Lecture 16:
Wrap-Up

Intermediate Macroeconomics

UT Dallas

Outline: Wrap Up

- Things to read?
- Future of U.S. and world growth?
- Q & A

Things to Read

- The Economist, FT, WSJ, NYT of course
- NBER, CEPR: Important updates on state of economic research
- Other blogs, sources?

Discussion Questions:

LR: What considerations impact U.S. and global growth over the next two decades?

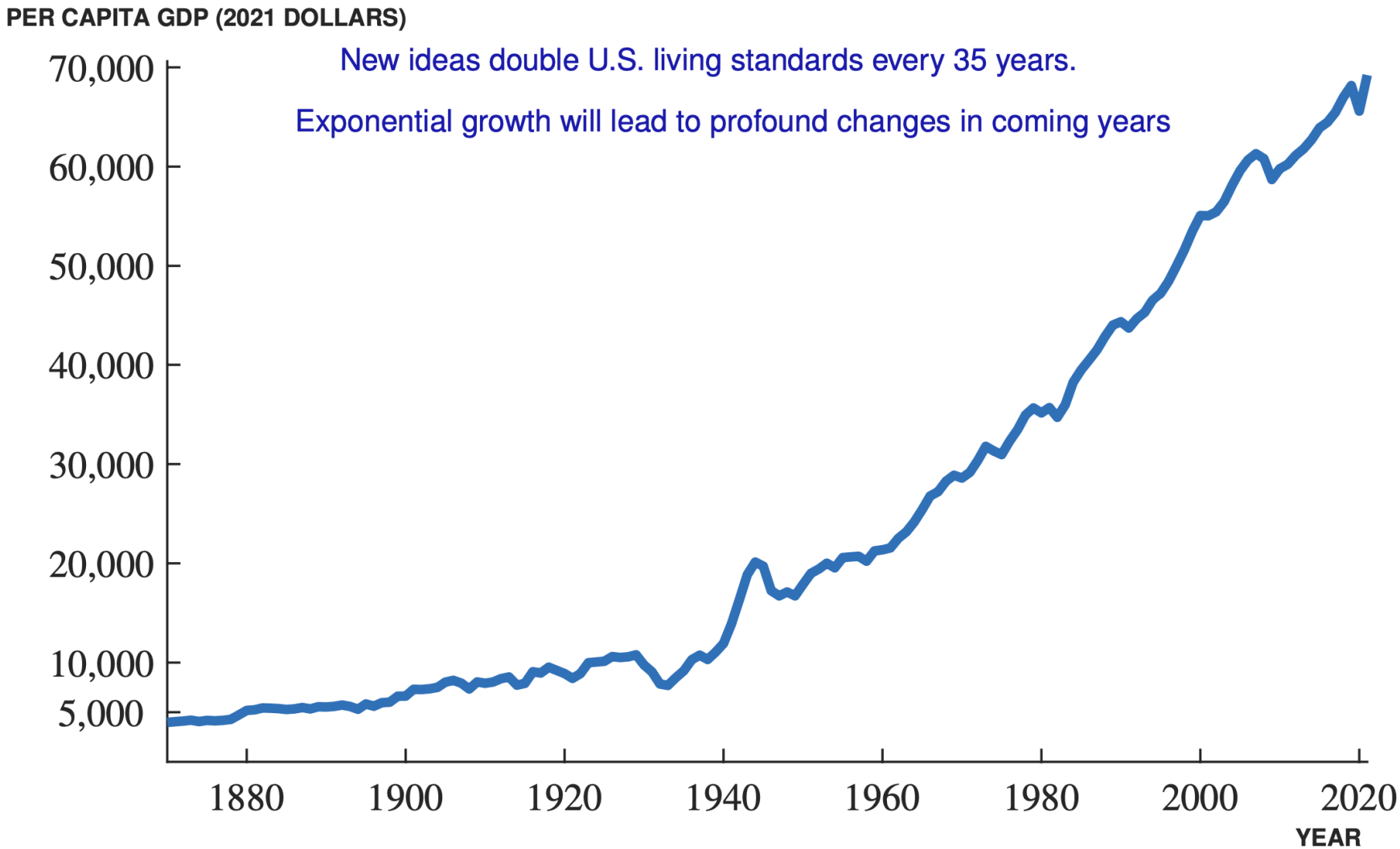
SR: What does the recovery from the Covid pandemic look like over the next few years?

- In terms of growth, inflation
- What is the new normal for remote/hybrid work?
- Role of automation? AI?

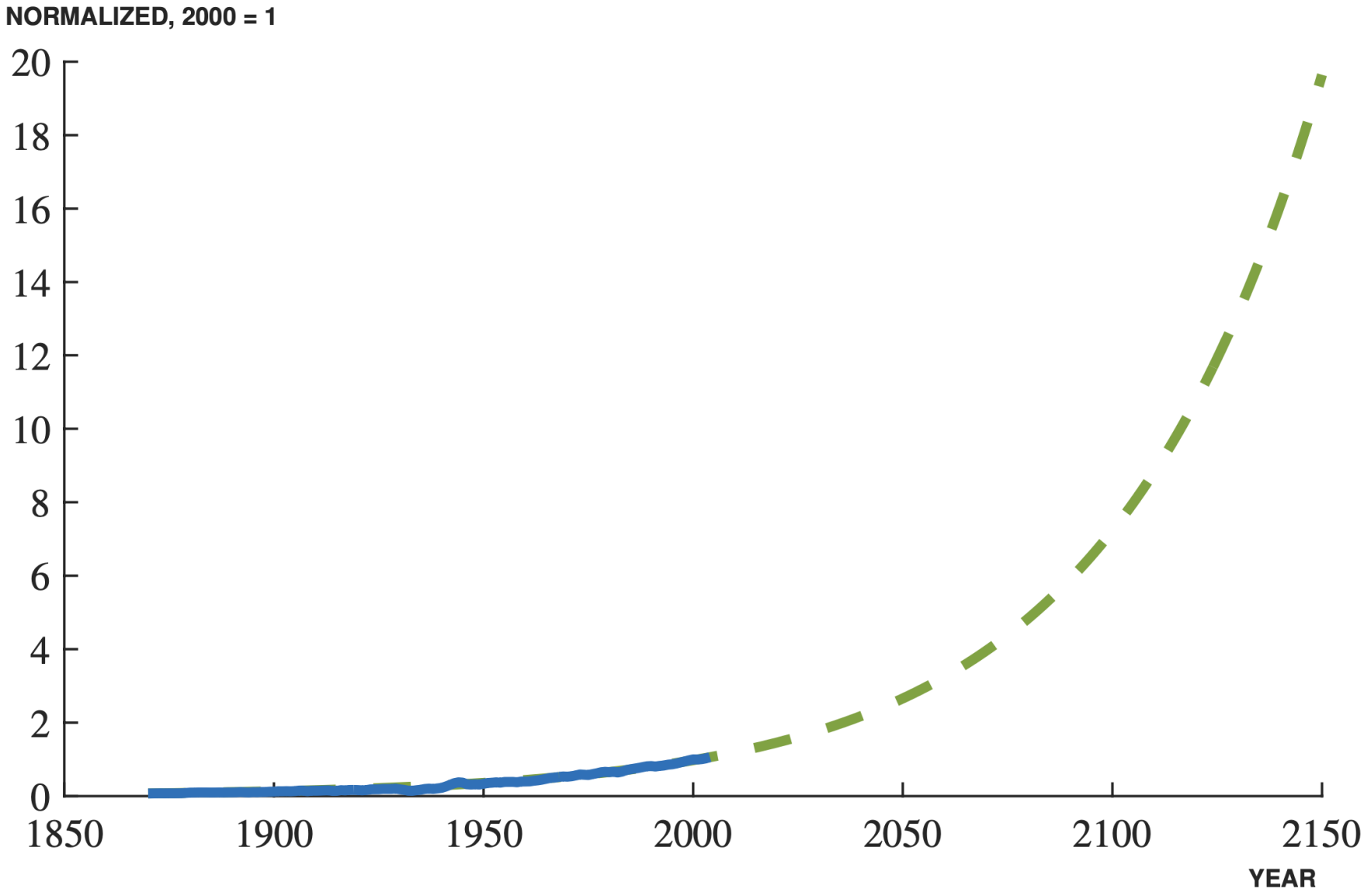
Six Touch Points

1. New ideas double U.S. living standards every 35 years
2. Emerging Economies: China and India
3. Budget constraints must be respected
4. Inequality
5. Recovering from the Covid-19 pandemic: inflation? recession?
6. The seeds of the next “golden era”...

