

Poverty, Inequality, and Epidemics

Poverty

Conceptual issues: defining the poverty line

- A poverty line is a **critical threshold** of income, consumption, or access to goods and services below which individuals are declared to be poor.
- A poverty line represents a minimum level of **'acceptable'** economic participation in a given society at a given point in time.
- A poverty line is an approximation to a threshold that is, in fact, a deeper and less quantifiable concept

Poverty rate definitions

1. **Absolute:** fraction of population with disposable income (normalised by family size) below poverty threshold y^* fixed in real terms (e.g. WB now uses \$1.90/day in 2011 dollar)
2. **Relative:** fraction of population with disposable income (normalised by family size) below poverty threshold y^* fixed relative to the median (EU defines poverty threshold at 60% of median)

Poverty rate definitions

- Absolute poverty falls in the long run with economic growth but relative poverty does not
- Absolute poverty captures both growth & inequality effects while relative poverty captures only inequality effects
- The fact that inequality stays in the debate in spite of huge growth since 1800 shows that relative income matters

Conceptual issues: the length of poverty

- People in a state of poverty often experience significant fluctuations in their income and consumption.
- ‘Temporary poverty’ occurs when people temporarily enter a poverty state because of bad economic shocks.
- ‘Chronic poverty’ is when they constantly stay in a poverty state for a long time.
- Policies to deal with problems are also different.
 - e.g. safety net or occupation change

Poverty rate disposable income definition

Most intuitive notion of poverty is based on consumption c (not pretax income y .)

$$c = y - T(y) + B(y) + E - s$$

Where $T(y)$ is tax, $B(y)$ gov transfers, E net private transfers (charity, family, friends), and s is net savings (change in assets)

- Consumption c is difficult to measure
- Disposable income $y - T(y) + B(y)$ (post-tax income) can be measured using household surveys

Family scale

- Ideally, poverty should be defined at the individual level based on individual consumption
- However, many consumption goods are shared within the family [e.g., housing, joint meals, etc.] and it is difficult to measure consumption at individual level
- Measured poverty is therefore based on consumption or disposable income at the family level [or unit sharing resources] and everybody within the family has same poverty status
- Bigger families need more resources but economies of scale in consumption: scale disposable income by family size

Poverty line in practice

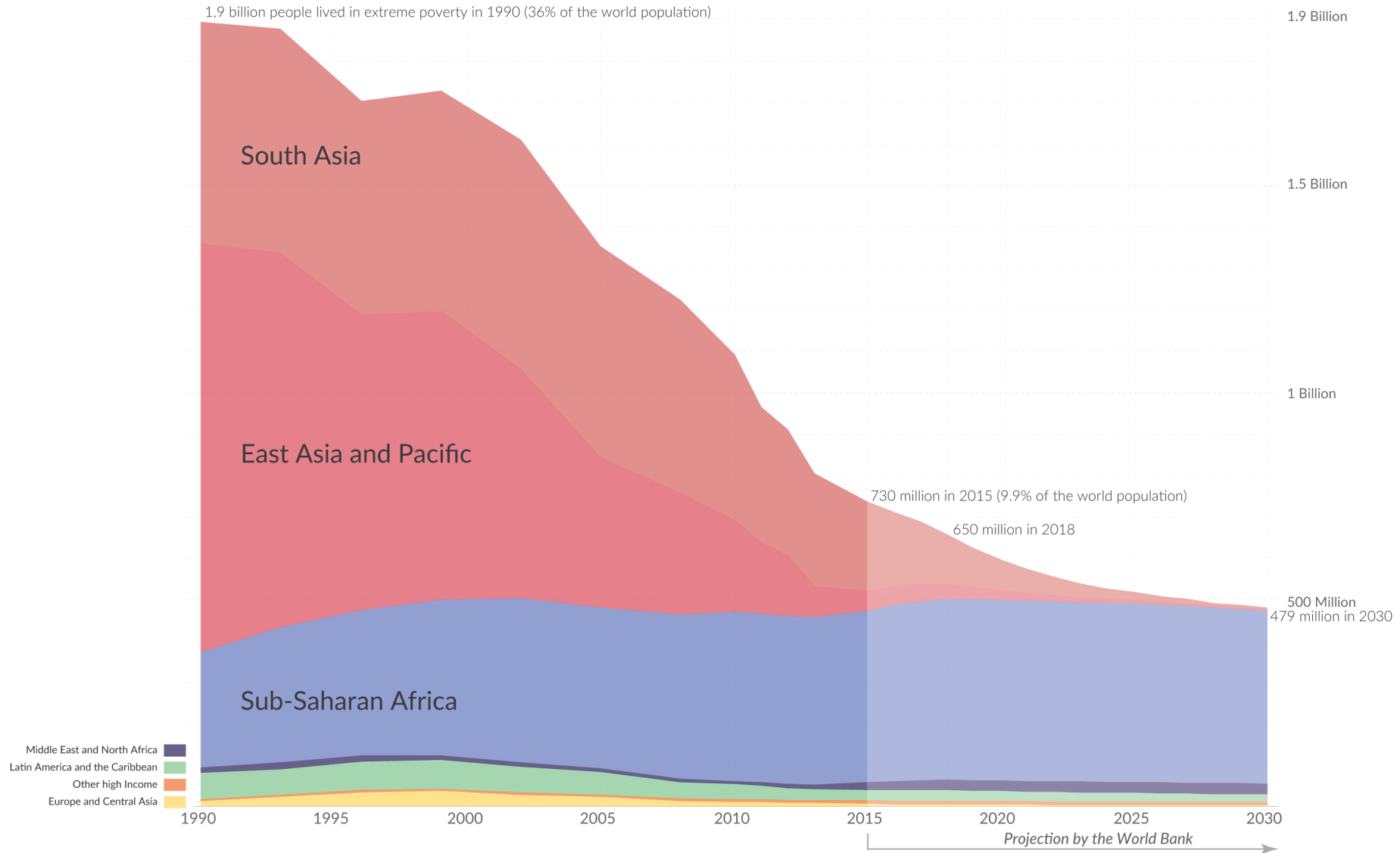
- World Bank's extreme poverty line is cited as "the International Poverty Line (IPL)", and expressed in each country in terms of its local currency. The IPL is at \$1.90 a day in 2011 PPPs.
- Lower Middle Income Countries line is US\$3.20 per person per day expressed in 2011 PPP U.S. dollars, Upper Middle Income Countries line is at. US\$5.50.

Poverty line in practice

- For many countries, the social relevance of the IPL has lessened over time as their economies have grown.
- World Bank's **Societal poverty line (SPL)** is based on a poverty line that is adjusted for the median level of wellbeing in each country.
- The new measure considers that individuals are suffering from societal poverty if they are living on less than US\$1.00 a day plus half of the value of median consumption (or income) per day in that country.
- If US\$1.00 plus half the median consumption is less than the IPL, then the SPL is equal to the IPL. In many countries, this value is greater than US\$1.90, and this greater value then becomes the SPL.

The number of people in extreme poverty – including projections to 2030

Extreme poverty is defined by the ‘international poverty line’ as living on less than \$1.90/day. This is measured by adjusting for price changes over time and for price differences between countries (PPP adjustment). From 2015 to 2030 the World Bank’s projections are shown.



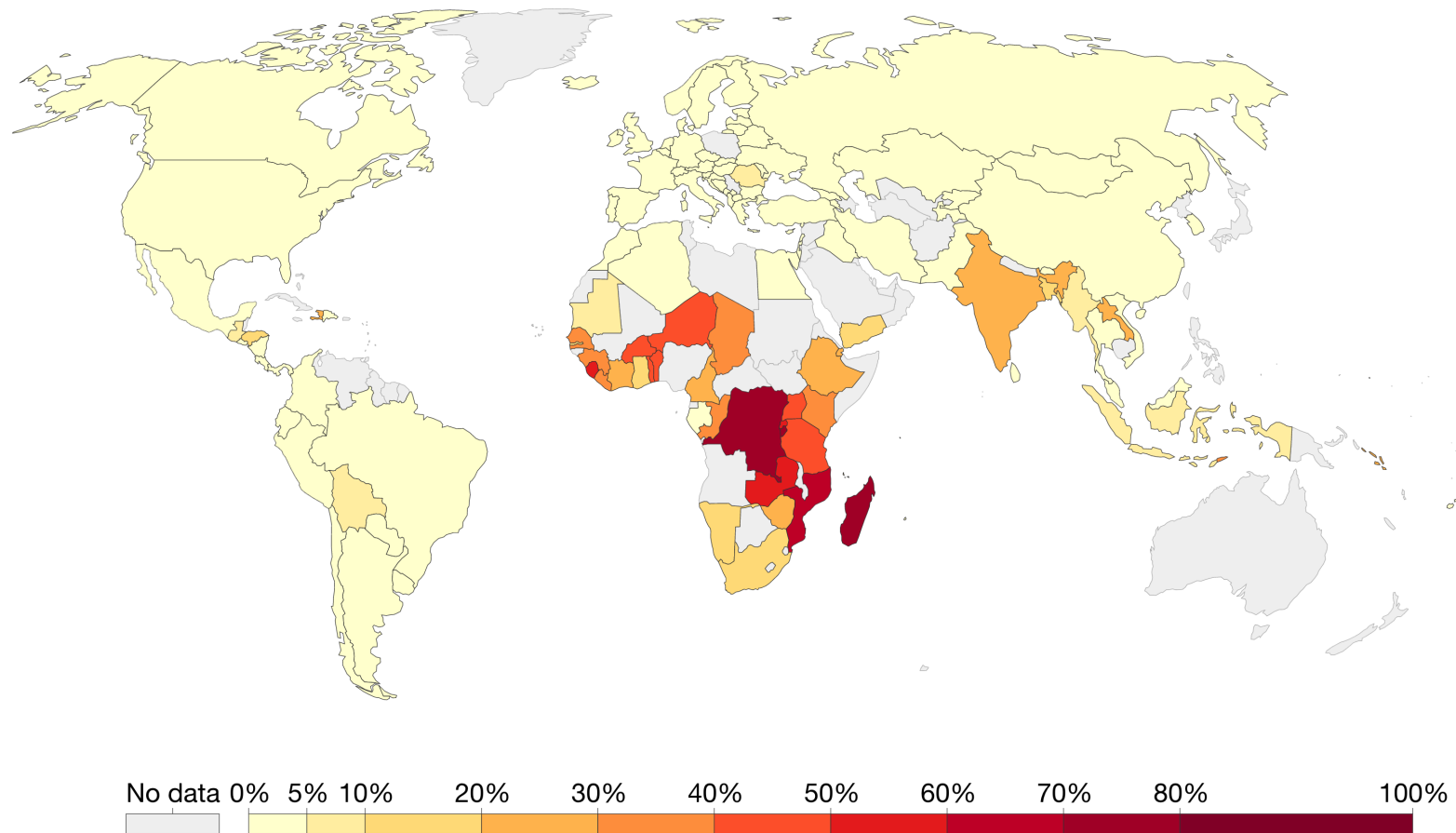
Data source: World Bank data from 1990 to 2015. The projections from 2015 to 2030 are published in the World Bank report *Poverty and Shared Prosperity 2018*.

