

Econ 133 – Global Inequality and Growth

Trends in inequality between countries

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Roadmap

1. The dynamics of between-country inequality since 1980
2. A very long run perspective
3. The future of inequality between countries

1 Between-country inequality since 1980

1.1 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)

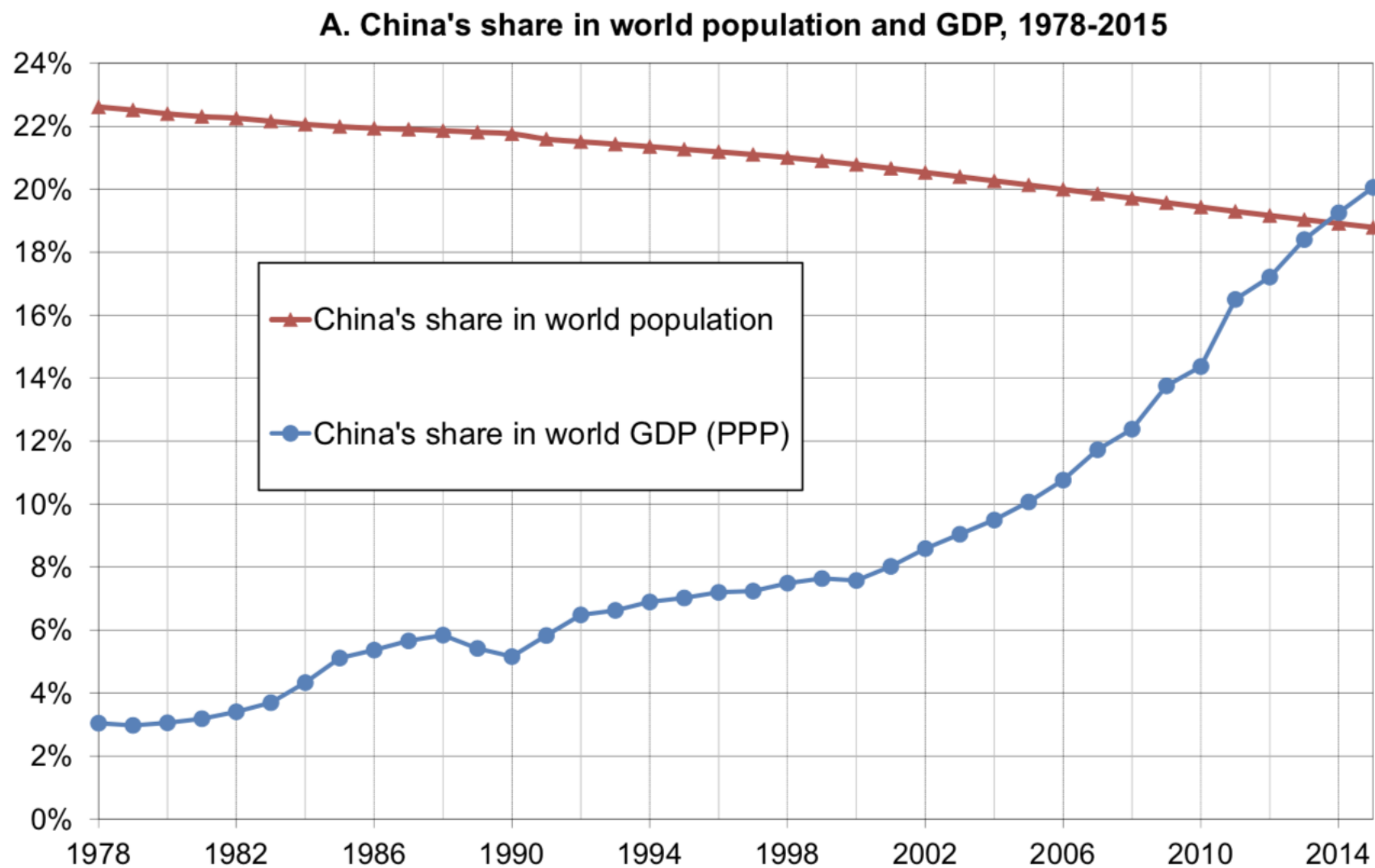
1.2 Changes in shares of global income

Today:

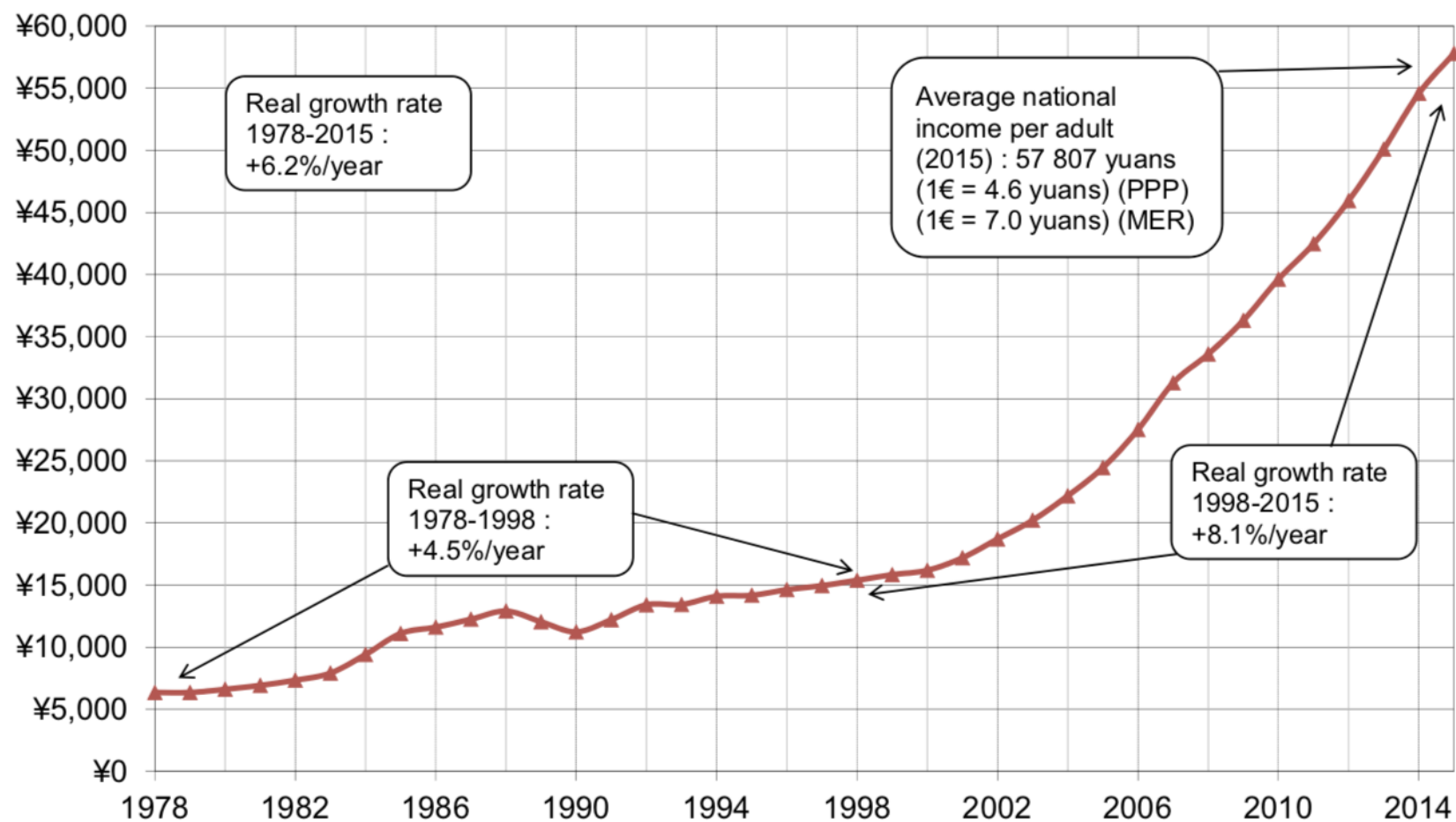
- China = 19% of global income
- North America = 17%
- EU = 17%

In 1980:

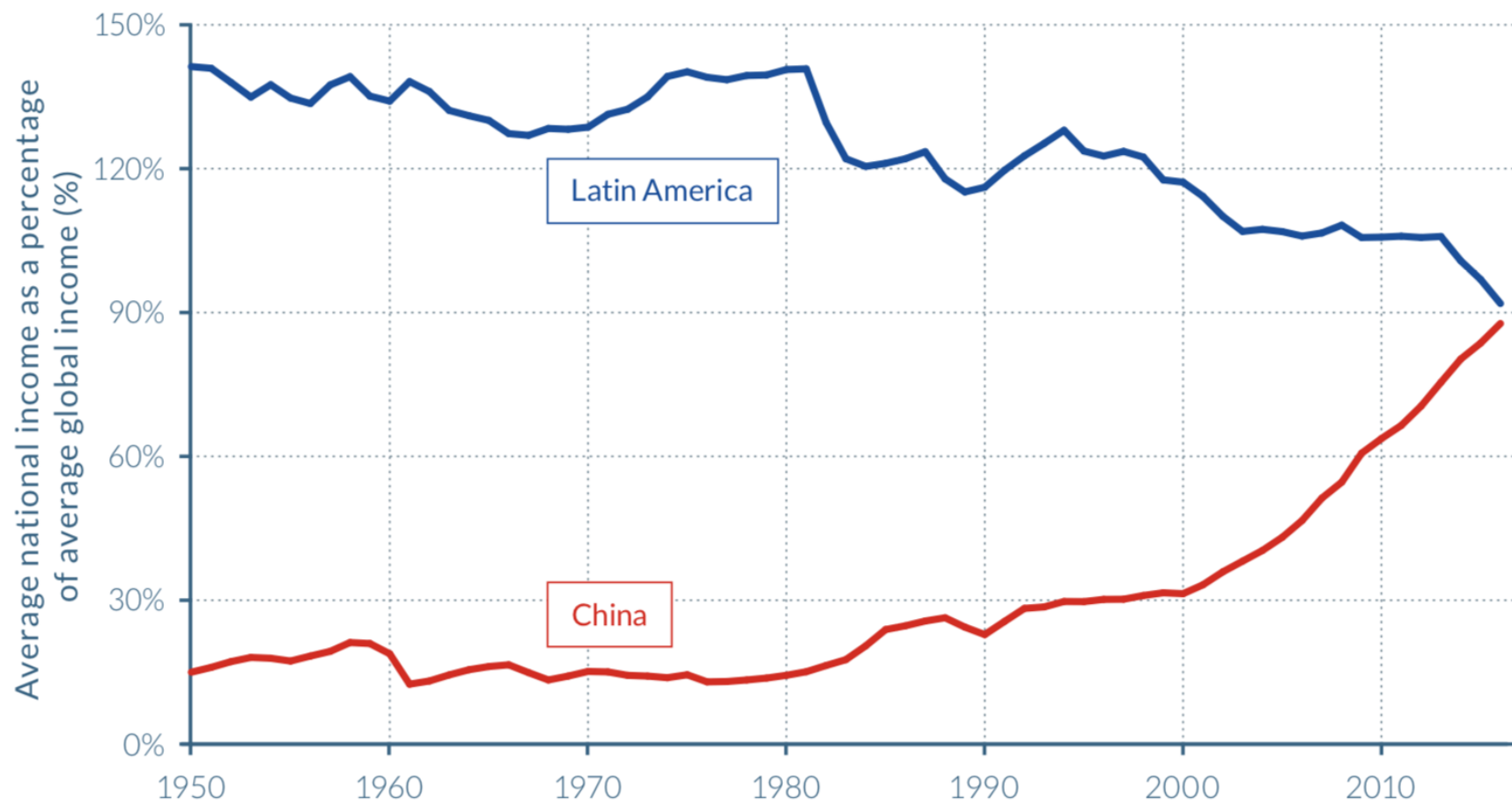
- China = 3% of global income
- North America = 20%
- EU = 28%



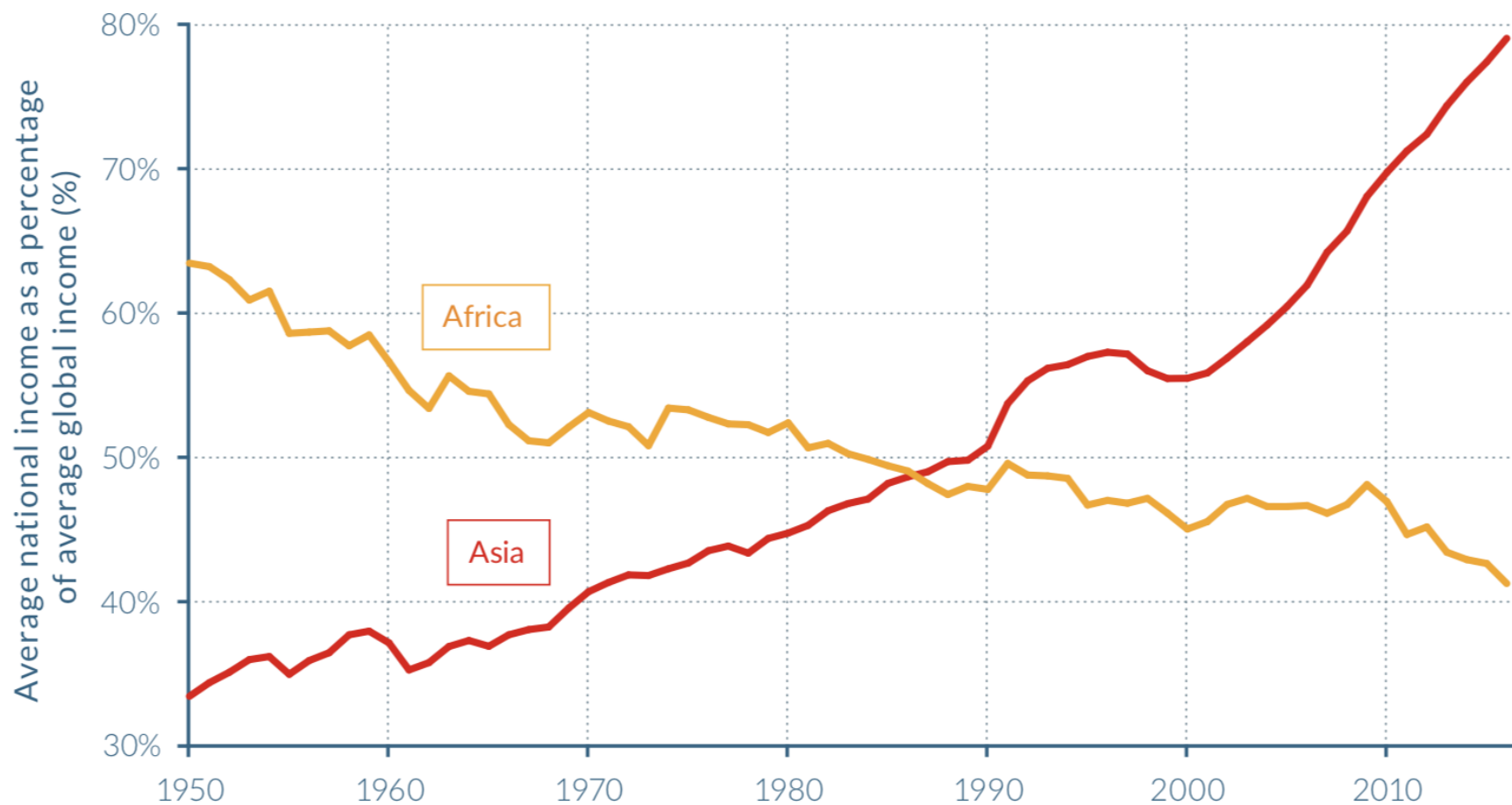
B. The rise of per adult real national income, 1978-2015 (2015 yuans)



