

Teaching Intermediate Macro: From Economic Growth to COVID-19

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Outline

- **Part I:** Economic Growth around the World
 - Inputs and TFP
 - Misallocation
- **Part II:** COVID and the Macroeconomy
 - Overview
 - Shocks/Model: tax on consumption and tax on working
 - Facts

Slides are available

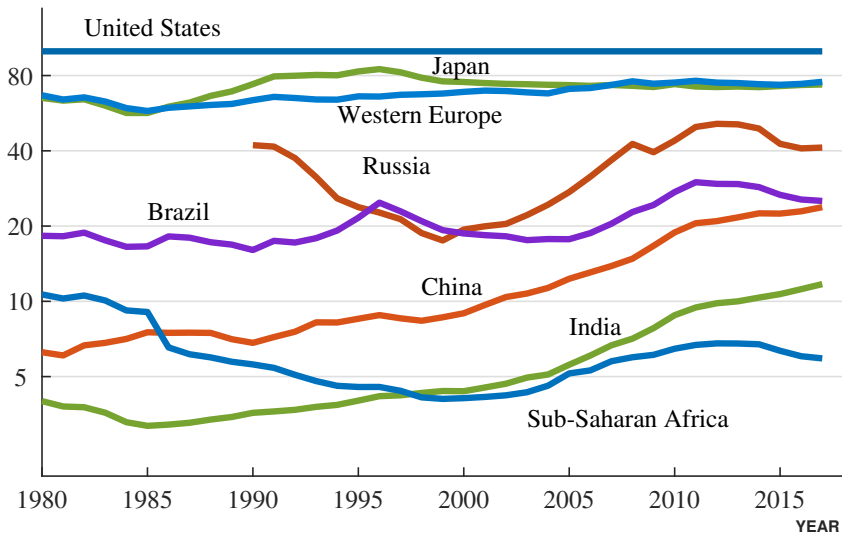
<https://web.stanford.edu/~chadj/RobertMorrisTeaching.pdf>



Economic Growth around the World

Growth since 1980

GDP PER PERSON (US=100)