This is a visualization from OurWorldinData.org, where you find data and research on how the world is changing.

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Share of the population living in extreme poverty, 2017

The share of individuals living below the 'International Poverty Line' of \$1.90 per day.



Source: World Bank

OurWorldInData.org/extreme-poverty/ • CC BY

Note: Depending on the country and year, the poverty rate relates to either income or consumption. Figures are given in international-\$. This means they are adjusted for price differences between countries and adjusted for inflation to allow comparisons between countries and over time. Income/consumption is measured at the household level, and is assumed to be divided equally among all household members.

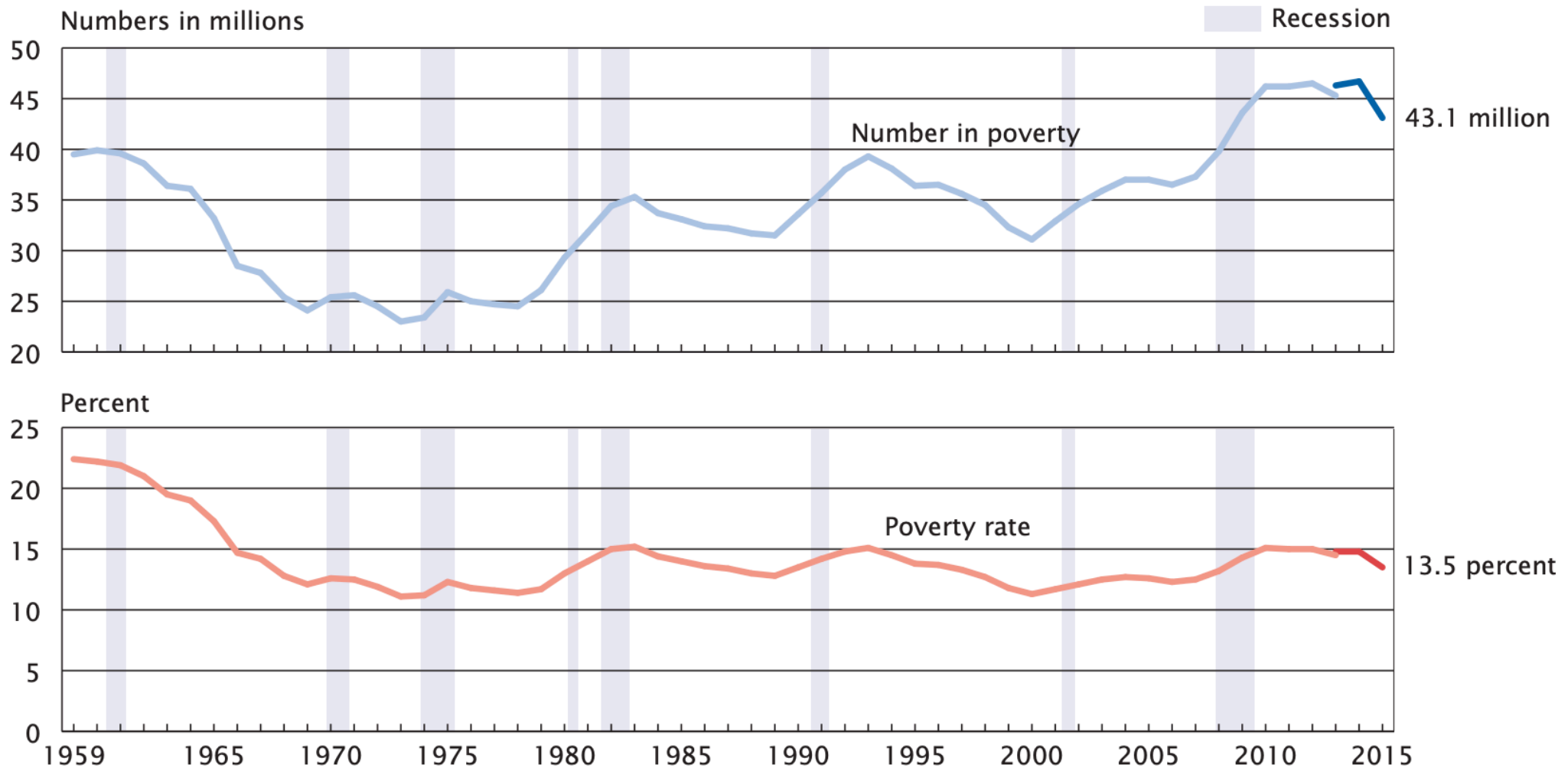
Example: US poverty rate definition

- Based on **money income** = market income before taxes + cash govt transfers + cash private transfers
- In-kind market income and transfers (employer health insurance, Medicaid, nutrition, public housing) do NOT count
- Income and employee payroll taxes are NOT deducted, Income tax credits (EITC, Child Tax Credit) are NOT added
- Threshold depends on household size/structure: e.g., \$20K/year for single parent with 2 kids
- Thresholds adjusted annually using the official CPI

Poverty Lines by Family Size (2012)

Size of Family Unit	Poverty Line
1	\$11,170
2	15,130
3	19,090
4	23,050
5	27,010
For each additional person, add	3,960

Number in Poverty and Poverty Rate: 1959 to 2015



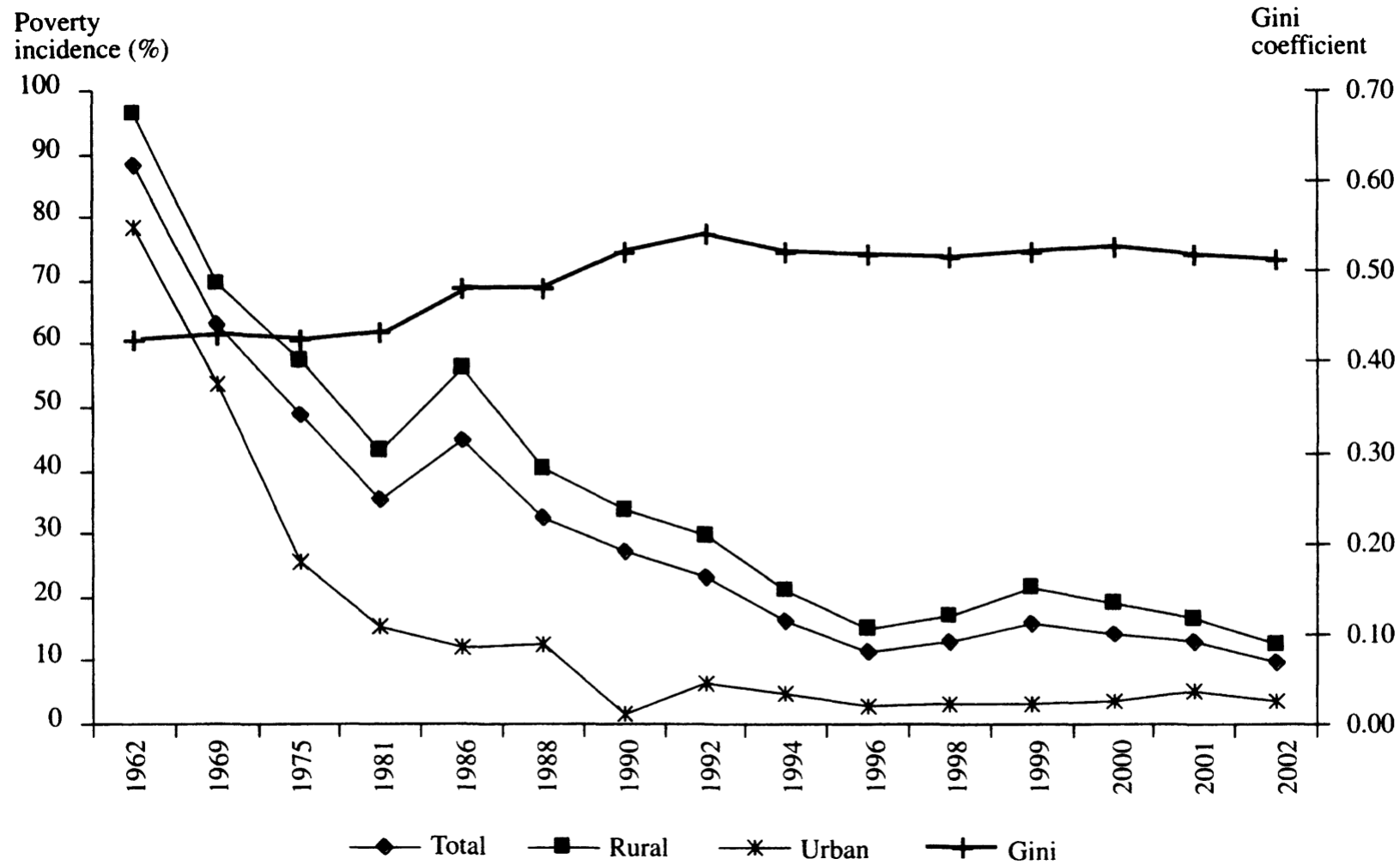
Note: The data for 2013 and beyond reflect the implementation of the redesigned income questions. The data points are placed at the midpoints of the respective years. For information on recessions, see Appendix A. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see www2.census.gov/programs-surveys/cps/techdocs/cpsmar16.pdf.

Source: U.S. Census Bureau, Current Population Survey, 1960 to 2016 Annual Social and Economic Supplements.

