

# Global Inequality & Growth:

## *Inequality between countries*

Ludvig Wier



## Global inequality has two dimensions

1. **Between country inequality: e.g. difference between Denmark and China (focus of today)**
2. Within country inequality: e.g. top income shares in Denmark (next time)

# Tonight: Inequality between countries!



Between country inequality since 1980

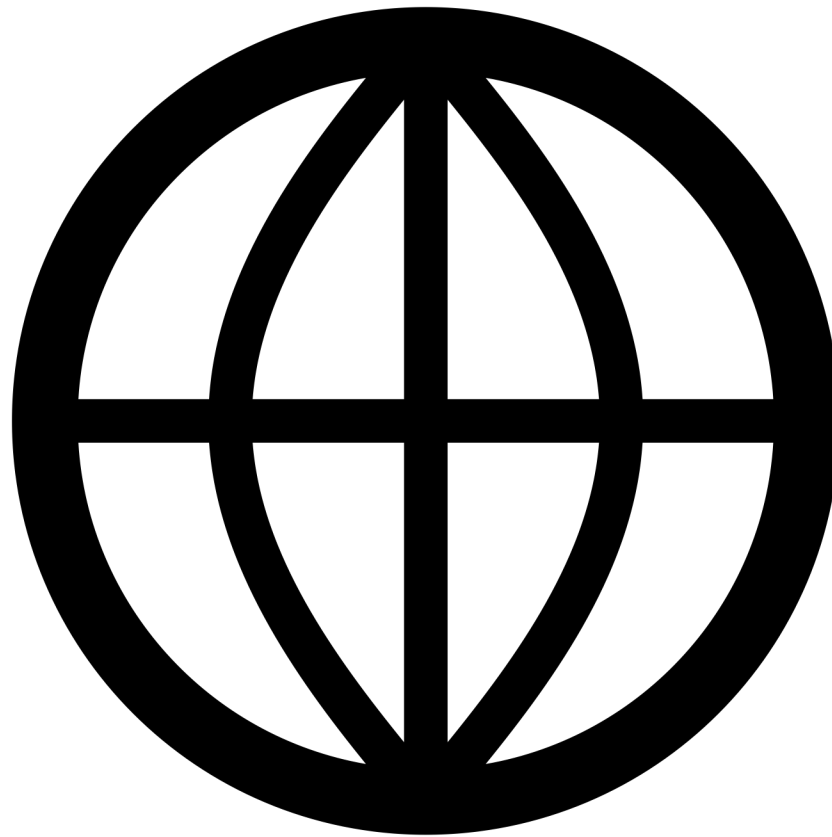


A very long-run perspective



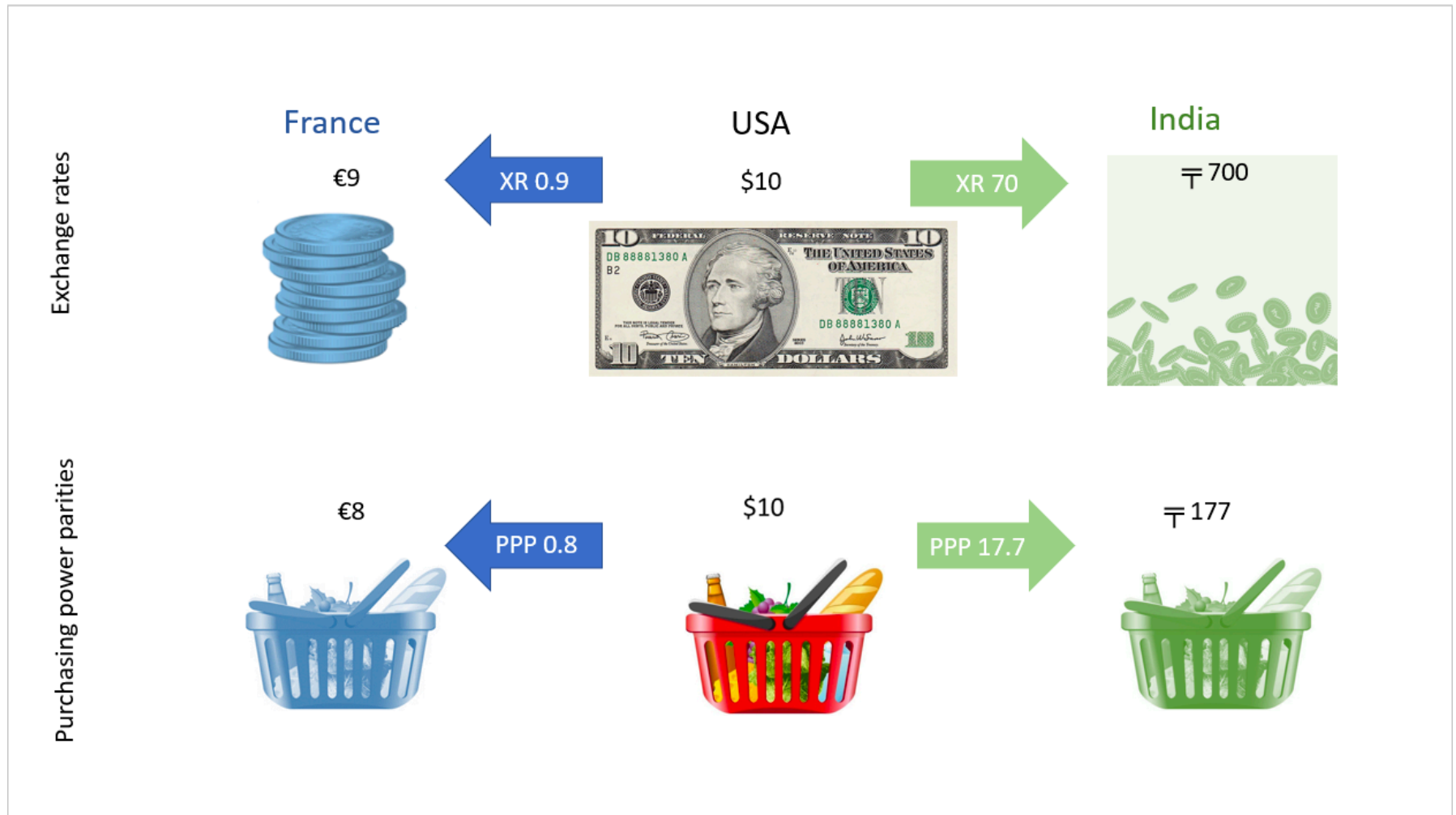
The future of inequality between countries

## Between country inequality





# Basic concept for today: PPP exchange rate





## Basic orders of magnitude for today

Average per adult monthly income, globally = \$1,740 (PPP)  
(Memo: at market exchange rate: \$1,090)

- North America: \$5,490 ( $3 \times$  global average)
- EU: \$3,420 ( $2 \times$  global average)
- China: \$1,520 (90% of global average)
- India: \$750 (45% of global average)
- Sub-Saharan Africa: \$560 (30% of global average =  $1/10$  of North America)



