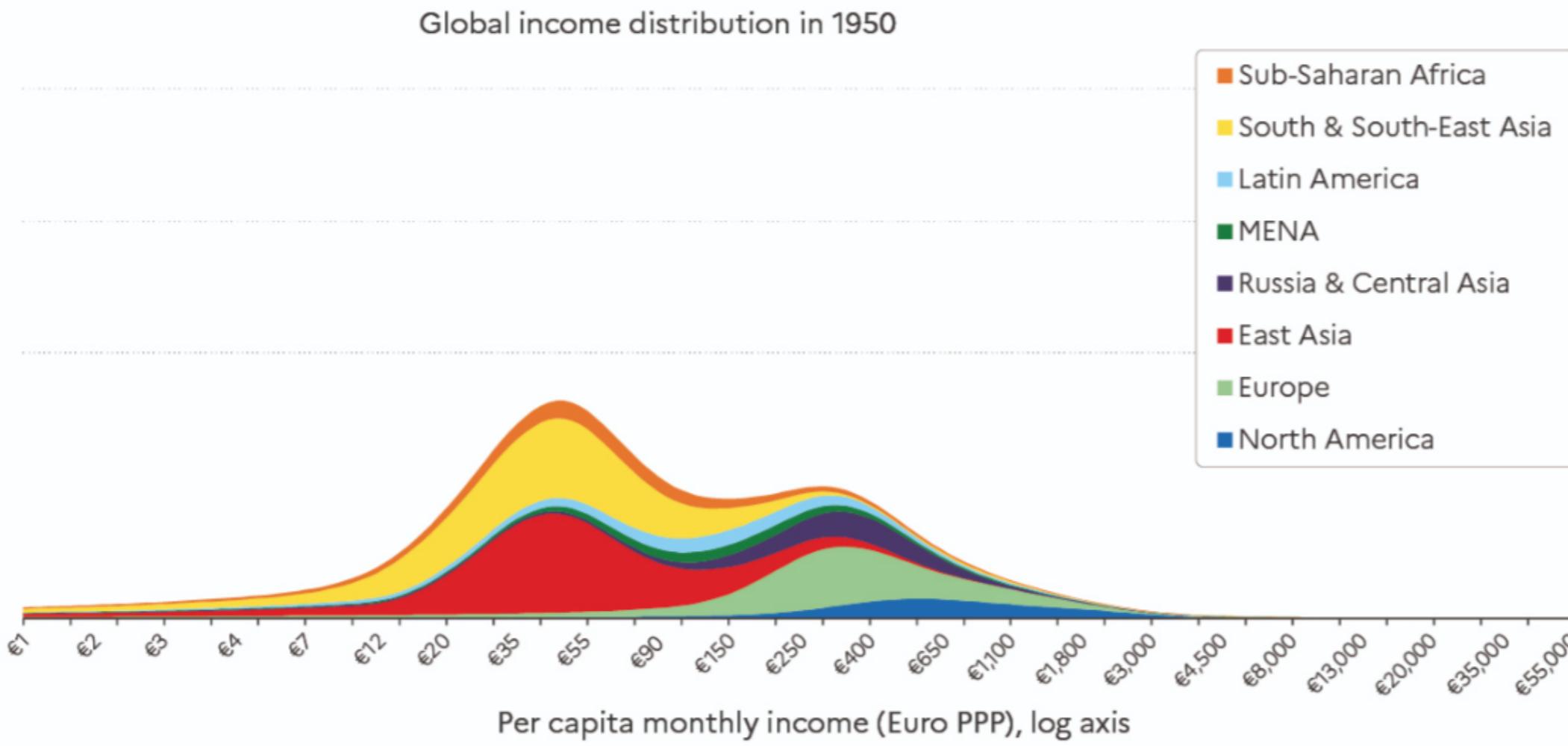
## Evolution of the between dimension

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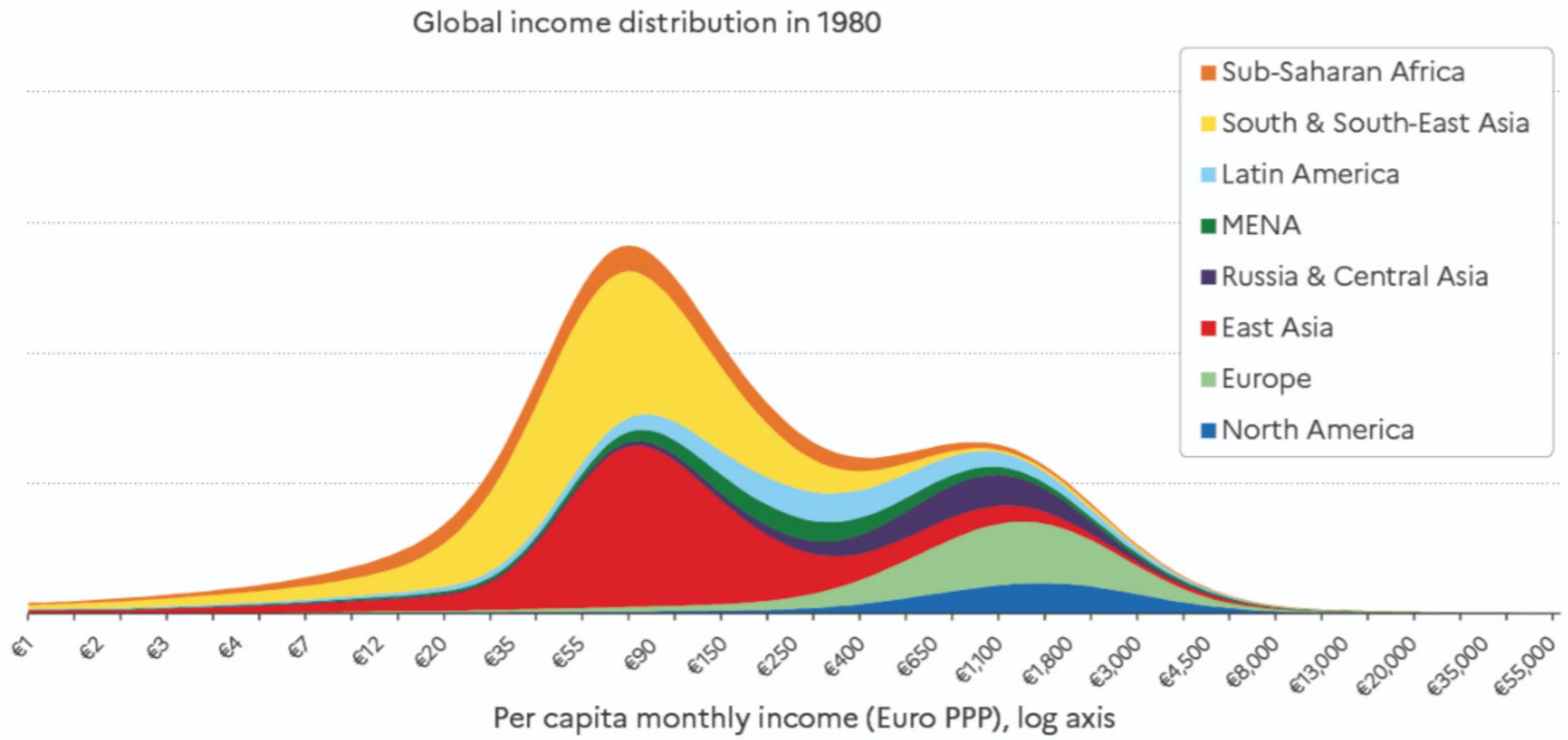
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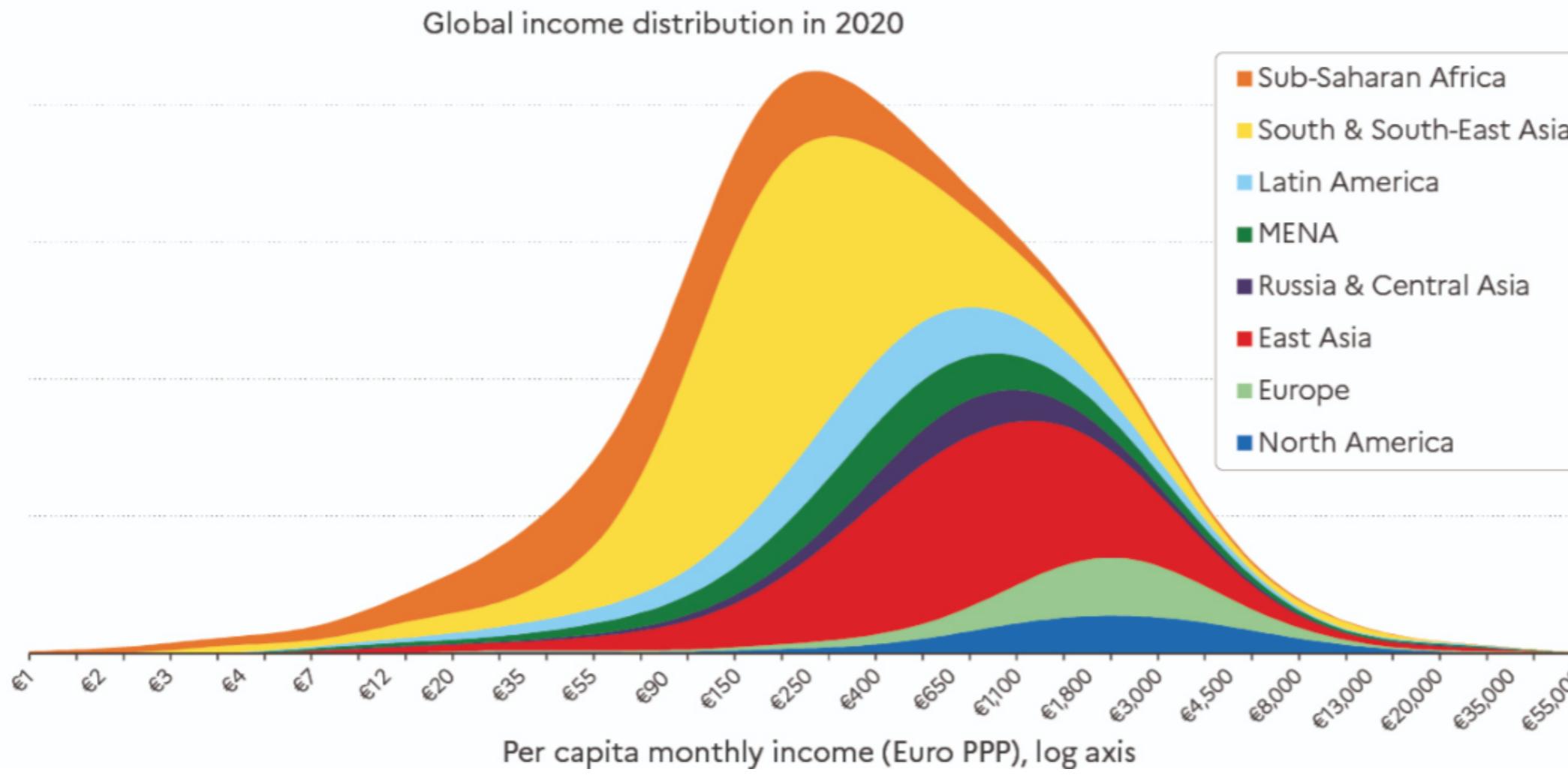
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## Evolution of the between dimension

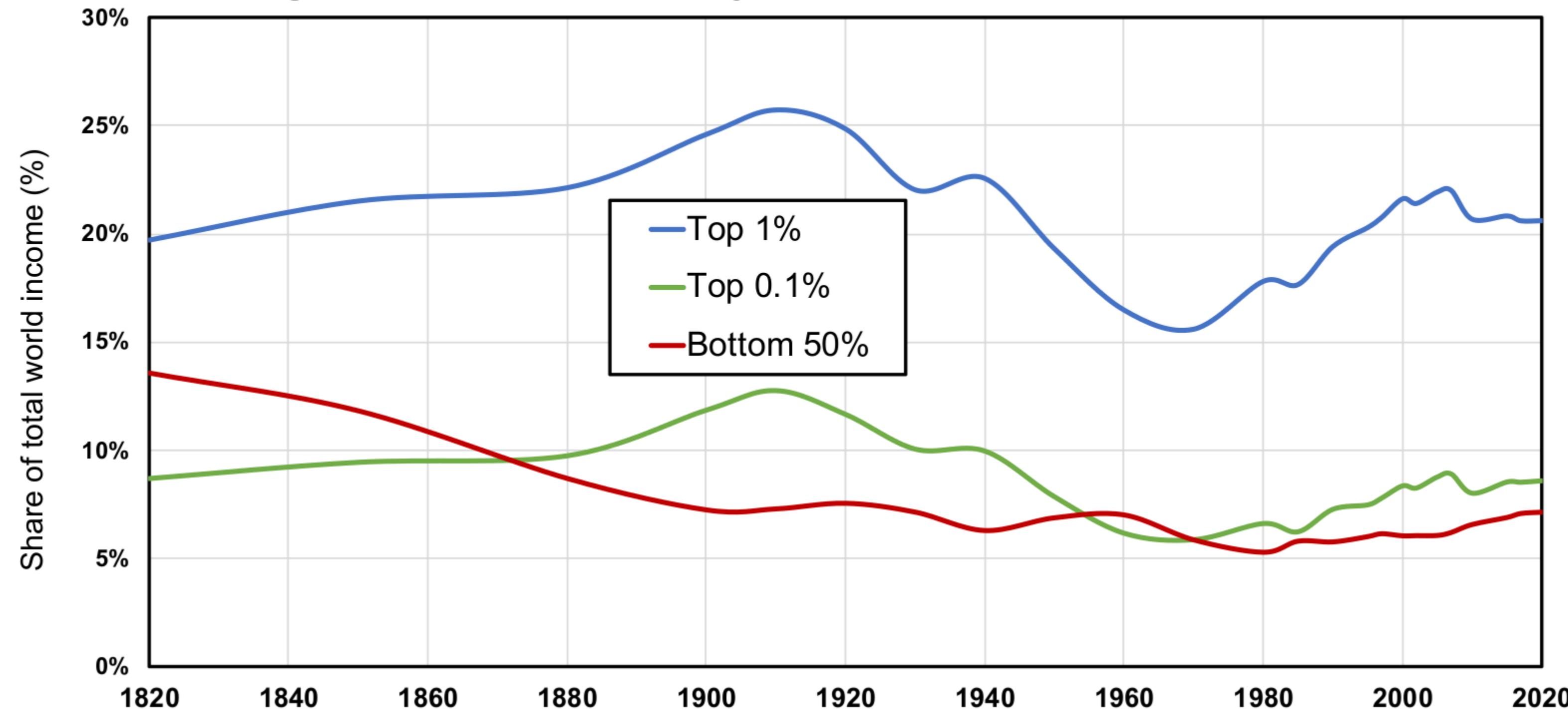
The axis is scaled such that the colored areas correspond to the total population in each region



## Evolution of the between dimension

Shall we focus also on the super rich?