Factors Explaining Evolution of Poverty Based on Hoynes, Page, and Stevens (2006)

1. Increasing pre-tax inequality: stagnant bottom wages in spite of economic growth per capita [large effect]
2. Changes in family structure: single parent families ↑ from 7% in 1967 to 14.4% in 2003 ⇒ Increases poverty rate by 4 pts [large effect]
3. Increase in female labor force participation ⇒ Reduces poverty rate [significant effect only since 1980]
4. Immigration: accounts for about 0.7 points in the poverty rate increase from 1969 to 1999 [small effect]
5. Means-tested transfers [medium effect because they are concentrated below poverty line]

The case of Thailand



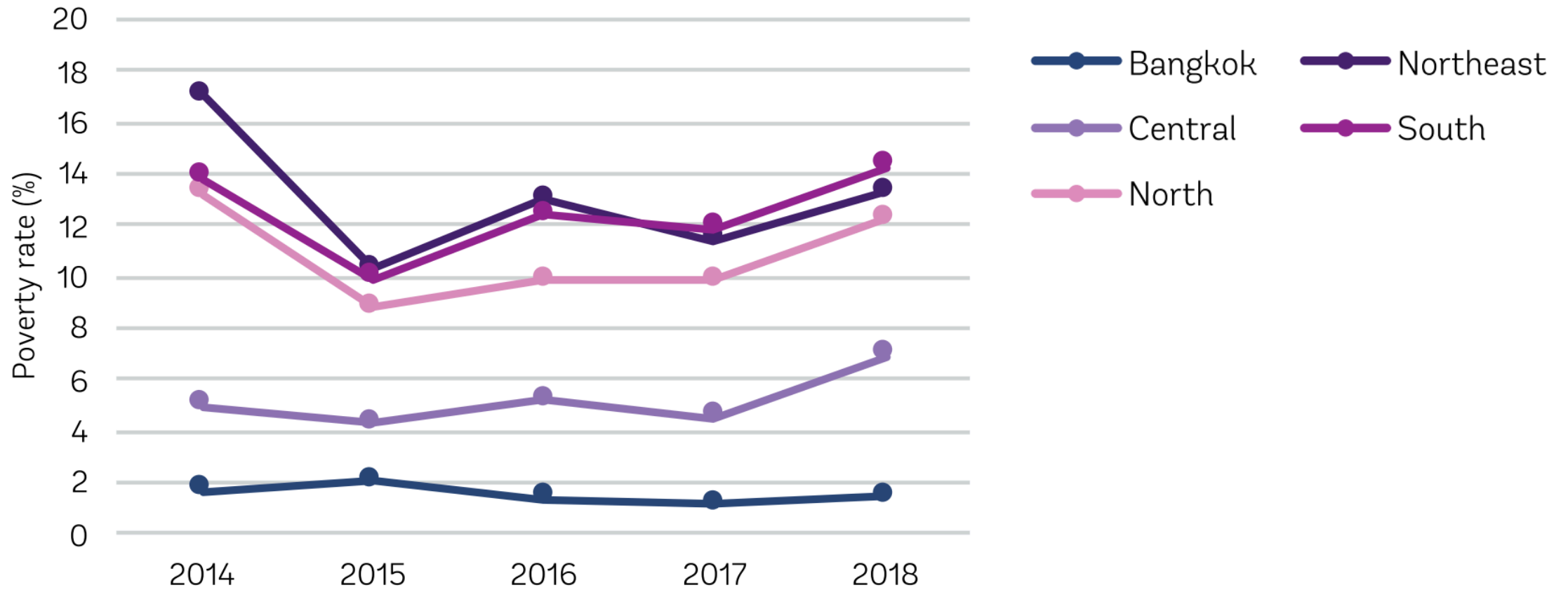
Source: reprinted from Warr (2004)

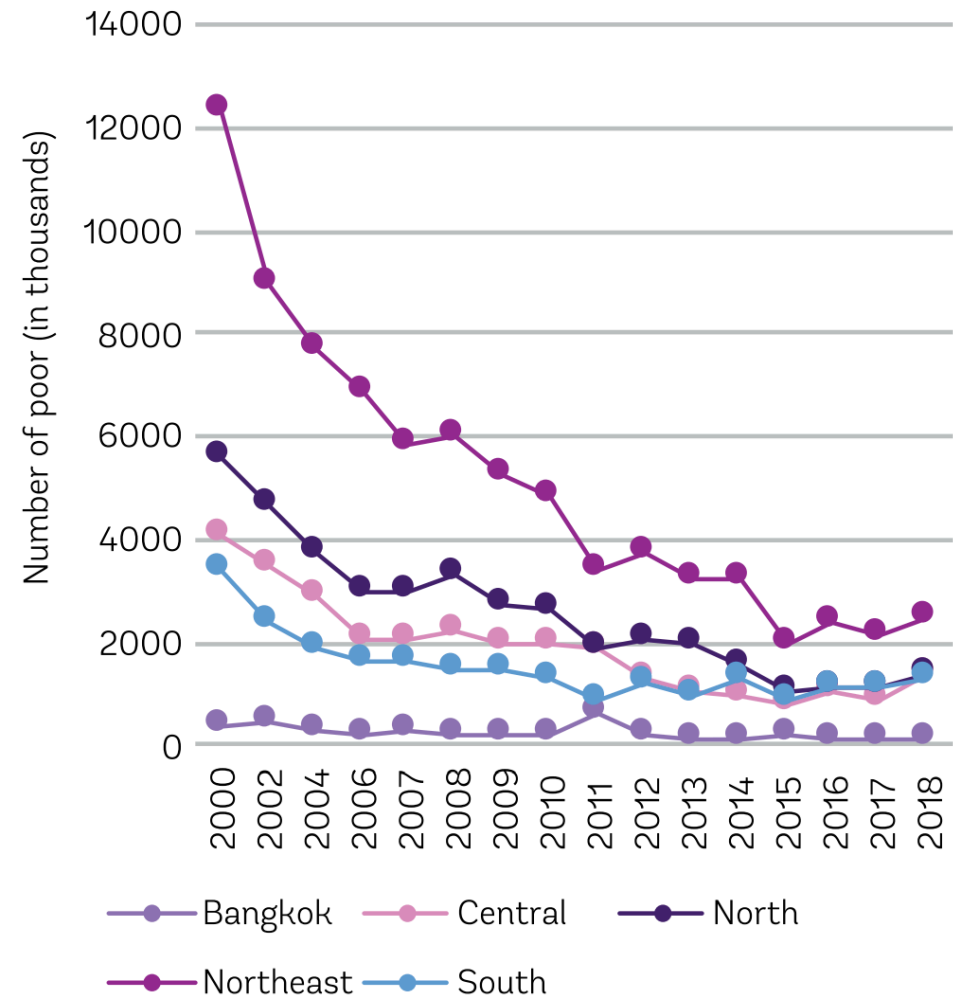
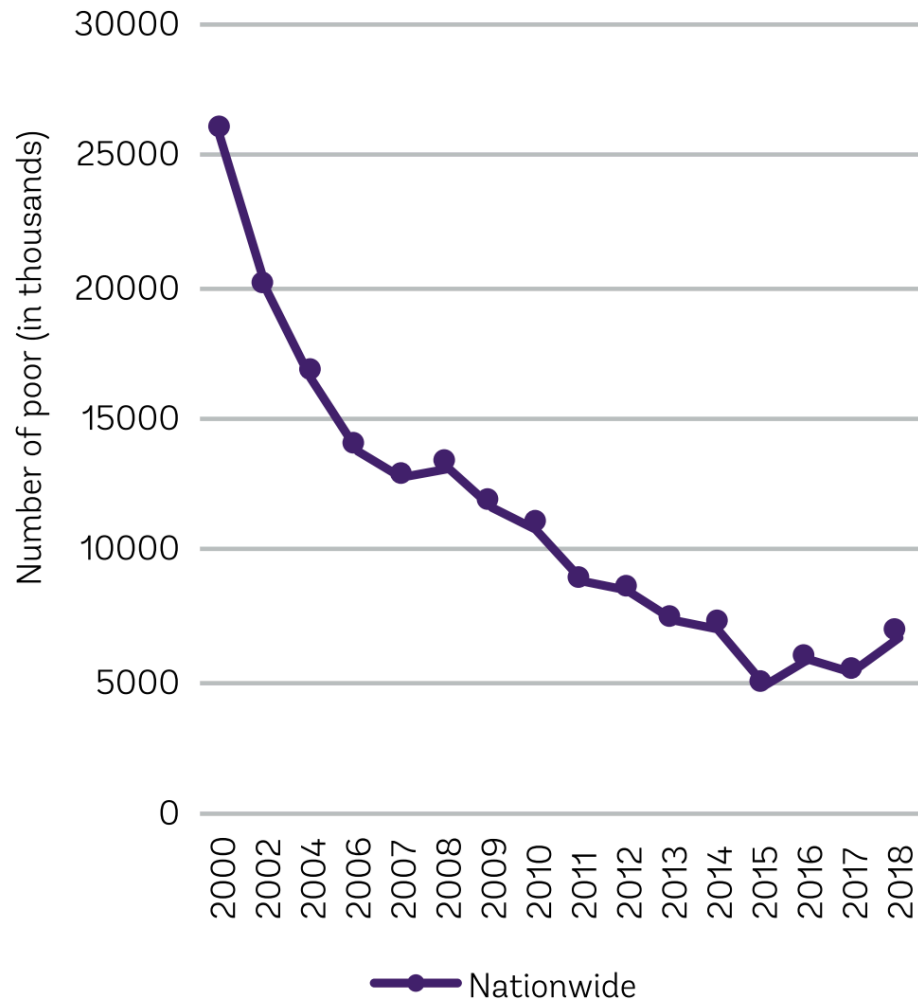
ตัวชี้วัด	2547	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560
ช่องว่างความยากจน	6.12	4.83	4.17	4.04	3.51	3.24	2.42	2.38	1.92	1.85	1.14	1.42	1.27
ความรุนแรงปัญหาความยากจน	2.03	1.59	1.31	1.22	1.06	0.97	0.70	0.70	0.53	0.51	0.30	0.38	0.33
เส้นความยากจน (บาท/คน/เดือน)	1,719	1,934	2,006	2,172	2,174	2,285	2,415	2,492	2,572	2,647	2,644	2,667	2,686
สัดส่วนคนจน (ร้อยละ)	26.76	21.94	20.04	20.43	17.88	16.37	13.22	12.64	10.94	10.53	7.20	8.61	7.87
จำนวนคนจน (ล้านคน)	16.5	13.8	12.7	13.1	11.6	10.8	8.8	8.4	7.3	7.1	4.8	5.8	5.3
สัดส่วนครัวเรือนยากจน (ร้อยละ)	24.29	19.92	18.26	18.54	15.81	14.50	11.64	10.74	9.24	9.10	6.14	7.30	6.34
จำนวนครัวเรือนยากจน (พันครัวเรือน)	4,404	3,793	3,540	3,620	3,170	3,010	2,486	2,344	2,089	2,065	1,309	1,731	1,525
สัมประสิทธิ์ความไม่เสมอภาค (Gini coefficient) ของรายได้"	0.493	0.514	0.499	na.	0.490	na.	0.484	na.	0.465	na.	0.445	na.	0.453
สัมประสิทธิ์ความไม่เสมอภาค (Gini coefficient) ของรายจ่ายเพื่อการอุปโภคบริโภค	0.425	0.420	0.398	0.405	0.398	0.396	0.375	0.393	0.378	0.371	0.359	0.367	0.364
ความเหลื่อมล้ำในรายได้กลุ่มรวยสุด 20% สูดท้ายต่อกลุ่มจนสุด 20% แรก (เท่า)	12.22	14.83	13.06	na.	12.30	na.	11.81	na.	12.64	na.	10.31	na.	10.16
ความเหลื่อมล้ำในรายจ่ายเพื่อการอุปโภคบริโภคกลุ่มรายจ่ายมากที่สุด 20% สูดท้าย ต่อกลุ่มรายจ่ายน้อยสุด 20% แรก (เท่า)	8.06	8.11	7.21	7.41	7.18	7.09	6.26	6.97	6.51	6.30	5.85	6.12	6.08
ประชากรทั่วประเทศ (ล้านคน)	61.8	62.8	63.5	64.2	65.0	66.0	66.2	66.5	66.8	67.0	67.2	67.5	67.7
จำนวนครัวเรือนทั้งหมด (พันครัวเรือน)	18,133	19,043	19,384	19,526	20,058	20,764	21,346	21,821	22,601	22,696	23,639	23,614	24,052

ที่มา : ข้อมูลจากการสำรวจภาวะเศรษฐกิจและสังคมของครัวเรือนสำนักงานสถิติแห่งชาติ, ประมวลผลโดยสำนักพัฒนาฐานข้อมูลและตัวชี้วัดภาวะสังคม สศช. ตั้งแต่ปี 2549 เป็นต้นไป ข้อมูลการสำรวจภาวะเศรษฐกิจและสังคมของครัวเรือน มีการบันทึกข้อมูลรายได้ติดลบหรือขาดทุน

: na. ไม่มีข้อมูล

Official poverty rate by region





Source: NESDC, Social indicators Table 2.3.