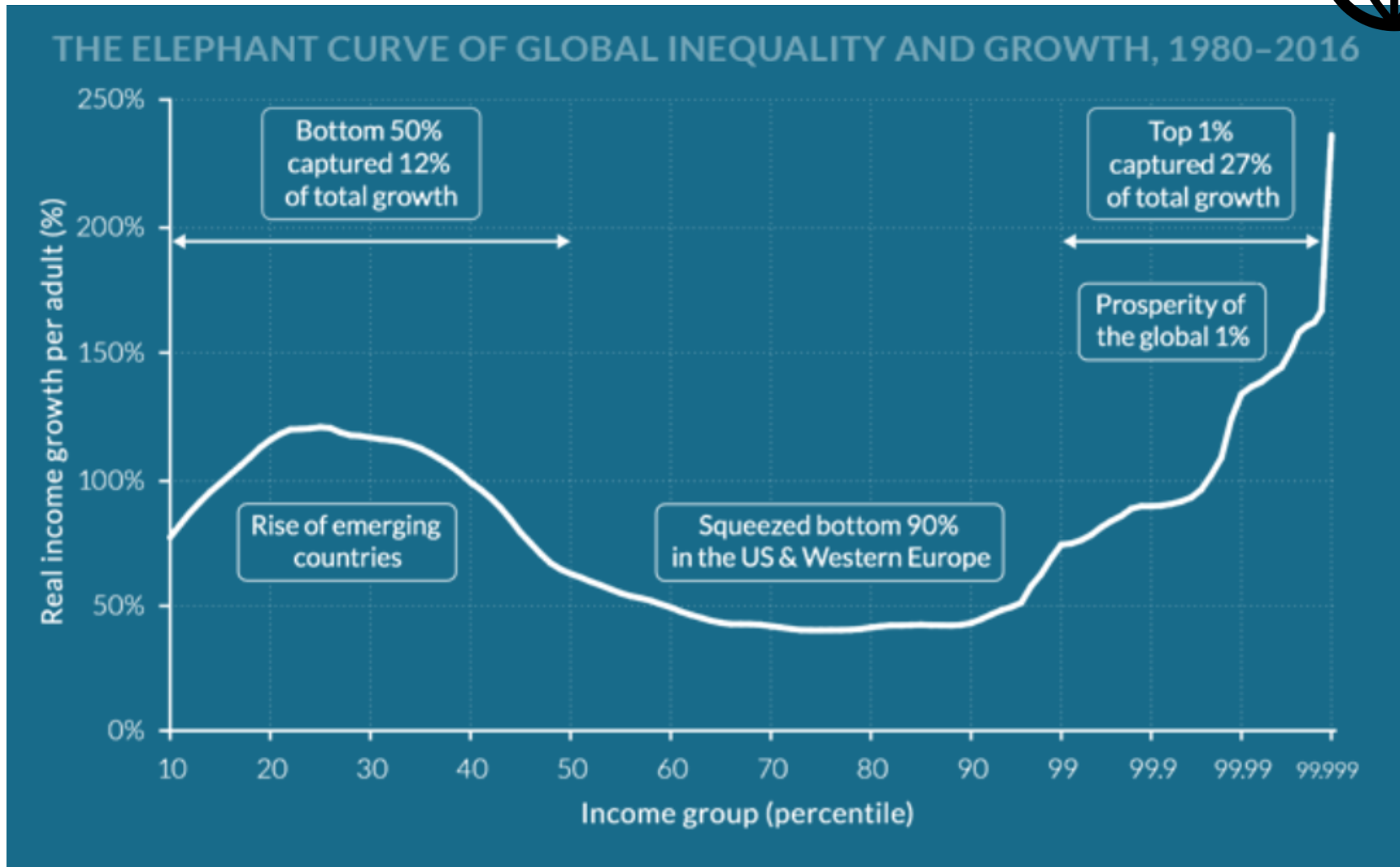
## Changes in shares of global income

In 1980:

- China = 3% of global income
- North America = 20%
- EU = 28%

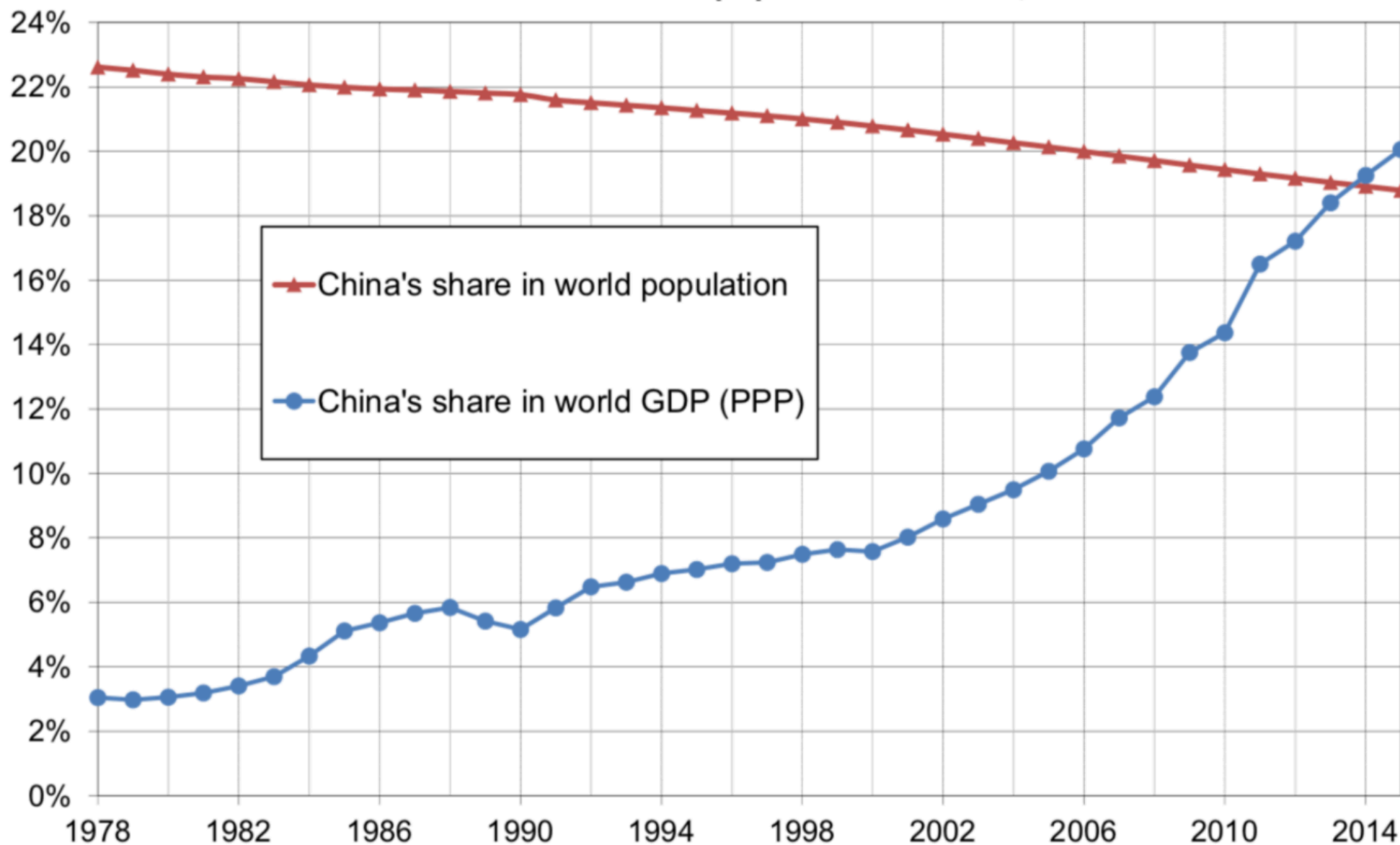
Today:

- China = 19% of global income
- North America = 17%
- EU = 17%



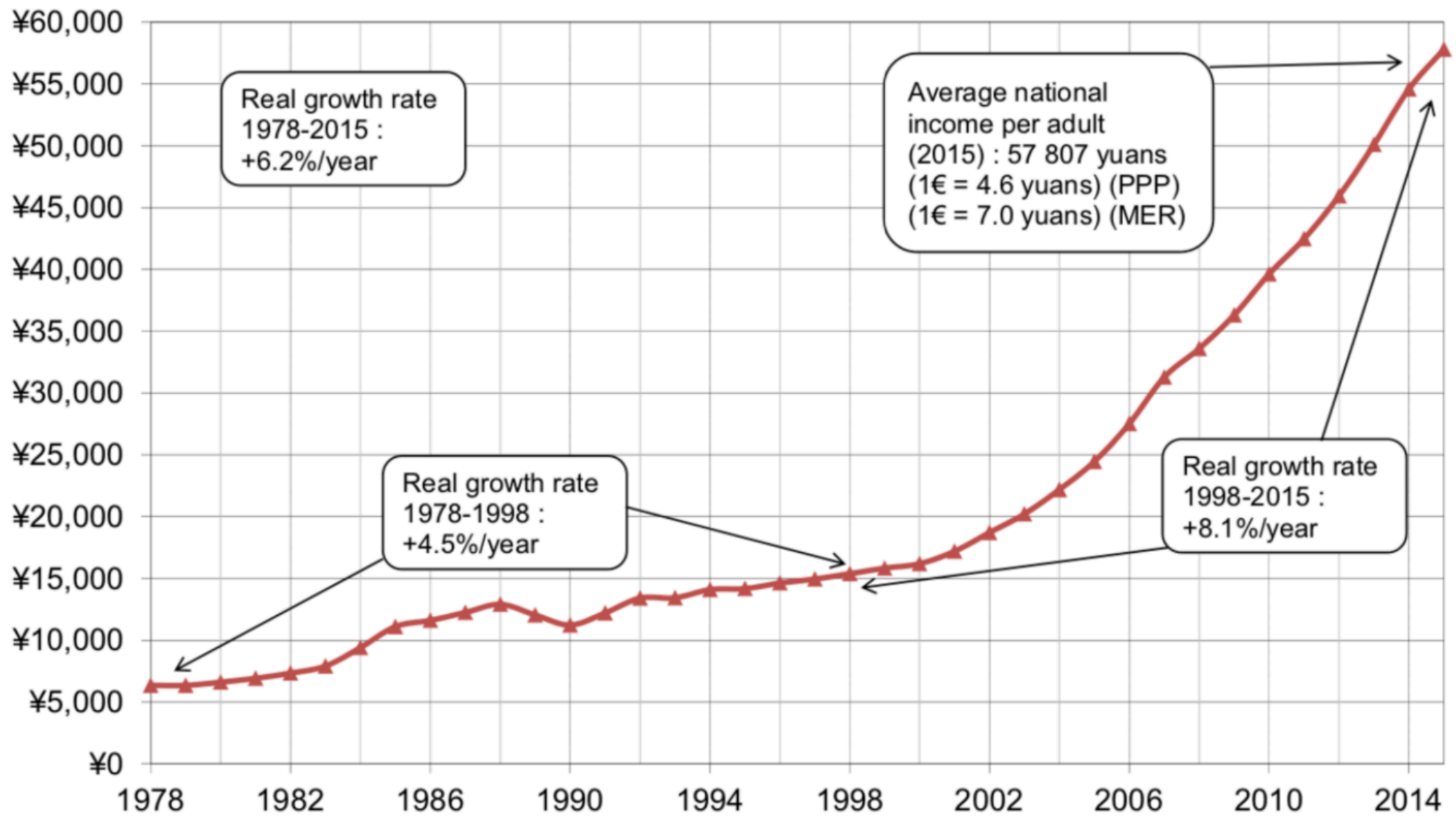


**A. China's share in world population and GDP, 1978-2015**



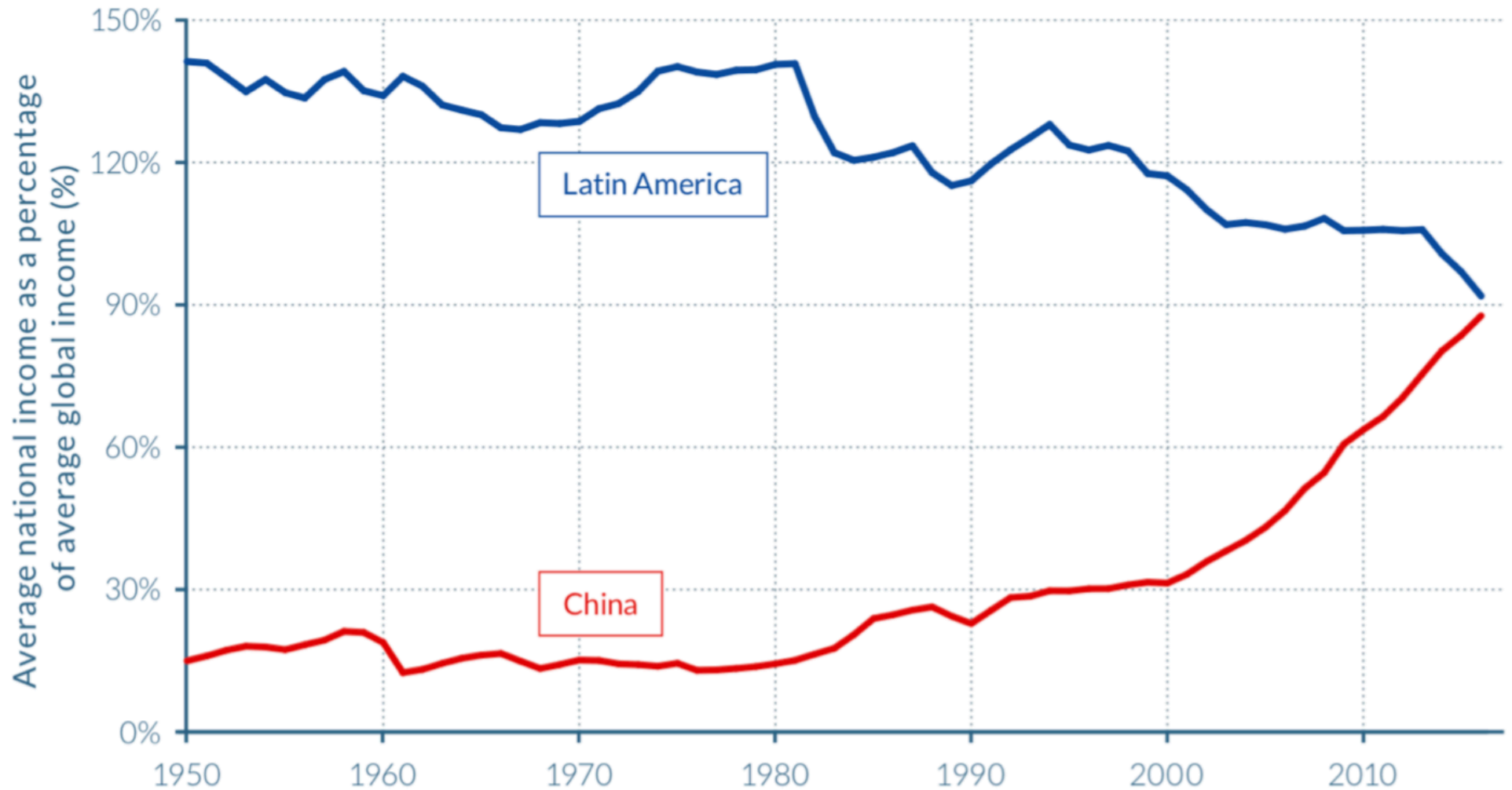
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## B. The rise of per adult real national income, 1978-2015 (2015 yuans)