1. Per Capita GDP in the United States



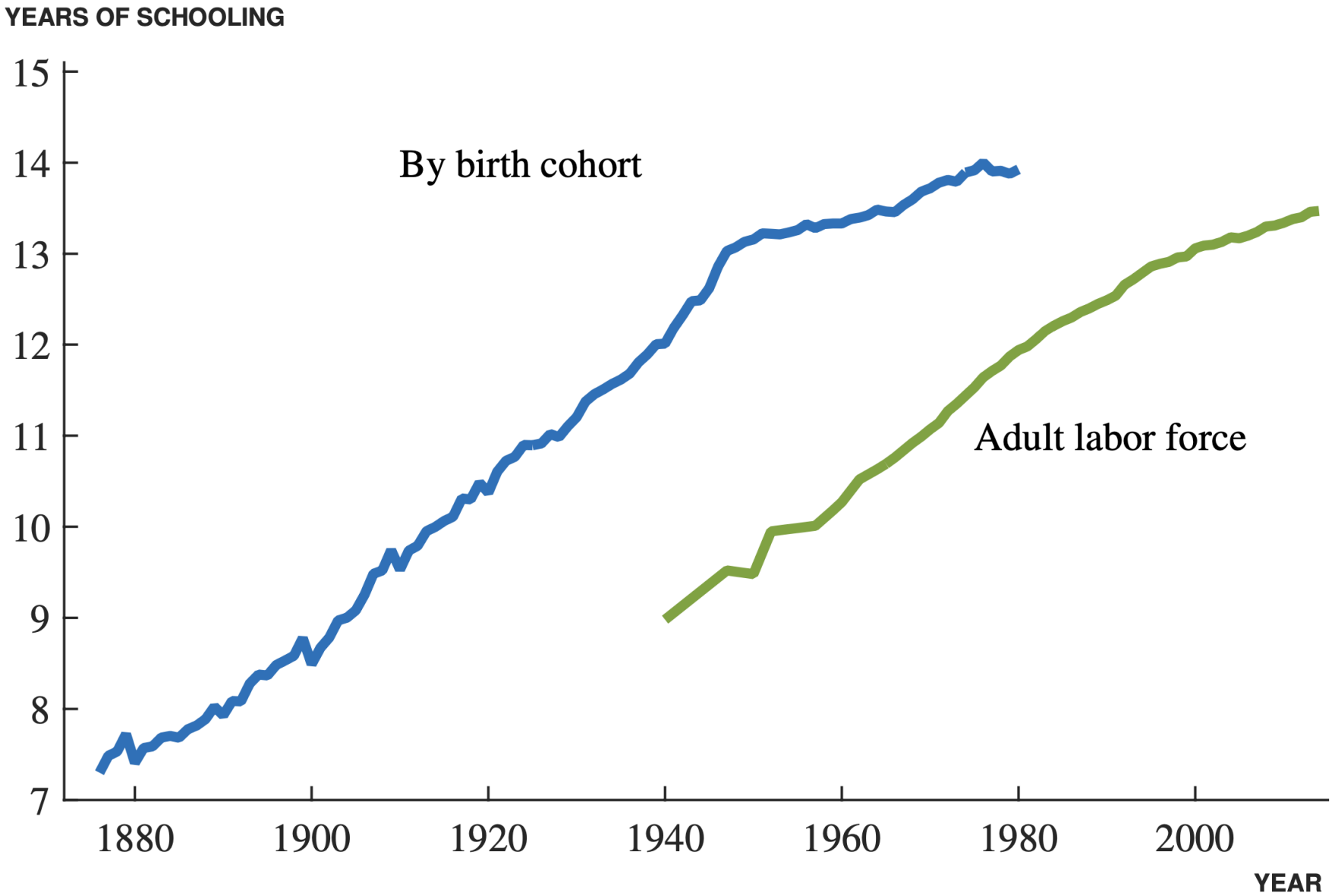
Future Implications of Exponential Growth: GDP per Capita



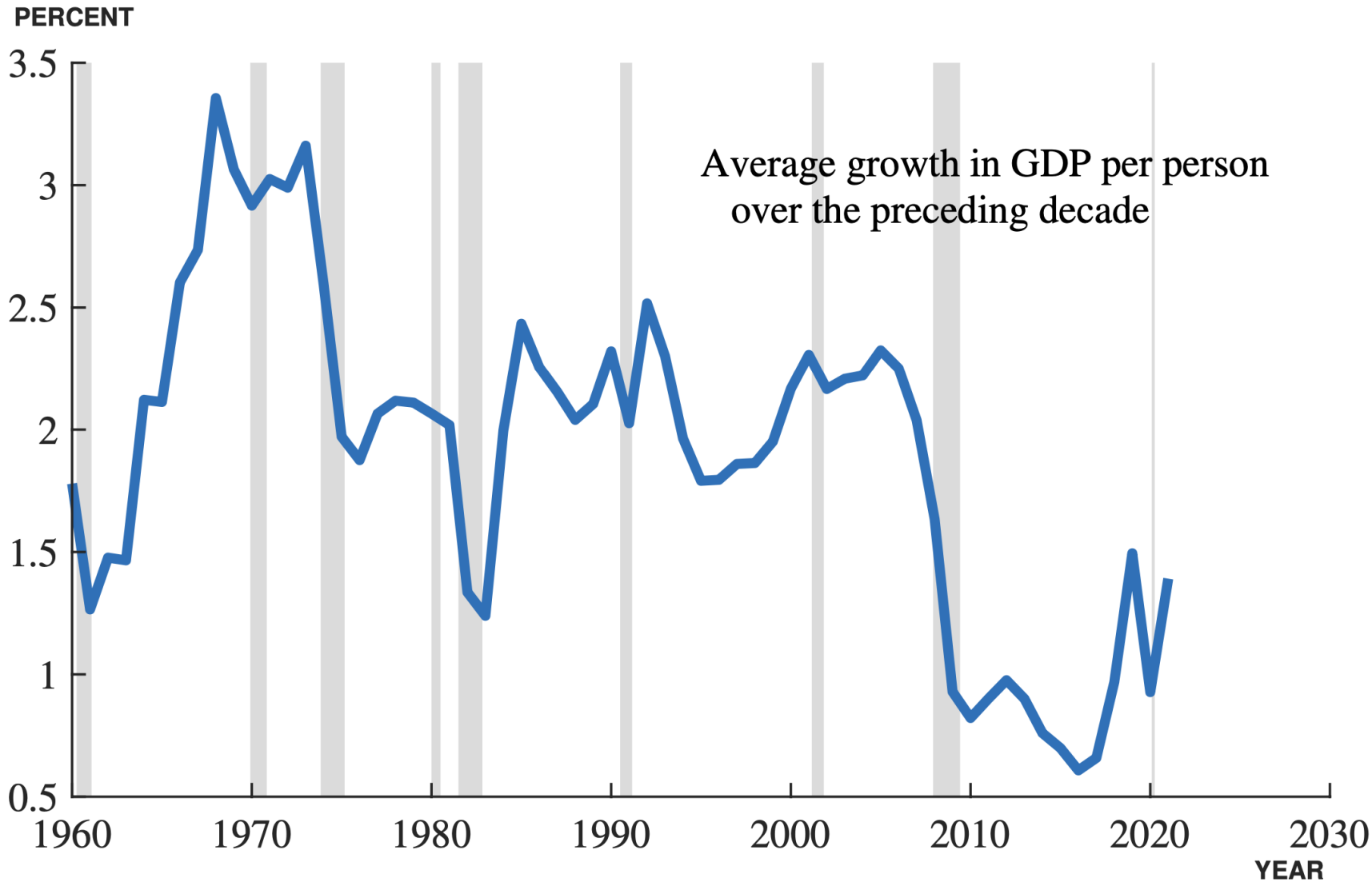
The role of Ideas and the Implications for the Scale of the Economy

- Doubles every T years
- As we saw in class: Due to technological progress & innovations
  (Abstracting from this led to models of a stuck economy that stops growing)
- Any given level gets reached much sooner than you might expect.
  Consider world population:
  - A million years to reach 1 billion
  - 100 years to reach 2 billion
  - 50 years to reach 3 billion and 15 years to reach 4 billion.
- Imagine a company w/ employment doubling every year.
  - A new office building is 3/4 empty 2 years before it fills
  - Half empty one year before it fills

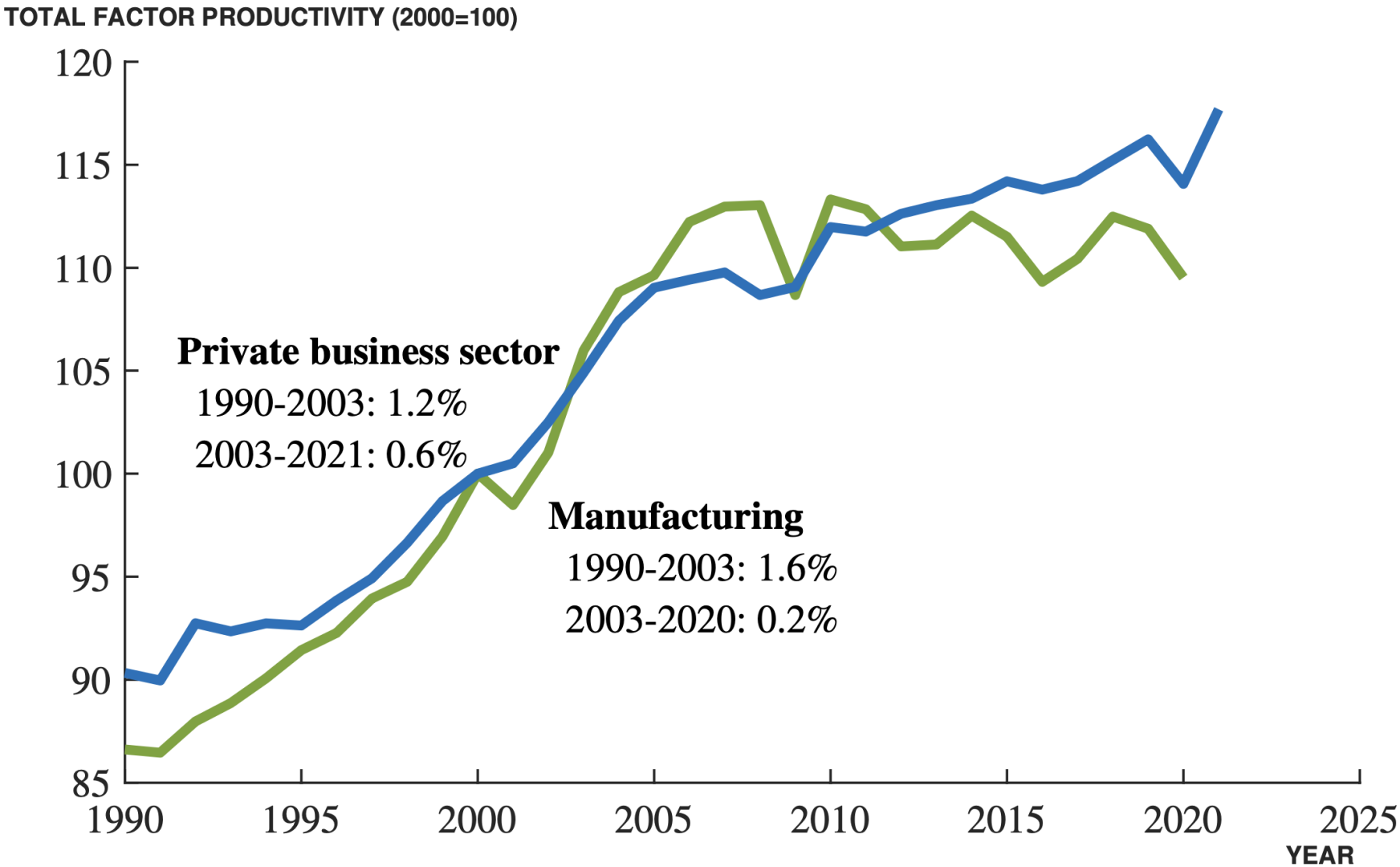
Increased Education: Notion of Innovation as Growth Engine