Notes: Consumption-based poverty rates. In 2012, Bueng Kan was added as a province in the Northeast, which explains some increase in the number of poor in the NE that year.

Current situation in Thailand

- Nationally, there were 6.7 million poor people in Thailand in 2018.
- The number of poor in 2018 is much lower than in previous decades, but was higher than in any year in the period 2015–17
- In 2018, there was almost 2.5 million poor in the Northeast region.
- The number of poor in the Central region increased by almost half a million people, as its regional poverty rate increased from 4.5 percent in 2017 to 6.9 percent in 2018.

Current situation in Thailand

- Across regions in Thailand, there have been large variations in the success of poverty reduction over the medium term. With Bangkok enjoying the biggest success in reducing poverty (12% per year btw 1988-2013)
- However, in recent years, the pace of poverty reduction has slowed down and even reversed in some regions.
 - For 2014–18, poverty increased in the urban and rural areas of the Central region, as well as the Southern urban regions
- An increase in poverty was seen across most provinces – compared with provincial poverty rates in 2014.

Inequality

The Distribution of National Income in the United States, 2014

Income group	Number of adults	Pre-tax income		Post-tax income	
		Average income	Income share	Average income	Income share
Full Population	234,400,000	\$64,600	100%	\$64,600	100%
Bottom 50%	117,200,000	\$16,200	12.5%	\$25,000	19.4%
Middle 40%	93,760,000	\$65,400	40.5%	\$67,200	41.6%
Top 10%	23,440,000	\$304,000	47.0%	\$252,000	39.0%
Top 1%	2,344,000	\$1,300,000	20.2%	\$1,010,000	15.6%
Top 0.1%	234,400	\$6,000,000	9.3%	\$4,400,000	6.8%
Top 0.01%	23,440	\$28,100,000	4.4%	\$20,300,000	3.1%
Top 0.001%	2,344	\$122,000,000	1.9%	\$88,700,000	1.4%

Source: Piketty, Saez and Zucman (2016)

The distribution of national income in Thailand, 2016

Table 2.6: Thresholds, averages, and national income shares in Thailand, 2016

Income groups	Number of adults	Threshold		Average income		Income share
		Thai Baht	2017 Dollar PPP	Thai Baht	2017 Dollar PPP	
Full population	36,459,685	0.00	0.00	309,812.72	24,739.50	100%
Bottom 50%	18,229,843	0.00	0.00	86,124.00	6,877.27	13.90%
Middle 40%	14,583,874	148,886.28	11,889.03	267,299.00	21,344.65	34.51%
Top 10%	3,645,969	599,218.32	47,849.42	1,598,302.00	127,629.32	51.59%
incl. Top 1%	364,597	2,608,684.70	208,311.48	6,187,370.00	494,080.49	19.97%
Top 0.1%	36,460	9,880,617.50	788,997.64	23,881,425.00	1,907,005.11	7.71%
Top 0.01%	3,646	35,758,214.00	2,855,403.18	98,109,090.00	7,834,312.07	3.17%
Top 0.001%	365	148,958,048.00	11,894,757.49	436,085,575.00	34,822,772.10	1.41%

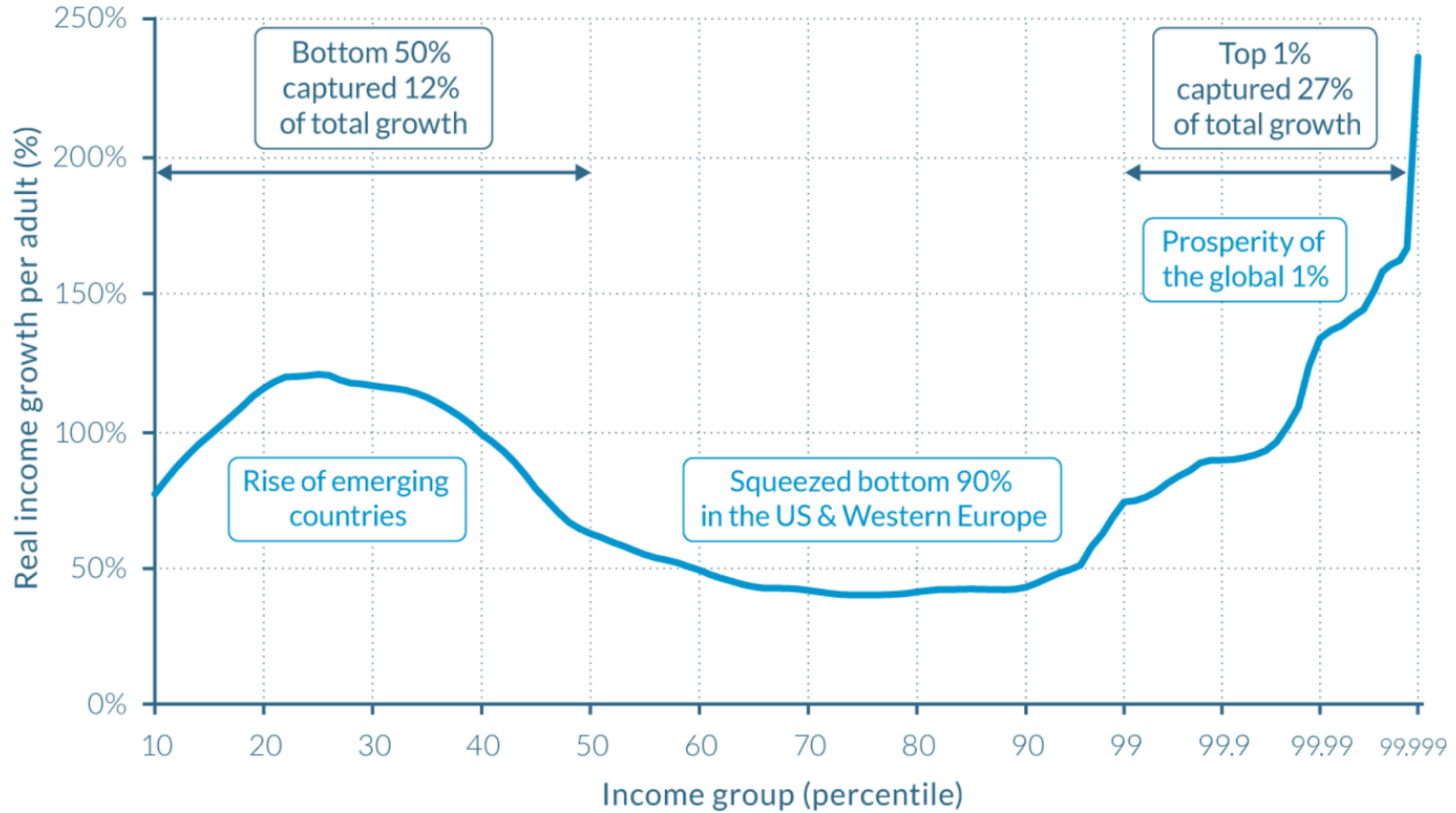
Source: Jenmana (2018)

Global picture

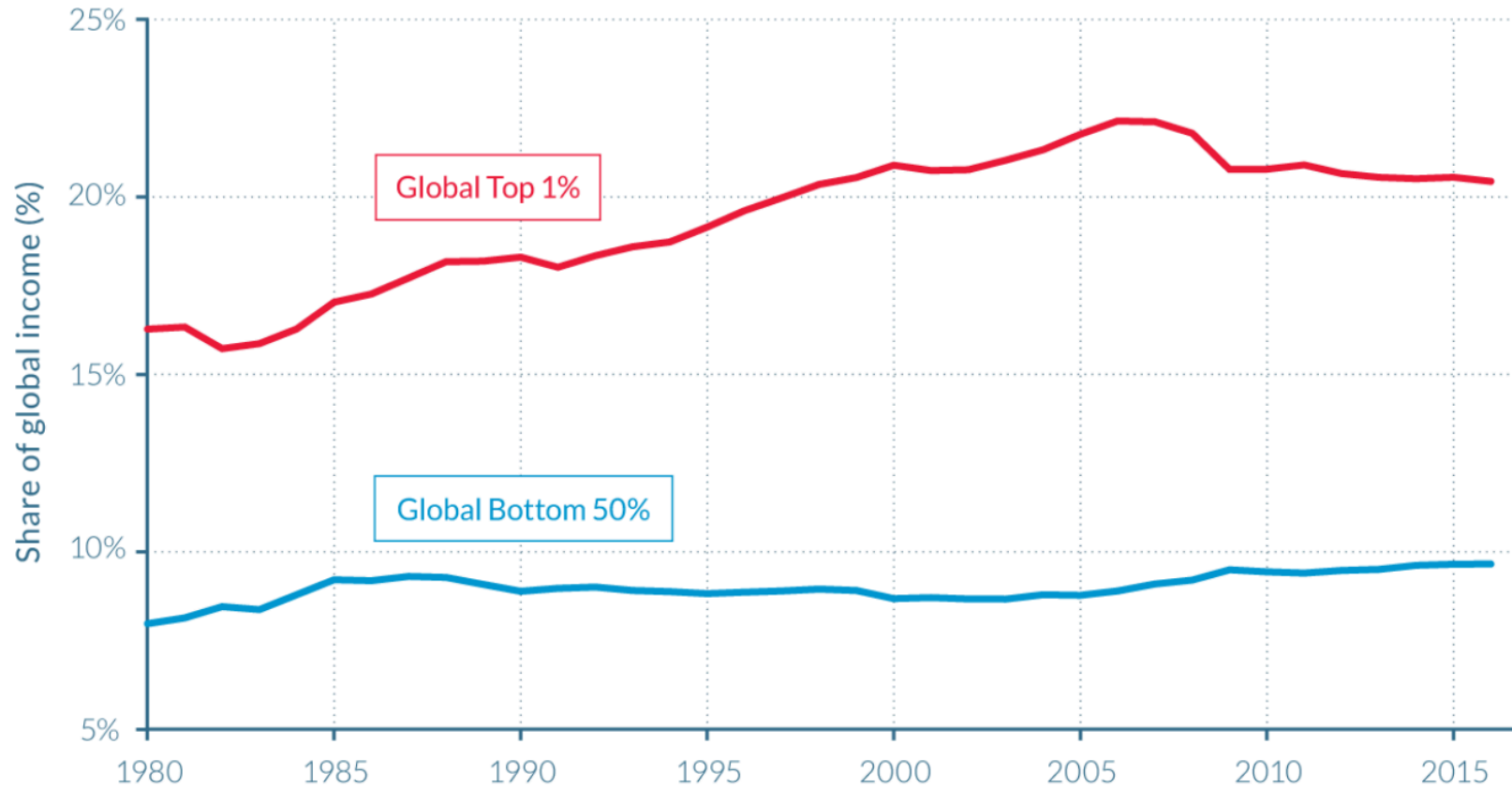
- Convergence in average income across countries, but rising inequality within countries
- More precisely: from 1980 to 2000 rising global inequality (global top 1% income share → 16% in 1980 to 22% in 2000)
- Then falling slightly 2000-2018 (top 1% share = 20% in 2018).