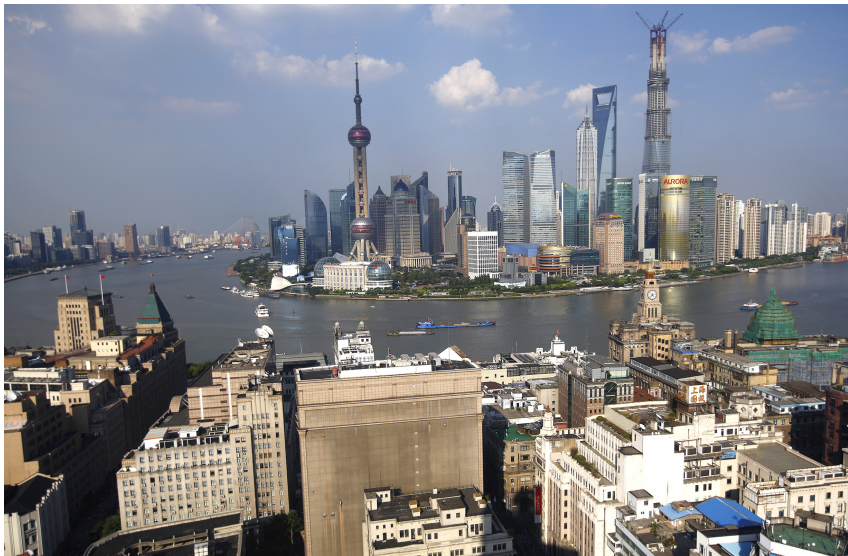


Source: Author's calculations using Penn World Tables

Shanghai 1987



Shanghai 2013



Sources of Economic Growth: Inputs and Productivity

- **Inputs**

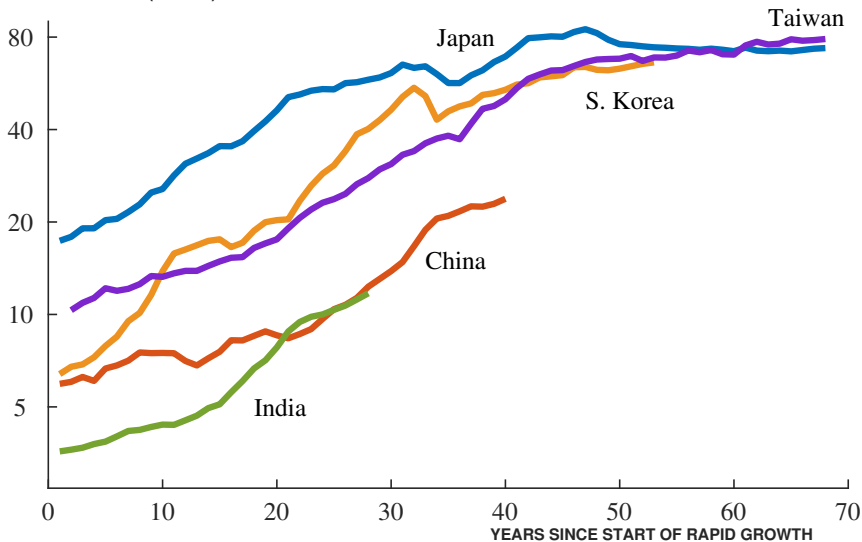
- Workers, human capital, physical capital
- “Try harder” accounts for a substantial part of “catch-up” growth
- But accumulating “stuff” runs into diminishing returns

- **Productivity**

- Changes in allocative efficiency (but there is a maximum)
- Ideas: Improvements in technology
- “Try better”

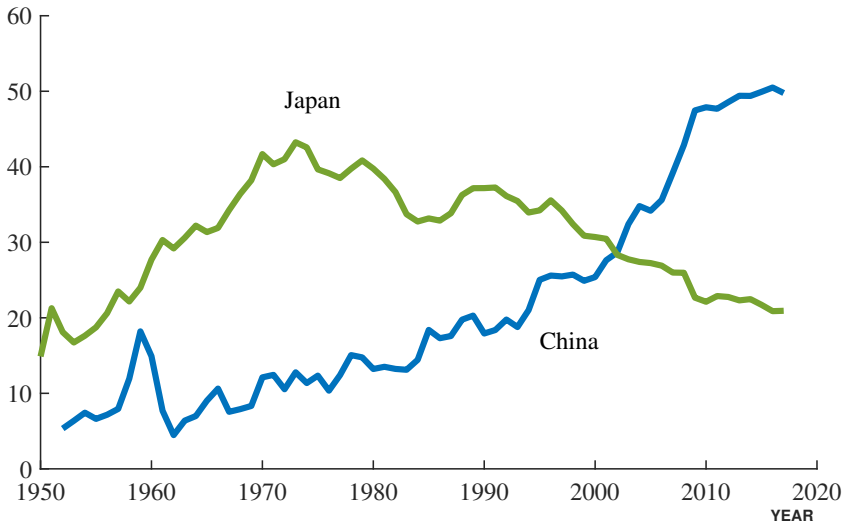
The Dynamics of Catch-Up Growth

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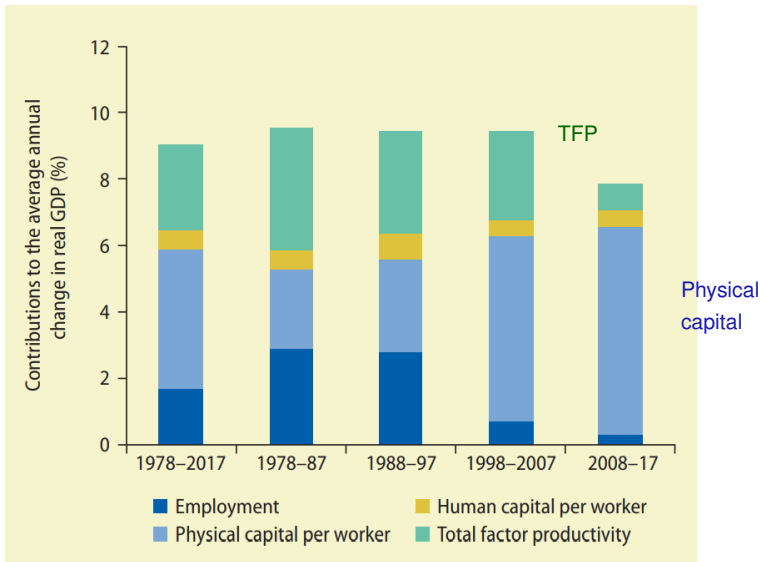


Investment in Physical Capital

PERCENT OF GDP



Growth Accounting for China



Great reading!