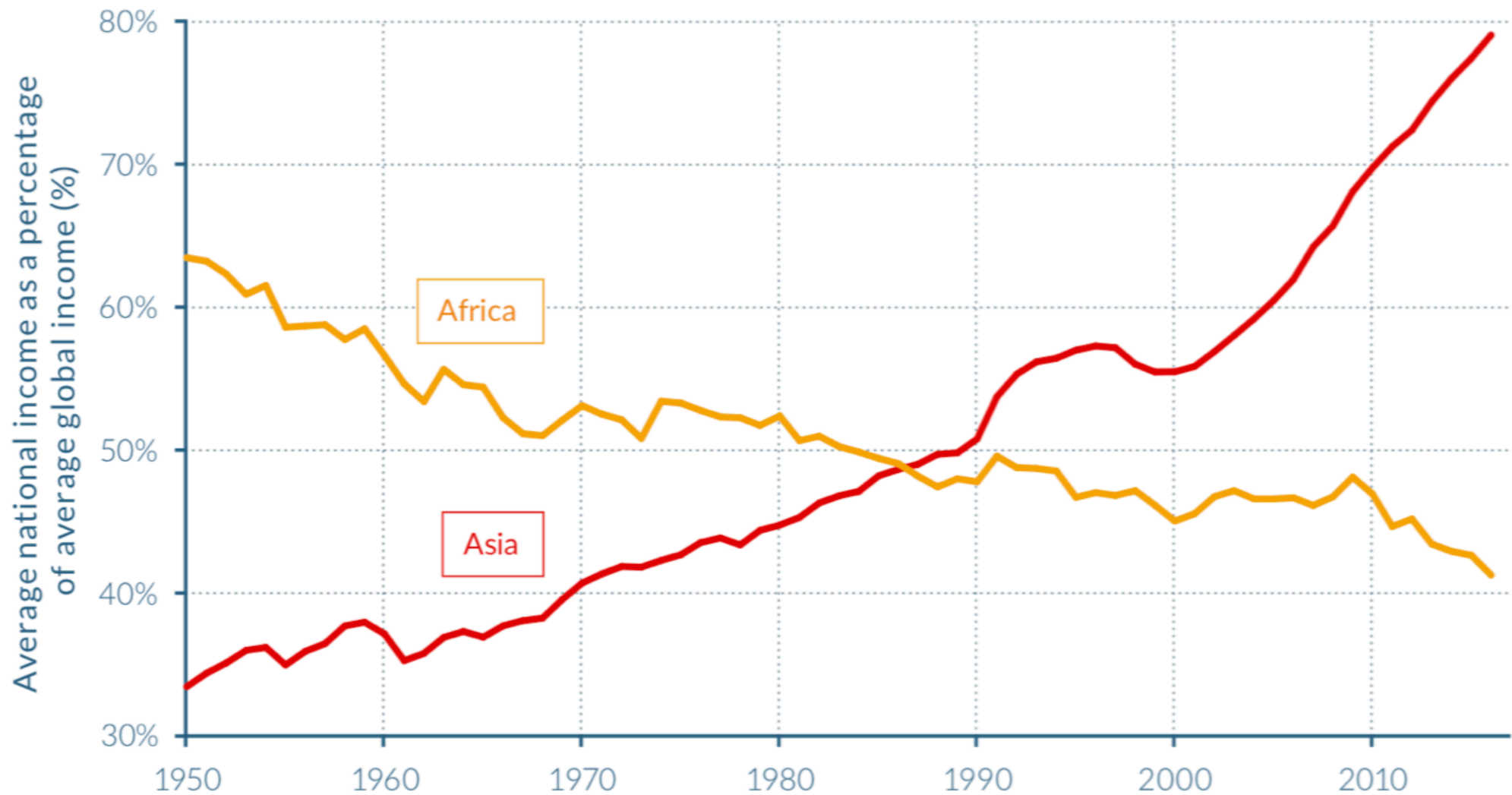
National income divided by adult population. National income = GDP - capital depreciation + net foreign income.

## Average income in China and Latin America relative to the global average, 1950–2016



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

## Average income in Africa and Asia relative to the global average, 1950–2016



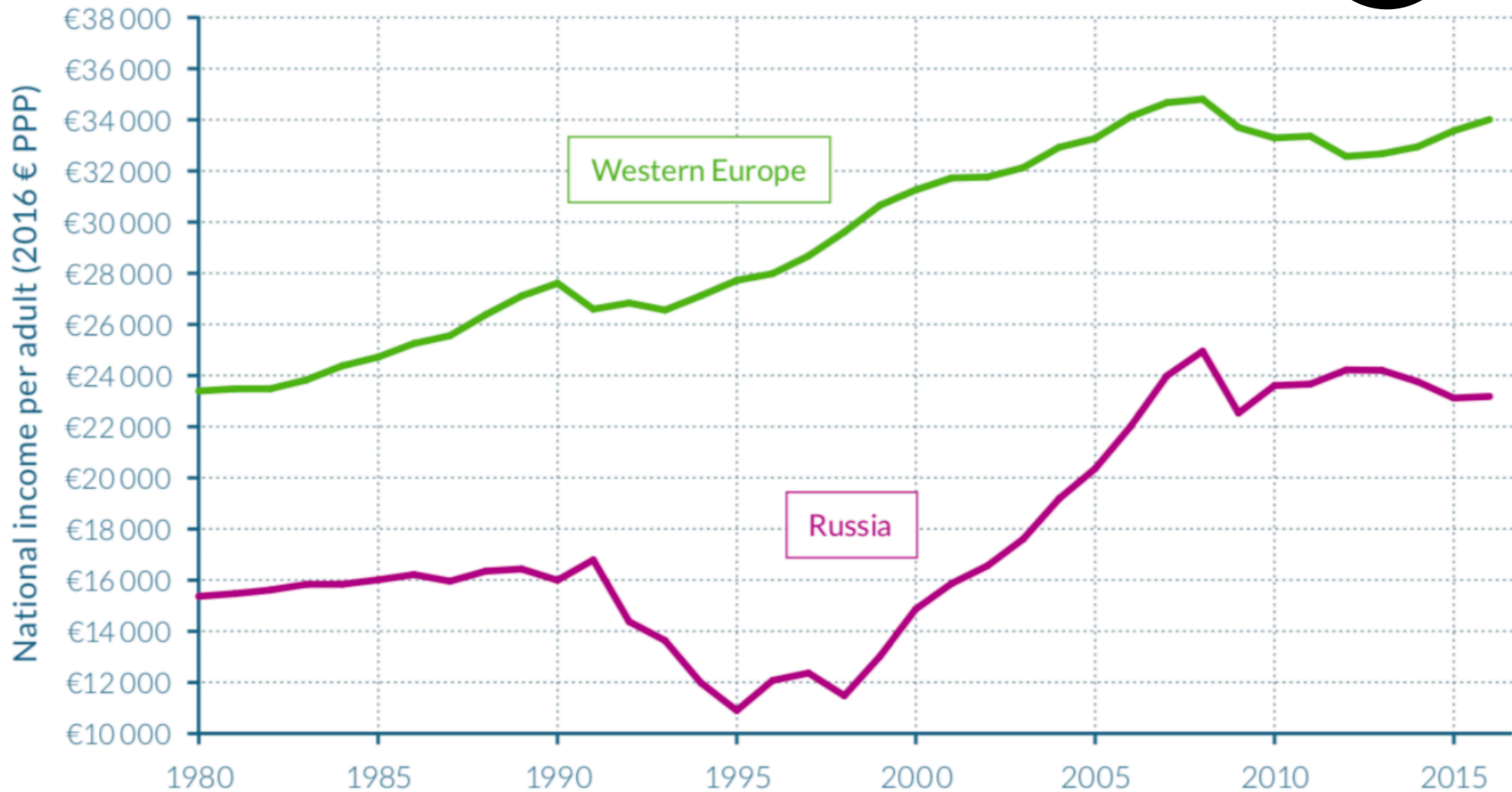


## Why is Africa falling behind?

- Africa's per capita income (constant PPP) grew by 30%...
- ... but the World grew by 85%