Distribution of world growth:

- Poorest half of the global population has seen its income grow significantly thanks to high growth in Asia.
- But top 0.1% has captured as much growth as the bottom half since 1980.
- Income growth sluggish or even nil for individuals between the global bottom 50% and top 1% (includes North American and European lower- and middle-income groups)

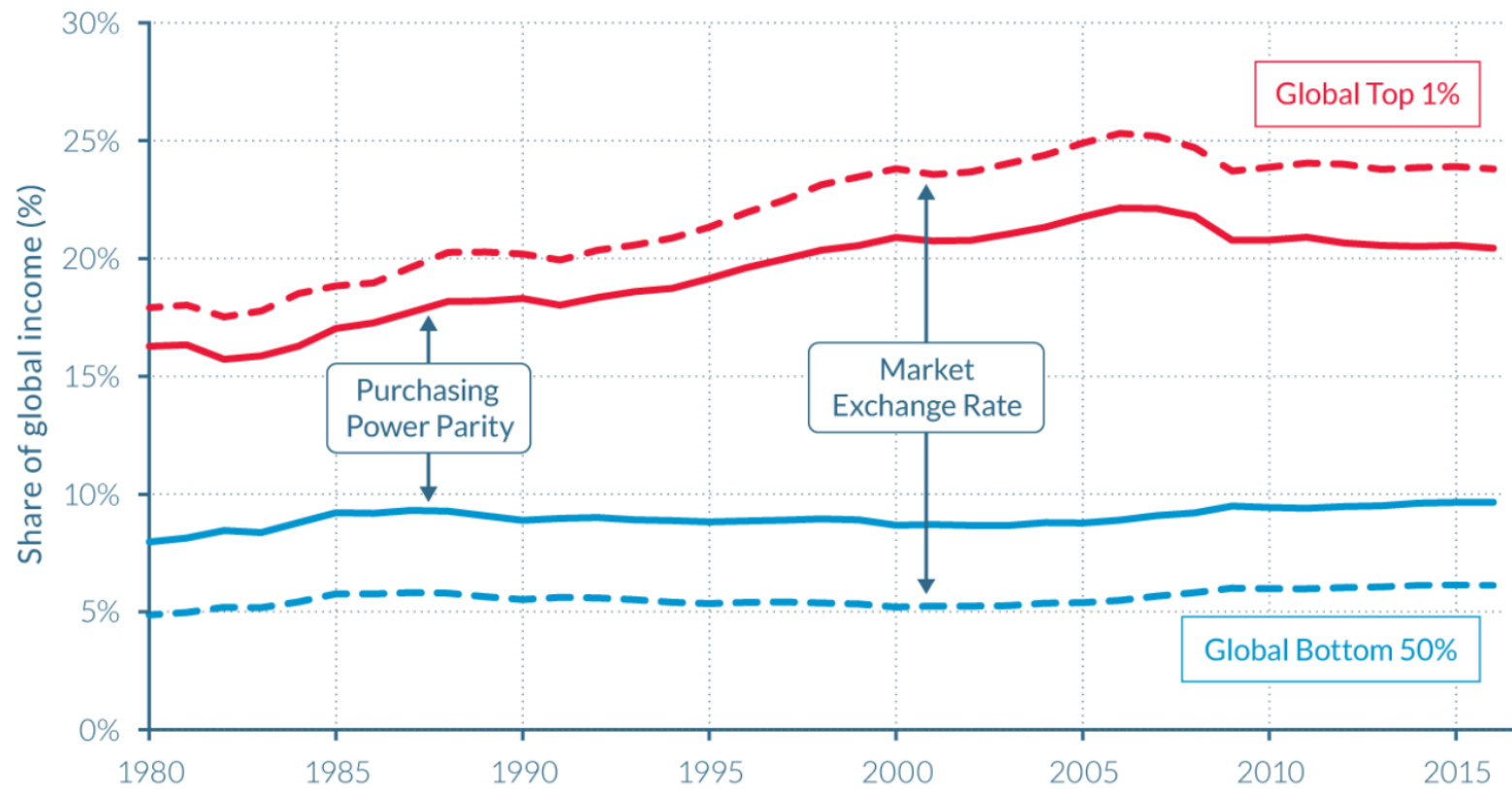


Source: WID.world (2017). See wir2018.wid.world/methodology.html for more details.



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

In 2016, 22% of global income was received by the Top 1% against 10% for the Bottom 50%. In 1980, 16% of global income was received by the Top 1% against 8% for the Bottom 50%.



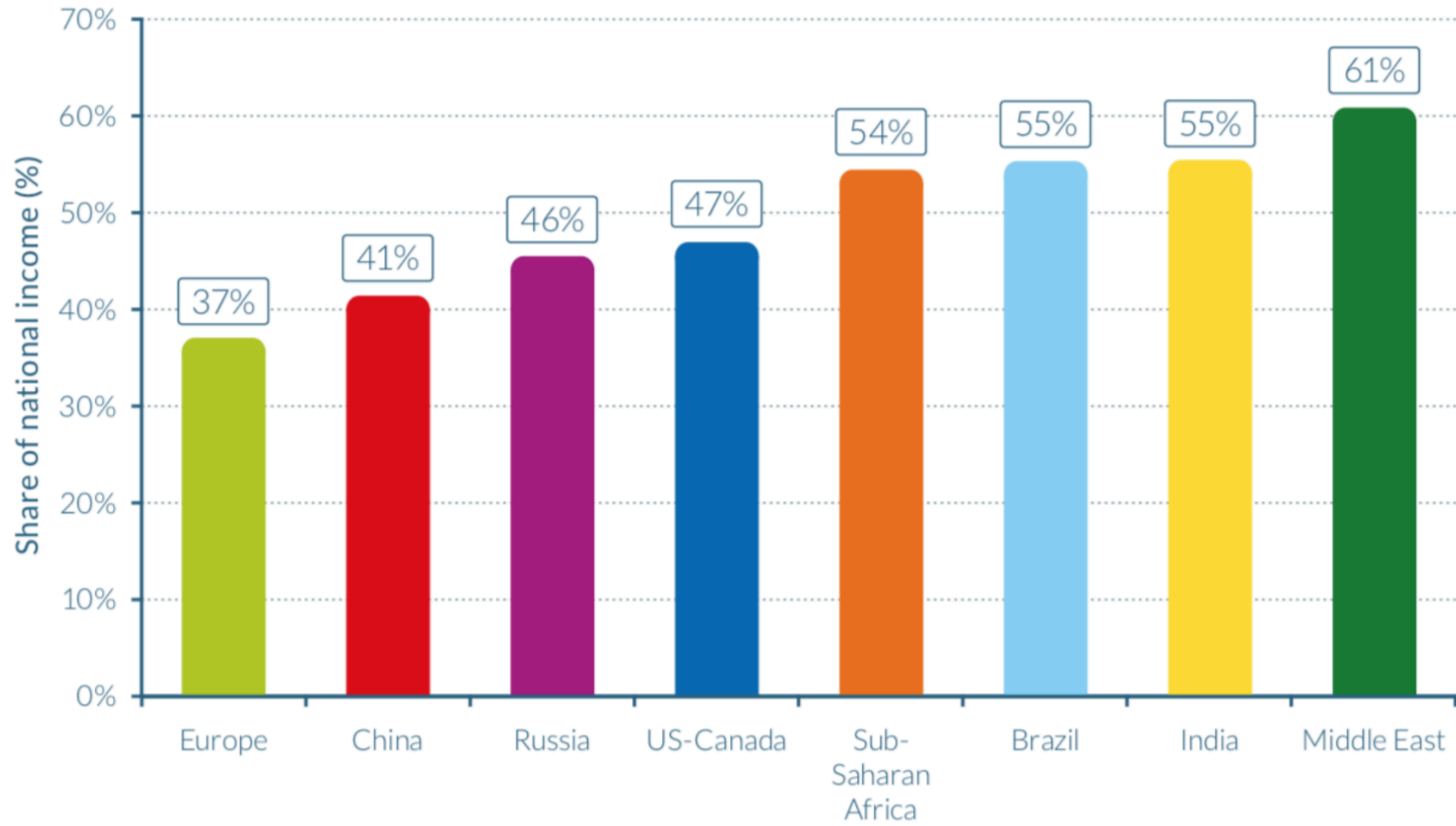
Source: WID.world (2017). See wir2018.wid.world/methodology.html for data series and notes.

In 2010, the Top 1% received 24% of global income when measured using Market Exchange Rates (MER). When measured using Purchasing Power Parity (PPP), their share was 21%. Thick lines are measured at PPP values, dashed lines at MER values. Income estimates account for differences in the cost of living between countries. Values are net of inflation.