- Paul Krugman, 1994, “The Myth of Asia’s Miracle” *Foreign Affairs*
 - Beautiful, intuitive storytelling that parallels the Solow model
- Concepts
 - Diminishing returns to capital accumulation
 - No free lunch
- Applications
 - Soviet Union in the 1960s-1980s, Japan into 1990s
 - Can relate to China today

What is this?



North versus South Korea: Institutions Matter!



North versus South Korea: Institutions Matter!



China post 1978: Gradual shift from communist allocations to market allocations

Misallocation and TFP

- Why do differences in institutions show up in TFP?

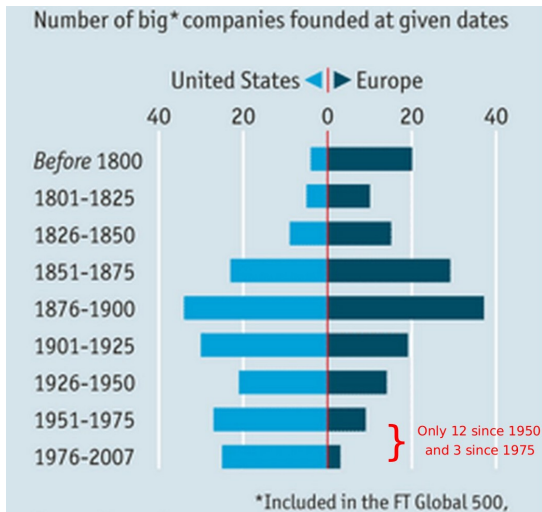
Misallocation and TFP

- Why do differences in institutions show up in TFP?
- Suppose economy = two firms making textiles
 - (a) Not very productive, but owned by the Prime Minister's sister
 - (b) A small, dynamic startup — much more productive

Good connections and bad property rights \Rightarrow the less productive firm is “favored” by loans, subsidies, etc.

- **TFP = how efficiently resources are allocated**
 - All inputs to low productivity firm \Rightarrow low TFP
 - Inputs allocated efficiently (e.g. markets/competition) \Rightarrow high TFP

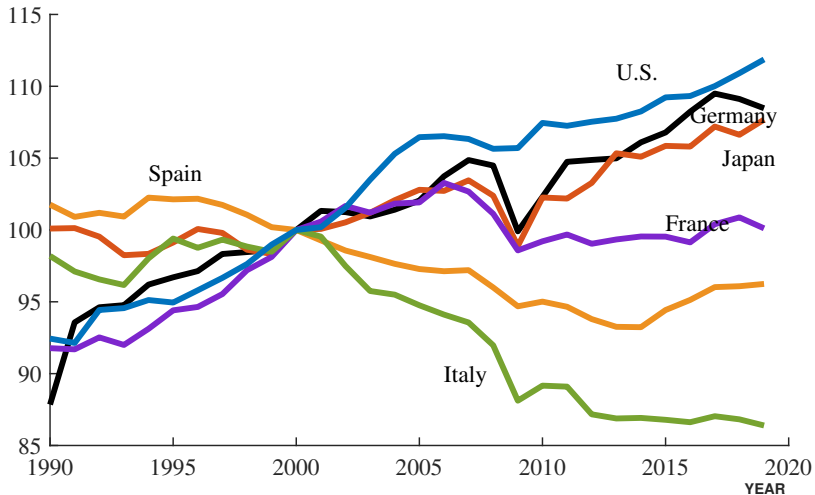
FT Global 500 Startups in US vs Europe (creative destruction)



Source: <http://www.economist.com/node/21559618>

TFP in Advanced Economies

TOTAL FACTOR PRODUCTIVITY (2000=100)



Misallocation in the United States

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 - Graduated 3rd in her class at Stanford Law School, 1952
 - Only job offer in the private sector: legal secretary