**Figure 6. Global Inequality: Top 1% vs Bottom 50% Shares**



Income of the 1% and 0.1% top earners was highest in 1910 then decreased until all time low in the 60s and rose again, but not as high.

*Our new series reveal that, around the turn of the 21st century, the within-country component of global inequality has become greater than the between-country component. In contemporary capitalism, an individual's income group (i.e. whether they belong to the bottom 50%, top 1%, etc. in their own country) now matters more than their nationality (where they live) in the determination of global inequality levels.*

**BEYOND INCOME**

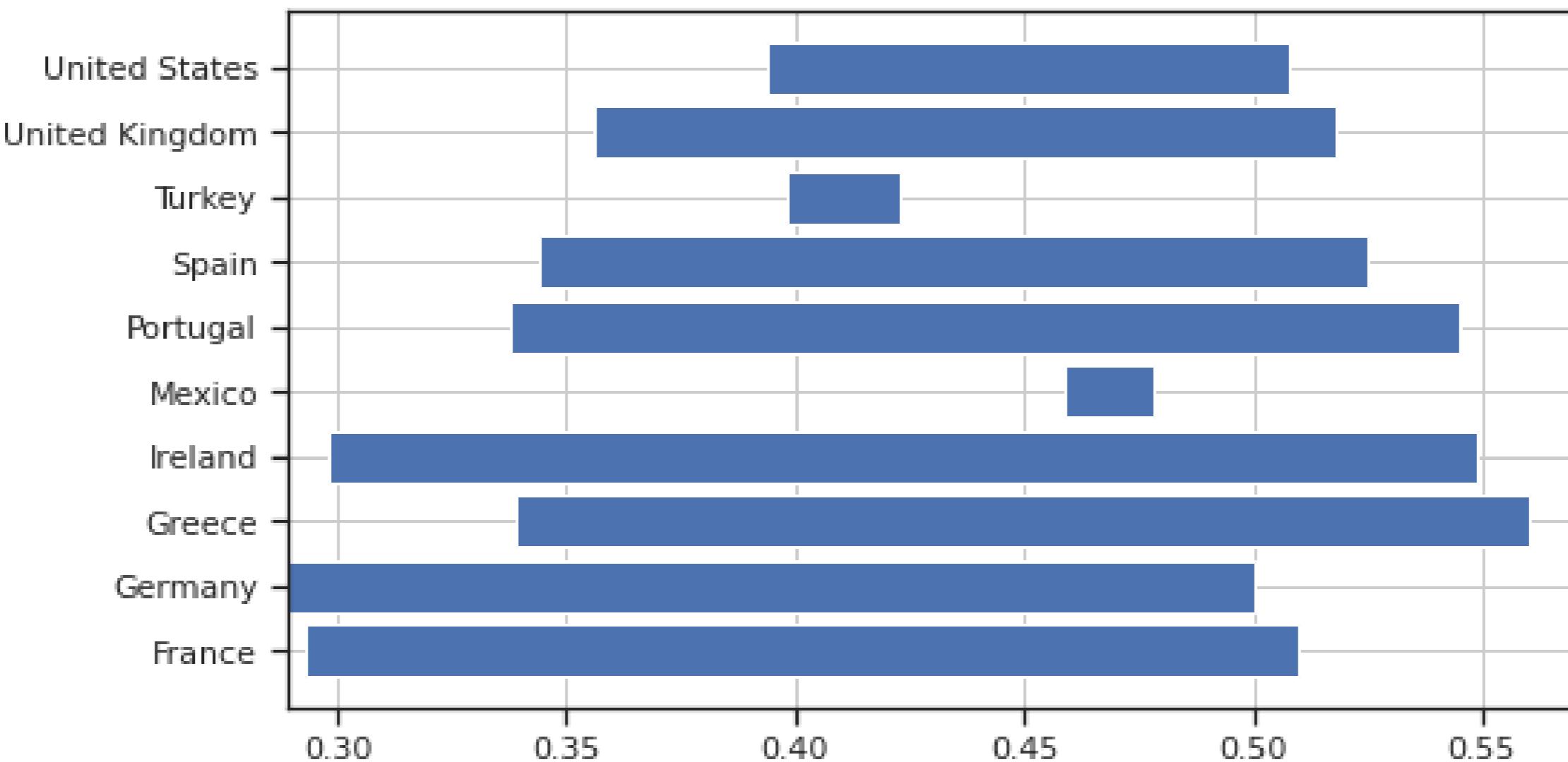
What kind of inequality do we care about?

Should we really focus on income?

# OTHER TYPES OF INEQUALITY

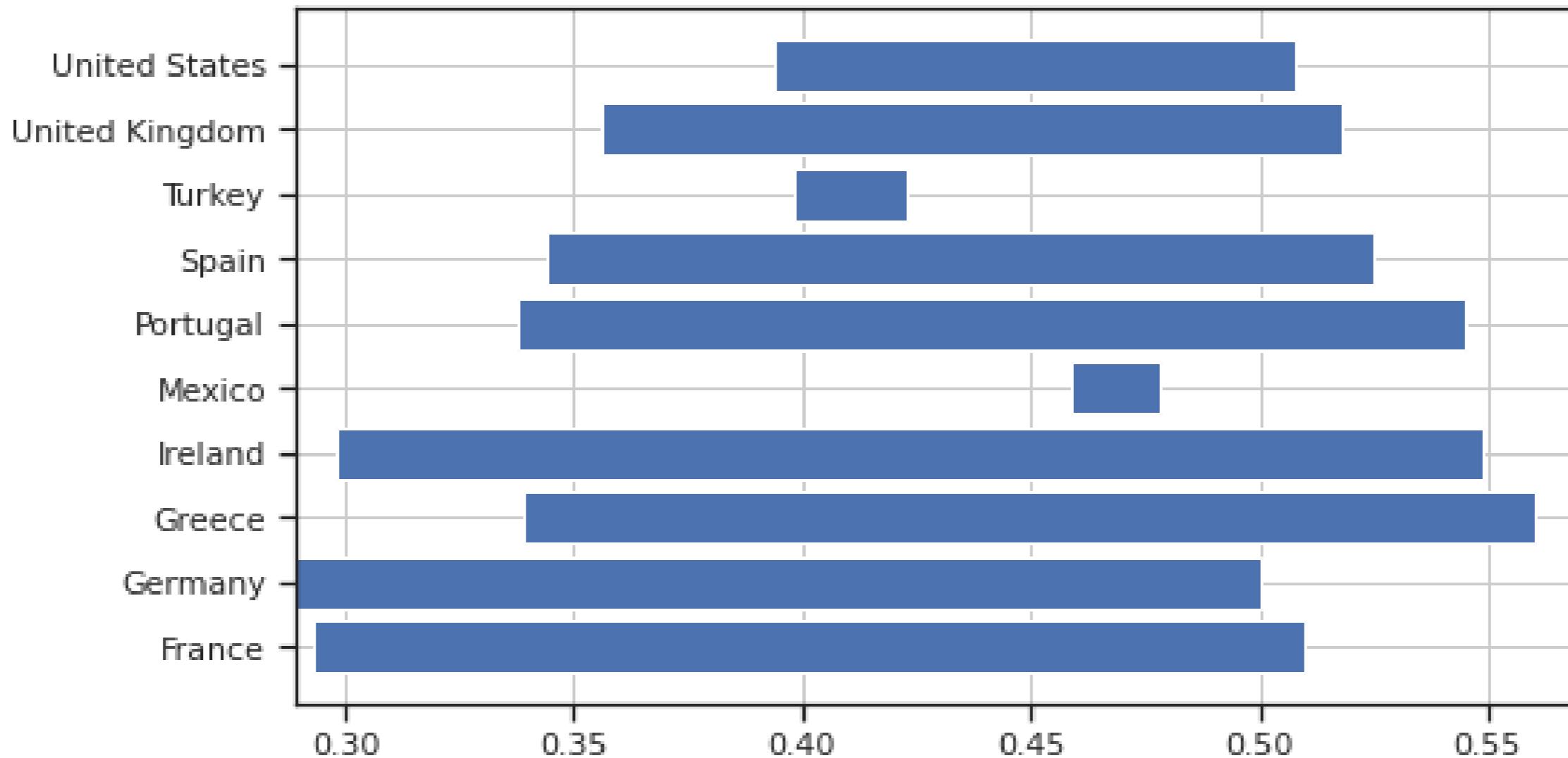
- income (net of taxes)
- income (gross)
- consumption
- wealth
- chance of being unemployed
- health
- life-expectancy
- well-being
- carbon emissions
- decision power
- beauty
- environmental exposition
- provision of public goods

# NET VS GROSS INEQUALITIES



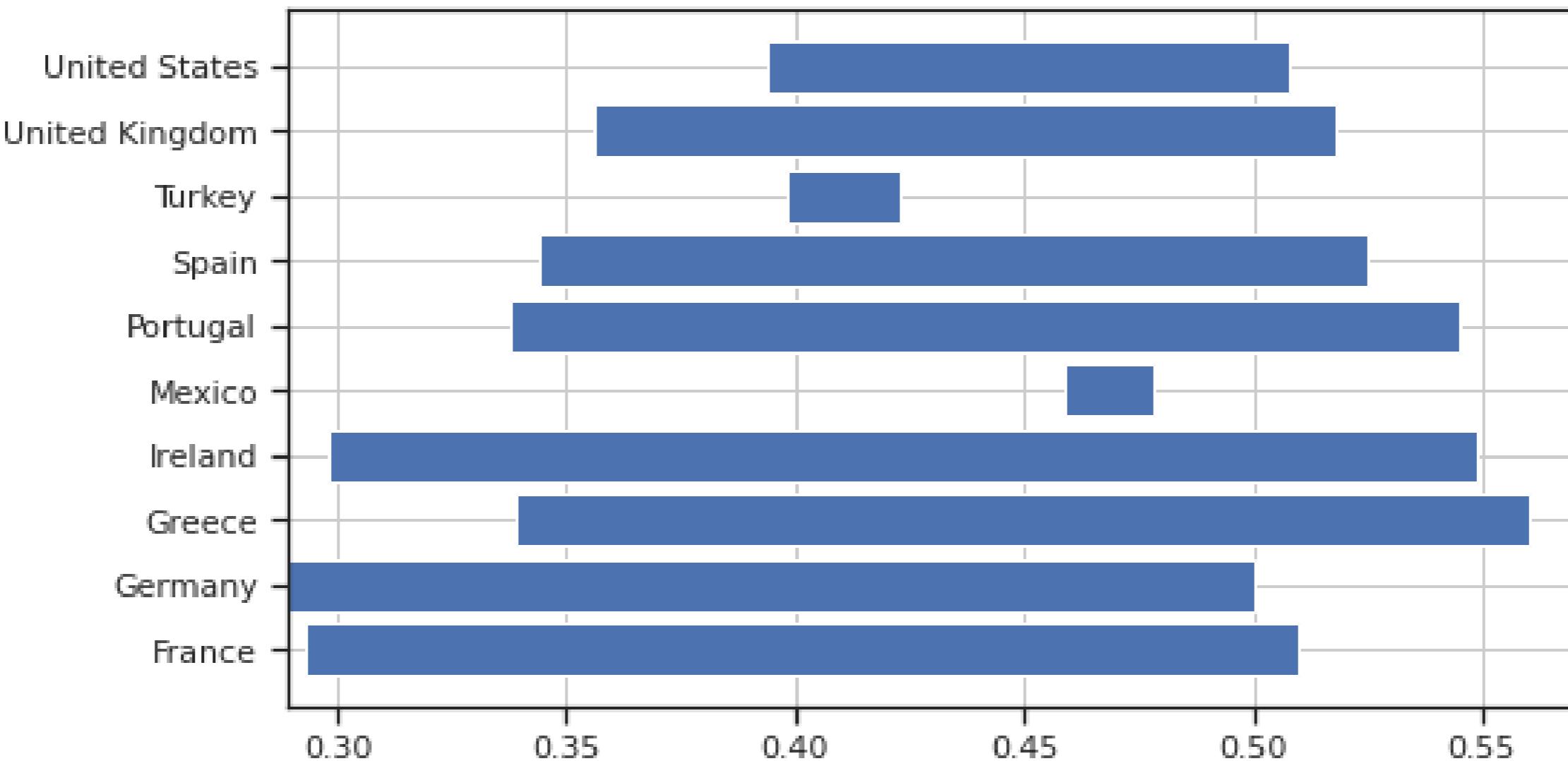
- Gini index for several countries before and after taxes in 2014