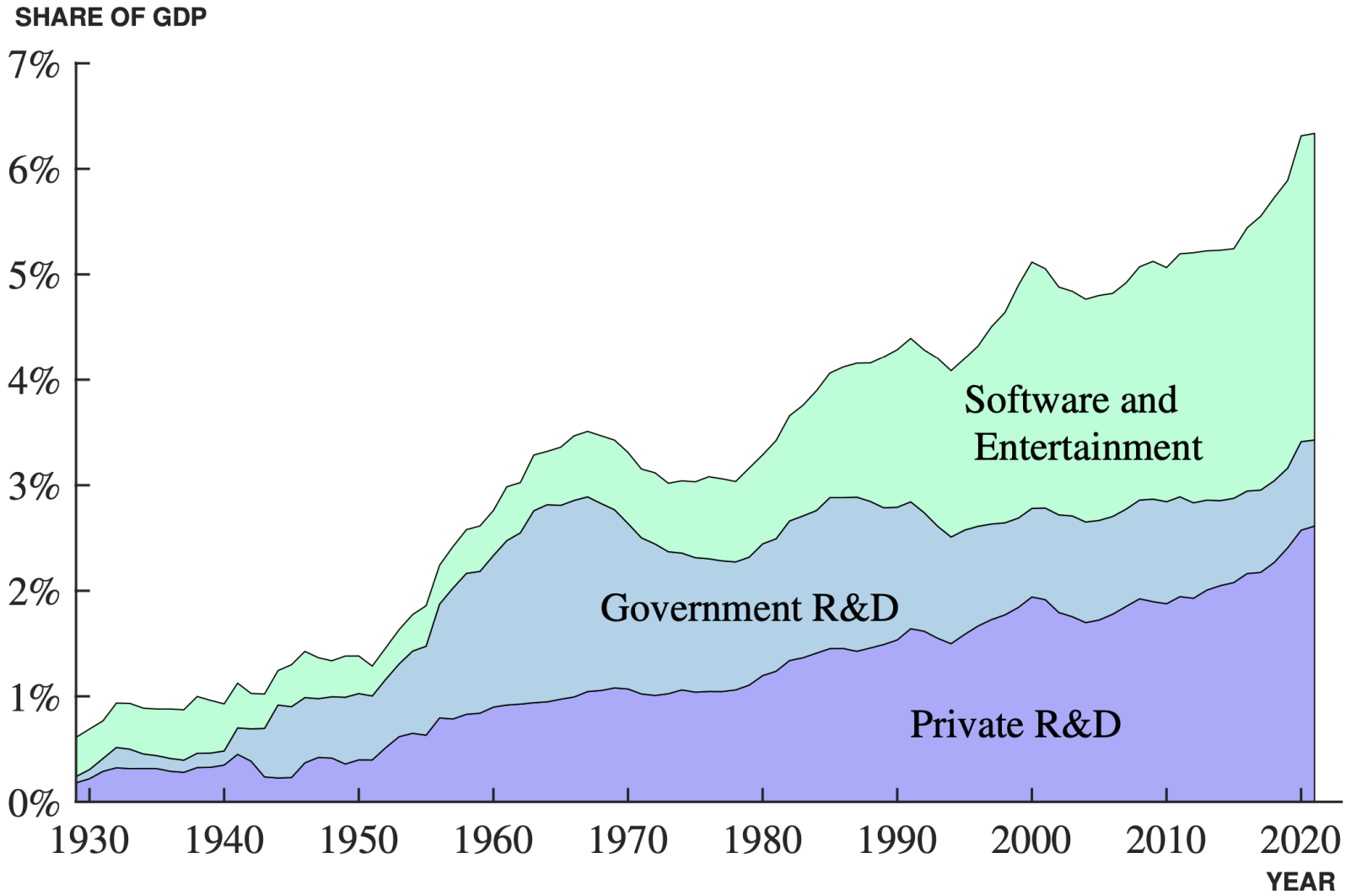
However: Growth has slowed!



U.S. Total Factor Productivity



Public vs Private R&D?

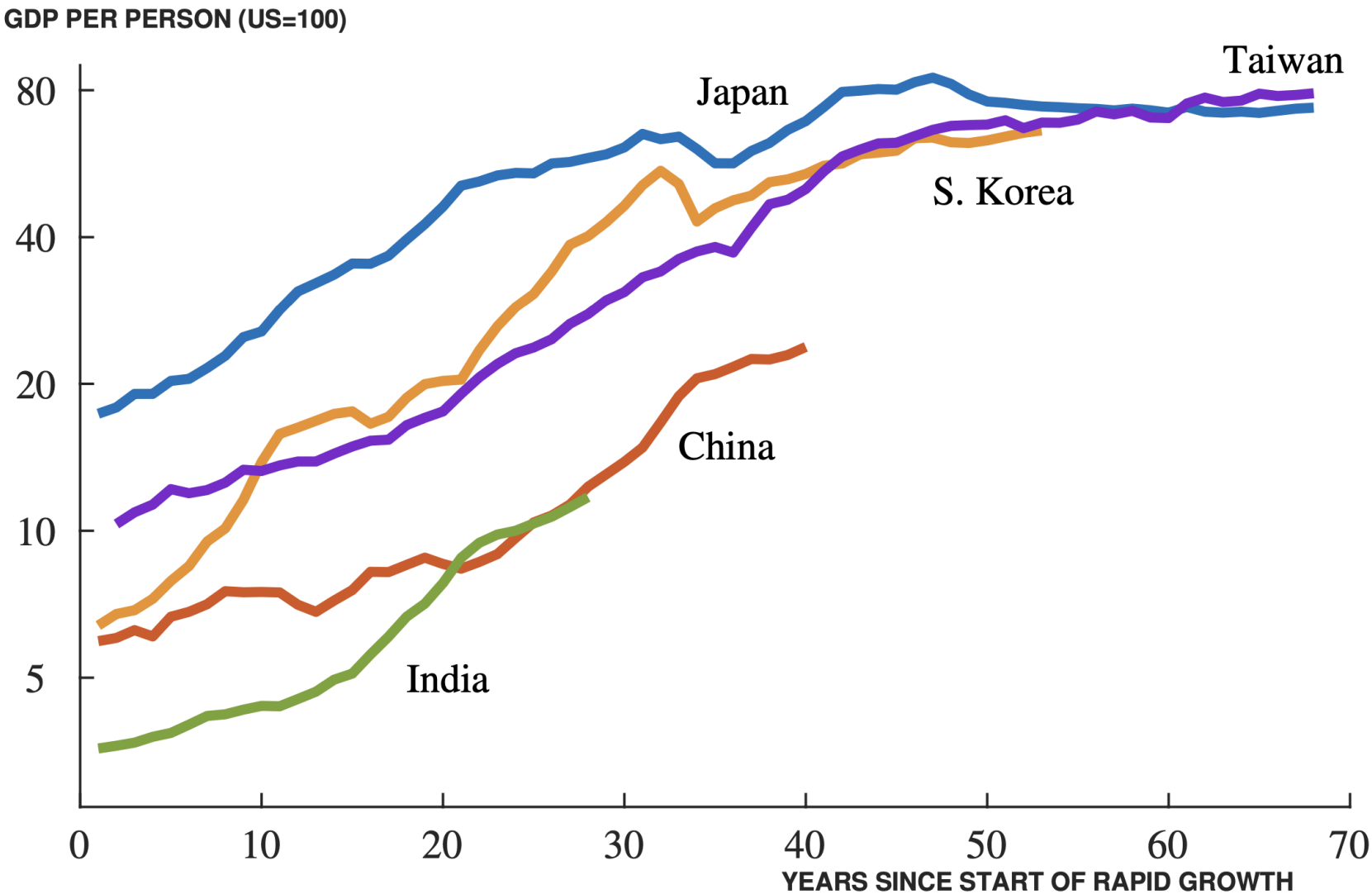


Fieldhouse & Mertens (2023): **non-defense** public R&D is tightly linked to innovation

2. Emerging Economies: China, India, and Beyond

- China: Extremely rapid "catch-up" growth is possible
  - Growth rate (per capita) since 1980: 8% per year
  - 10 times richer today than in 1980!
  - 1 generation, more than 1 billion people
- Openness: Competing in world markets and engaging the world of ideas is the best development strategy.
  - Competition is good.
- Finding Missing Edisons and Doudnas
  - China and India: More people each than US/Euro/Japan
  - Double the number of entrepreneurs and researchers in 50 years?