Misallocation in the United States

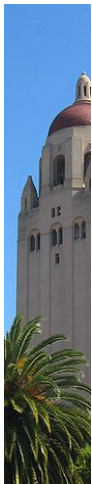
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- Consider white men in U.S. business:
 - 1960: **94%** of doctors, lawyers, and managers
 - 2010: **60%** of doctors, lawyers, and managers

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- Consider white men in U.S. business:
 - 1960: **94%** of doctors, lawyers, and managers
 - 2010: **60%** of doctors, lawyers, and managers
- Over the past 50 years, the U.S. allocation of talent has improved!
Accounts for
 - **40%** of growth in GDP per person, and
 - **20%** of growth in GDP per worker

Growth around the World — Takeaways

- Economic growth is the best global anti-poverty program, lifting billions of people out of poverty over the past 70 years
 - Growth in inputs (employment, human capital, physical capital)
 - Growth in TFP (efficiency, innovation)
- Good institutions are crucial
 - Secure property rights
 - Market rewards for innovation
 - Competition in global markets and creative destruction
- All countries suffer from misallocation, even the U.S.



COVID and the Macroeconomy

A new supplement to my textbook

- “COVID-19 and the Macroeconomy”

https://web.stanford.edu/~chadj/Macroeconomics_Covid.pdf

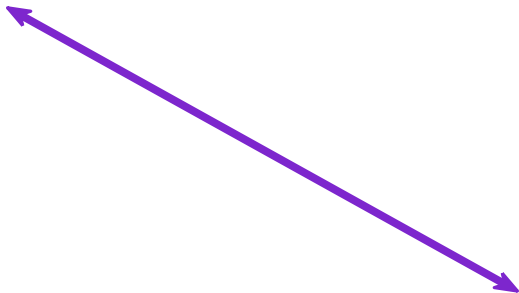
- How to think about the pandemic and the macroeconomy
 - Model
 - Facts

(Will update soon after the release of new NIPA data)

Tradeoff: Economic Activity vs. Covid Deaths?

GDP LOSS (PERCENT)

Shut down economy

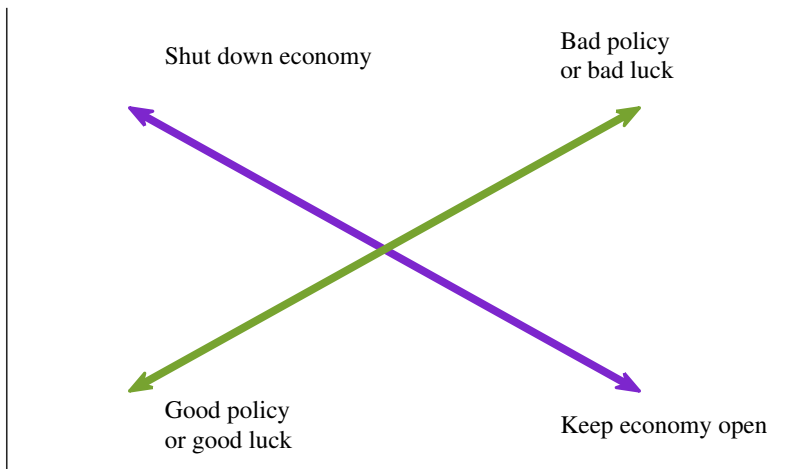


Keep economy open

COVID DEATHS PER MILLION PEOPLE

Pandemic Health Policy, Luck, and Dynamics Shift the Curve

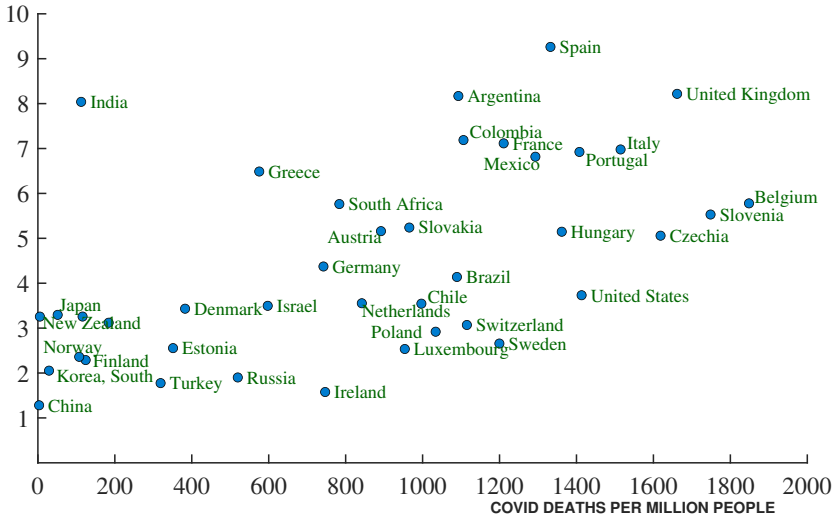
GDP LOSS (PERCENT)