# NET VS GROSS INEQUALITIES



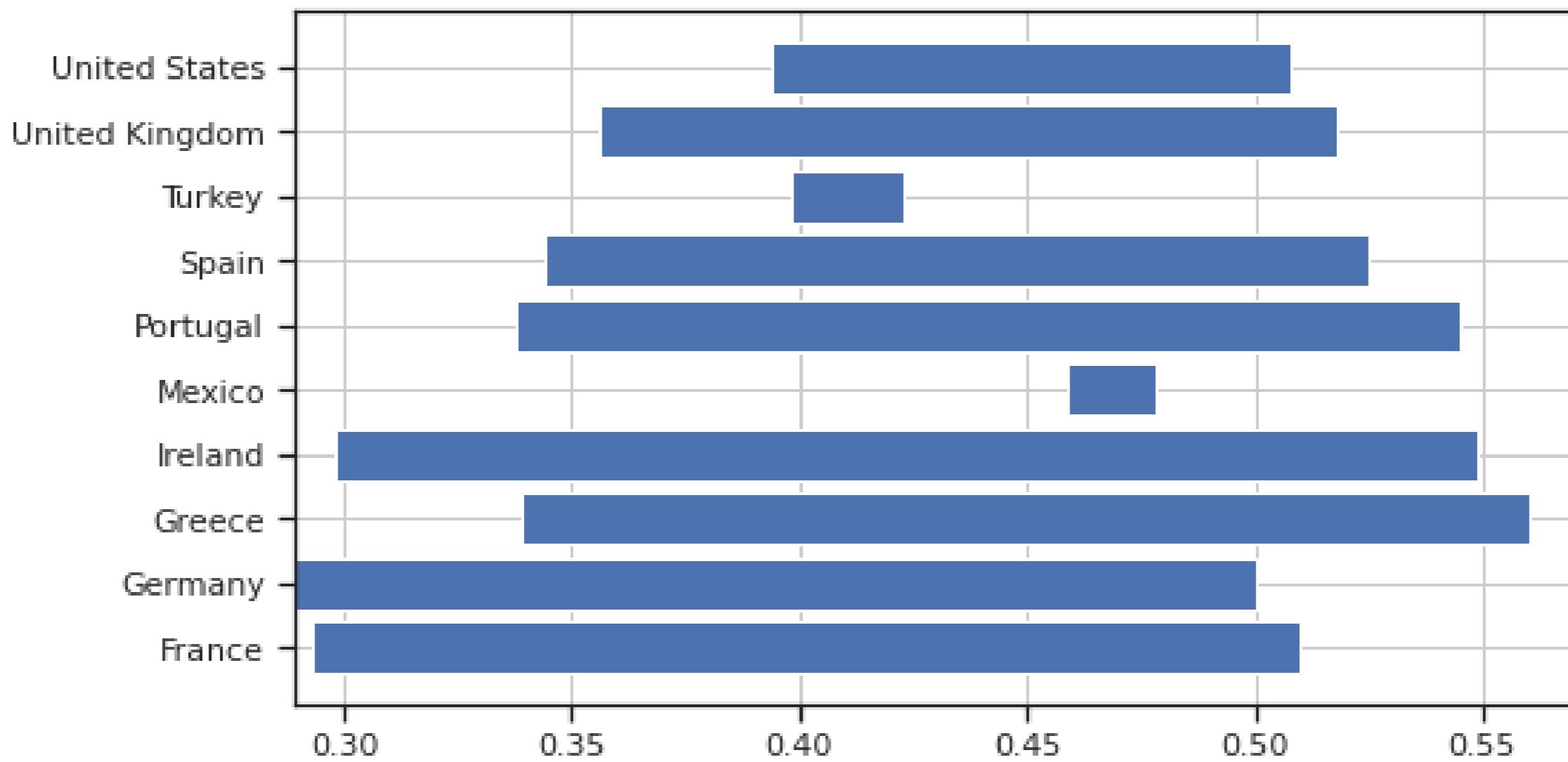
- Gini index for several countries before and after taxes in 2014
  - France and United states: same pretax inequality level: 0.51

# NET VS GROSS INEQUALITIES



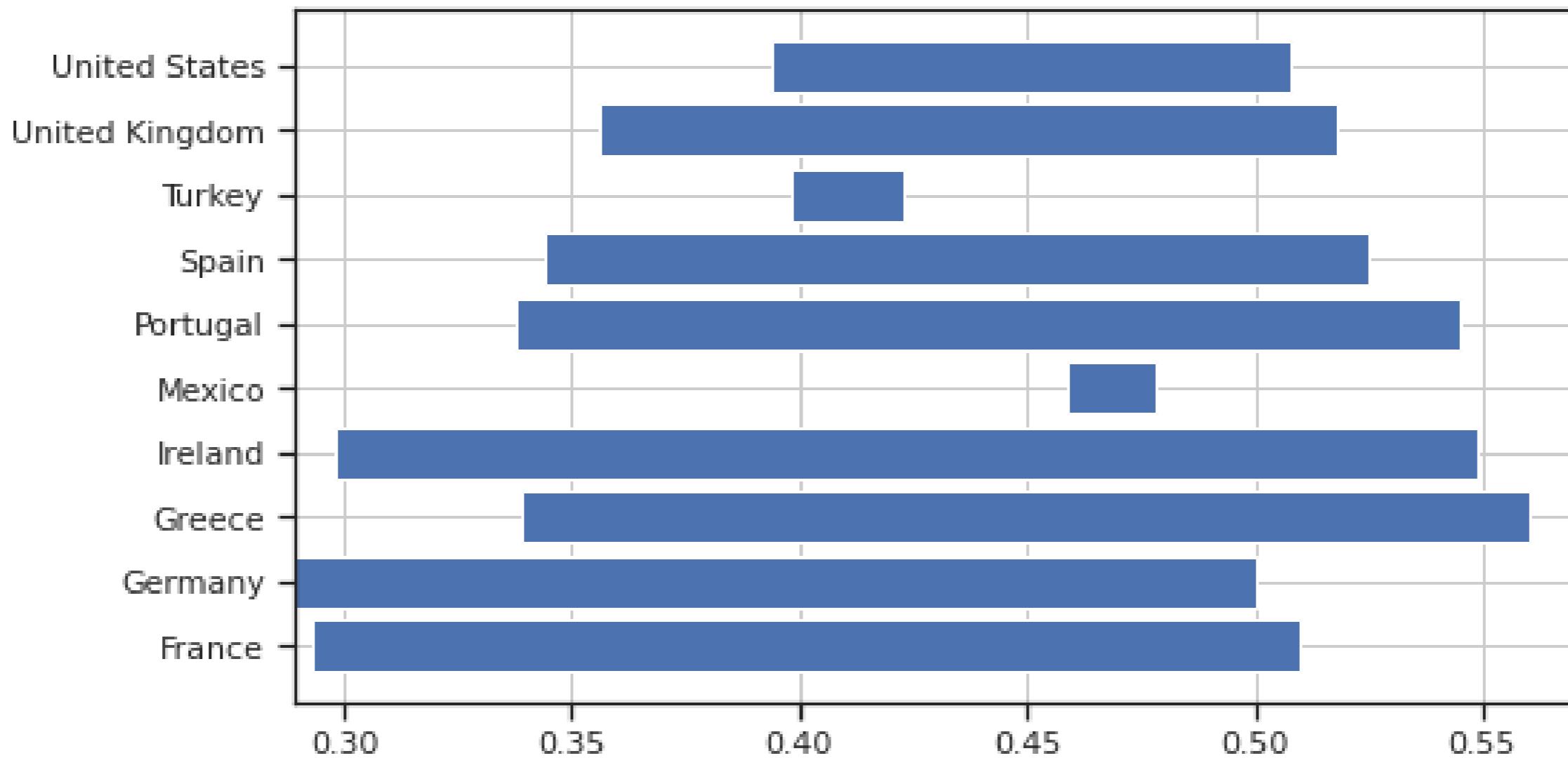
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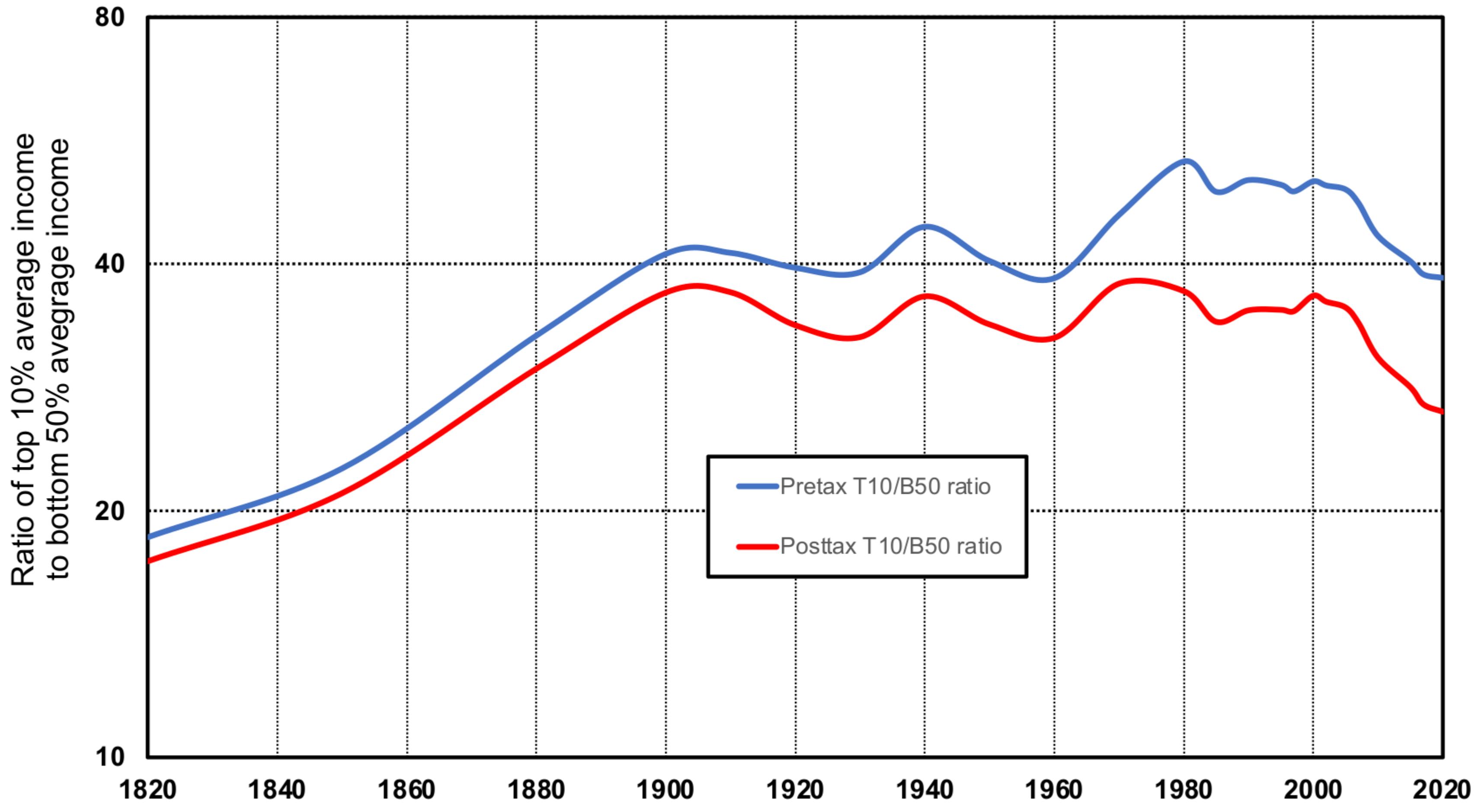
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  - European countries tend to redistribute more