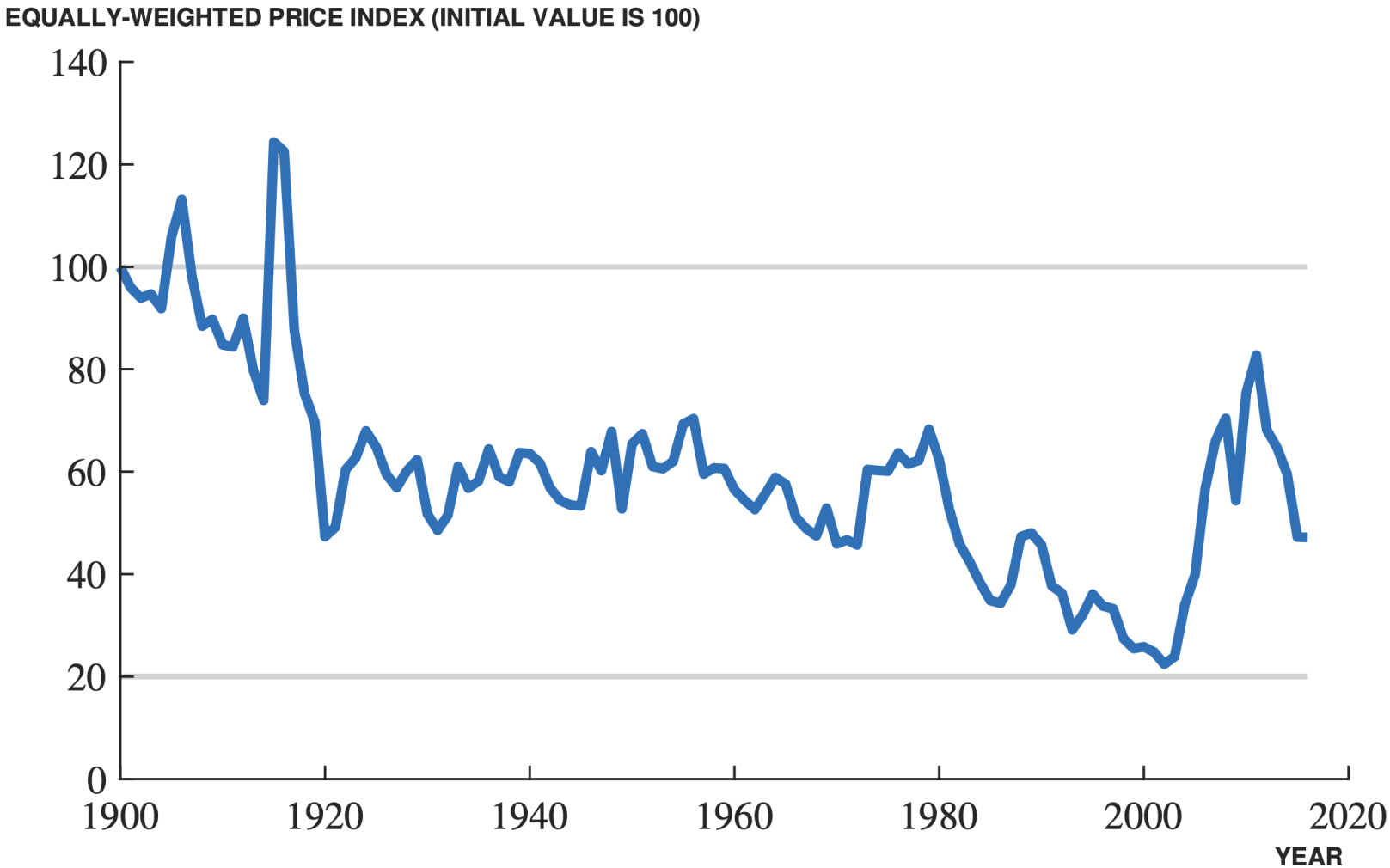
Dynamics of Catch-Up Growth



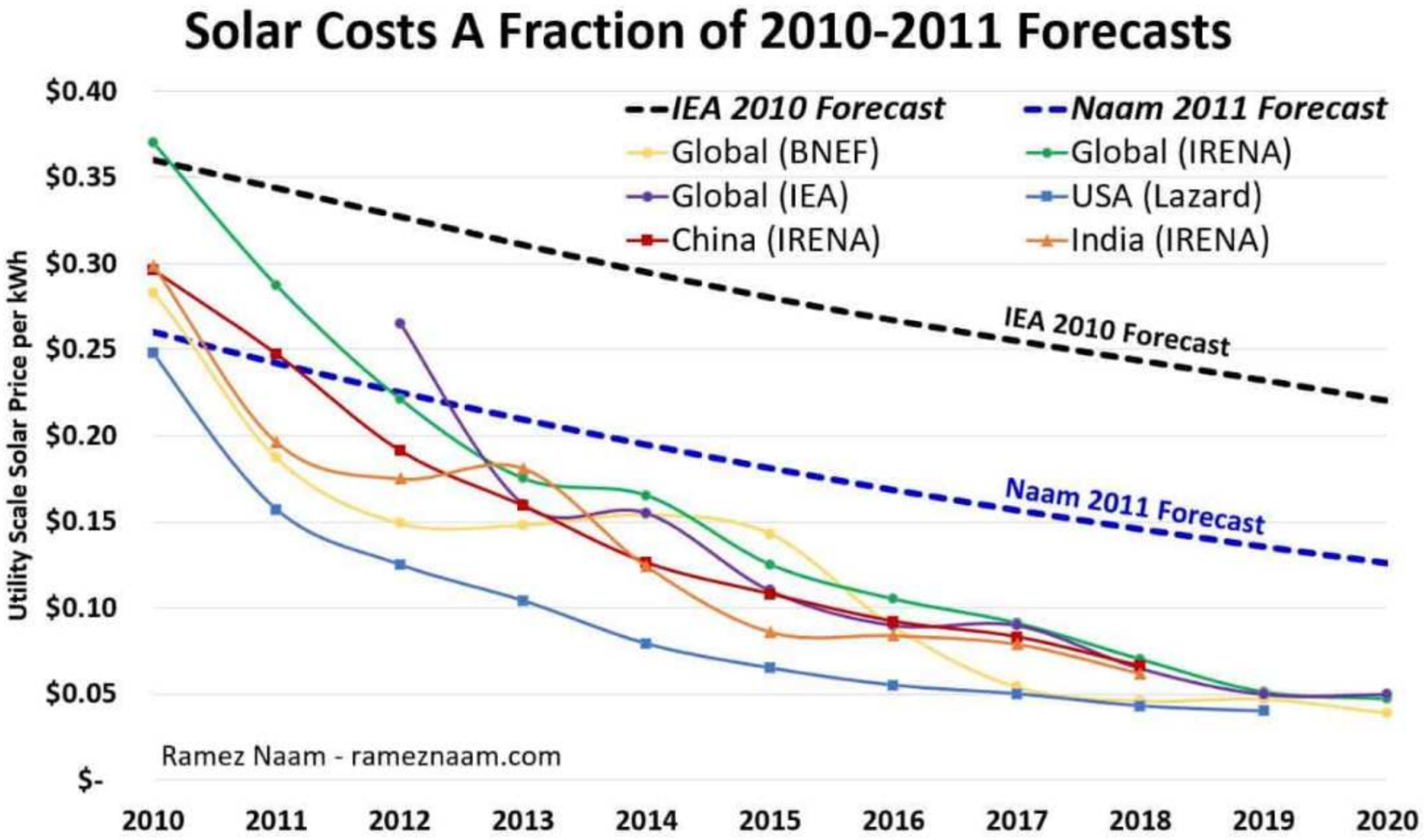
Commodity Prices over the Long Run

These countries used to rely more on exporting natural resources

But commodities lose value overtime and generate little value added



Instead they turned their focus on more innovative initiatives



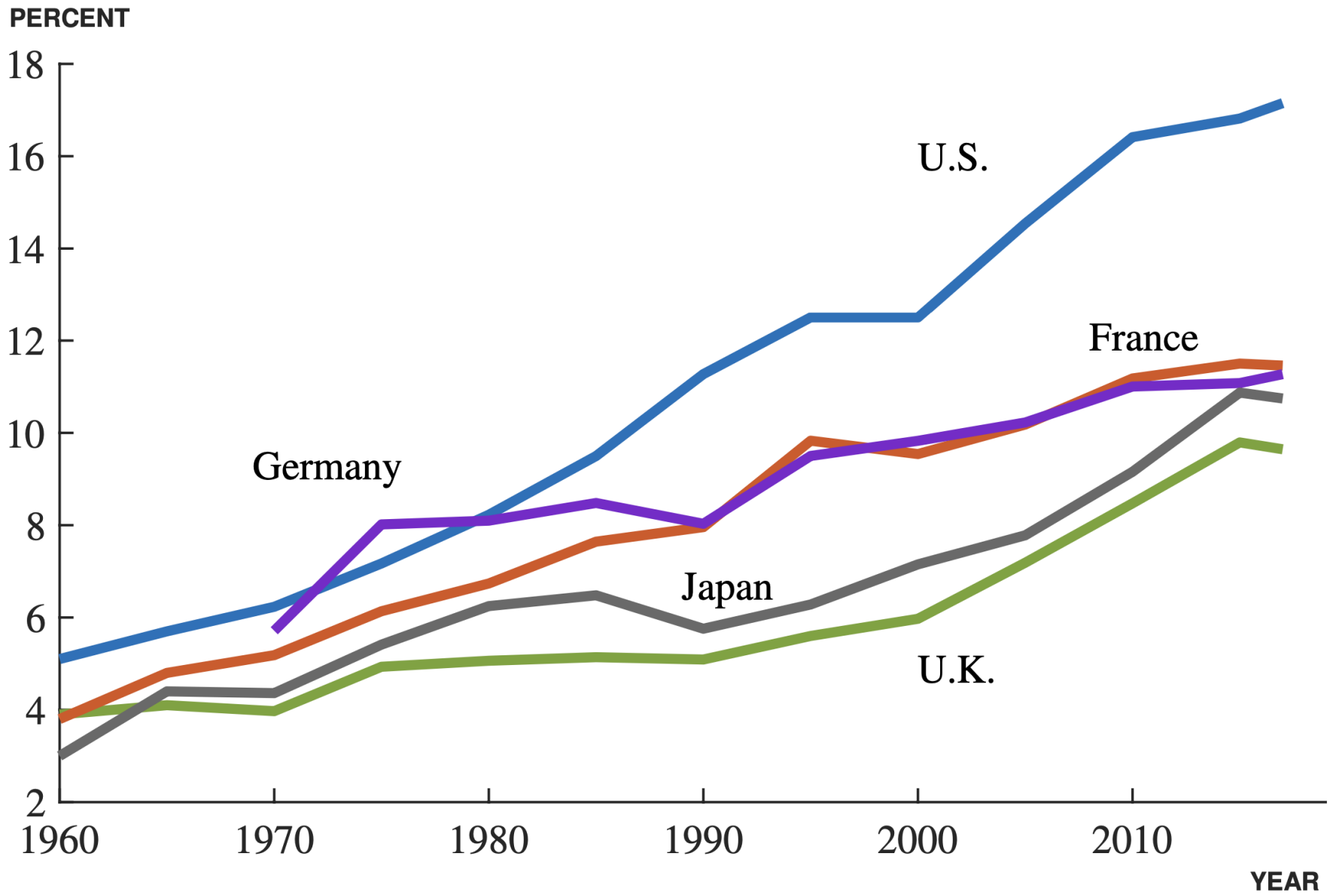
3. Budget constraints must be respected

- Mismanaged government budget constraints are the cause of most economic problems.
  - Fiscal deficits, current account/foreign assets
  - Hyperinflations, defaults, financial crises
- European debt crisis
  - Banks / Government / Competitiveness
- U.S. (and world) financing of rising health spending.
- COVID-19 crisis + Expanding Fed balance sheet
  - Is increased spending the seed for an even more severe financial crisis in the future?