COVID DEATHS PER MILLION PEOPLE

International Covid Deaths and Lost GDP

GDP LOSS (PERCENT YEARS)

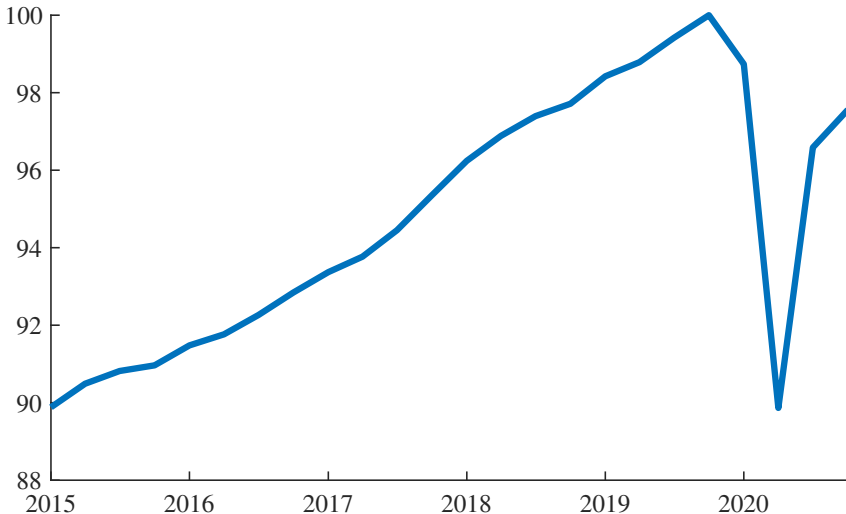


Effects in Standard Macro Models

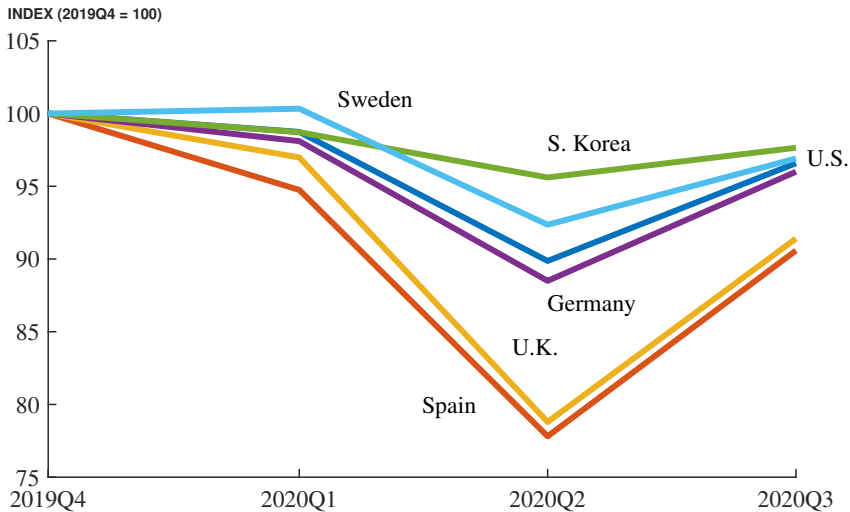
- **Tax on consumption:** negative aggregate demand shock
 - Reduction in aggregate demand reduces GDP
 - Puts downward pressure on inflation via the Philips curve
 - Microeconomics: increased demand for some goods (masks, hand sanitizer), which raises some prices
- **Tax on working:** negative shock to Potential Output (Solow model)
 - Reduces both supply of goods and demand of goods
 - No change in the “output gap” or “short-run output”
 - Therefore no downward pressure on inflation
 - Explains how GDP can decline substantially with little change in inflation!
- Both happen to some extent? Changes in inflation informative