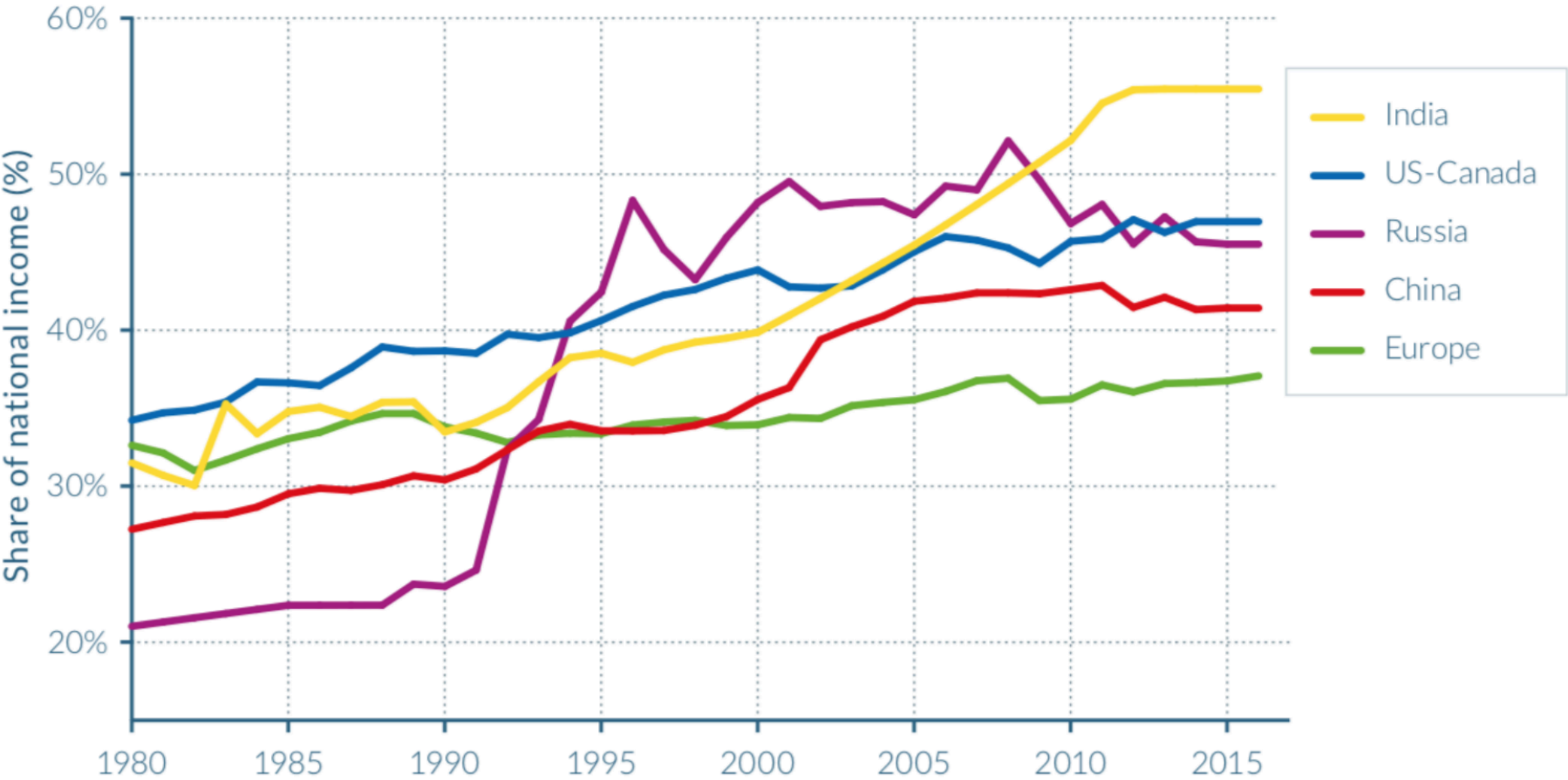
Inequality today: orders of magnitude

- 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%

Top 10% national income share across the world, 2016

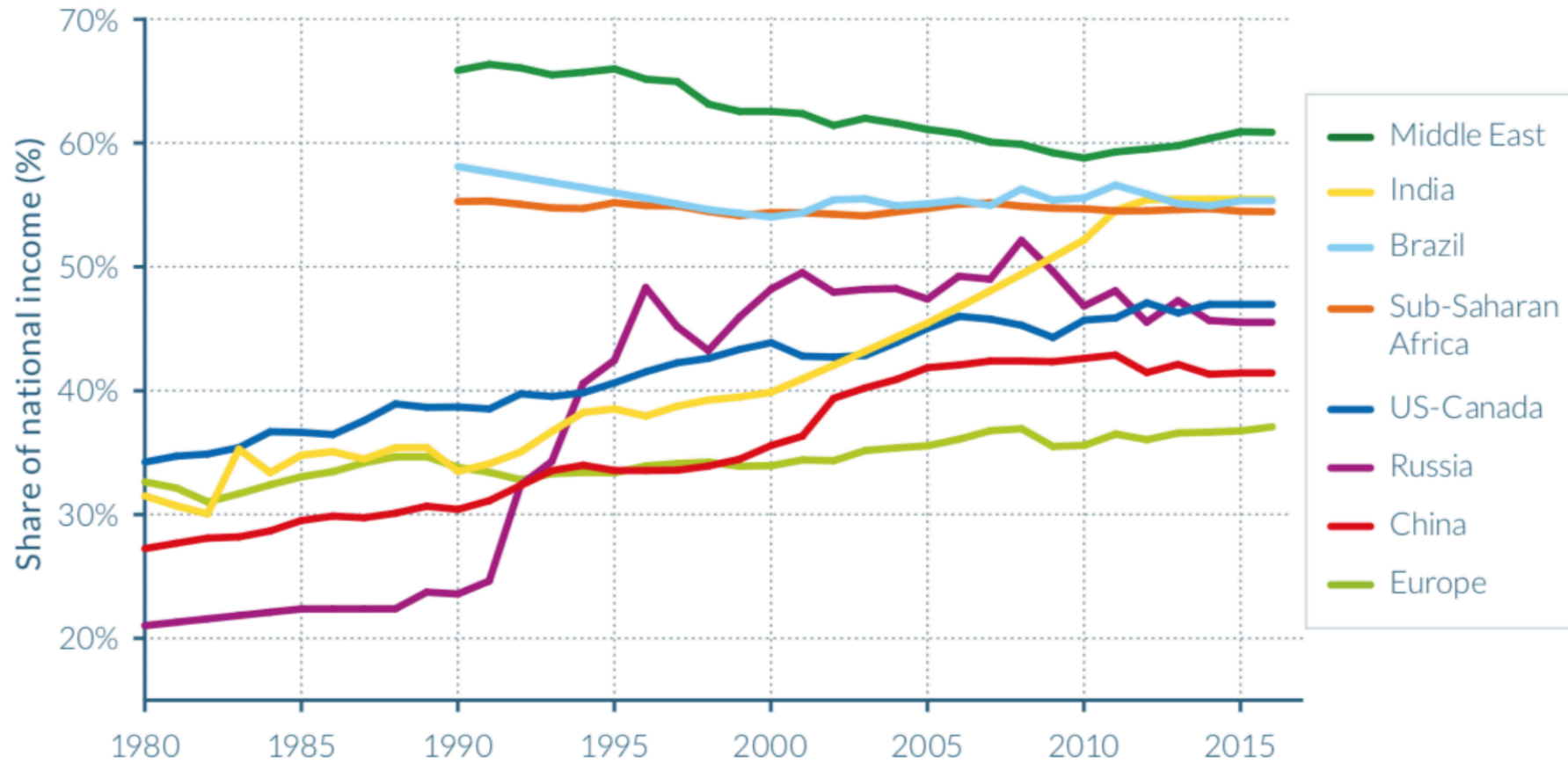


Top 10% income shares across the world, 1980-2016: Rising inequality almost everywhere, but at different speeds



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.

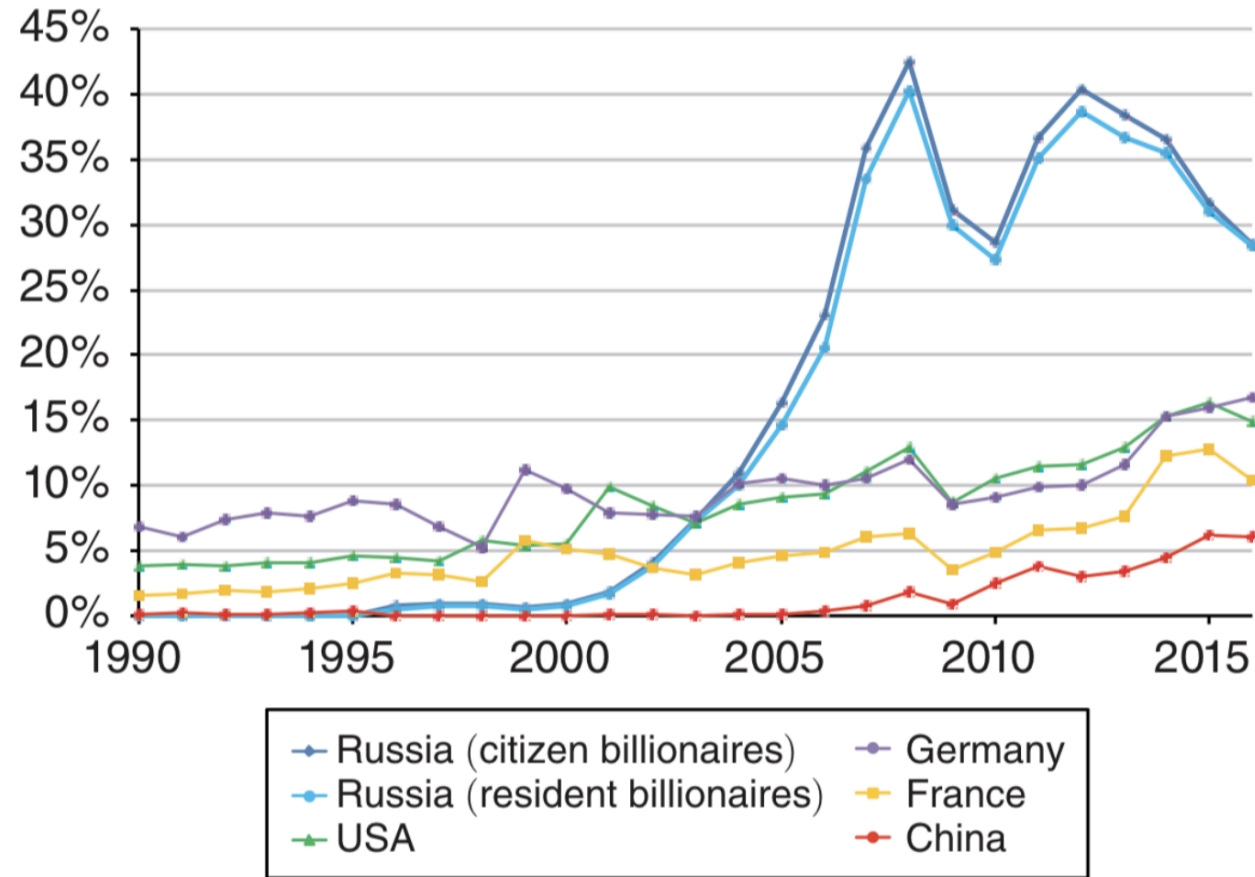


FIGURE 5. TOTAL FORBES BILLIONAIRE WEALTH:
 RUSSIA VERSUS OTHER COUNTRIES, 1990–2016
(Percent national income)

