Economics 2
Fall 2024

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LECTURE 17
Fiscal Policy

Two Types of Macroeconomic Policy

- Fiscal policy: Actions taken by the government to change the government budget surplus/deficit

- Monetary policy: Actions taken by the central bank to affect nominal and real interest rates.

II. Fiscal Policy in Theory

Fiscal Policy Terminology

- Government budget surplus (deficit if negative):
  - Net tax revenues T (taxes-transfers) minus Government purchases G: T−G
- Contractionary fiscal policy: Actions that increase the government budget surplus: increase T or reduce G
  - Will decrease PAE at a given level of Y.
- Expansionary fiscal policy: Actions that decrease the government budget surplus: reduce T or increase G
  - Will increase PAE at a given level of Y.

Reminder about the PAE

$$C = \bar{C} + c\cdot(Y - T)$$

$$PAE = C + I^p + G + NX$$

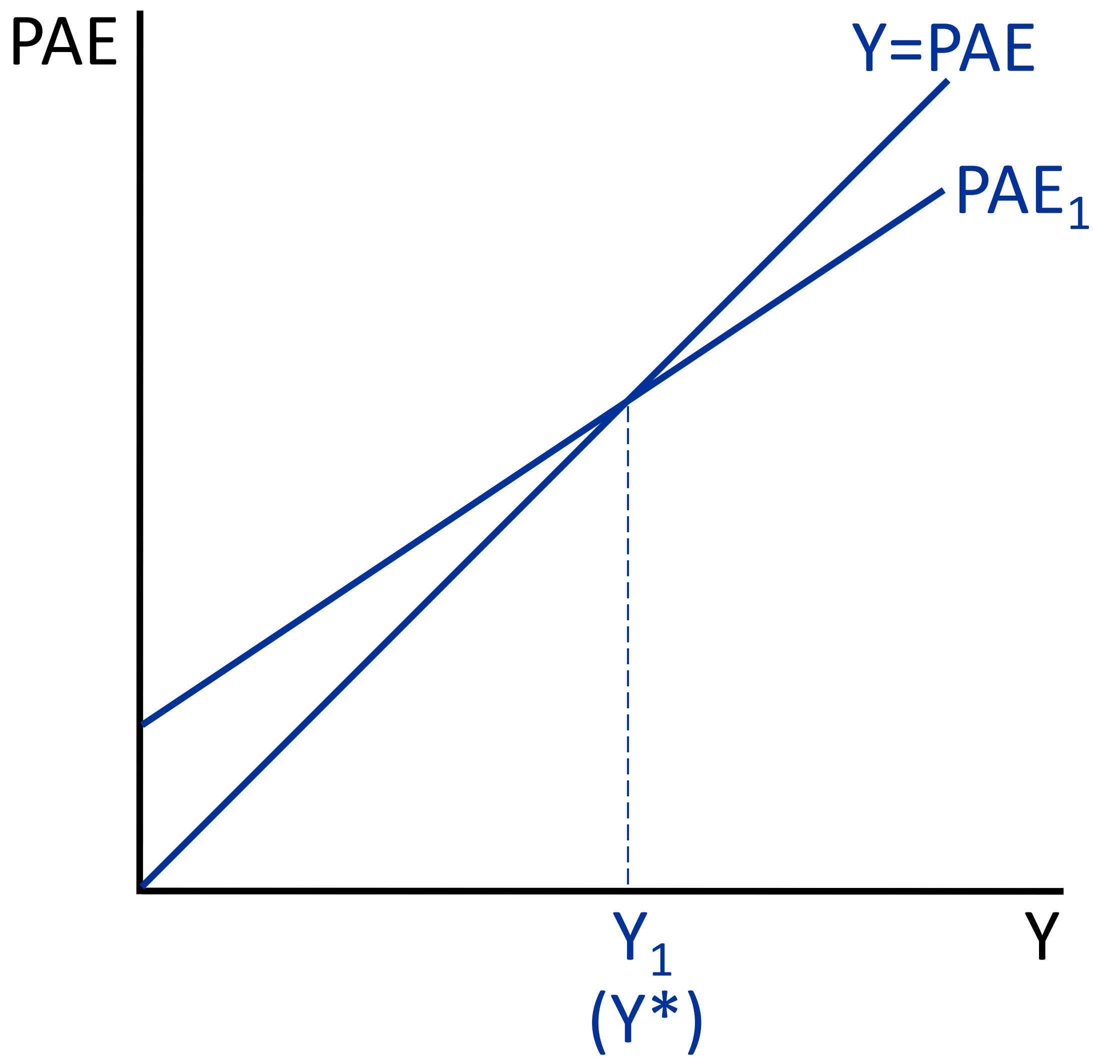
$$= \bar{C} + c\cdot(Y - T) + I^p + G + NX$$

$$= (\underbrace{\bar{C} - c\cdot T + I^p + G + NX}_{\text{Autonomous Spending}}) + c\cdot Y$$