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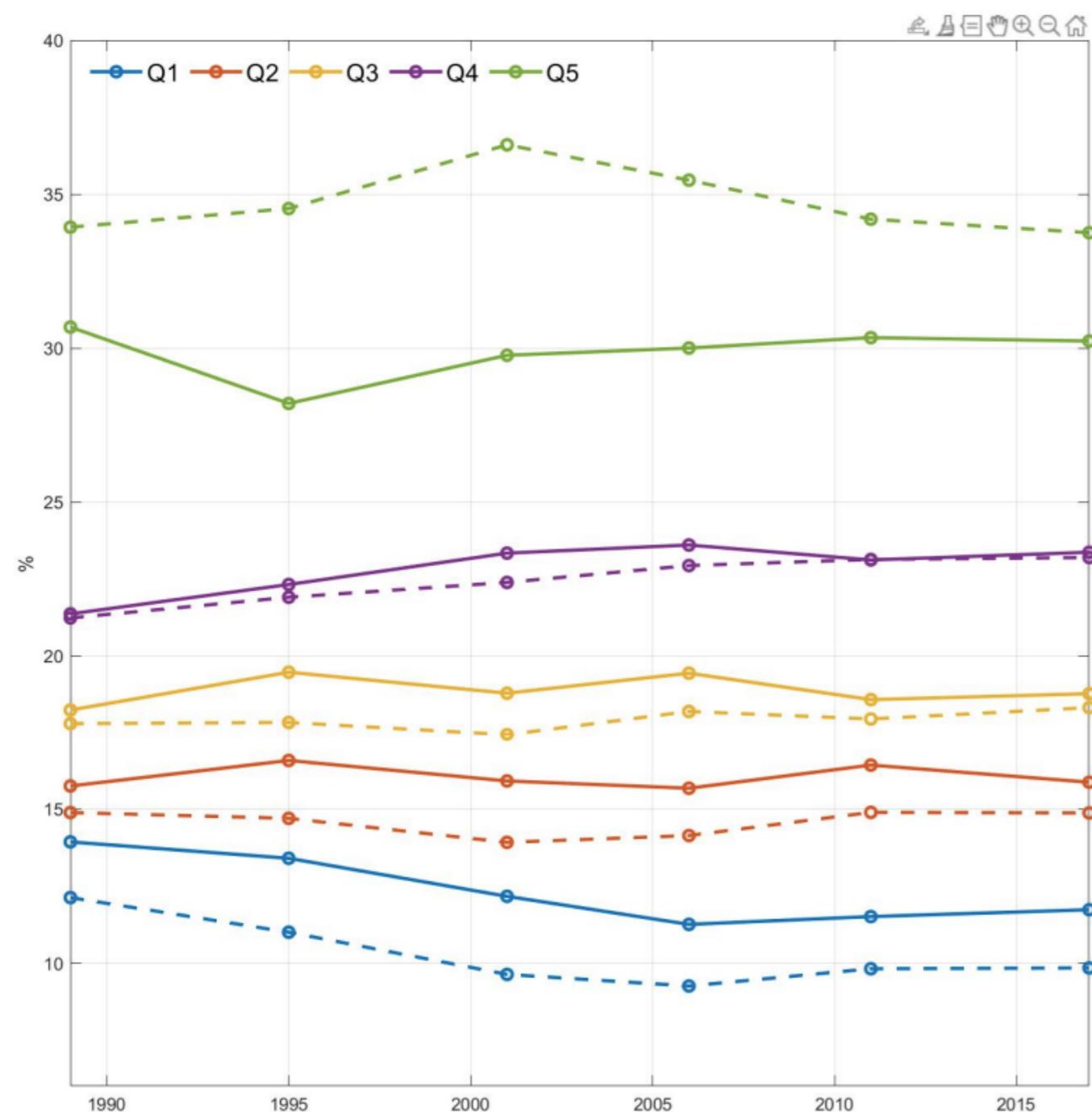
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  - In France, redistribution brings it to 0.29, 0.39 aux US
  - European countries tend to redistribute more
  - some small european countries (Ireland, Portugal, Greece) have similar, very high levels of inequalities

## Figure 17. Global income inequality: pretax vs posttax



# CONSUMPTION INEQUALITY

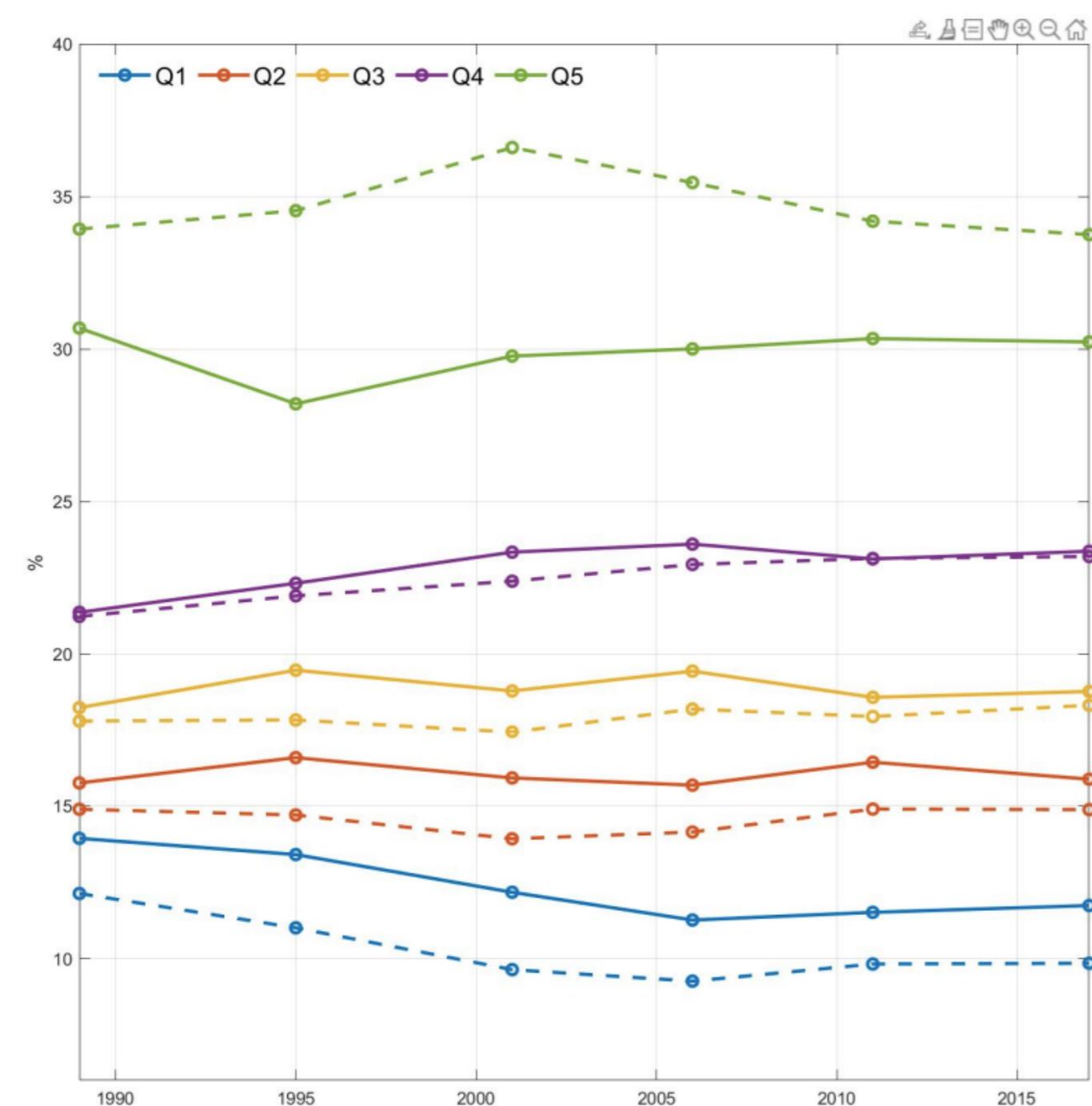
From Measuring and Comparing Consumption Inequality between France and the United States,  
Aliocha Accardo, Sylvérie Herbert, Cristina Jude,  
Adrian Penalver



- (a) Shares of quintiles' consumption as a proportion of total consumption (full line) and shares of quintiles' gross disposable income as a proportion of total income (dashed line)



# CONSUMPTION INEQUALITY



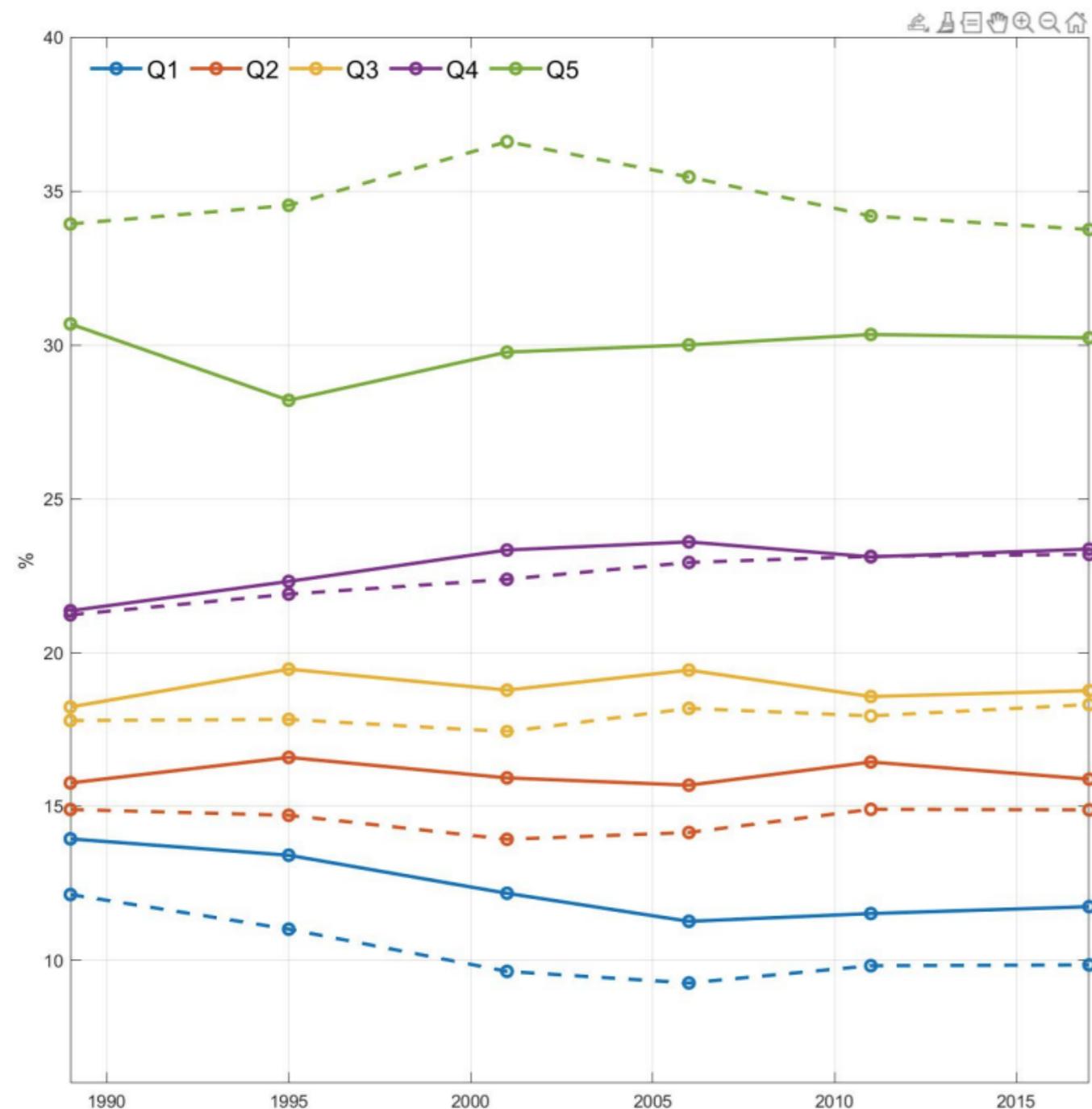
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- Consumption Inequality is much lower than income inequality

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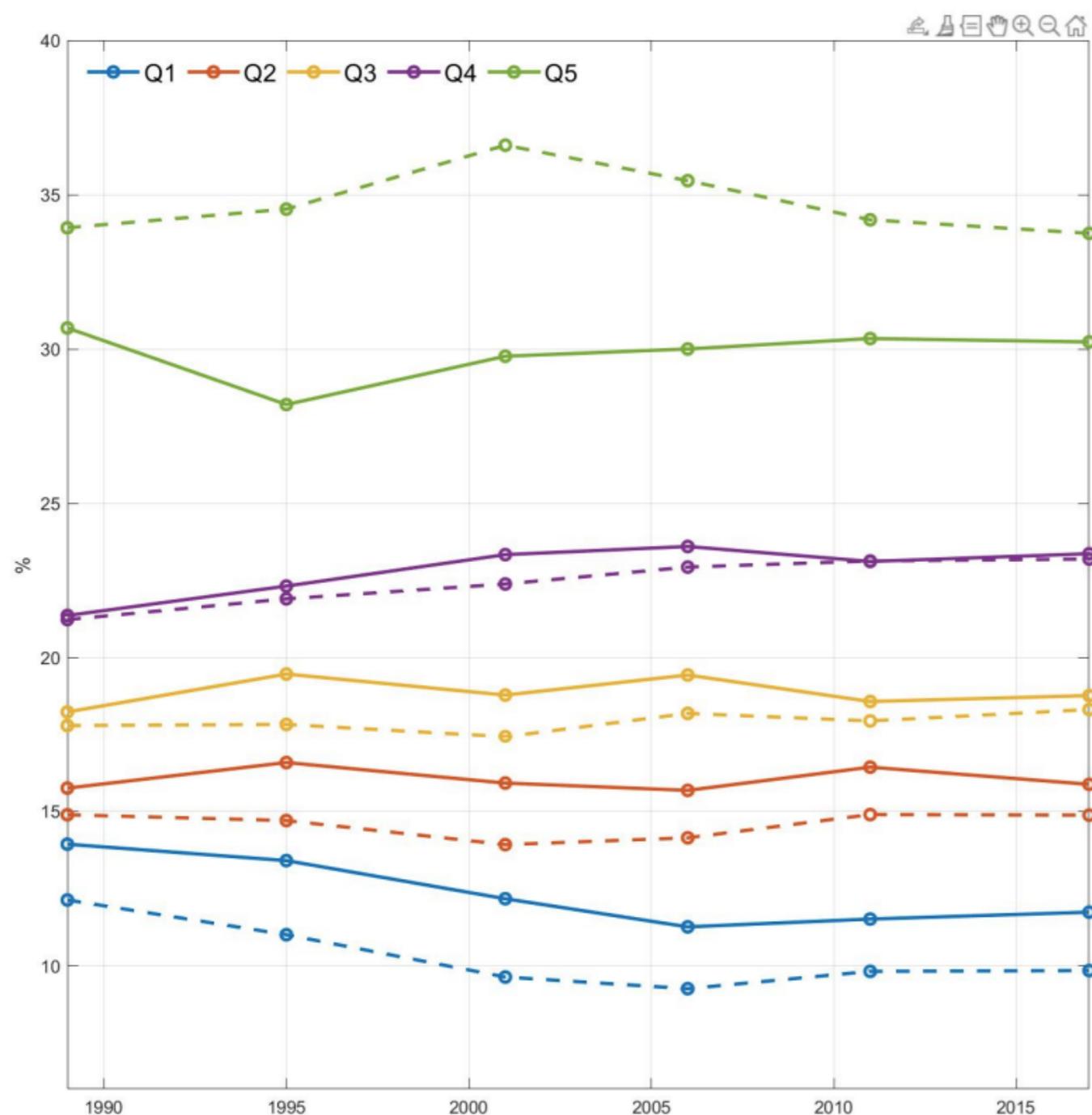
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# CONSUMPTION INEQUALITY