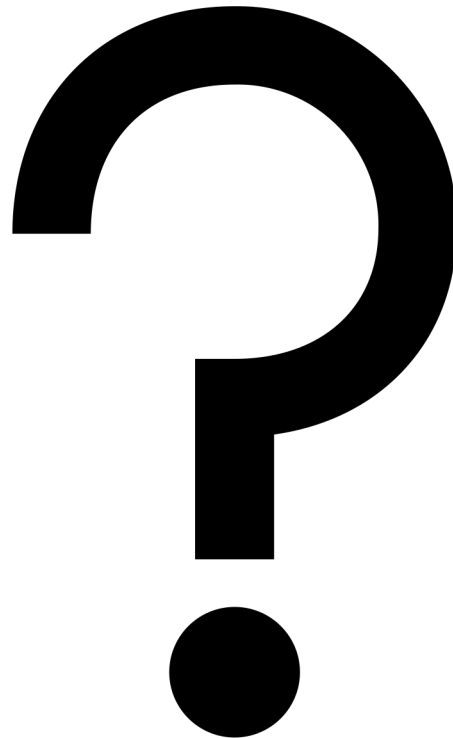


## Average national income per adult in Russia and Western Europe, 1980–2016



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

Why have countries converged?



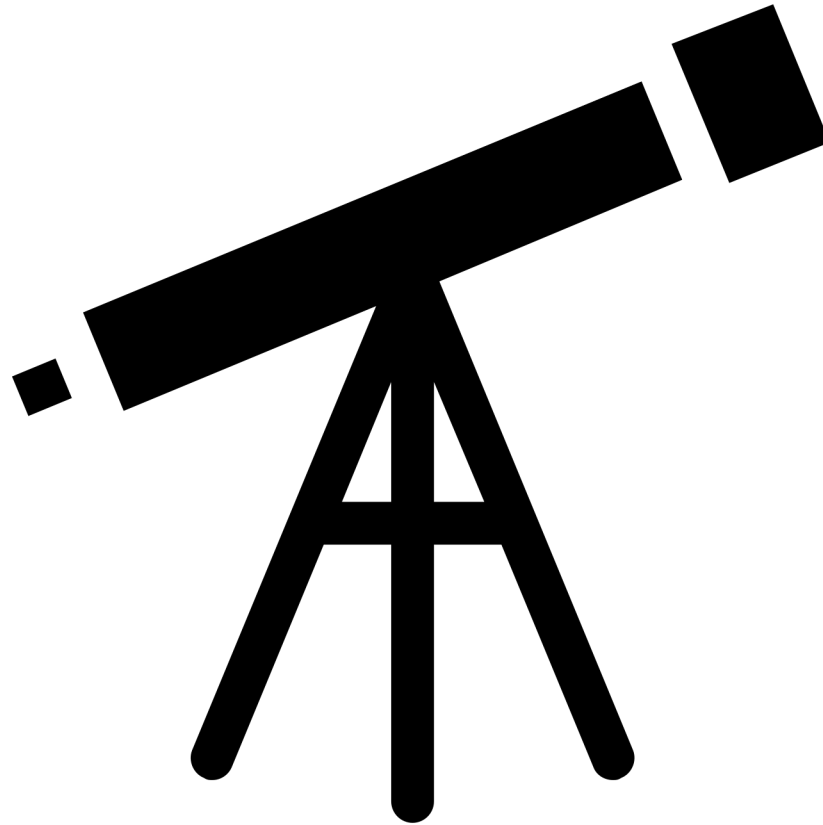


## Why have countries converged?

- Openness: diffusion of technology, know-how, trade (specialization)
- Reform of institutions
- Domestic investment: education, health, etc. (strong correlation between tax/GDP ratio and income per capita)
- Development assistance
- Limited evidence for role of foreign capital flows – Helps convergence in output but not income