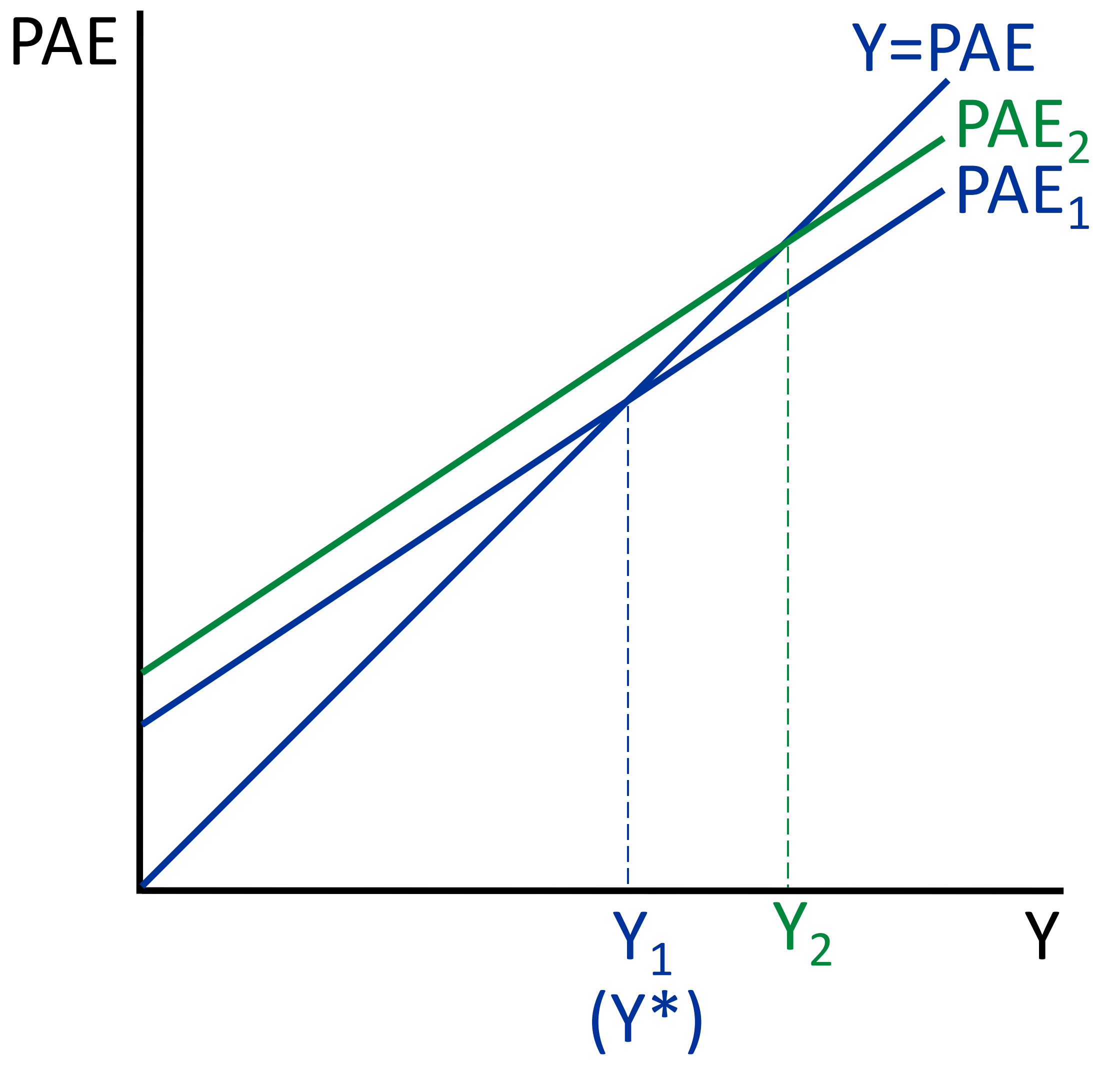
An increase in T shifts the PAE down

An increase in G shifts the PAE up

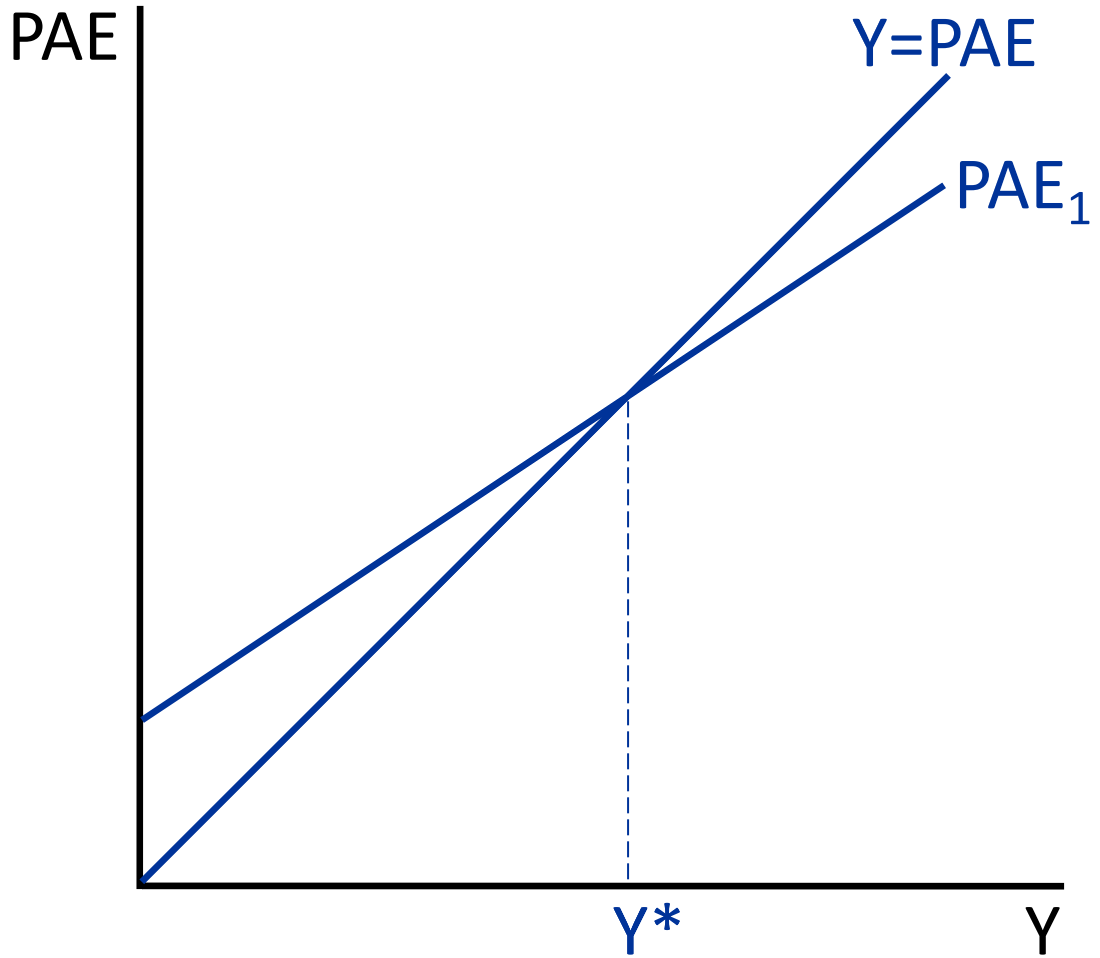
Short-Run Effects of a Tax Cut: T goes down