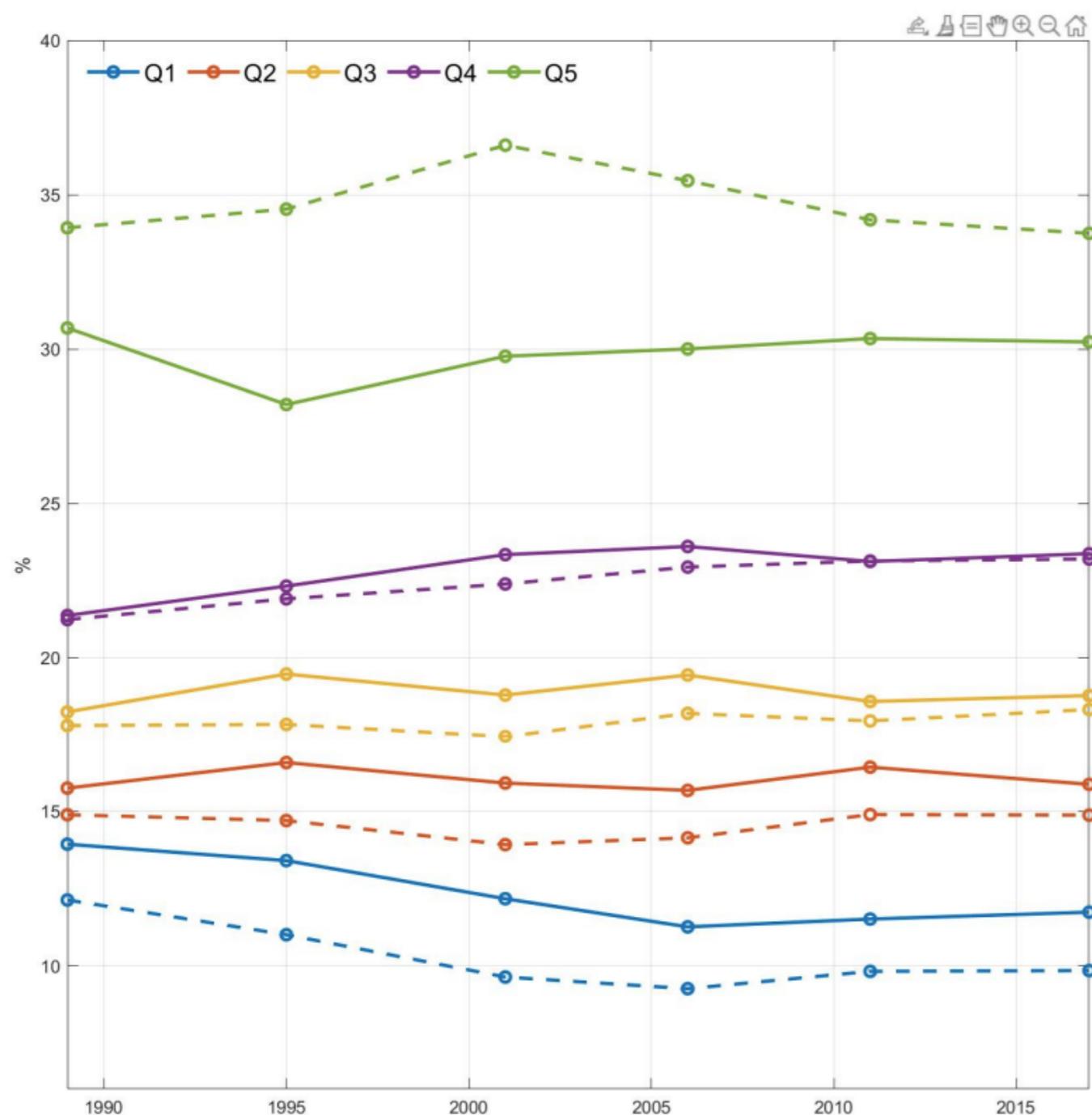
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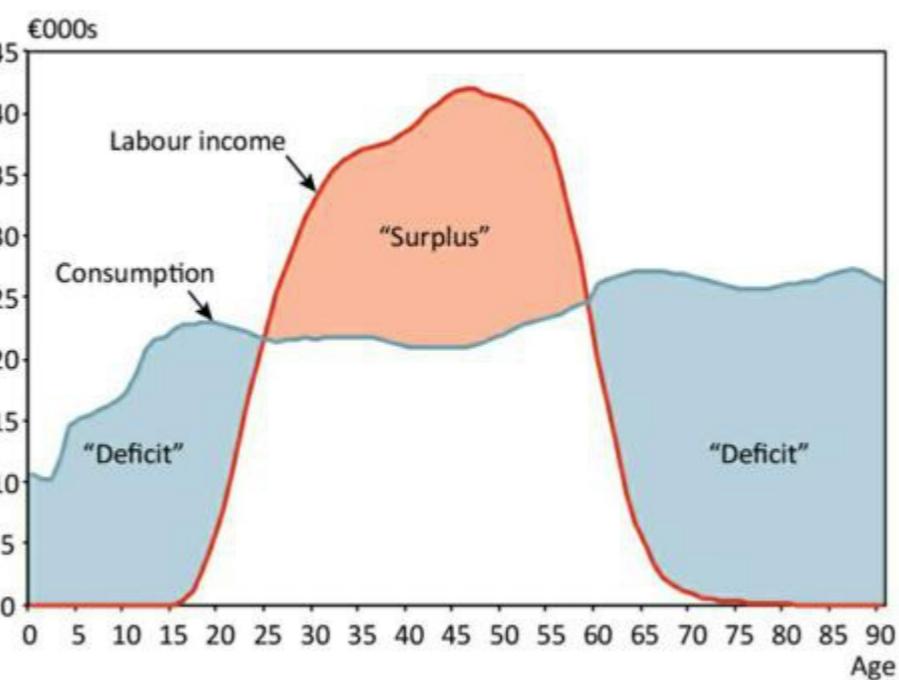
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- Consumption Inequality is much lower than income inequality
- Two main reasons
  - Consumption sharing within a household or a family
  - Consumption smoothing with borrowing or saving
    - to absorb temporary shocks
    - to smooth consumption over the life cycle

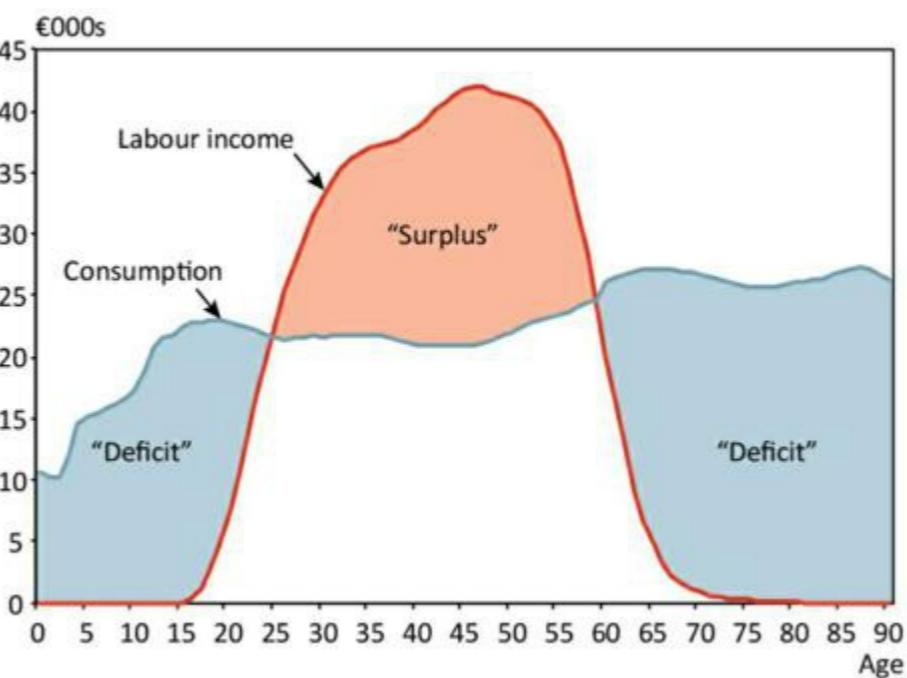
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# CONSUMPTION INEQUALITY: LIFE-CYCLE



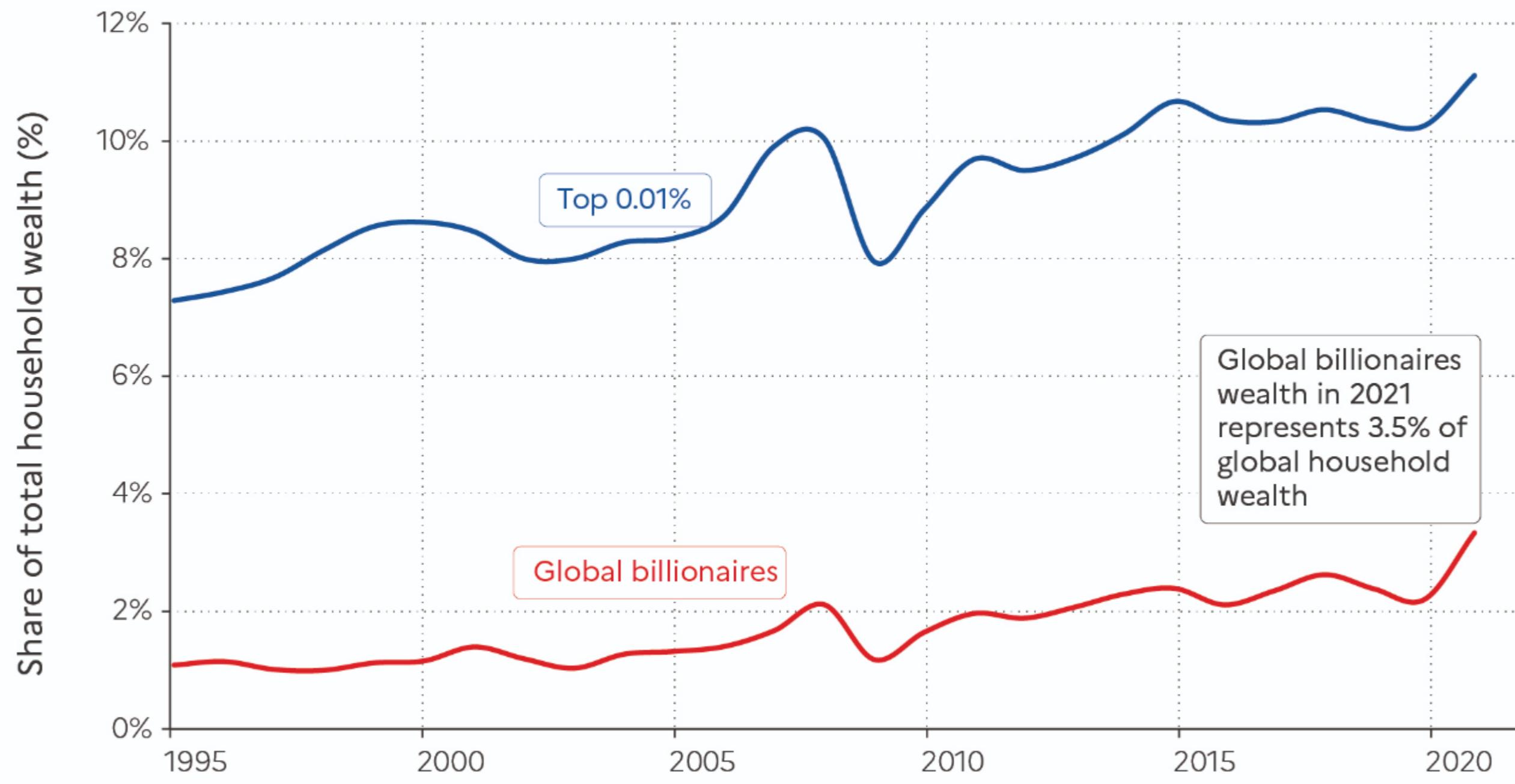
## CONSUMPTION INEQUALITY: LIFE-CYCLE



- Do we actually want to reduce it?