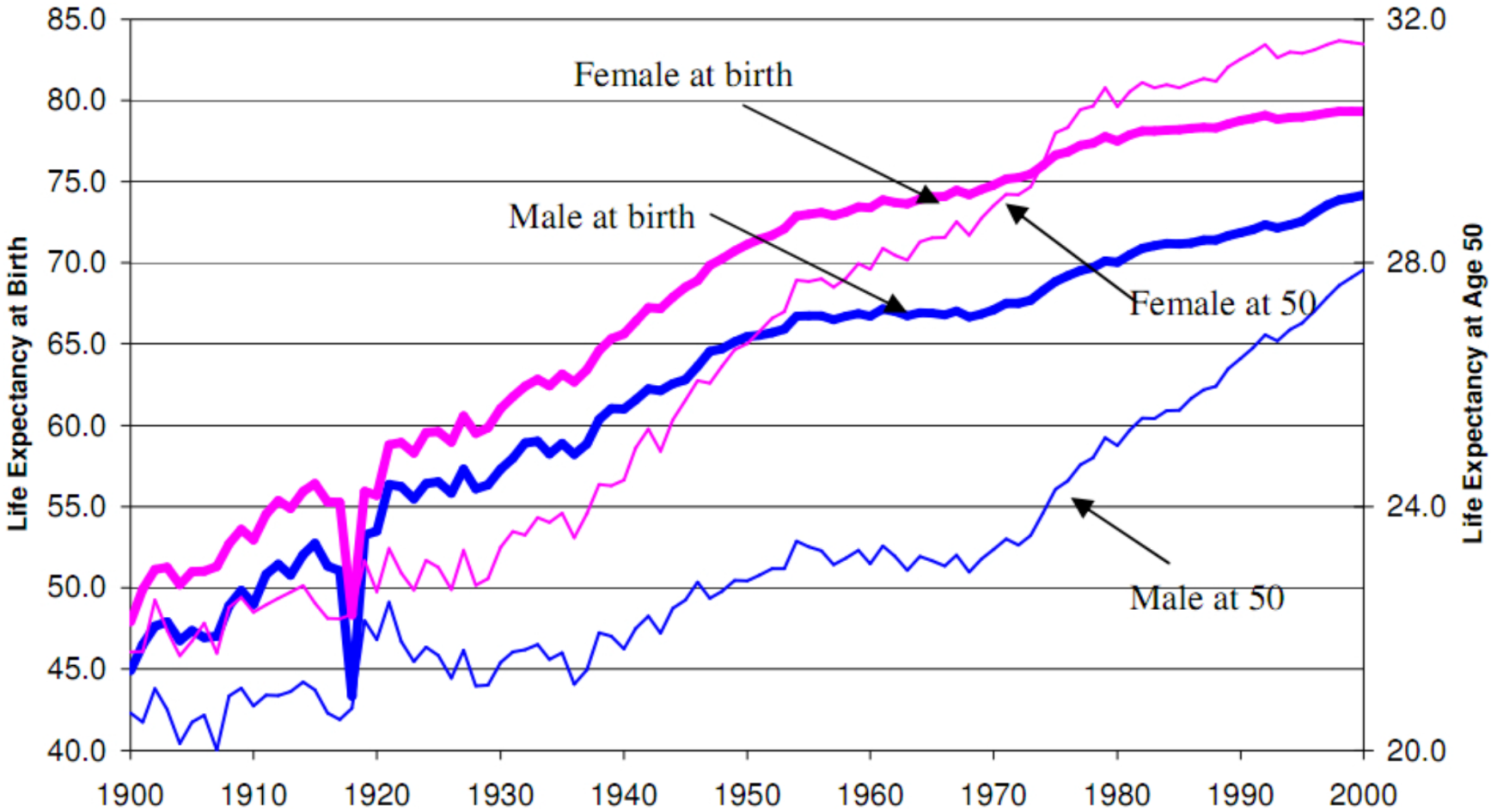
U.S. Debt-GDP Ratio

Debt-GDP ratio: Already ≈100% for 2023

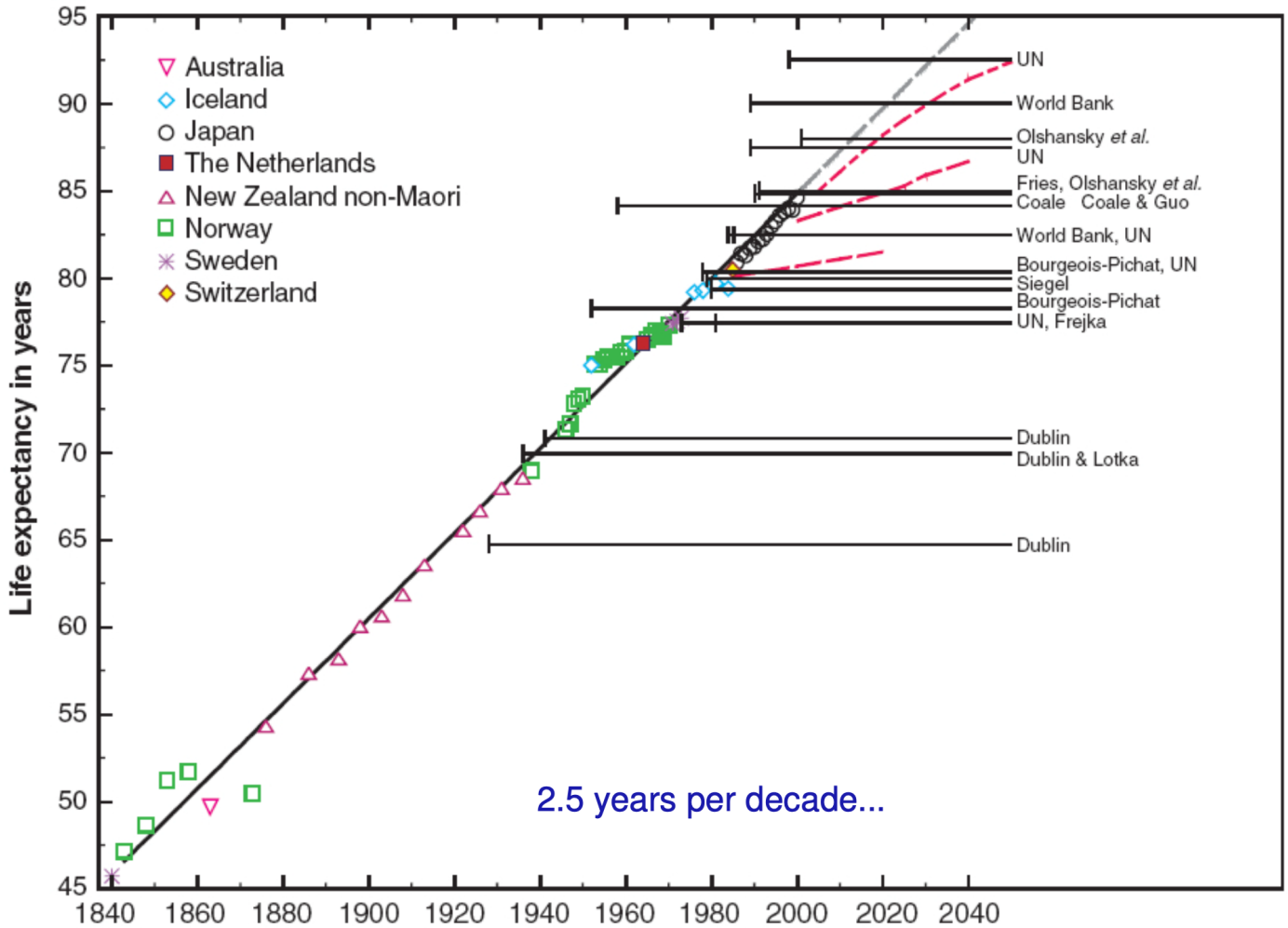
Health Spending as a Share of GDP



U.S. Life Expectancy



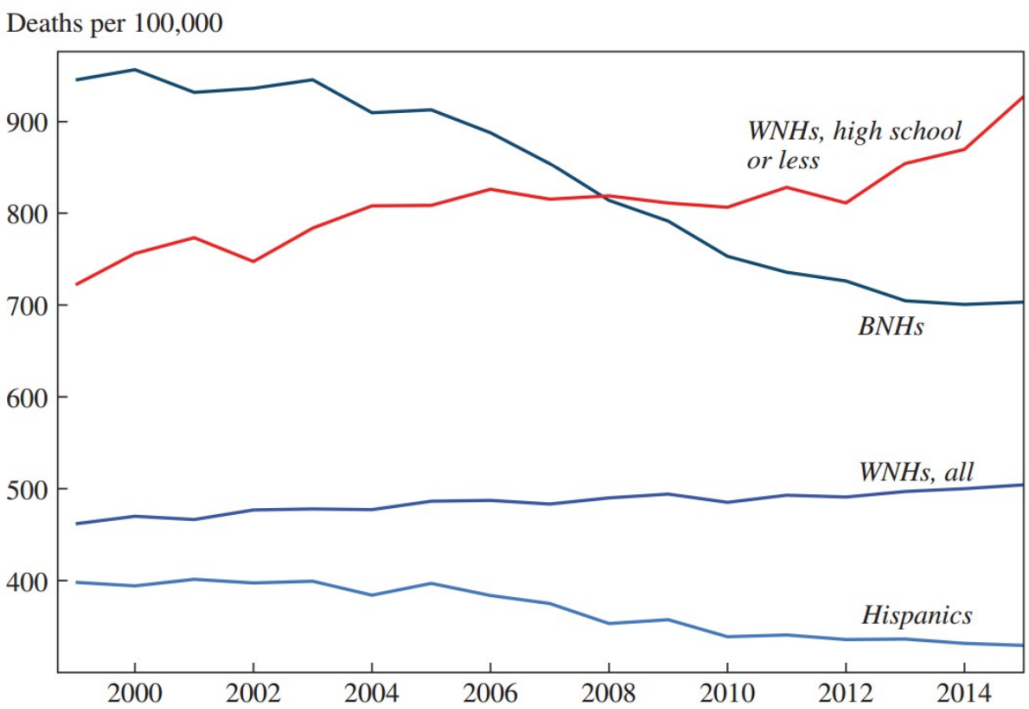
Record Life Expectancy (Oeppen and Vaupel, 2002)