Short-Run Effects of a Tax Cut: T goes down



Combining the Effects of a Fall in Autonomous Consumption and a Tax Cut



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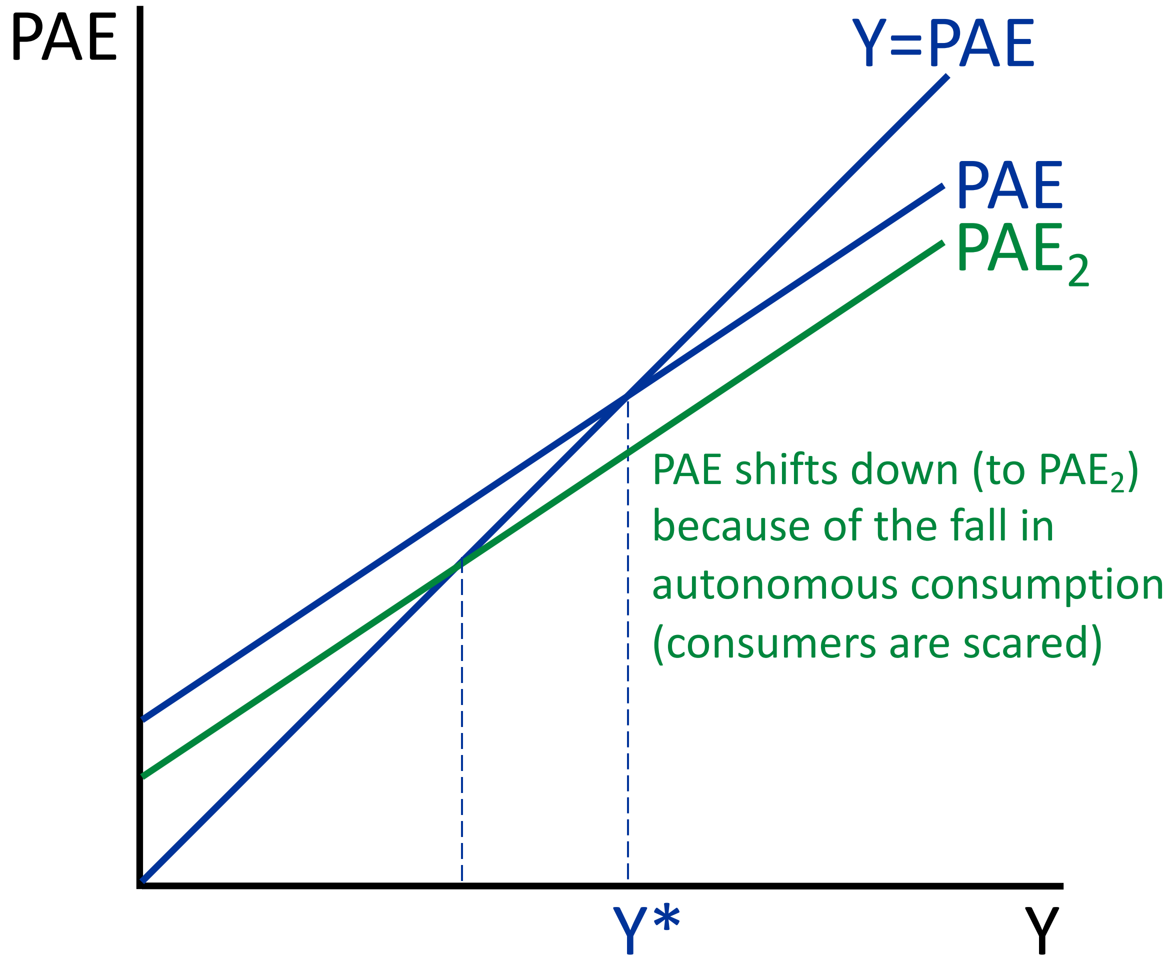

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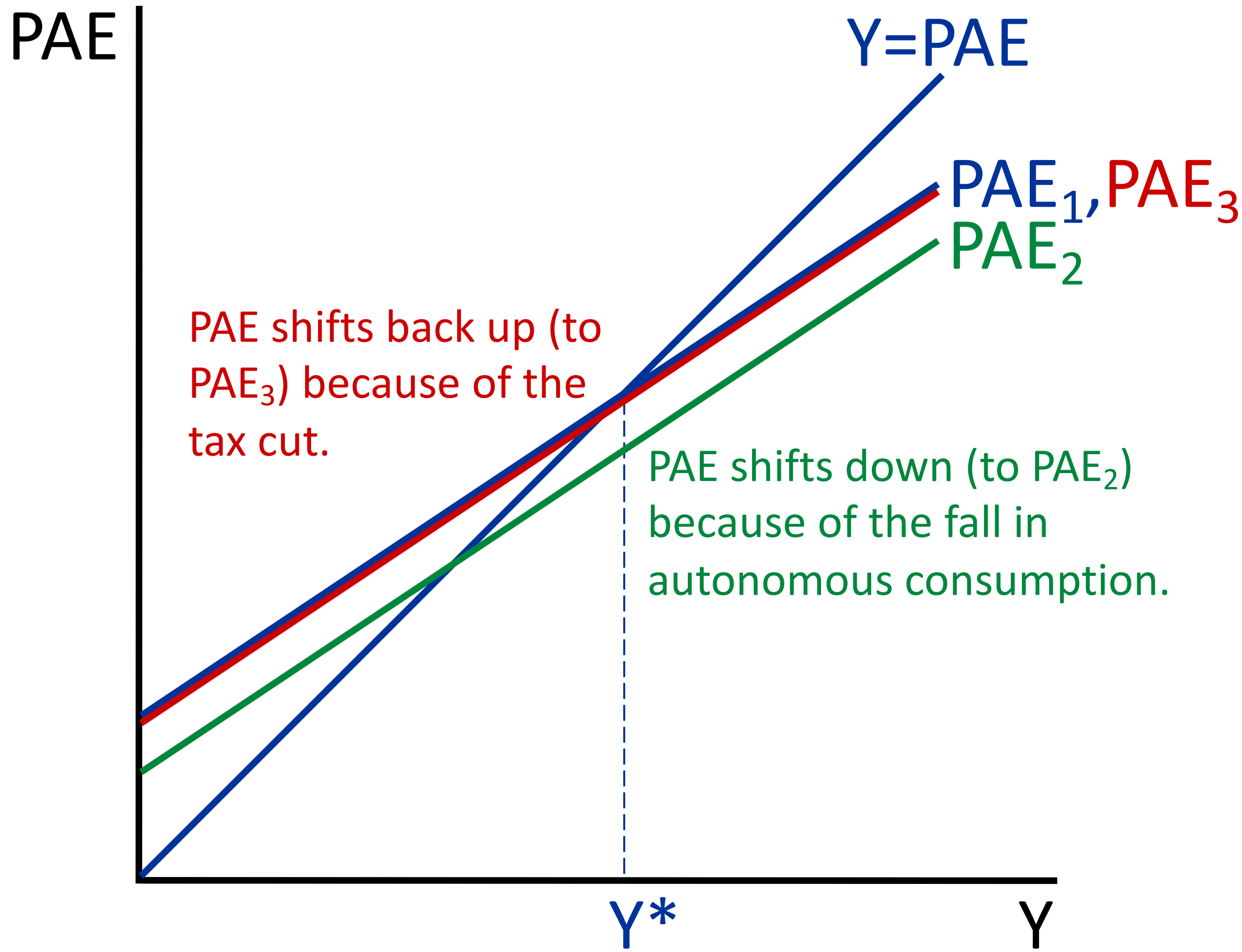