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

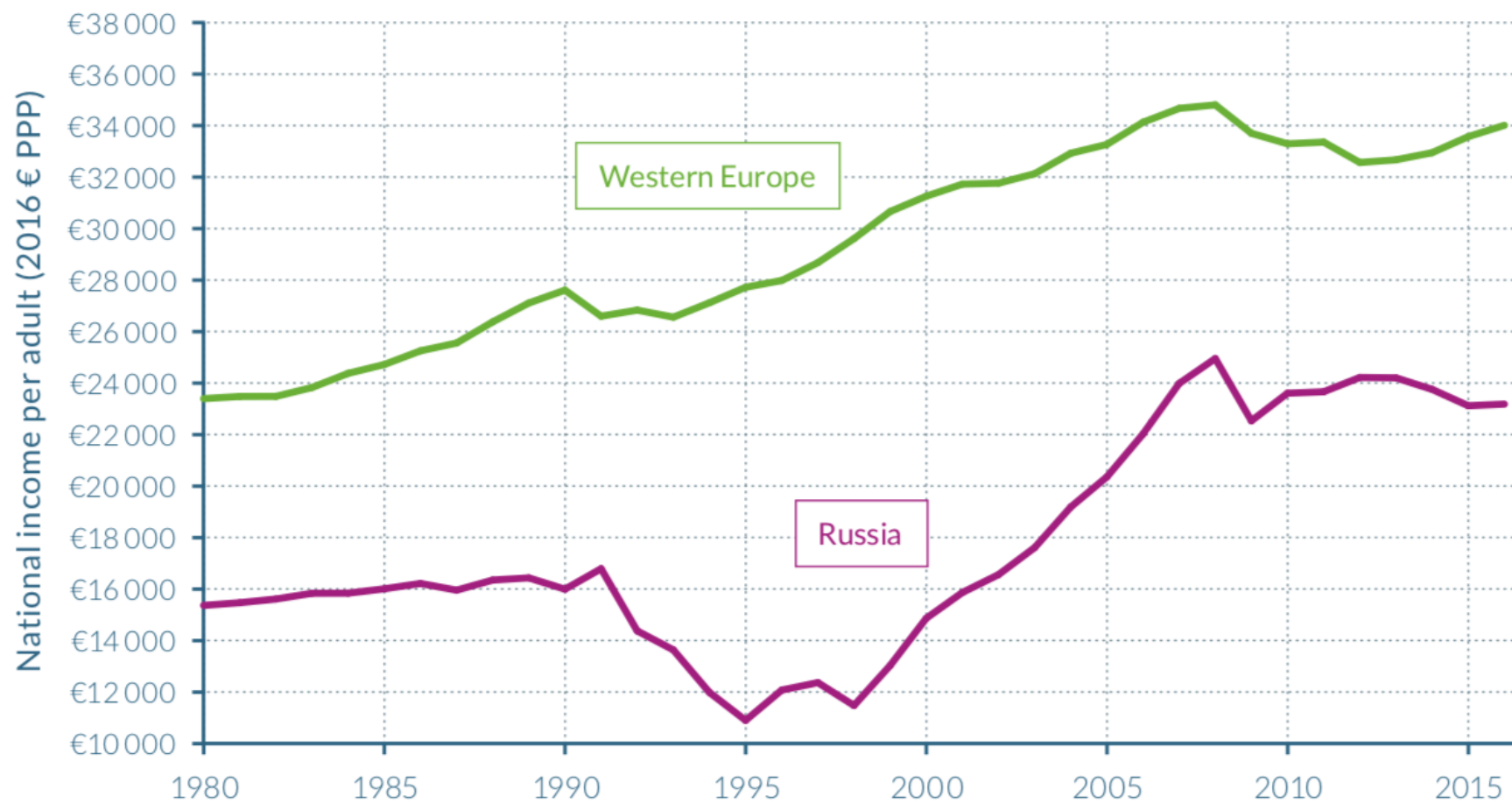
Average income in China and Latin America relative to the global average, 1950–2016