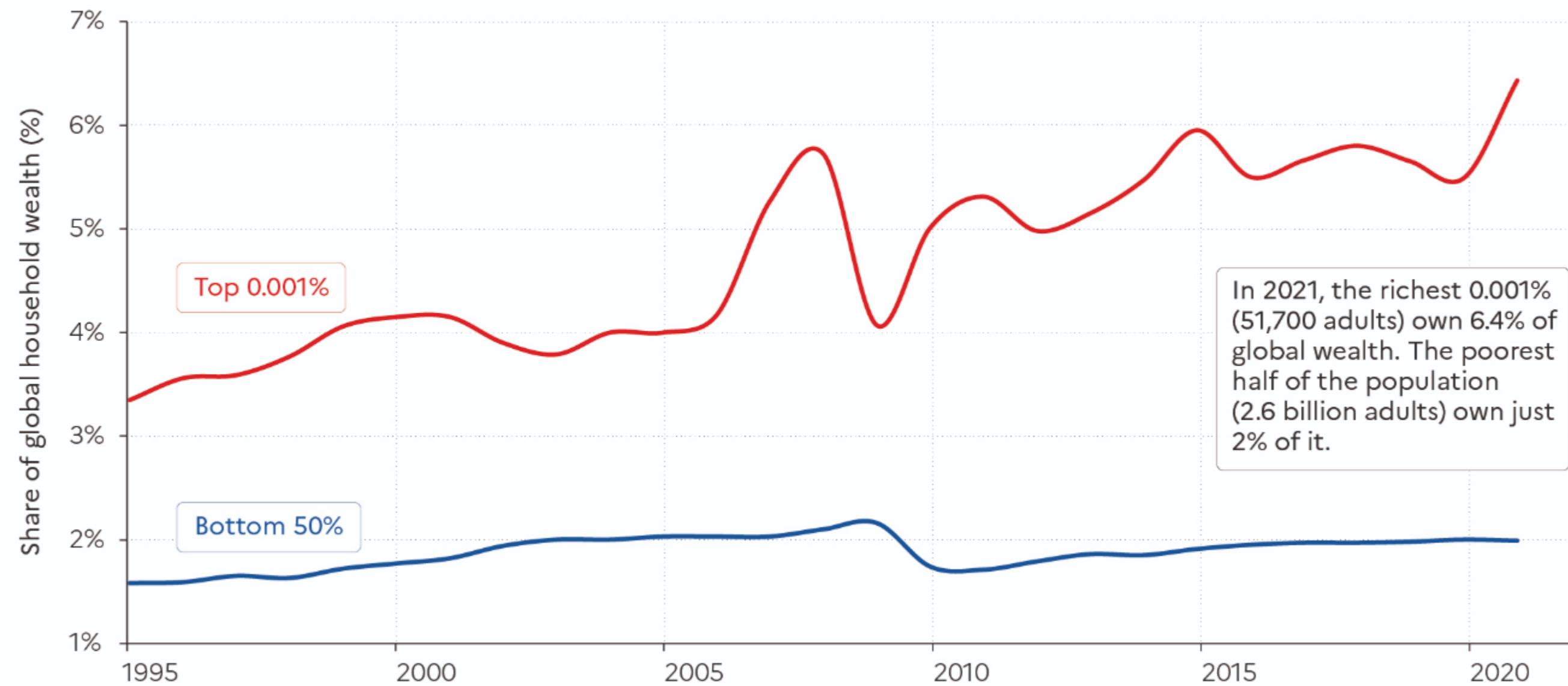
# WEALTH INEQUALITY

**Figure 10** Extreme wealth inequality: the rise of global billionaires, 1995-2021



# WEALTH INEQUALITY

**Figure 4.3a** Extreme wealth inequality: top 0.001% vs. bottom 50% wealth share, 1995-2021



- It is very hard to get precise data about wealth. Authors used many different strategies (tax receipts, surveys, ...)

# WEALTH INEQUALITY



- What is the problem with Wealth Inequality?
  - it is very persistent
  - it is still an instrument of power (less so than in the past)
- Since richer individuals get access to higher returns on investment, by itself, wealth inequality tends to increase until it is taxed
- Most economic models find that wealth is not automatically mean-reverting

# INEQUALITY DIMENSIONS

For a given welfare target, one can get different inequality measures.

- by changing the overall population. *Within*
  - country
  - region
  - peers, ...
- by comparing several subcategories. *Between*
  - countries
  - race
  - gender
  - age or generation?
  - education level

## INTRA-POPULATION

- In both cases, one must distinguish a pure measure of inequality from a measure of discrimination.

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    - geographic segregation
    - ...
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  - in the US, whites earn 30% more than afro-americans who earn 20% more than hispanics
  - not just about racism
    - different job types
    - differences in education
    - geographic segregation
    - ...
- Gender gap
  - EU: women receive in average 15% less than men
  - They earn 10% for equivalent work (European Commision).
- In both cases, one must distinguish a pure measure of inequality from a measure of discrimination.

## **INTER-GENERATIONAL INEQUALITY**

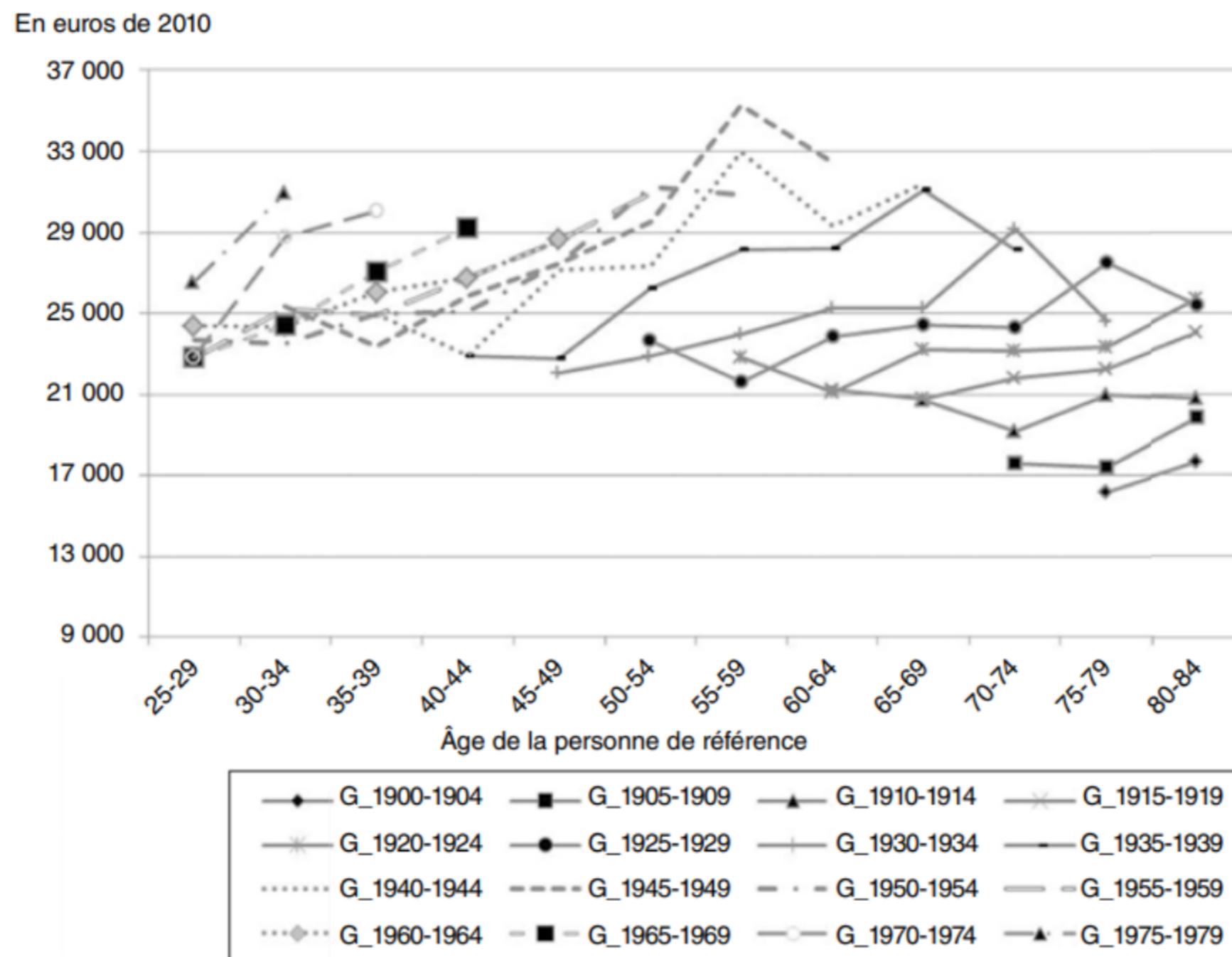
- According to D'Albis and Badji, this is not true in France

## INTER-GENERATIONAL INEQUALITY

- A common narrative: for the age gap
  - baby-boomers saw their income rise during their life and enjoy rather high pensions
  - new generations have lower life-income profiles and lower expected pensions
  - even more problematic for wealth inequality: average age for retirement is 60 years
- According to D'Albis and Badji, this is not true in France