Analytics the PAE and government fiscal stimulus

$$C = \bar{C} + c\cdot(Y - T)$$

$$PAE = C + I^p + G + NX$$

$$= \bar{C} + c\cdot(Y - T) + I^p + G + NX$$

$$= (\underbrace{\bar{C} - c\cdot T + I^p + G + NX}_{\text{Autonomous Spending}}) + c\cdot Y$$

If $\bar{C}$ falls by 1, need to decrease T by 1/c>1 OR increase G by 1 to restore autonomous spending

Quiz: G vs. T stimulus

In the Keynesian cross model, why is increasing govt spending G by 1 more powerfully stimulative than reducing net taxes T by 1?

- A. Because government spending like roads is more useful than private consumption spending
- B. Because people don’t spend fully a tax cut, they also save part of it
- C. Because government spending like extra road construction puts directly more people to work
- D. Because receiving a tax cut or govt transfer reduces your need to earn income by working and producing
- E. All of the above

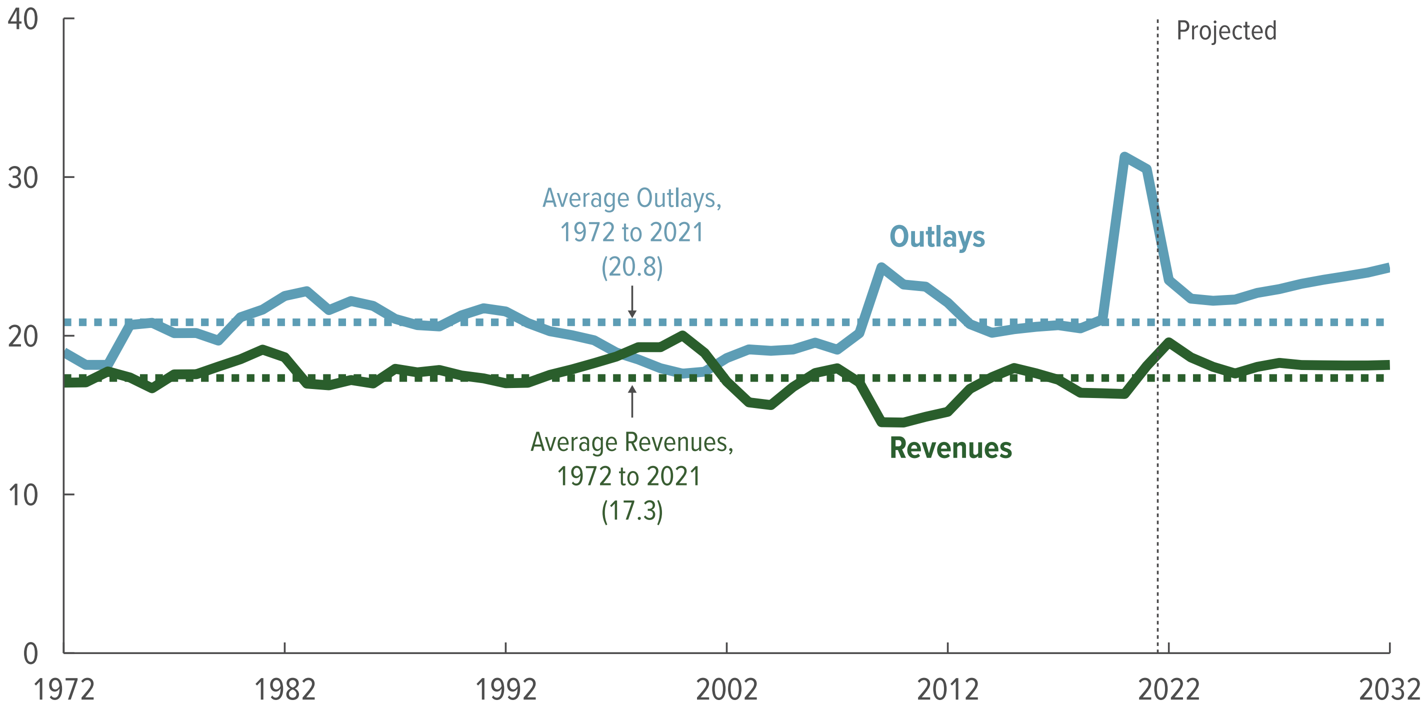
Countercyclical Fiscal Policy

- Automatic stabilizers: In recessions, taxes automatically drop as they depend on output. Transfers such as unemployment insurance automatically increase.
- Discretionary stabilization: Policy actions taken by the government in response to business cycle (examples: 2009-12 Obama stimulus, COVID care acts in 2020 and 2021)
- Ability to run deficits in recessions is a great tool for short-run business cycle stabilization (as long as debt level is sustainable)

Figure 1-2.

Total Outlays and Revenues

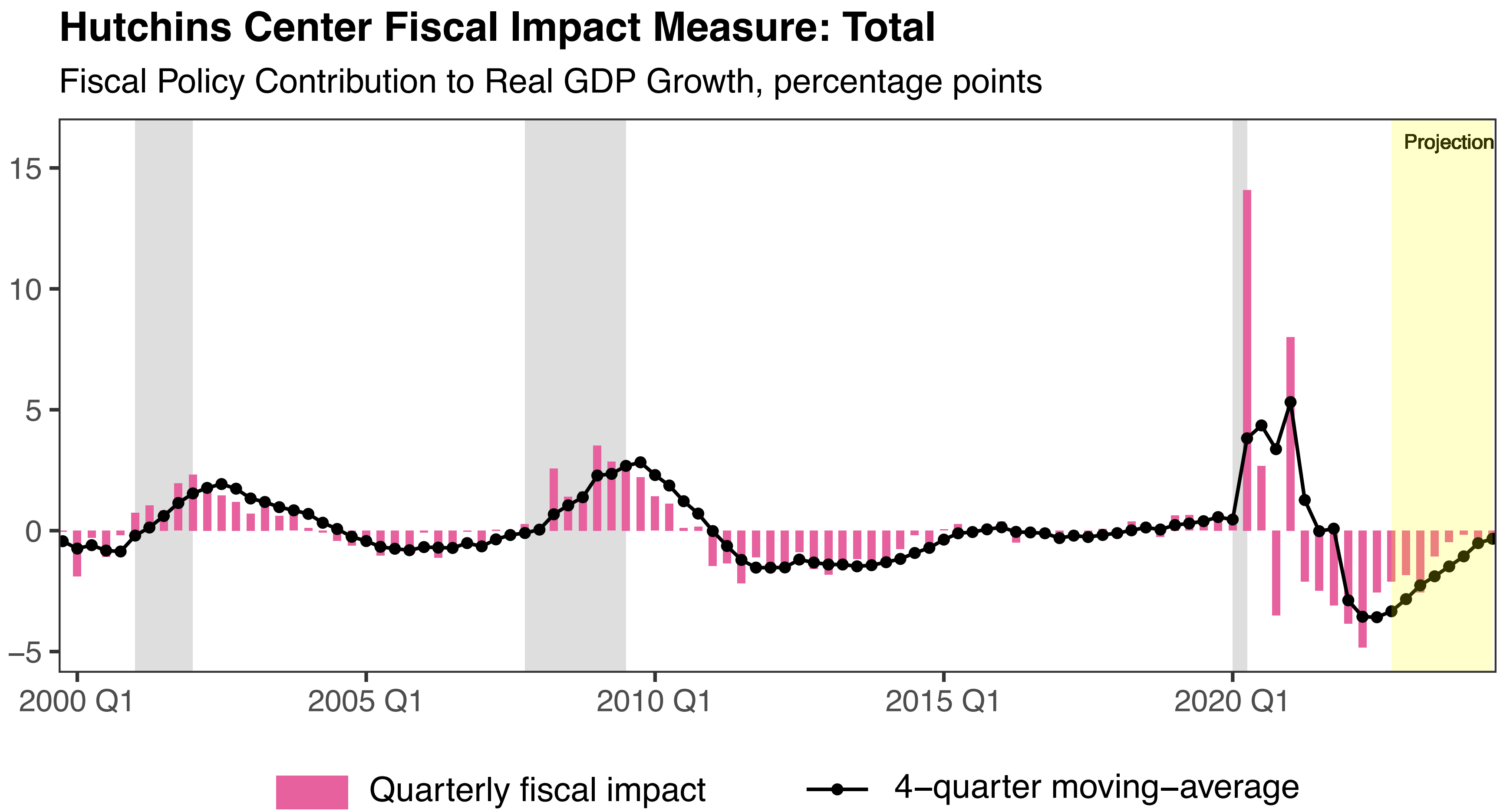
Percentage of Gross Domestic Product



Outlays are projected to drop from recent highs, as pandemic-related spending wanes, and then trend upward, as they did before the pandemic. Revenues are projected to increase sharply this year and then hover around their historical average as a share of the economy.