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

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

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

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



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

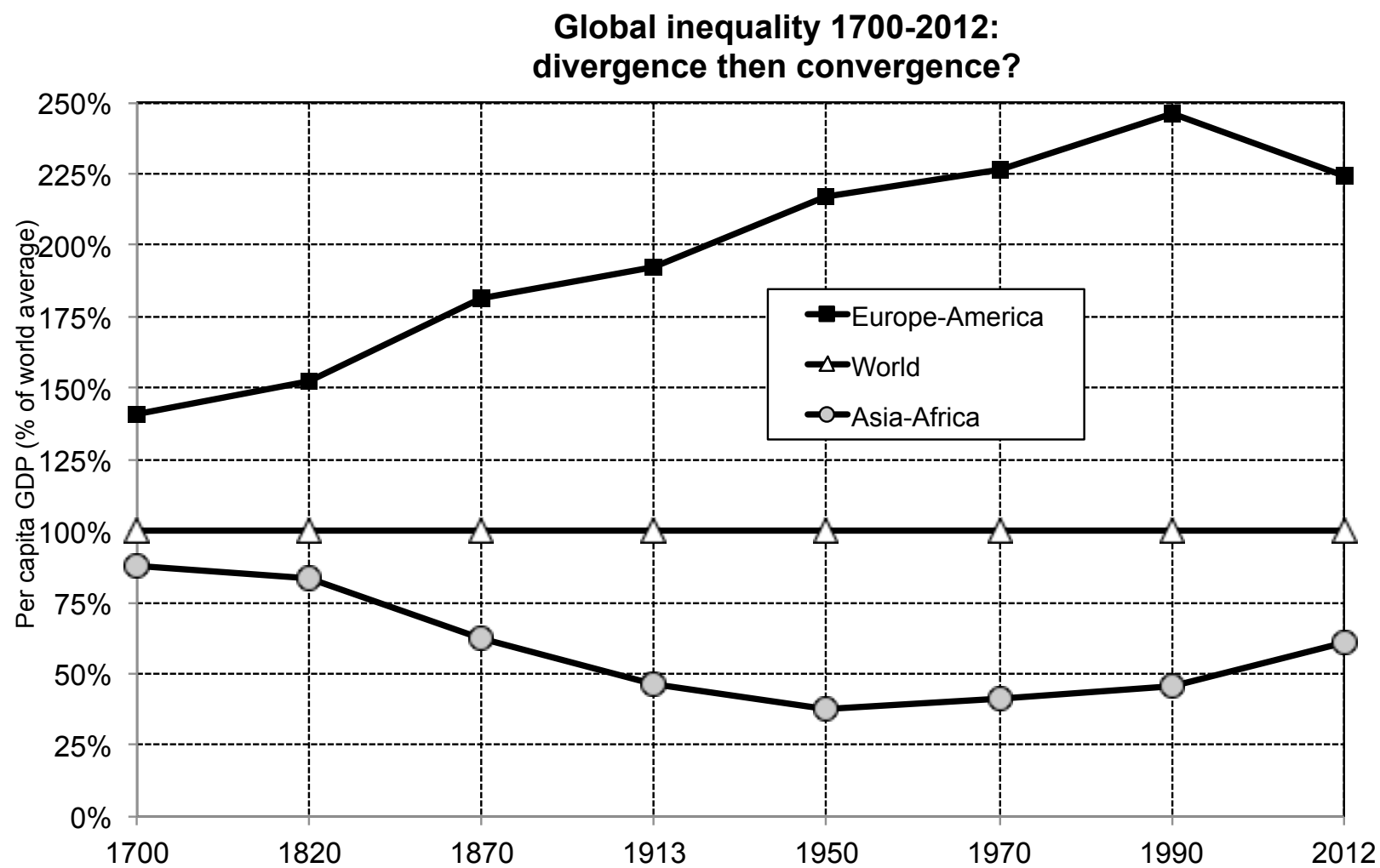
1.3 Explaining convergence

- Openness: diffusion of technology, know-how, trade (specialization)
- Limited evidence for role of foreign capital flows
 - Helps convergence in output but not income
 - Most growth success stories rely on dom. rather than foreign inv
- Domestic investment: education, health, etc. (strong correlation between tax/GDP ratio and income per capita)

2 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



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.