## A very long-run perspective



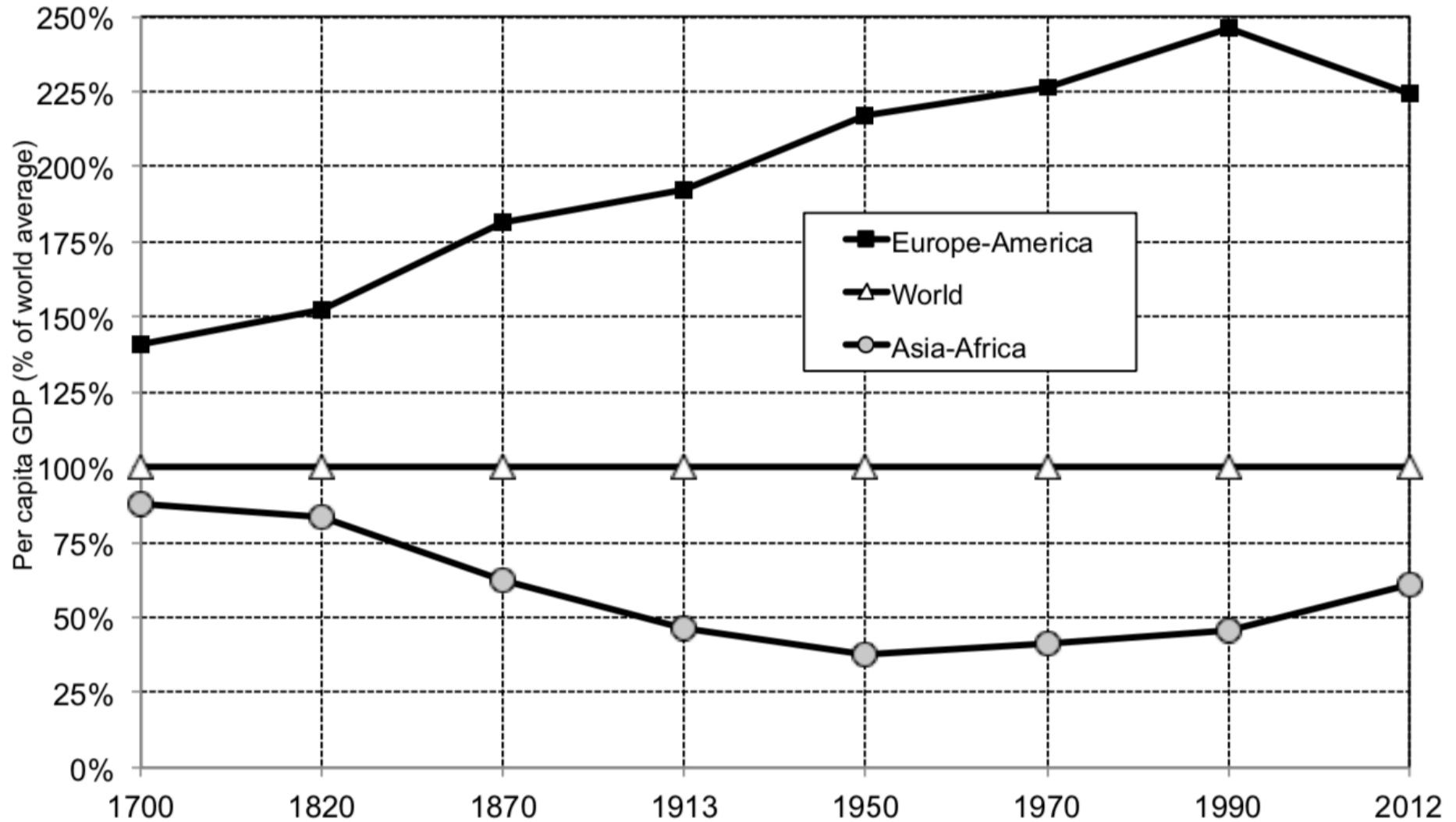


## Between-country inequality in the long run

Two phases in between-country income inequality 1700-2015:

- Divergence between Western and other countries during 19th century & until mid-20th century
- Convergence since 1980s

## Global inequality 1700-2012: divergence then convergence?



Per capita GDP in Asia-Africa went from 37% of world average in 1950 to 61% in 2012.

Sources and series: Piketty (2014) see [piketty.pse.ens.fr/capital21c](http://piketty.pse.ens.fr/capital21c).



## Data sources on long-run population and output

- Maddison project database: <http://www.ggdnc.net/maddison/>
- Recent decades: World Bank World Development Indicators: <http://data.worldbank.org>
- Population projections: United Nations World Population Prospects: [esa.un.org/wpp](http://esa.un.org/wpp)



## Explaining divergence

Huge literature on long-run developments and why some countries are richer than others?

- Smith: market institutions, property rights
- Marx: primitive accumulation
- Weber: protestant ethics

Here emphasize some recent important work



## Armed trade and colonial domination → allow West to escape ecological constraint

Pomeranz, 2000

- 1750-1800 Western Europe & China at similar levels of development
- But massive deforestation in 18th century: from 1500 to 1800, share of forested land goes from 30-40% to 5-10% in Europe
- Trade and colonial domination → escape from Malthusian trap
- Key role of colonization of America & armed trade → how Europe
- prevails in Asian trade over China



## European domination over global textile manufacturing (Beckert, 2004)

- Cotton = key 19th century commodity, the Industrial Revolution's “launching pad”
- European domination over textile: violence at every stage
- West appropriates land in America, sends slaves from Africa to produce raw cotton, bans Indian textiles
- → 1750-1850: Europe controls global textile manufacturing
- Key role of slavery: huge acceleration of slave trade 1780–1860
- Only after abolition of slavery in US does Indian cotton rise again

## Climate and ecology

Large strand of literature finding an impact of climate and ecology on long-run economic outcomes, e.g.:

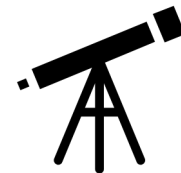
- Areas with naturally higher infectious disease rates due to climate → lower long-run economic growth (Alsan, 2015; Andersen et al. 2016)
- Lower concentration of nutritional minerals in soil → lower long-run economic growth (Field et al., 2009)
- Areas with higher prevalence of drought experience more conflict → lower long-run economic growth (e.g. Vors et al., 2012)



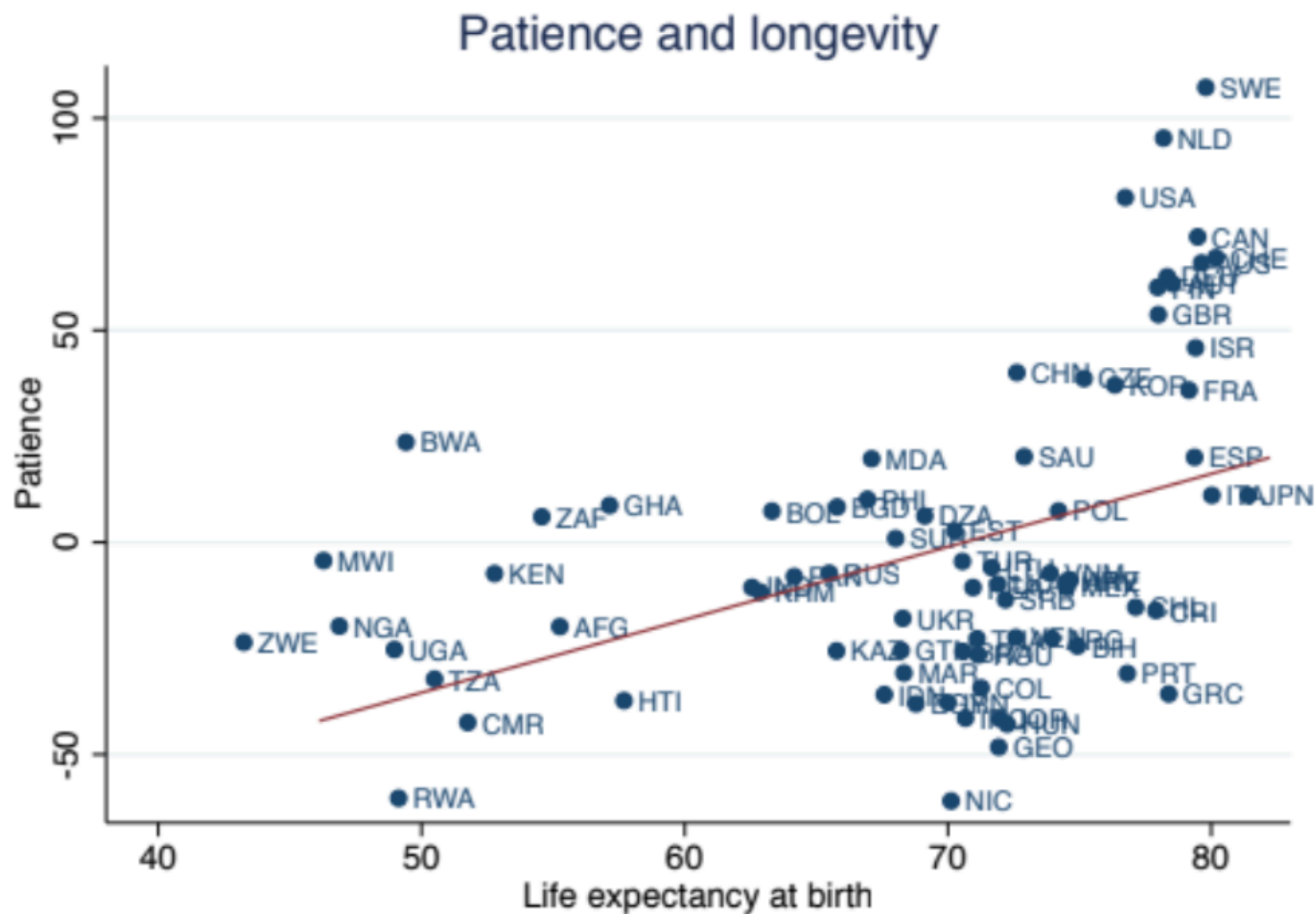
# The Effect of the TseTse Fly on African Development<sup>†</sup>

By MARCELLA ALSAN\*

*The TseTse fly is unique to Africa and transmits a parasite harmful to humans and lethal to livestock. This paper tests the hypothesis that the TseTse reduced the ability of Africans to generate an agricultural surplus historically. Ethnic groups inhabiting TseTse-suitable areas were less likely to use domesticated animals and the plow, less likely to be politically centralized, and had a lower population density. These correlations are not found in the tropics outside of Africa, where the fly does not exist. The evidence suggests current economic performance is affected by the TseTse through the channel of precolonial political centralization. (JEL I12, N57, O13, O17, Q12, Q16, Q18)*



# Poverty trap



*Falk, Hermle and Sund (2019)*



## The future of between country inequality

- Today, Europe + North America = about 50% of world GDP (as in 1860)
- At some point during 21th century: down to 20-30% (= share of Europe + America in world population = convergence)
- When exactly? Nobody knows.