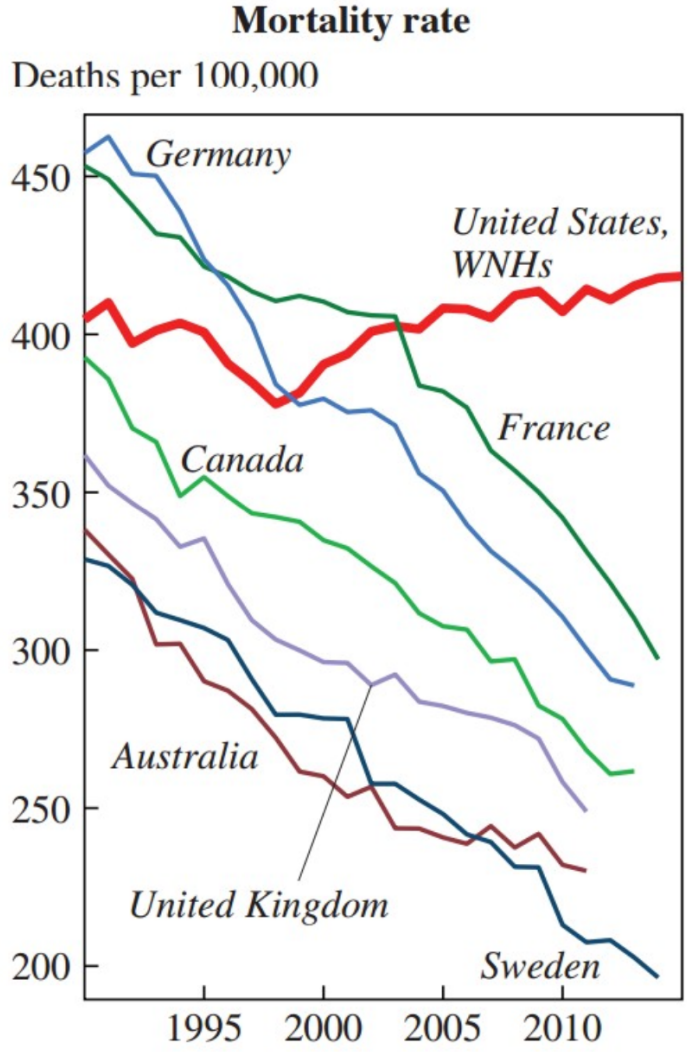


Higher life expectancy: Improved living standards

But also older population and less sustainable retirement system

Other Countries





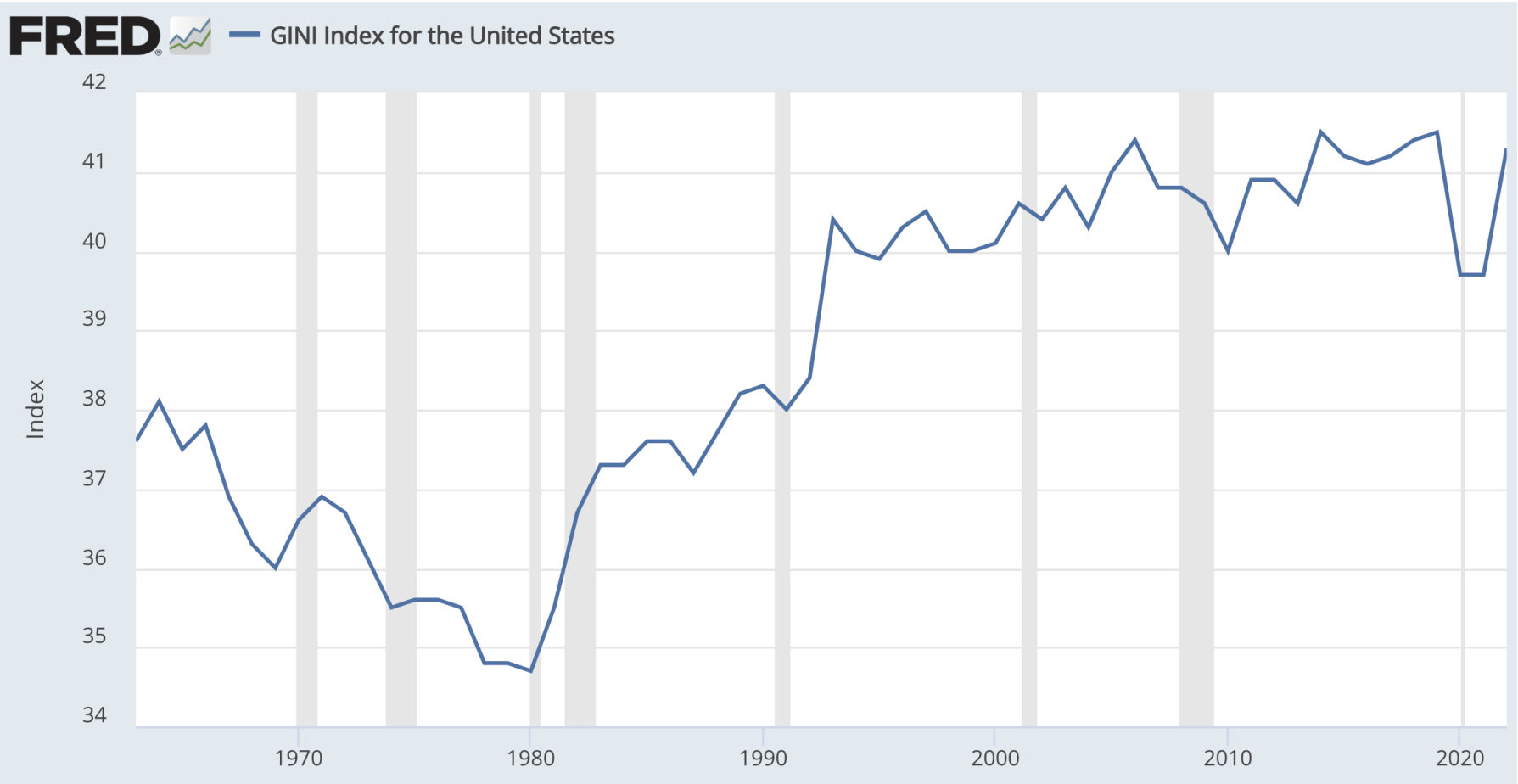
Source: https://www.brookings.edu/wp-content/uploads/2017/08/casetextsp17bpea.pdf

and (Case and Deaton, 2017)