2.1 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

2.2 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

1. 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

2. European domination over global textile manuf (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

3. Size of political communities & conflict

- Europe: smaller polities → more competition between small states, military (and financial) innovation
- China: larger polity, less military innovation during 17c-19c
- See, e.g., Rosenthal and Wong (2011)

3 The future of between country inequality

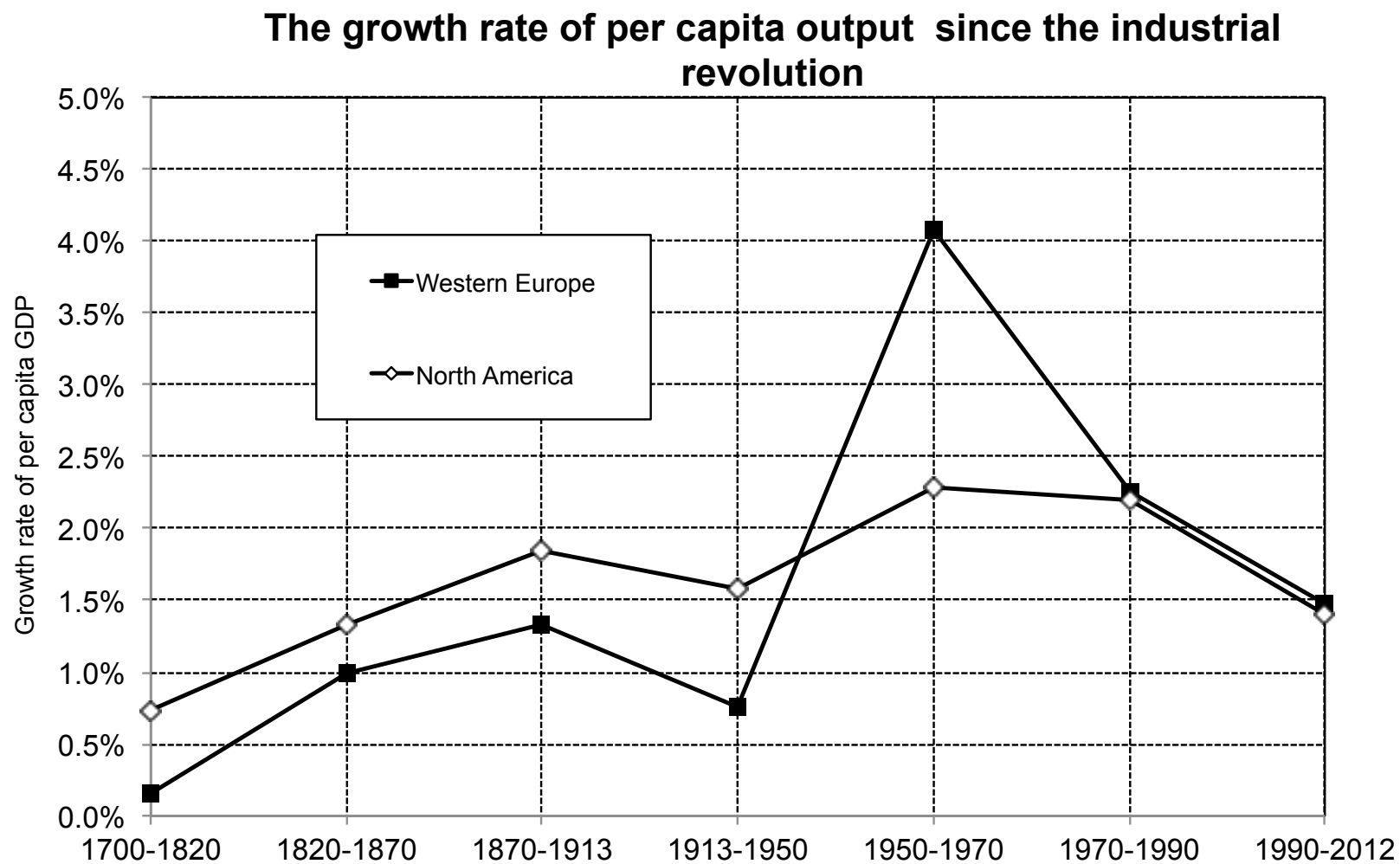
- Today, Europe + North America = about 50% of world GDP (as in 1860)
- At some point during 21th century: down to 20-30% (= share of Europe + America in world population = convergence)
- When exactly? Nobody knows. Convergence \approx 2040 in East Asia, and \approx 2090 in South Asia and Africa?