# The future of global growth





## The future of global growth

**$g = n + h$  = population growth + productivity growth**

- $h$  comes from education, innovation, etc.
- Over 1700-2018, at the global level  $g = 1.6\%$  and  $n = 0.8\%$

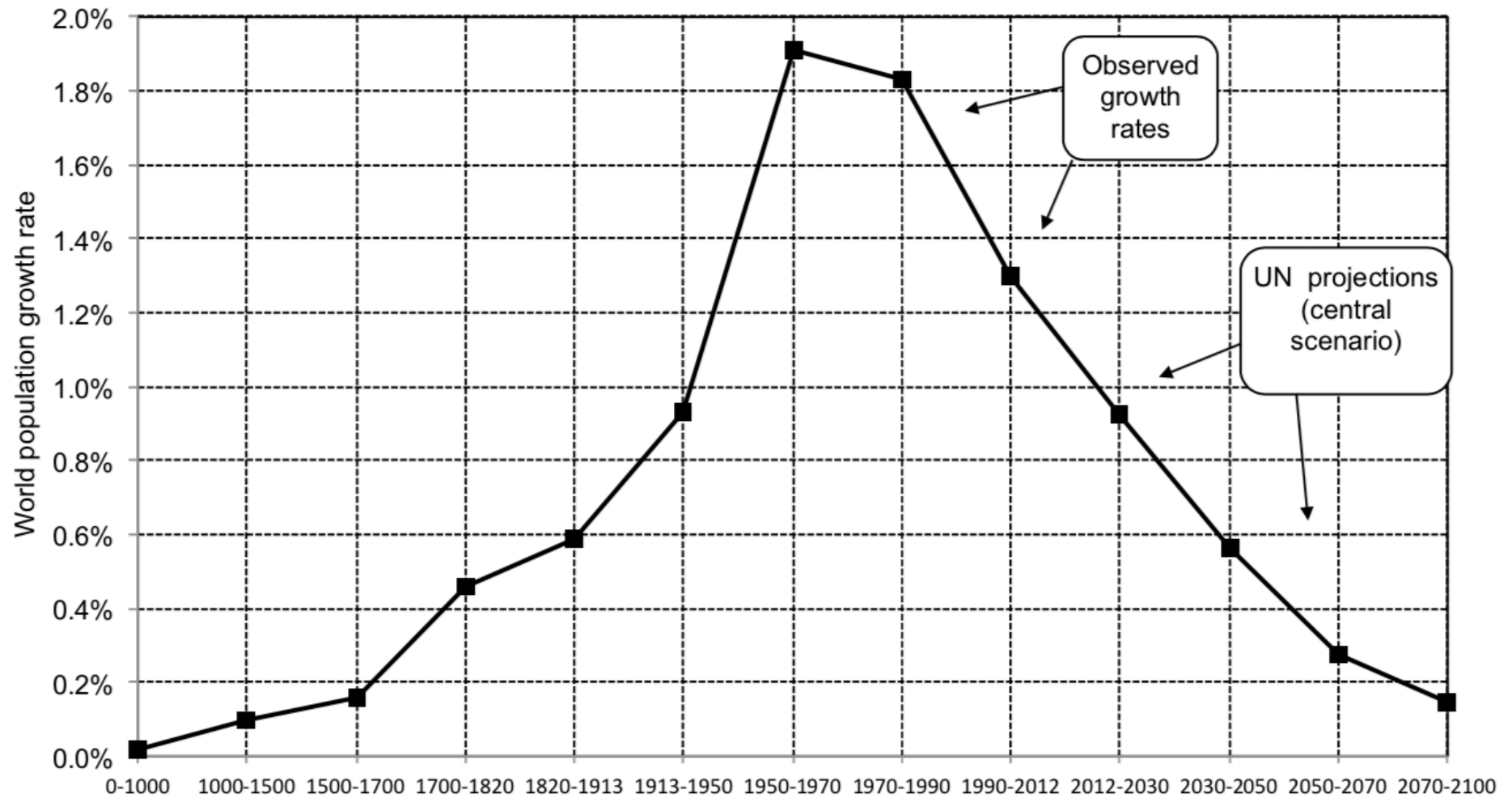


## The future of global growth

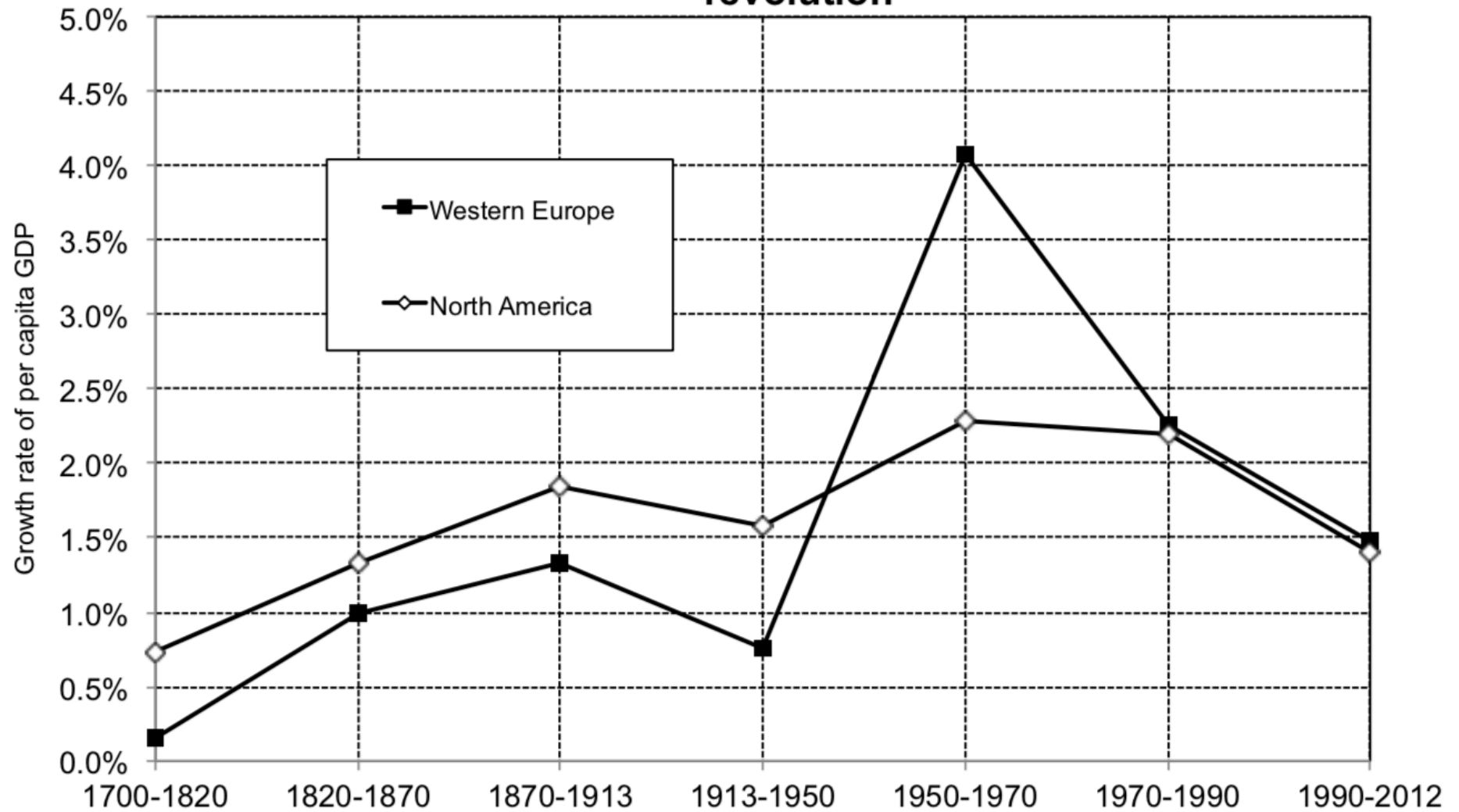
$g = n + h = \text{population growth} + \text{productivity growth}$