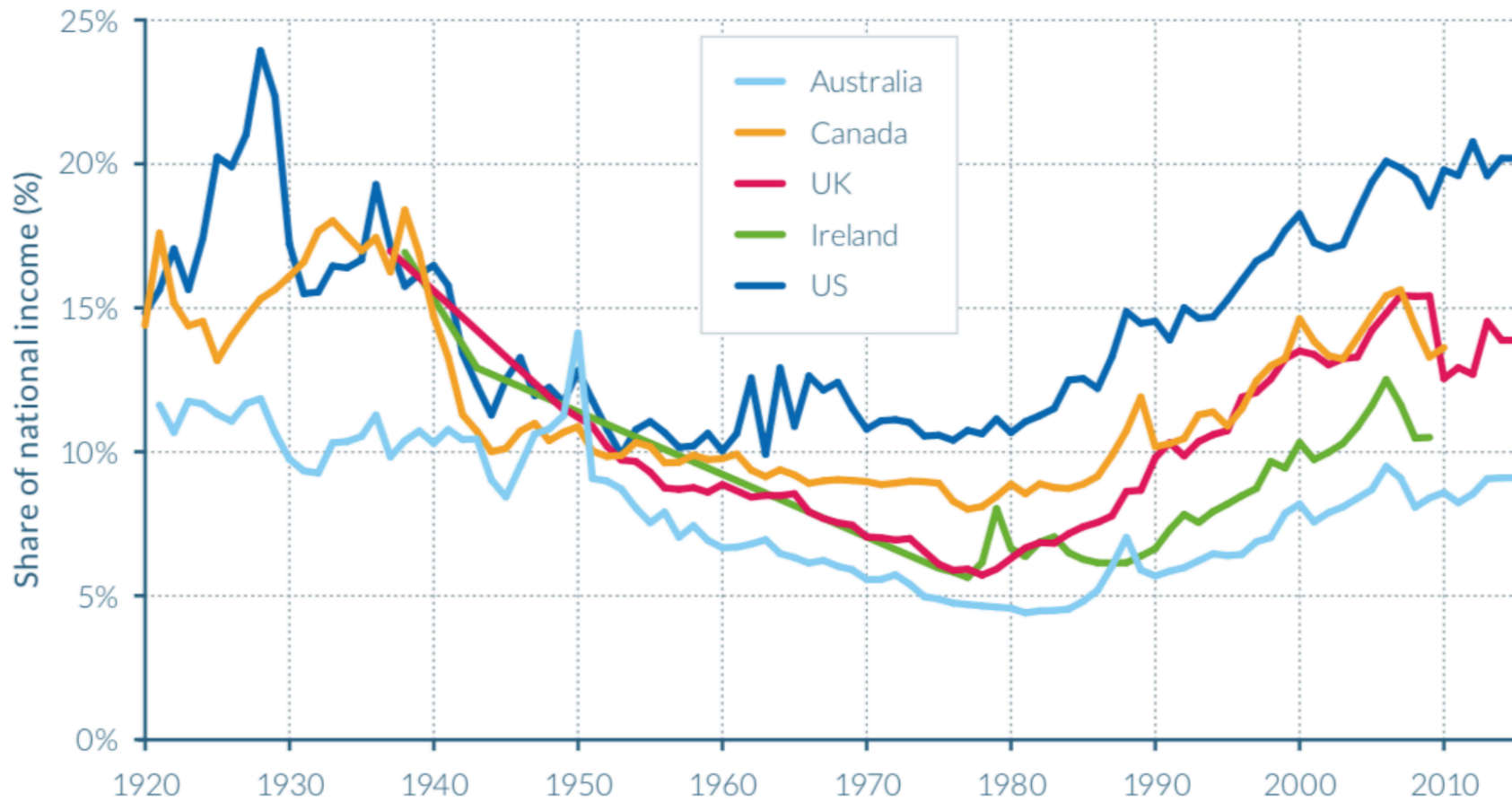
The decline of income inequality 1920s–1970s

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

1. In developed countries

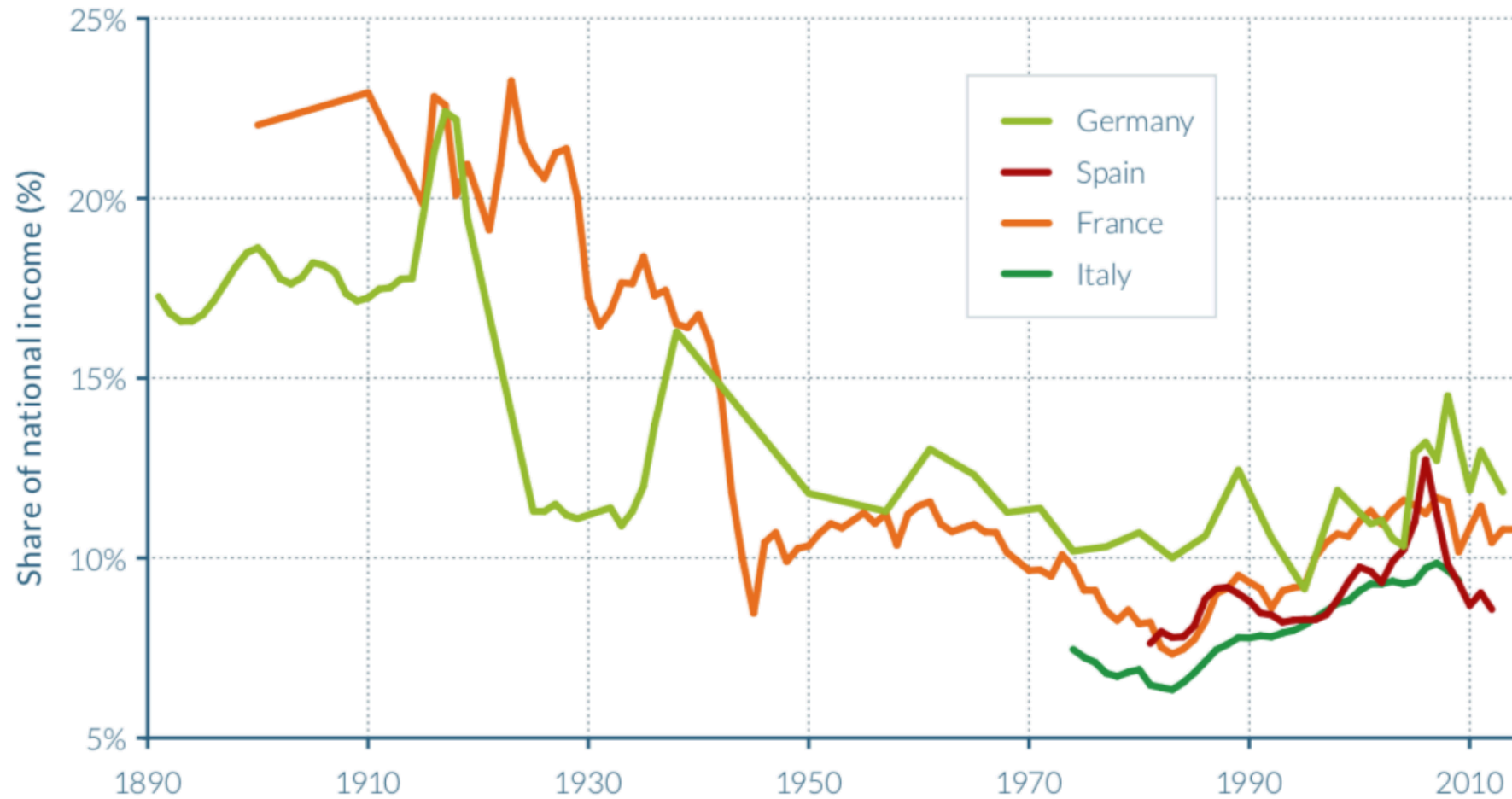
- 1920s-1970s combination of political, social, and economic shocks
- Followed by egalitarian policies: Social Security, public education, pro-labor policies, progressive taxation
- Decline in inequality largely a capital phenomenon
 - Large shocks to top fortunes 1913-1945
 - Rise of patrimonial middle-class

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



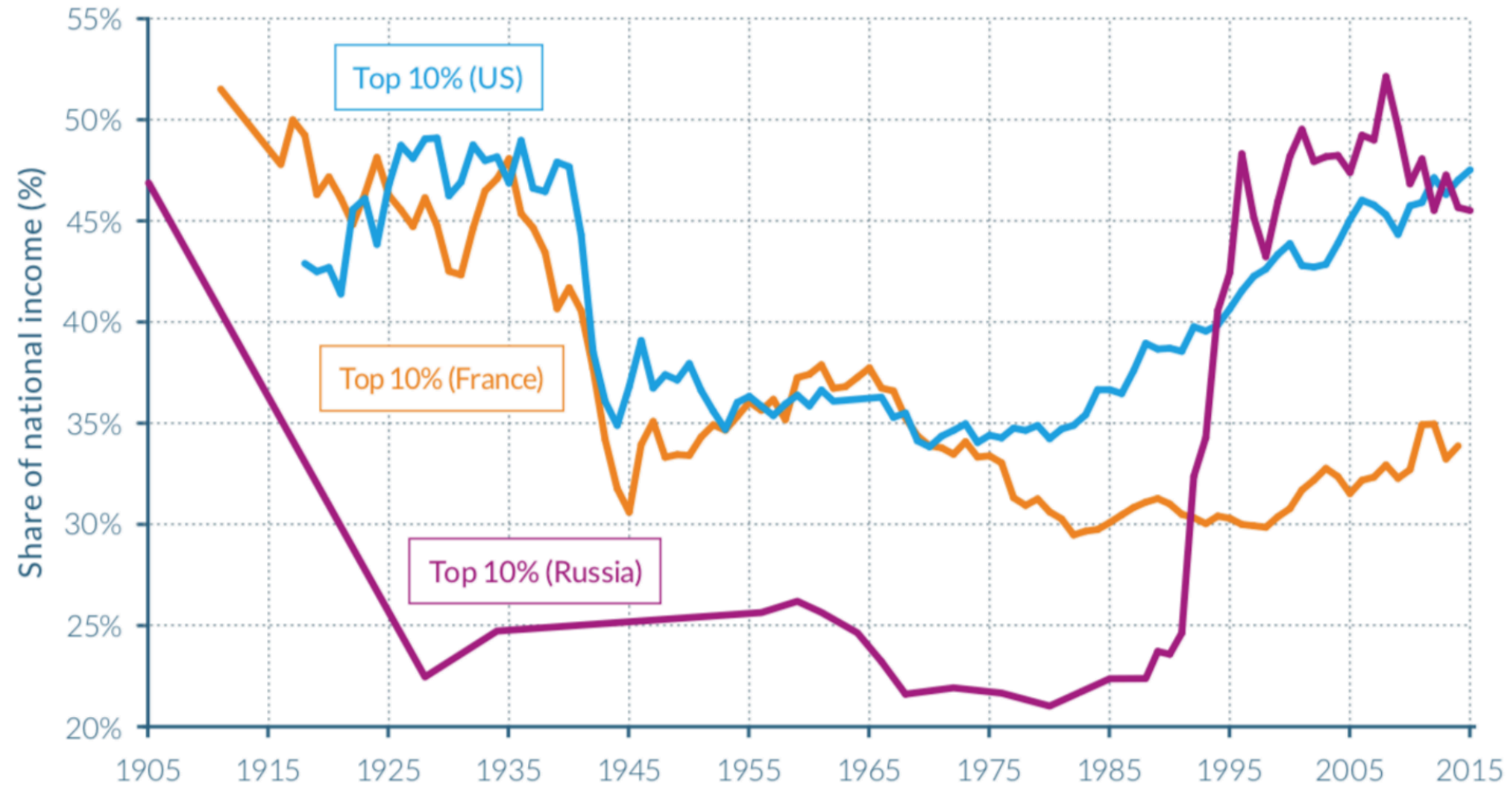
Source: WID.world (2017). See [wir2018.wid.world](#) for data series and notes.