GDP in the United States

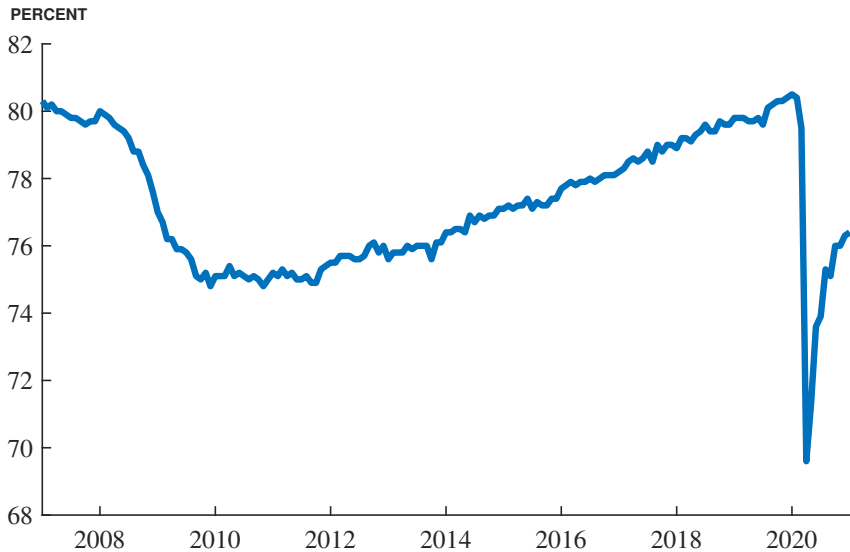
INDEX (2019Q4 = 100)



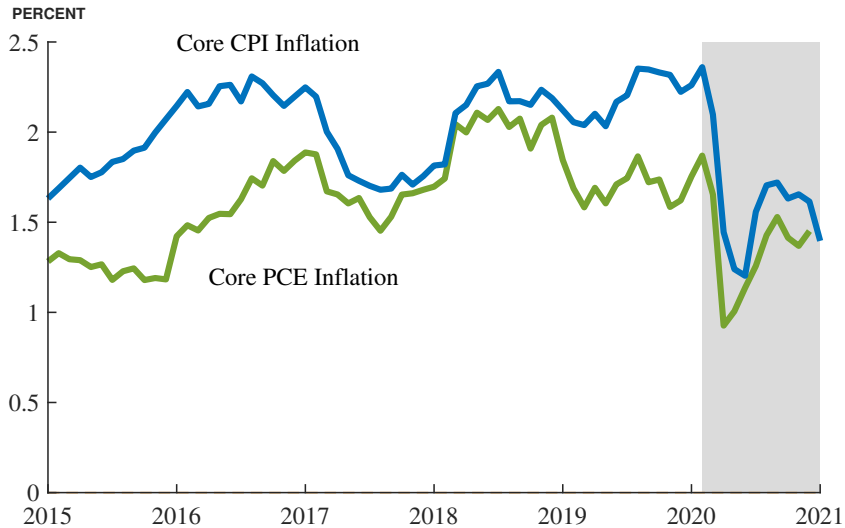
GDP in Other Countries



U.S. Employment-Population Ratio, Ages 25–54



Core Inflation in the United States



Government Policy Responses

- **Social Insurance**

- Direct payments to households
- Extensions and supplements to unemployment insurance