- Productivity growth  $h$  always slow for countries at world technological frontier
- Once global convergence over,  $h$  might be low everywhere
- Population growth  $n$  seems to  $\rightarrow 0$
- So in very long run, maybe  $n \approx 0\%$  and  $h \approx 1-1.5\%$
- Some economists even less optimistic: long-run  $g < 1\%$ ?

## The growth rate of world population from Antiquity to 2100



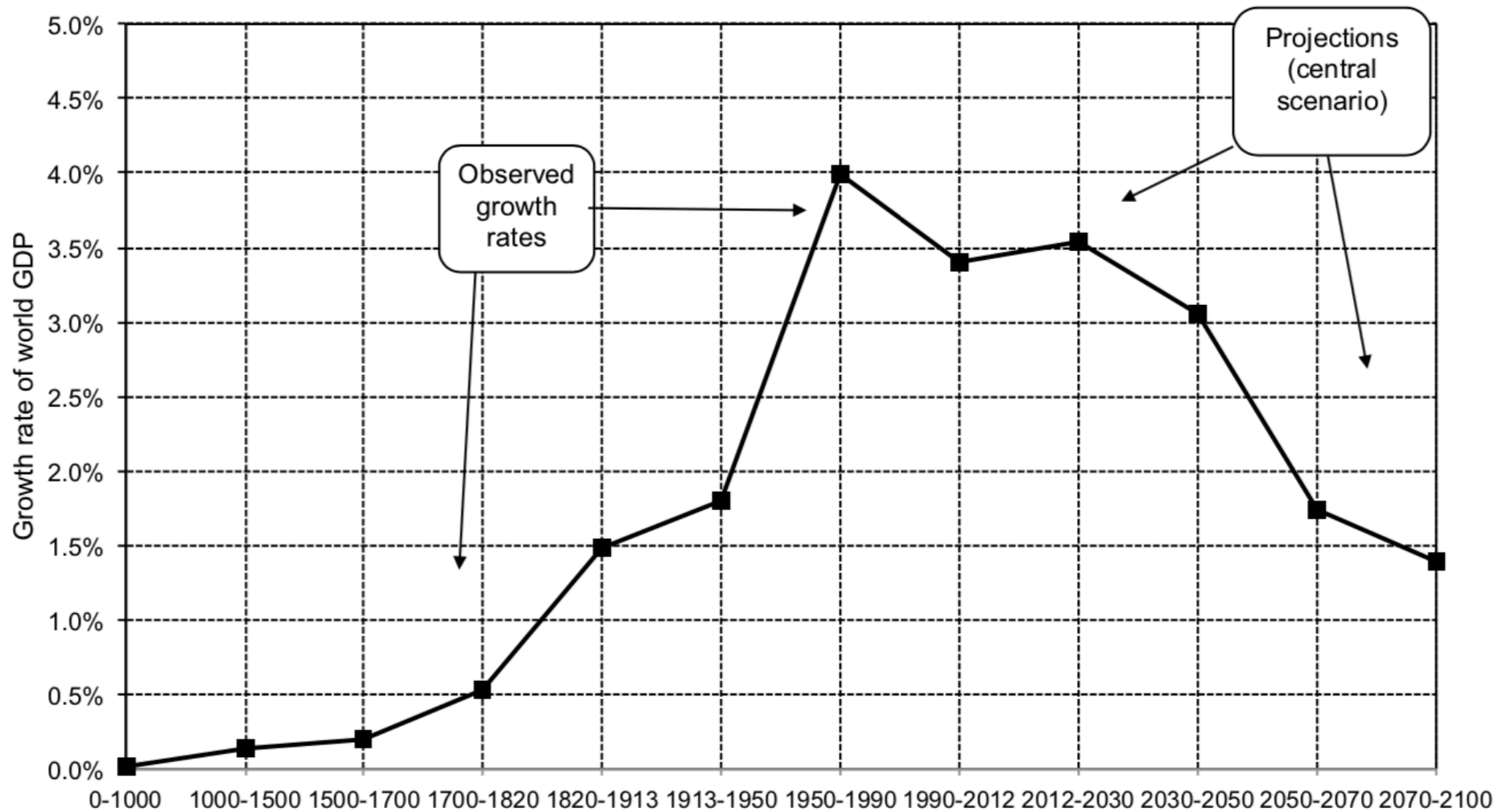
## The growth rate of per capita output since the industrial revolution



The growth rate of per capita output surpassed 4% per year in Europe between 1950 and 1970, before returning to American levels. Sources: Piketty (2014) see [piketty.pse.ens.fr/capital21c](http://piketty.pse.ens.fr/capital21c)



## The growth rate of world output from Antiquity until 2100



The growth rate of world output surpassed 4% from 1950 to 1990. If the convergence process goes on it will drop below 2% by 2050. Sources: Piketty (2014), see [piketty.pse.ens.fr/capital21c](http://piketty.pse.ens.fr/capital21c).



## The future of global growth: Climate change and resource shortage

$g = n + h + x =$  **population growth + productivity growth  
+ resource exploitation**

- $x$  comes from depleting resources such as oil, minerals and clean air
- Since forever  $x > 0$ , but might that end?
- If  $x \ll 0$  and  $n + h$  is small  $\rightarrow g < 0$

## References:

- Beckert, Sven, *Empire of Cotton: A Global History*, Alfred A. Knopf, 2004.
- Pomeranz, Kenneth, *The Great Divergence: China and Europe in the Making of the Modern World*
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- Piketty, Thomas, Li Yang, and Gabriel Zucman, “Capital Accumulation, Private Property and Rising
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- Rosenthal, Jean-Laurent and R. Bin Wong, *Before and Beyond Divergence: The Politics of*
- *Economic Change in China and Europe*, Harvard University Press, 2011.
- *World Inequality Report 2018*, <https://wir2018.wid.world>