2. In emerging countries

Political and social shocks led to even more radical reduction of inequality:

- Abolition of private property in Russia, plans, education, land redistribution
- Socialist policies in India post-independence

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

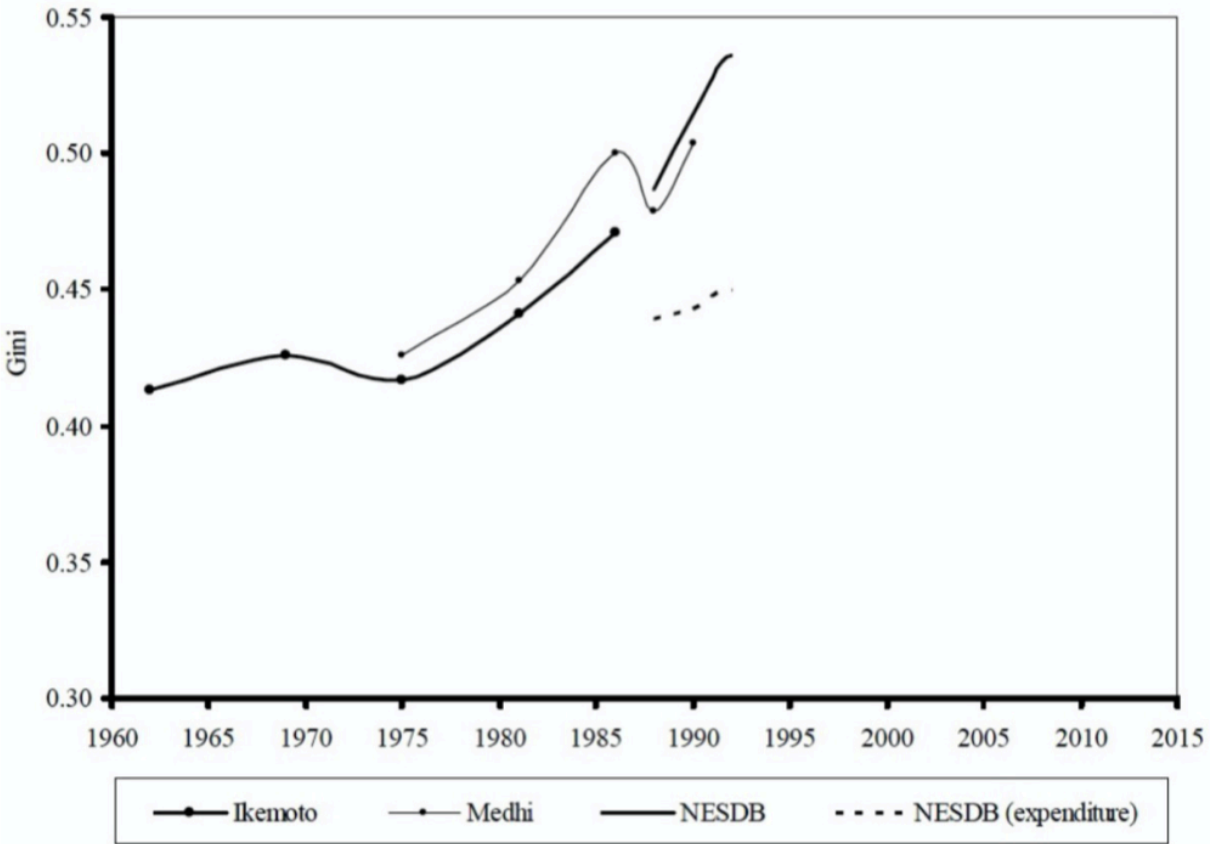


Source: Novokmet, Piketty and Zucman (2017). See wir2018.wid.world for data series and notes.

- After historical decline in most parts of the world from 1920s to 1970s, income inequality is on the rise in nearly all countries.
- But variety of national pathways, highlighting key role of political and institutional factors
- Among rich countries, Anglo-Saxon countries have experienced a sharp rise in inequality since the 1980s.

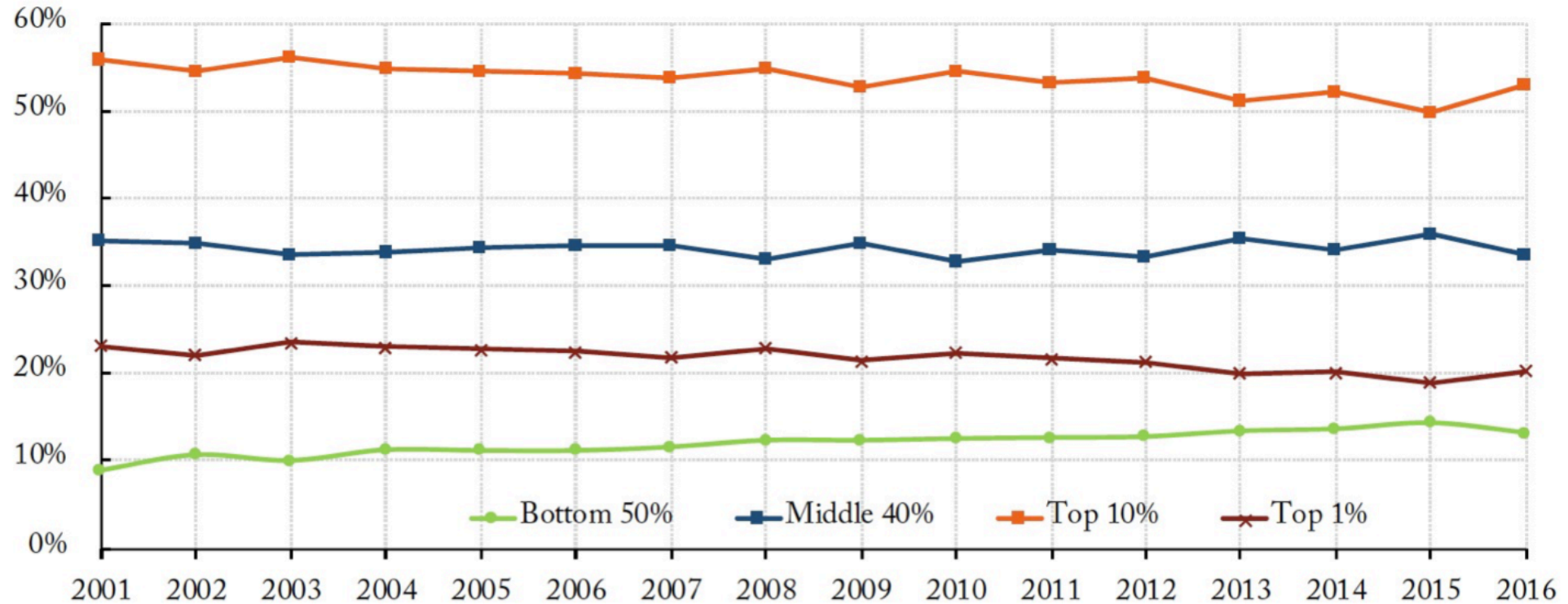
- In China, India, and Russia, three formerly communist or highly regulated economies, inequality surged with opening and liberalization policies.
- Steepest rise occurred in Russia, where the transition to a market economy was particularly abrupt.
- Too little is known of long-run dynamics of income inequality in many low- income countries.

Thai situation



Source: Reprinted from Phongpaichit (2016).

Figure: Income inequality in Thailand: national income share, 2001-2016



Source: Jenmana (2018).

Poverty, inequality, and the COVID-19 crisis

Poverty and Covid-19

- Using the US data as of July 2020, Siddique (2020) found that poverty is a significant determinant of Covid-19 cases.
 - Poverty is concentrated in regions with economic structures that require hypermobility - more physical human to human contacts such as the lower income levels of the service sector. Poverty is concentrated in regions where this service sector is dominant.
 - Poverty related to limited economic activities are not the dominant factors leading to the containment of this infectious disease.
 - These are also regions where minority groups are concentrated and where access to health services are limited.

Poverty and Covid-19



- a staggering 3.0 billion people worldwide have no water to wash their hands and over 1.8 billion people have no adequate shelter—or homes to go to.

Urban Poverty and Covid-19

- The often high-density living quarters coupled with a large number of persons per dwelling and the lack of adequate sanitation are reasons why measures to contain the pandemic only work to a limited extent in slums.
 - Firstly, social distancing, which is currently being implemented on a large scale across the world, is a physical impossibility in slums due to the high density of buildings and persons per dwelling
 - Furthermore, we know that residents of low and middle-income countries have increased risks for respiratory infections due to elevated levels of air pollution
 - slums and informal settlements are poorly prepared to manage the pandemic and offered suggestions to minimize the risk of the virus.

Urban Poverty and Covid-19

- However, this general knowledge about urban poverty is insufficient to handle to current and the future epidemics
 - inhabitants in the same community may expose to different risks. For example, some communities with relatively older dwellers may encounter greater risks.
 - Density and number of inhabitants are different in different communities and this matters.
 - There are also other differences and similarities.
- Read Friesen and Pelz (2020)

Racial and ethnic inequalities

- Higher COVID-19 mortality rates among blacks and Hispanics:
- Baseline mortality rates for blacks higher than for whites
- Baseline mortality rates for Hispanics lower than for whites
- CDC argues that the COVID-19 inequalities are largely spatial
 - Many whites live in areas without COVID-19
 - Housing and density likely to be important, as well as occupation (particularly working in healthcare)
 - Native Americans badly hit: e.g. Navajo, crowded living conditions and often lack of running water

Racial and ethnic inequalities

- Racial inequality had caused health differences among races. Black people have higher risks to have obesity, heart disease, diabetes. These diseases have impacts on the outcomes of COVID-19 treatments.
 - It is important to note that socioeconomic situations of these people contributed greatly to these diseases.
- Some even argue that there is a multiple standard in treating patients with different races



**รวม 16 แรงงานเมียนมา
หนีโควิดมาเลยเข้าไทย**

- Poverty forced them to move and this increased risks of spreading the disease.

Fate of the 5,000: #ผีน้อย illegal Thai workers in South Korea won't be coming home any time soon, and many Thais are happy about that

by THISRUPT — March 3, 2020 in Current Affairs



- This case is similar in some aspects.
- However, the #ผีน้อย showed us the relationship between inequality and scapegoating
- <https://thisrupt.co/current-affairs/illegal-workers-in-south-korea/>

Poverty and COVID-19: In Germany

- Ettensperger (2020) presented that there was a lack of evidence to link between poverty related indicators and case and mortality rates of the outbreak in Germany.
- Only employment in low qualification jobs approximated by the job training variable consistently affected case numbers in urban districts in the expected direction.
- Why?

Poverty and COVID-19: In Germany

- A relatively universal and accessible health care system, with less income dependent clinical outcomes and high accessibility for all social groups might be causing this.
- Very rapid and effective response in reducing case numbers in Germany might have been responsible for the much lower death toll on deprived communities and zones.