4. Inequality

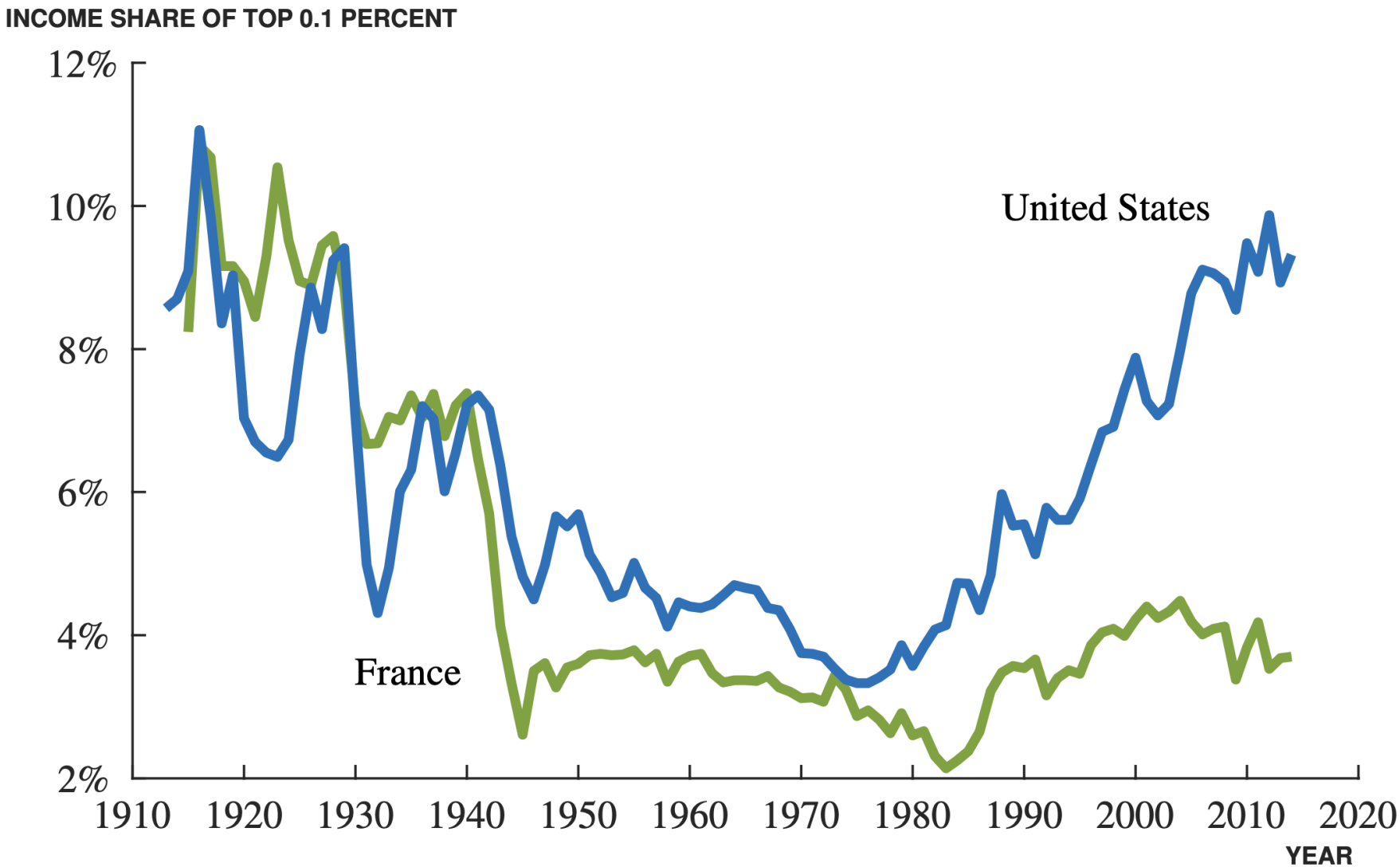
Concerning: We should no longer focus on aggregate growth

Particularly if it excludes most of the population



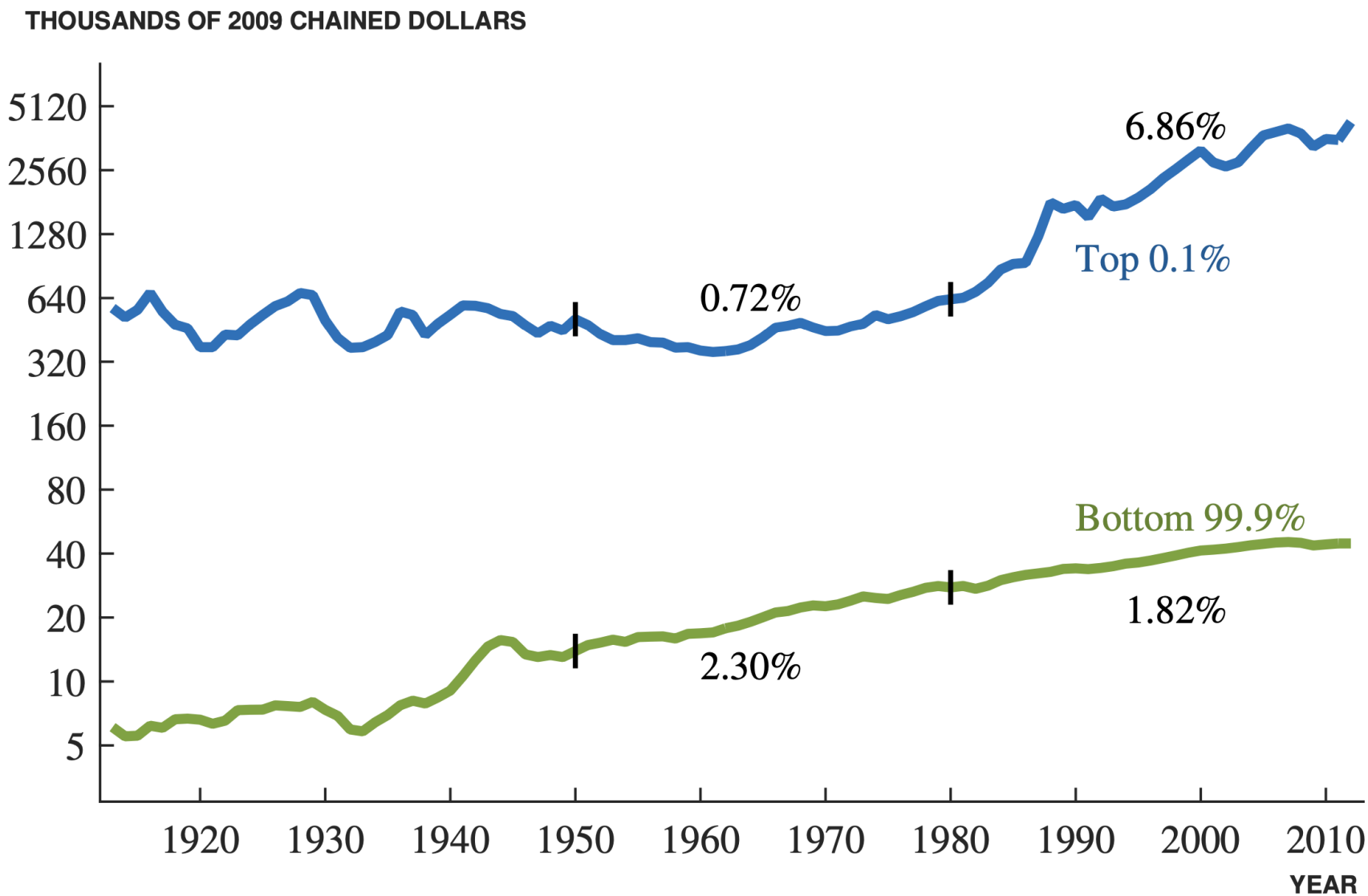
Source: World Bank

Income Share of the Top 0.1 Percent of the Population



Source: Piketty and Saez, “Income Inequality in the United States, 1913-1998” (updated)