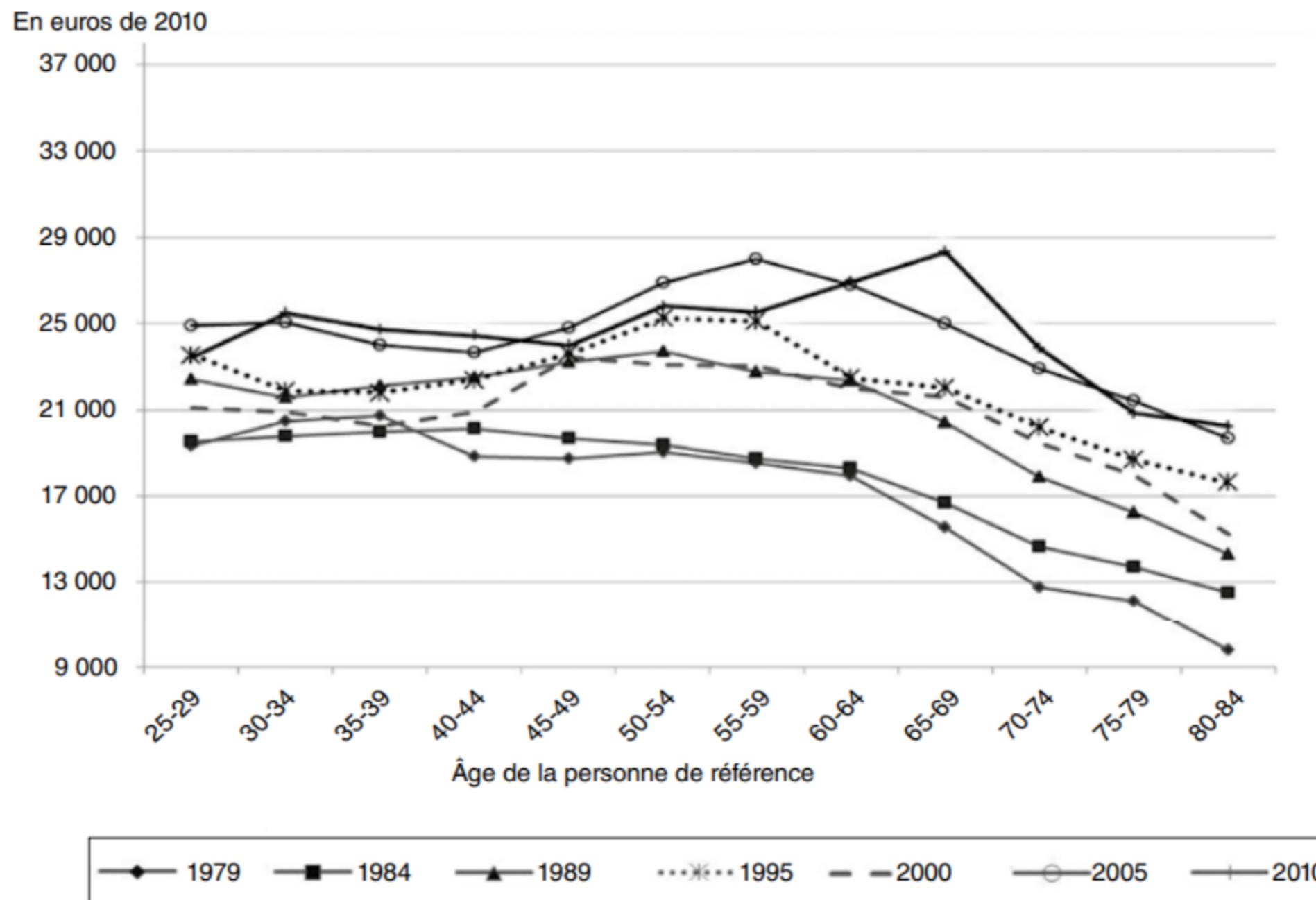
# INTER-GENERATIONAL INEQUALITY

## **Revenu disponible annuel par unité de consommation selon l'âge et la génération de la personne de référence**



# INTER-GENERATIONAL INEQUALITY

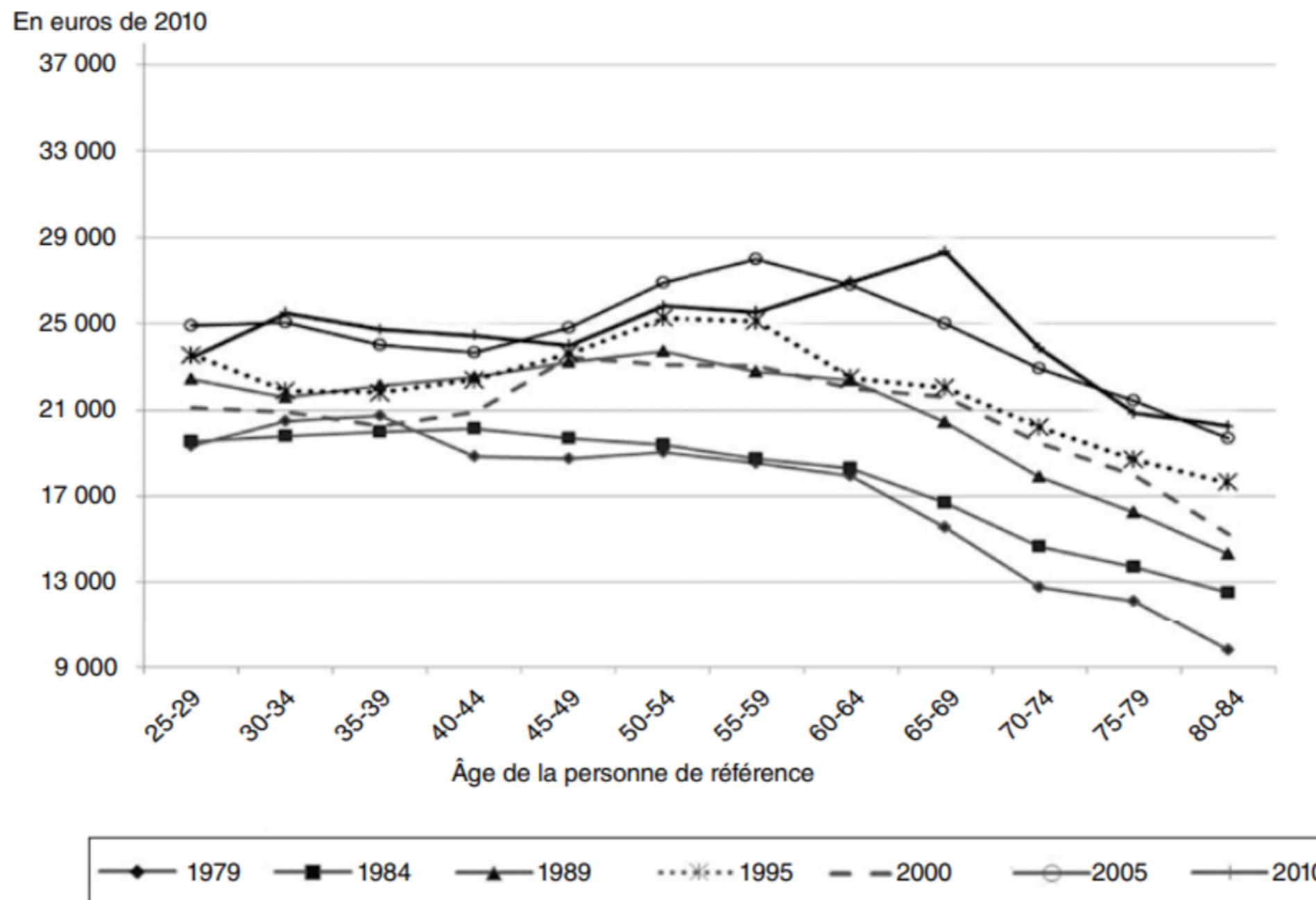
Figure III  
**Consommation annuelle par unité de consommation selon l'âge de la personne de référence et la date de l'enquête**



- This is even more dubious when looking at consumption.

# INTER-GENERATIONAL INEQUALITY

Figure III  
**Consommation annuelle par unité de consommation selon l'âge de la personne de référence et la date de l'enquête**



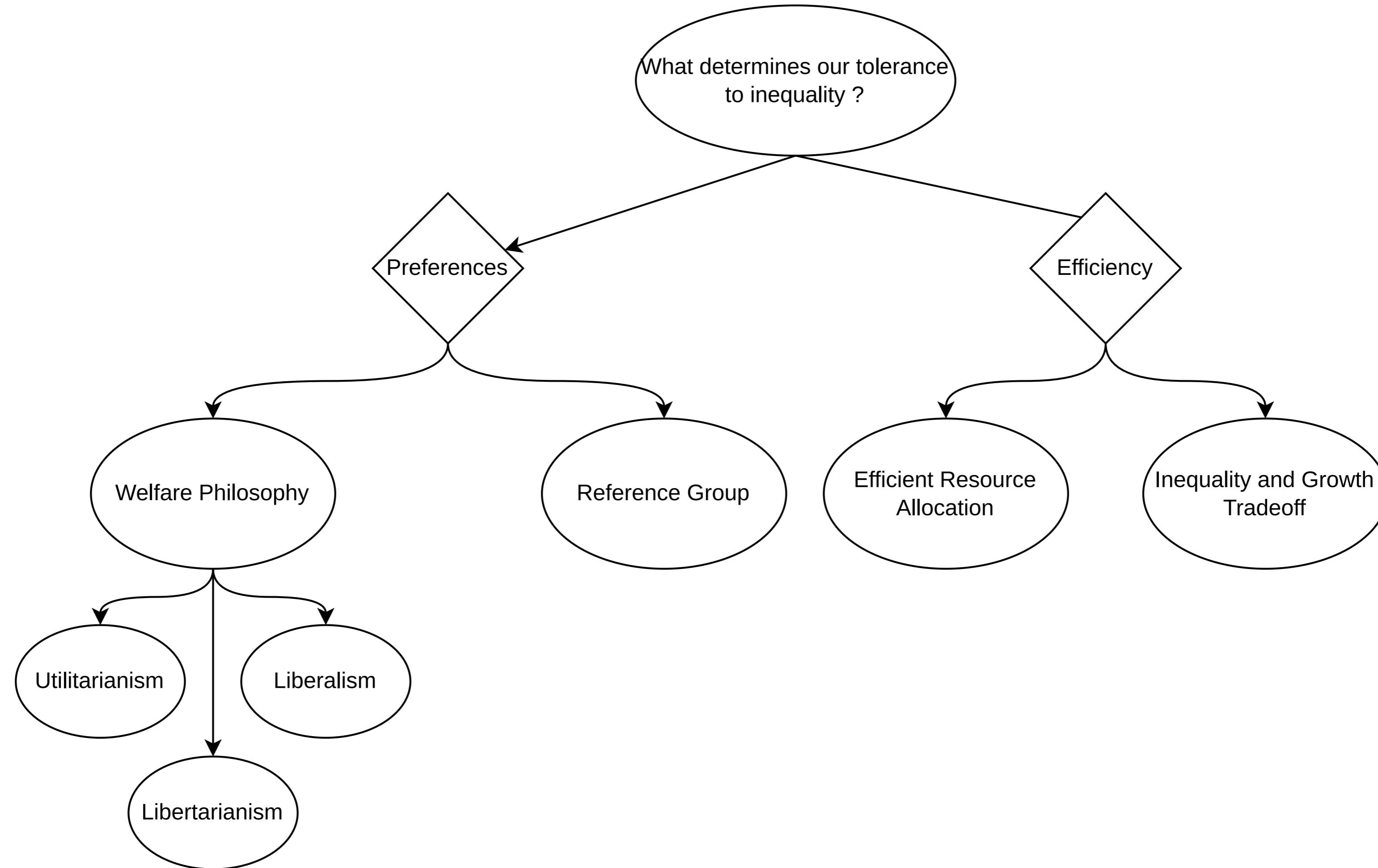
- This is even more dubious when looking at consumption.
- ... and there were a lot of other material improvements (like life expectancy)

**WHY DO YOU CARE?**

*What improves the circumstances of the greater part can never be regarded as an inconveniency to the whole. No society can surely be flourishing and happy, of which the far greater part of the members are poor and miserable.*

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Adam Smith, The Wealth Of Nations, Book I Chapter VIII, p.96



# **POLITICAL PHILOSOPHY (1)**

**Utilitarianism:** the state should maximize total utility of all citizens(Bentham, Stuart Mill)

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- it does not imply perfect redistribution because
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  - too much equality can induce bad incentives which is detrimental to everybody

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  - there is a cost to redistribution
  - too much equality can induce bad incentives which is detrimental to everybody
- Modern version: Pareto weights  $\omega_i$

$$\max \sum_i \omega_i U(c_i)$$

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- Liberalism: the state should choose fair policies as evaluated by an objective observer hidden behind a *veil of ignorance*

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- it is not clear what is the aversion to this kind of risk
  - Rawls/Knight: one maximizes utility in the worst case (**maximin criterion**)
- more redistribution than in the *utilitarian* case
  - but not 100% equal either

## POLITICAL PHILOSOPHY (3)

**Libertarianism:** state should punish crimes, and help secure voluntary contracts between willing individuals, but it should not redistribute income

- inequality is not relevant at a state's level
  - in the same way that granting the same grade to all students is not a valid objective
- it doesn't mean libertarians are not altruistic
- state must guarantee that the allocation procedure be legal
  - concretely: grant property rights

Among the three philosophies, what do you think is the better description of international relations between countries?

## PREFERENCES

We have seen last week, how regular human beings can have "other-regarding" preferences

- cf the ultimatum game

A key concept here is the notion of **reference group**

There are different kinds of "other-regarding" preferences

# OTHER REGARDING PREFERENCES ARE NOT ONLY ABOUT MONEY?

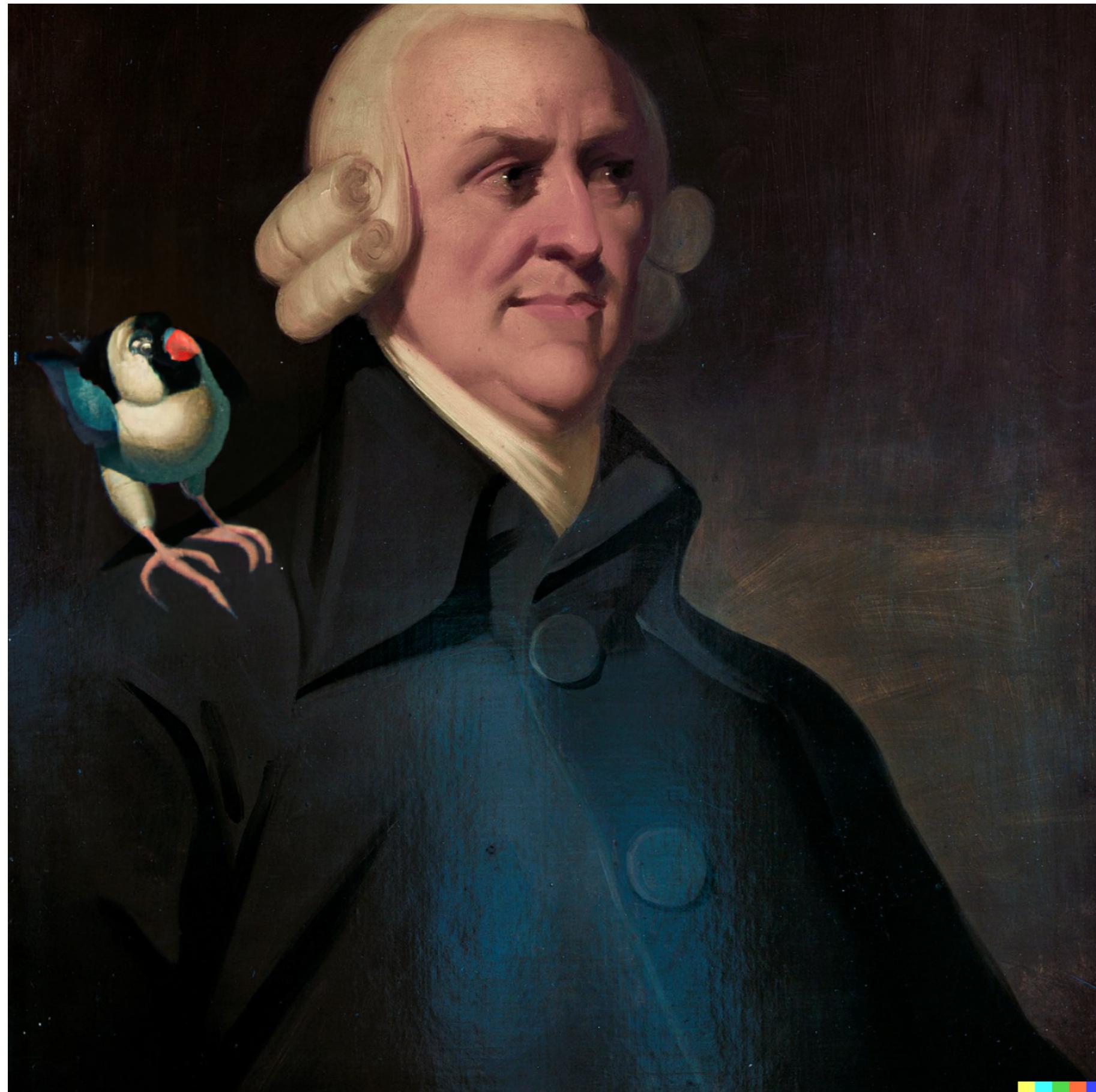
**Table 6.6** *Emissions growth and inequality, 1990-2019*

	Per capita emissions (tonnes CO <sub>2</sub> e per capita)		Total emissions (billion tonnes CO <sub>2</sub> e)		Growth in per capita emissions (1990-2019)	Growth in total emissions (1990-2019)	Share in emissions growth (1990-2019)
	1990	2019	1990	2019			
<b>Full population</b>	6.2	6.6	32.0	50.5	7%	58%	100%
<b>Bottom 50%</b>	1.2	1.6	3.1	6.1	32%	96%	16%
<b>Middle 40%</b>	6	6.6	13.3	20.4	4%	54%	39%
<b>Top 10%</b>	30	31	15.7	24.0	4%	54%	45%
<b>Top 1%</b>	87	110	4.5	8.5	26%	87%	21%
<b>Top 0.1%</b>	323	467	1.7	3.6	45%	114%	10%
<b>Top 0.01%</b>	1,397	2,531	0.7	2.0	81%	168%	7%

**Interpretation:** Personal carbon footprints include emissions from domestic consumption, public and private investments as well as imports and exports of carbon embedded in goods and services traded with the rest of the world. Growth in total group emissions are different to growth in per capita emissions, due to population growth. Modeled estimates based the systematic combination of tax data, household surveys and input-output tables. Emissions split equally within households. **Sources and series:** [wir2022.wid.world/methodology](http://wir2022.wid.world/methodology) and Chancel (2021).

- Do you find it scandalous?
- What if big carbon emitters were paying for it?