3.1 The future of global growth

Conceptual framework: The standard growth model

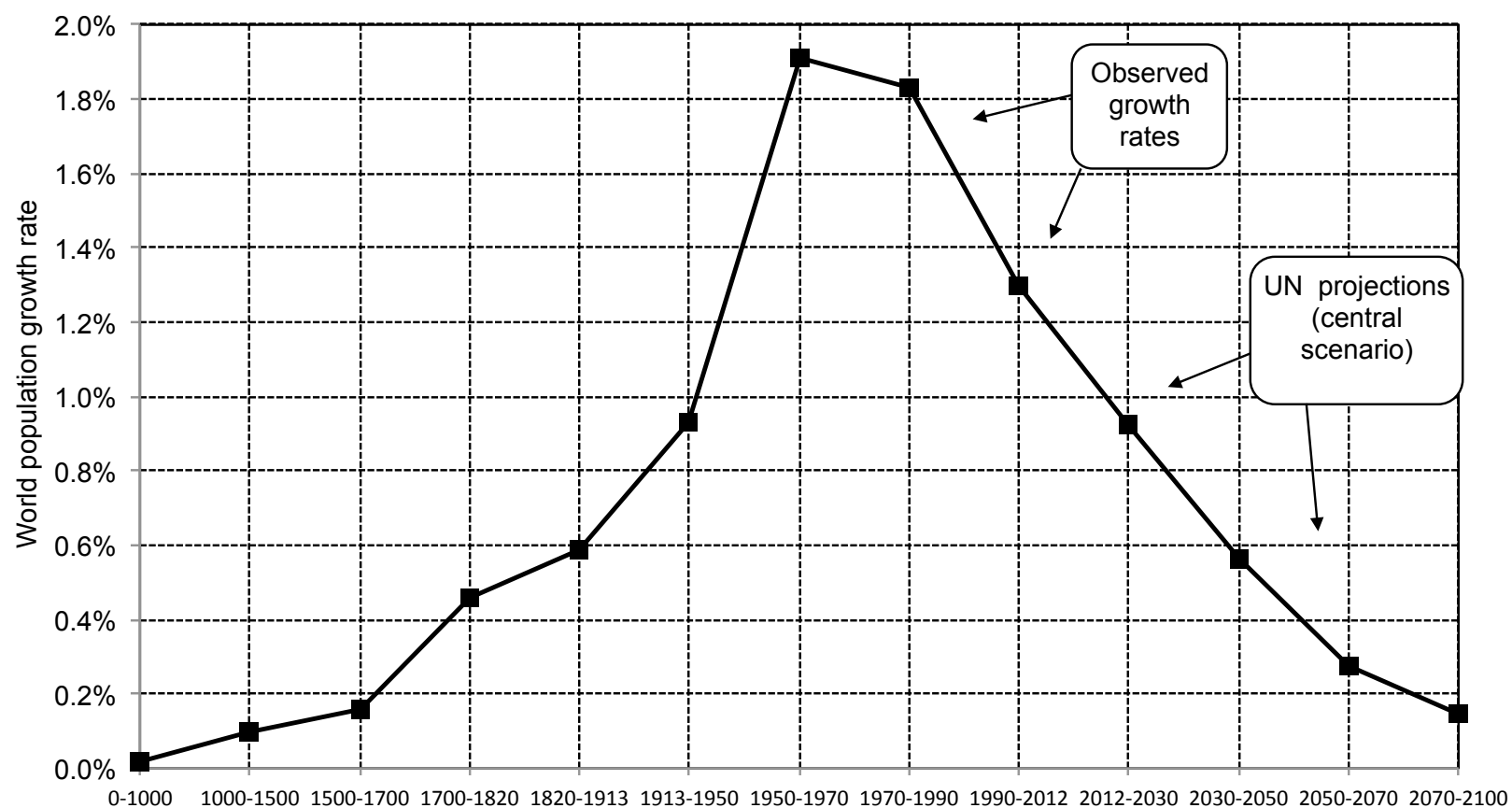
- $Y = F(K, L)$ with constant returns to scale
- e.g., Cobb-Douglas: $Y = K^\alpha L^{1-\alpha}$
- Steady-state growth path = everything grows at rate g :
 $Y_t = Y_0 e^{gt}$, $K_t = K_0 e^{gt}$ and $L_t = L_0 e^{gt}$
- Growth of $L_t = N_t \times P_t$ can be decomposed into growth of employed population $N_t = N_0 e^{nt}$ and of productivity $P_t = P_0 e^{ht}$
- i.e., $g = n + h = \text{population growth} + \text{productivity growth}$
- n comes from fertility decisions, health, etc.