Economic growth by inequality

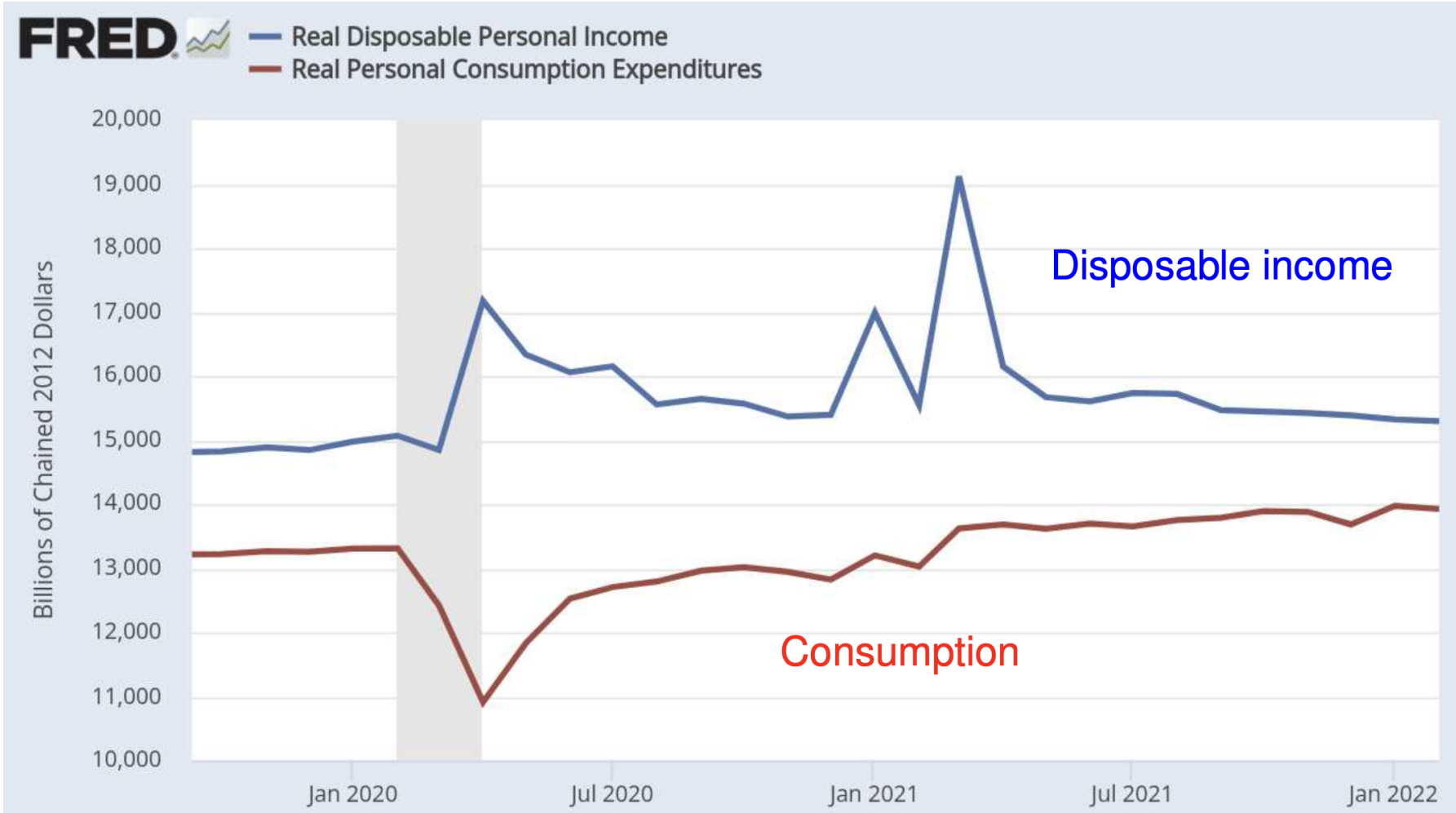


Source: Maddison + BEA + Piketty/Saez

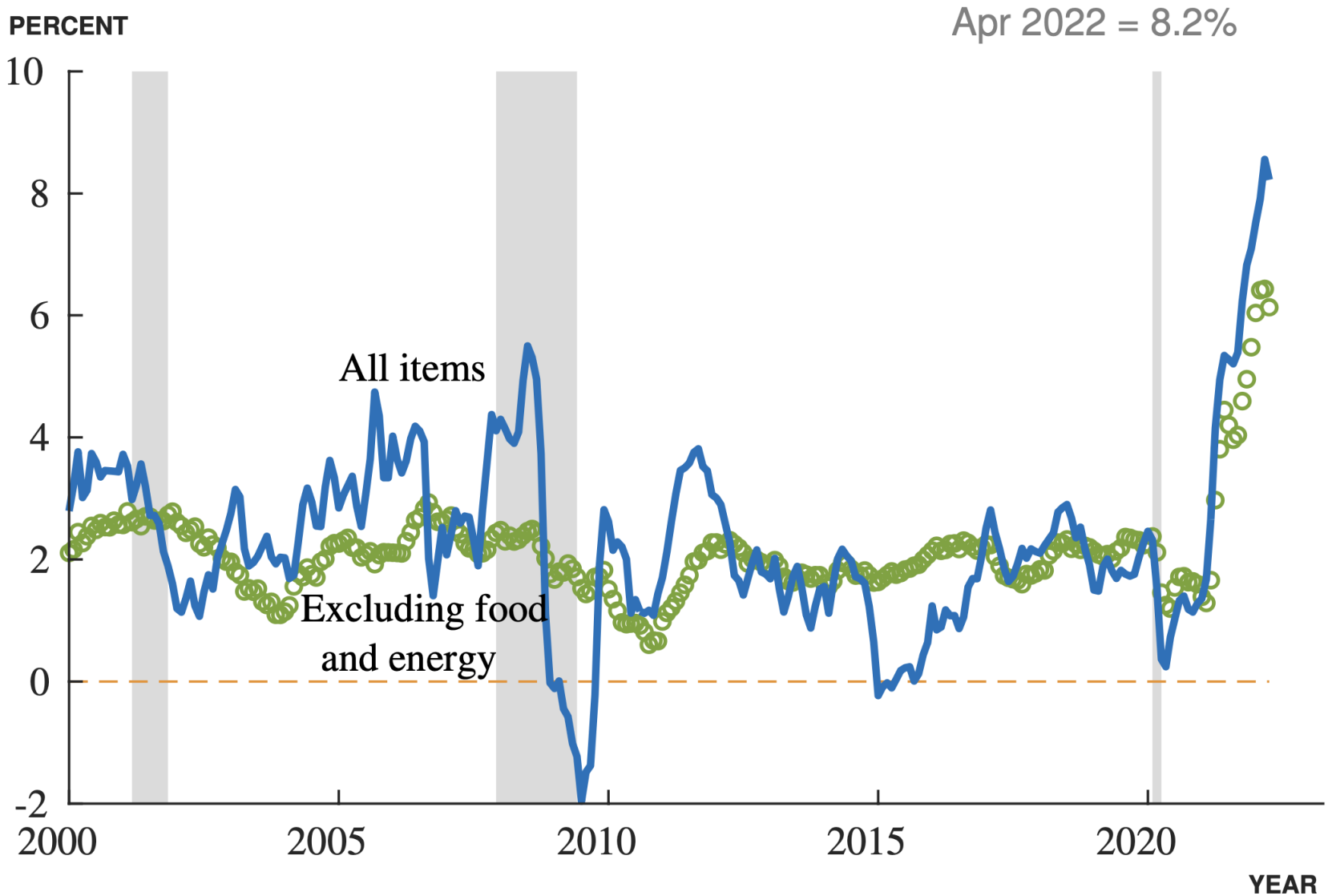
5. Recovering from the COVID-19 Crisis

- Variants and vaccinating the world?
  - Main risk to recovery
  - IMF: $50b investment saves $9t in lost lives and GDP! (source)
- Inflation, expectations, stagflation?
  - Will Fed and CB's around the world manage a "soft landing"?
  - Will high inflation become entrenched in expectations and cause problems for several years?
- Inequality: Augmented by COVID episode (IMF-WEO Oct 2020)
  - Impact on low-income workers
  - Lower gov capacity to assist in low income countries (LIC)
  - Recovery relies on access to technology (worse in LIC)

Consumption and Disposable Personal Income



Recent CPI Inflation

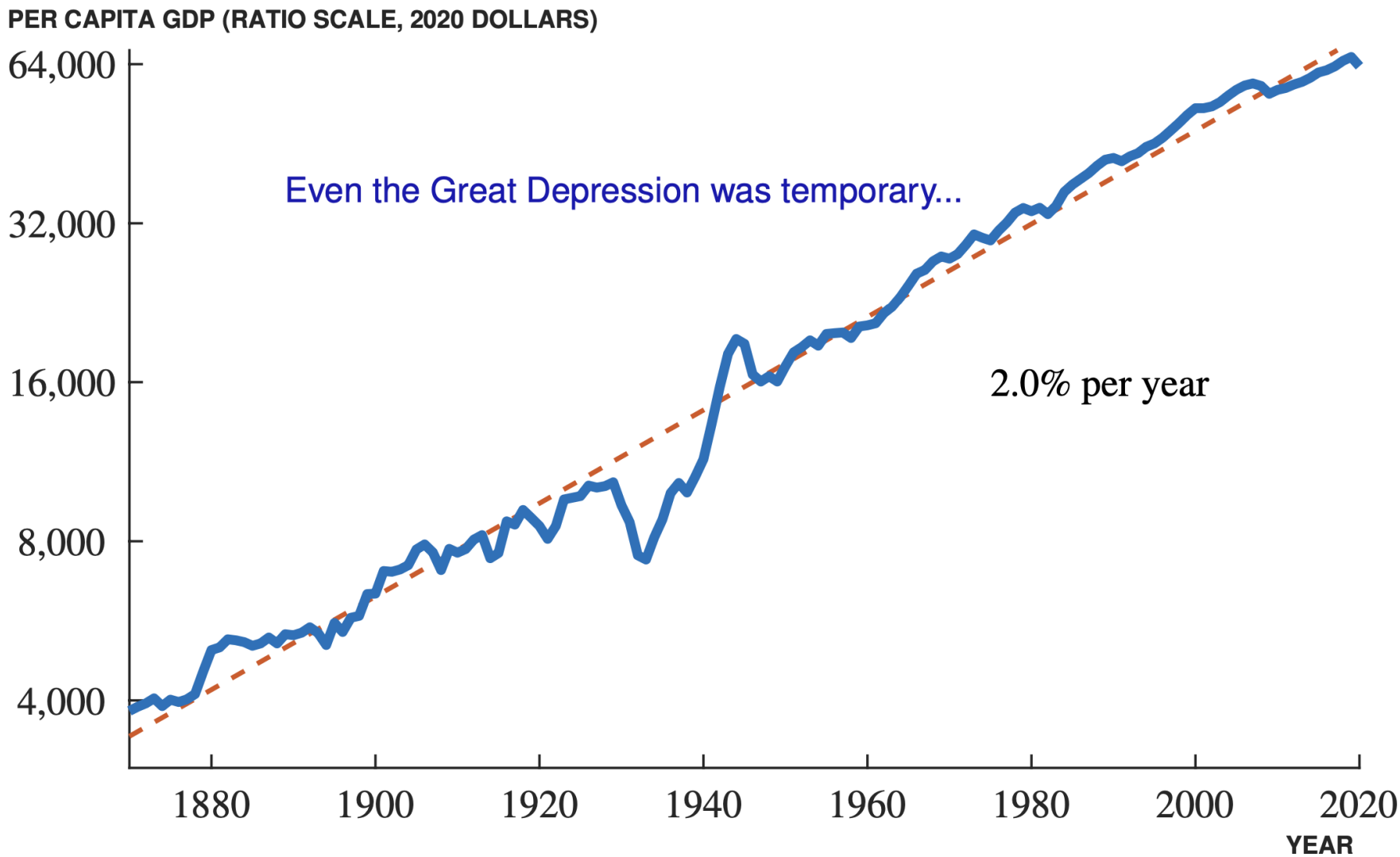


6. The seeds of the next “golden era”...

- Microsoft was founded at the end of a recession in 1975.
- Apple released the iPod in the recession of 2001.
- AI+ChatGPT at end of the Covid pandemic
- “During the [Great Depression], the U.S. economy was, in fact, experiencing a period of technological and organizational creativity that, in the aggregate, remains as yet unmatched.” — Alexander Field, 2011
    - 1929–1941 featured rapid TFP growth, and numerous innovations
    - Television, nylon, conveyor belts, stainless steel, chrome plating, new plastics, electron microscope, FM radio

What about now? whatever the next big innovation, hopefully it is impactful enough to offset negative effect of shrinking population dynamics

U.S. Per Capita GDP



Where to look for more (data)

Links to country macro data:

- Fred, World Bank
- IMF's World Economic Outlook
- OECD Economic outlook and Statistics section
- Country Snapshots (with data links) from Chad Jones (the author of the course's textbook)

Q & A ?

Wrap up

I had a great time teaching this course.

I hope it made you curious about any aspect of economics

- Macroeconomics or not

[A takeaway] Macroeconomics is not an isolated field: It relies heavily on Microeconomics, Statistics, and other fields in economics.

All the best in your future courses and endeavors!

Please remember to complete the online course evaluation, thanks!