# CLASSICAL EFFICIENCY ARGUMENT



Adam Smith view (according to Debora Boucoyannis)

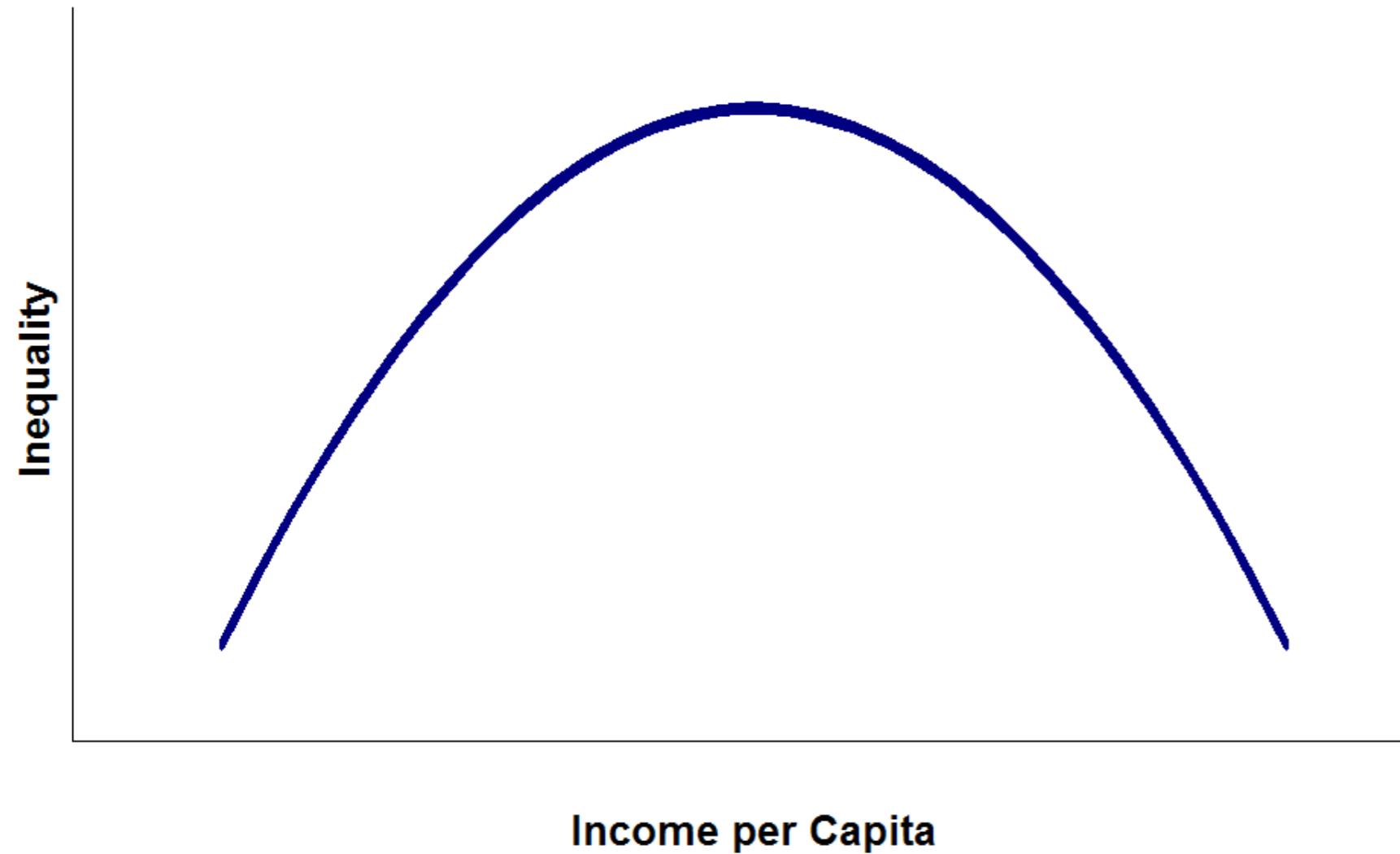
- individuals should be paid according to their marginal productivity
    - i.e. what they bring to the society
    - more productive individuals should be paid more to produce more
  - but because marginal returns are decreasing no one will get very high salary
    - not even entrepreneurs because profits are decreasing
- ⇒ High inequality is a sign that markets are not functioning properly



*Of the tendencies that are harmful to sound economics, the most seductive, and in my opinion the most poisonous, is to focus on questions of distribution... The potential for improving the lives of poor people by finding different ways of distributing current production is nothing compared to the apparently limitless potential of increasing production.*

Bob Lucas (2004)

# INEQUALITY AND DEVELOPMENT



Kusnetz has studied the relationship between the level of development and inequality.

He asserted that countries develop in two phases:

- in developing economies: entrepreneurs accumulate wealth by hiring cheap workers migrating from the country-side to the cities
- in mature economies: salaries rise and growth in human capital becomes central to economic growth

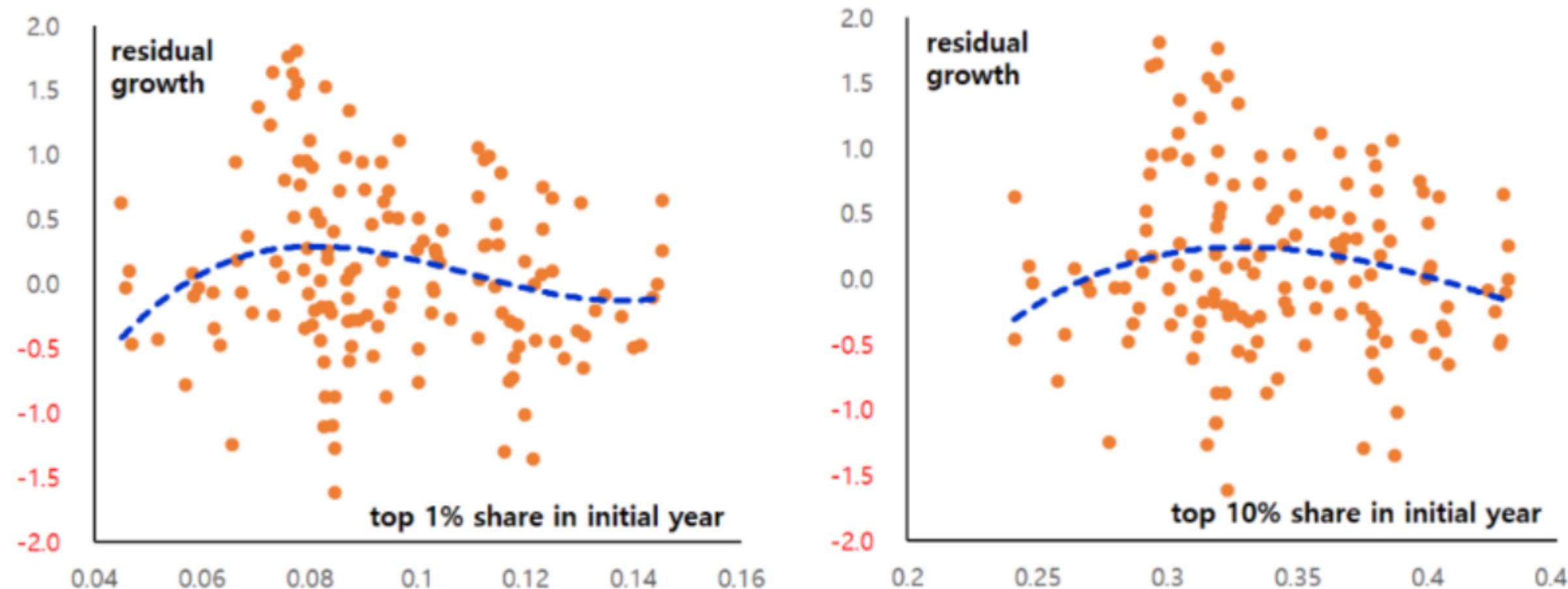
# INEQUALITY AND GROWTH (1)

What if there was trade-off between growth and inequality:

- **trickle-down economics:**
  - transferring money to the riches benefits everyone because it is reinvested in the economy
  - popular with some conservative politicians
  - ...but not defended by any serious economist
- some growth economists (Paul Romer, Philippe Aghion) have studied how growth induces more inequality
  - through skill-biased technical changes
  - through the unequal of the rents from innovation

# INEQUALITY AND GROWTH (2)

Figure 1: Growth and Inequalities



Empirically, several studies have been carried out see whether there was a systematic relationship between growth of inequalities.

- Deininger and Squire 1998, Barro 2000, Forbes 2000, ...: inconclusive
- Banerjee and Duflo 2003: inverted U-shape

## Response to Lucas

*It's fairly common for conservative economists to try and shout down any discussion of income distribution by claiming that distribution is a trivial matter compared with the huge gains from economic growth. For example, Robert Lucas: "Of the tendencies that are harmful to sound economics, the most seductive, and in my opinion the most poisonous, is to focus on questions of distribution." The usual answer to this is to point out that we don't actually know much about how to produce rapid economic growth – conservatives may think they know (low taxes and all that), but there is no evidence to back up their certainty. And on the other hand, we know how to make a big difference to income distribution, especially how to reduce extreme poverty. So why not work on what we know, as at least part of our economic strategy?*

Krugman

# MODERN VERSION: MANKIW'S DEFENSE OF THE TOP 1%

- Greg Mankiw:
  - New Keynesian
  - conservative
  - author of the (very consensual) textbook "Principles of Economics"

*Most economists today belong to the classical school of thought.*

- Splash: [Defending the One Percent](#) in Journal of Economic Perspectives, 2013
- [Krugman Response](#)



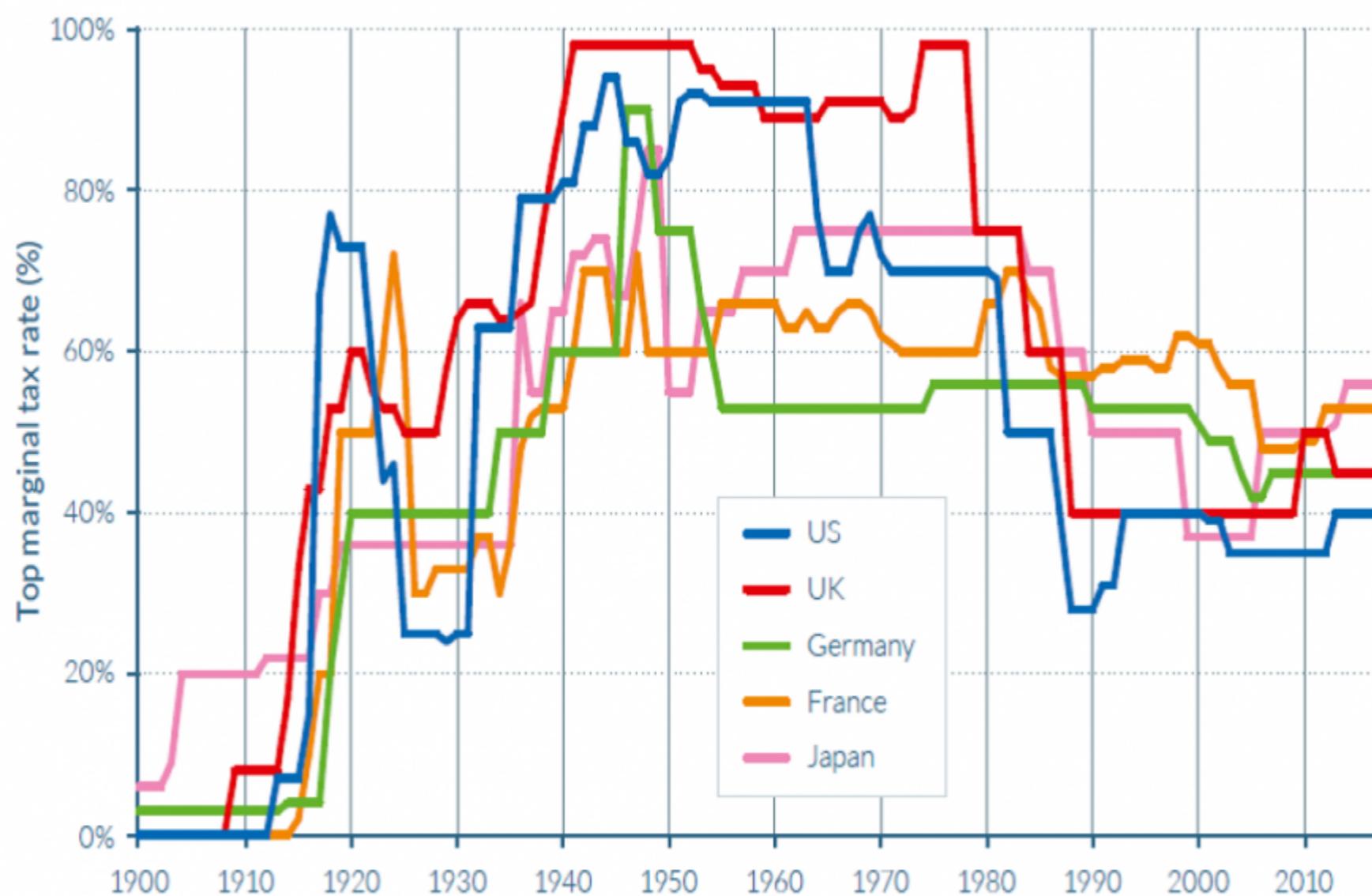
**WHY IS IT CRUCIAL TO CONTROL INEQUALITIES NOW?**

There are two big reasons why not tackling inequalities could have huge impact

- in an unequal society, negative shocks are borne disporportionnately by the bottom of the distribution
- actual and perceived changes in inequalities are strong drivers for doing / undoing coalitions
  - for big reforms we need strong coalitions
    - ex: pension reforms, carbon tax, international climate coalition

# CAN WE DO MORE?

Top income tax rates in rich countries, 1900-2017



Source: World Inequality Report 2018, [wir2018.wid.world](http://wir2018.wid.world)

# CAN WE DO MORE? (2)