Data source: Congressional Budget Office. See www.cbo.gov/publication/57950#data.

Source: CBO. Federal government outlays (=govt spending+transfers) exceed revenue from taxes, especially so in recessions (2009-2010, 2020-21)

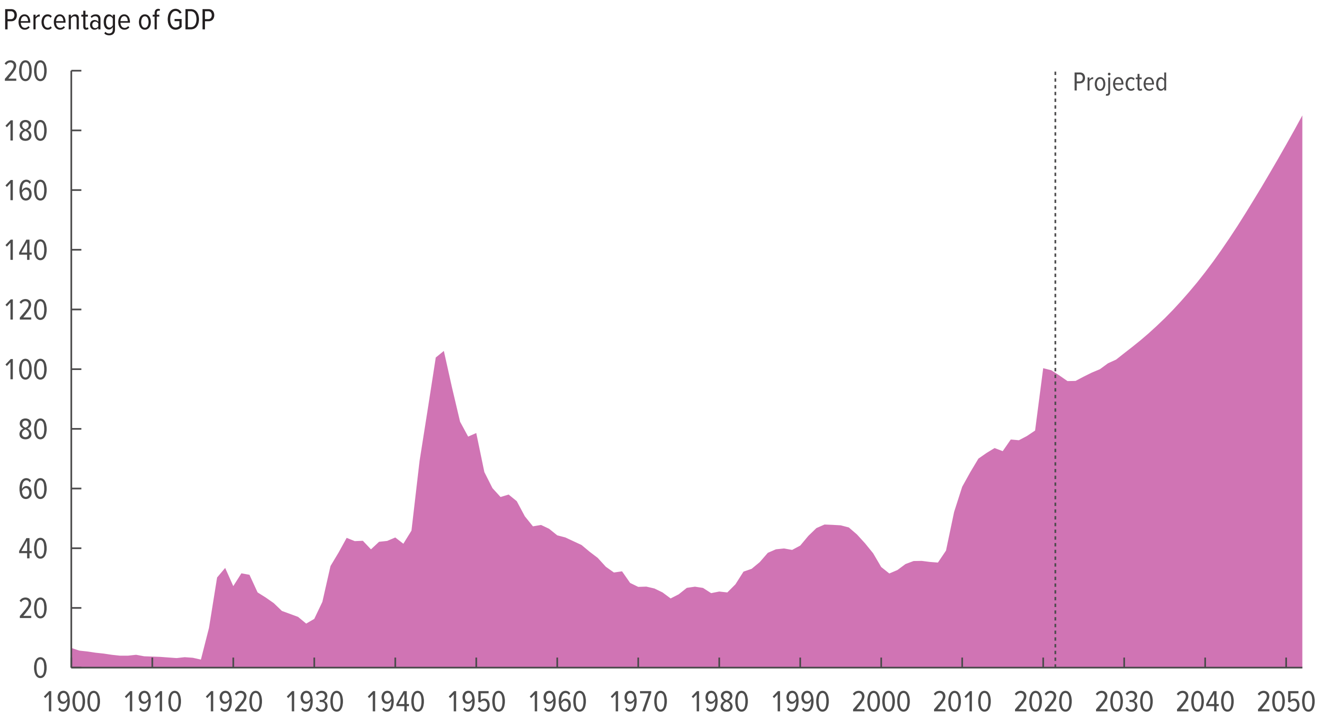


Source: Hutchins Center calculations from Bureau of Economic Analysis and Congressional Budget Office data; grey shaded areas indicate recessions and yellow shaded areas indicate projection.

Hutchins Center
on Fiscal & Monetary Policy
at BROOKINGS

Figure 1-8.

Federal Debt Held by the Public, 1900 to 2052



Federal debt held by the public is projected to increase in most years in the projection period, reaching 110 percent of GDP in 2032—higher than it has ever been. In the two decades that follow, growing deficits are projected to push federal debt higher still, to 185 percent in 2052.