- **Business Assistance**

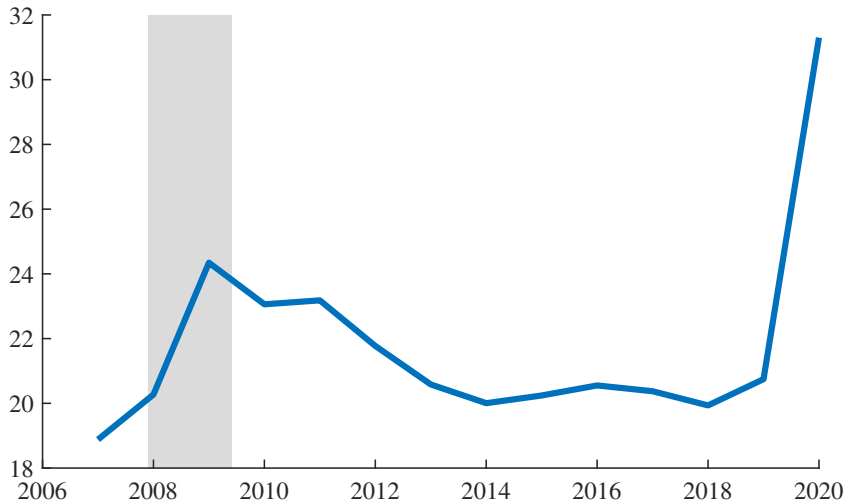
- Paycheck Protection Program
- Reduce bankruptcies in the short term

- **Quantitative Easing**

- \$3.5 trillion
- Includes support for banks and businesses

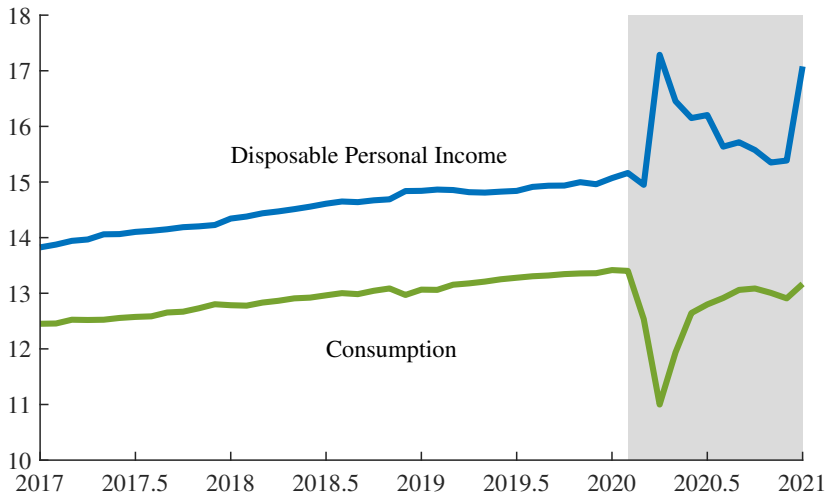
U.S. Federal Government Spending

PERCENT OF GDP



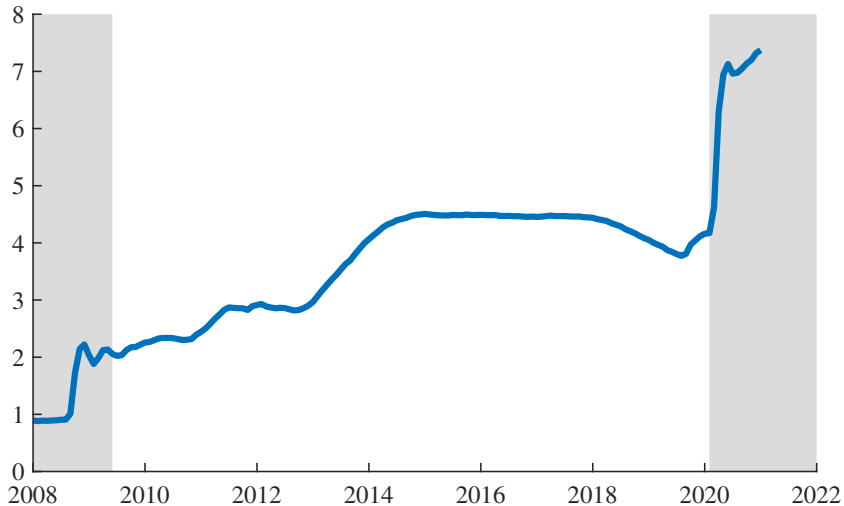
Disposable Income and Consumption

TRILLIONS OF CHAINED DOLLARS



Quantitative Easing by the Federal Reserve

TRILLIONS OF DOLLARS



Expected Inflation: 5 years ahead for 5 years

PERCENT



Conclusion

- Best of luck with your teaching
 - We certainly live in interesting macroeconomic times!

- Slides are available

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