- h comes from education, innovation, etc.
- Over 1700-2018, at the global level $g = 1.6\%$ and $n = 0.8\%$
- 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 $g < 1\%$?



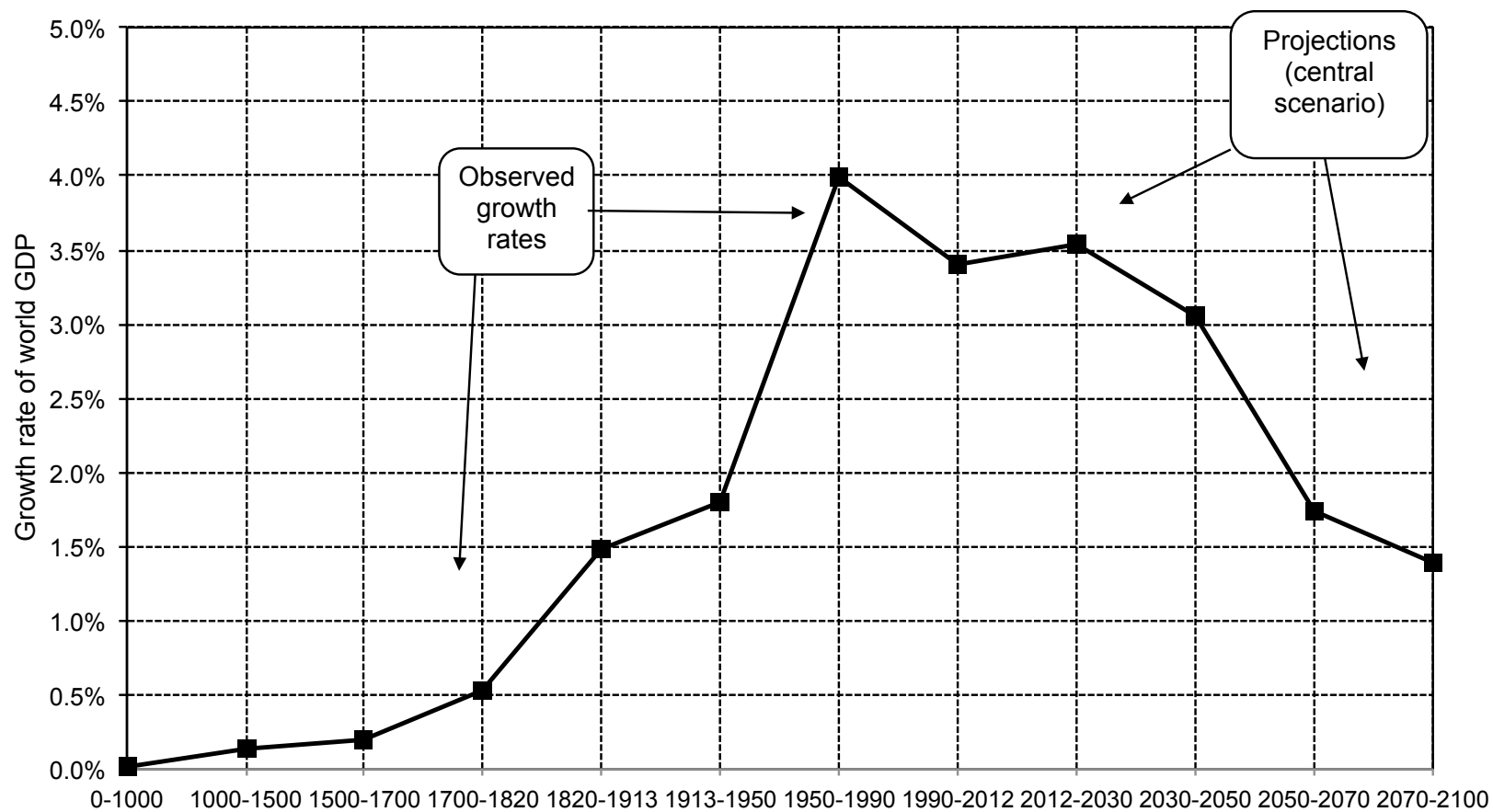
The growth rate of per capita output surpassed 4% per year in Europe between 1950 and 1970, before returning to American levels. Sources: Piketty (2014) see piketty.pse.ens.fr/capital21c

The growth rate of world population from Antiquity to 2100



The growth rate of world population was above 1% per year from 1950 to 2012 and should return toward 0% by the end of the 21st century. Sources: Piketty (2014), see 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.

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 Economy*, Princeton University Press, 2000.

Piketty, Thomas, Li Yang, and Gabriel Zucman, "Capital Accumulation, Private Property and Rising Inequality in China 1978-2015," *American Economic Review*, 2019 (web)

Rosenthal, Jean-Laurent and R. Bin Wong, *Before and Beyond Divergence: The Politics of Economic Change in China and Europe*, Harvard University Press, 2011.

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