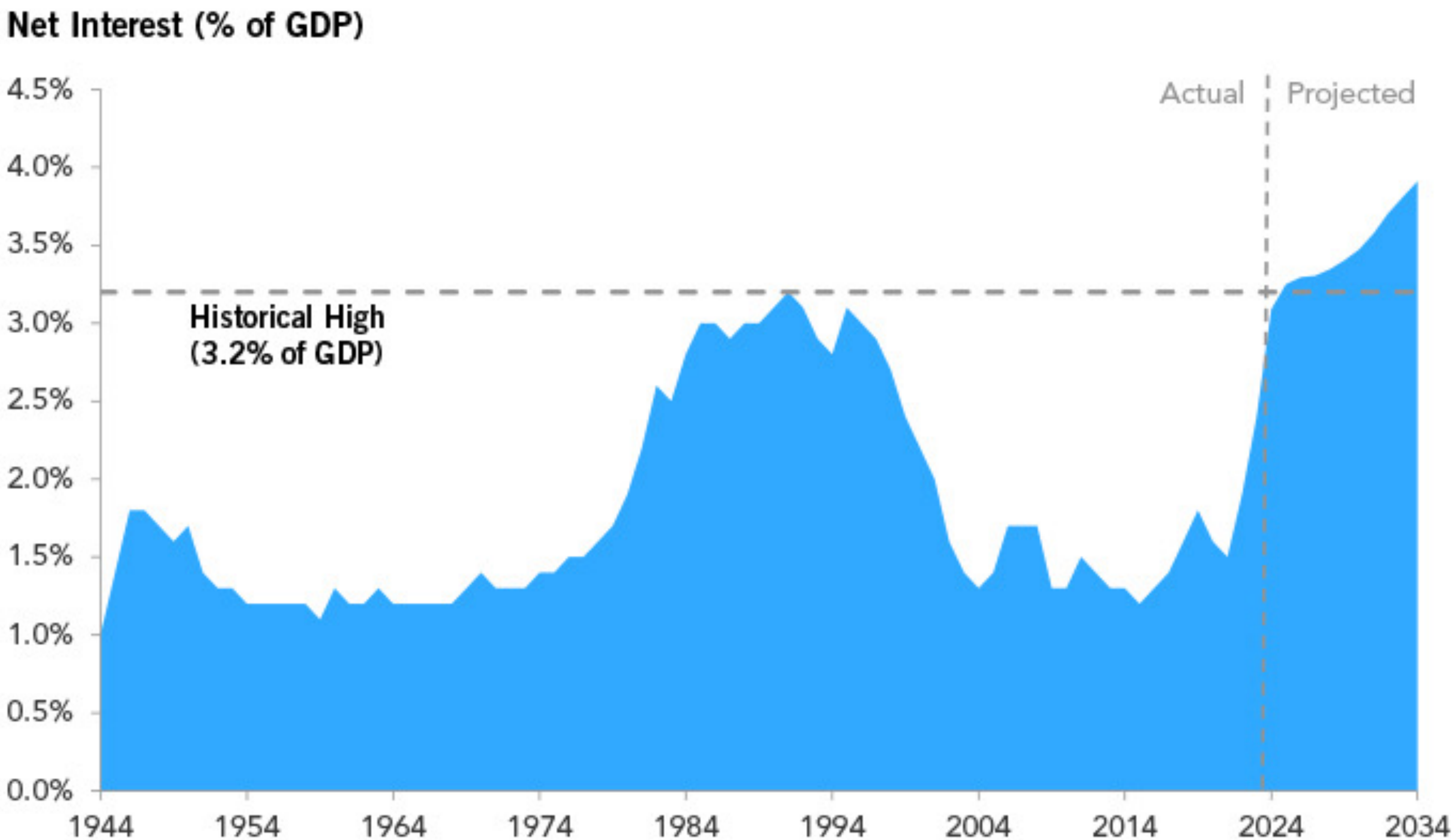
Data source: Congressional Budget Office. See www.cbo.gov/publication/57950#data.

GDP = gross domestic product.

US Federal Debt has increased a lot since 2000 for fighting recessions: Great recession and COVID and also because of tax cuts (GW Bush and Trump 1, and possibly Trump 2)

PETER G. PETERSON FOUNDATION

Net interest costs are projected to exceed the previous high relative to the size of the economy in 2025



SOURCES: Congressional Budget Office, *The Budget and Economic Outlook: 2024 to 2034*, February 2024; and Office of Management and Budget, *Historical Tables, Budget of the United States Government, Fiscal Year 2025*, March 2024.

PGPF.ORG

Big US Federal Debt sustainable as long as interest rate paid on US govt debt remains Low. Was the case up to 2022-3 but not in 2024 and projected future years

Poll on Federal govt debt

What is your view on US federal government deficits and growing debt?

- A. No concern at all because debt has grown a lot and nothing bad has happened yet
- B. Some concern that with high debt, US govt won't be able to borrow more in future emergency (recession, disaster, war, etc.)
- C. Some concern that with high debt, US govt won't be able to keep paying for its main programs: Social security and Medicare for the elderly, Medicaid for the poor, Defense, etc.
- D. I find it unfair that the government systematically spends more than it takes in taxes.

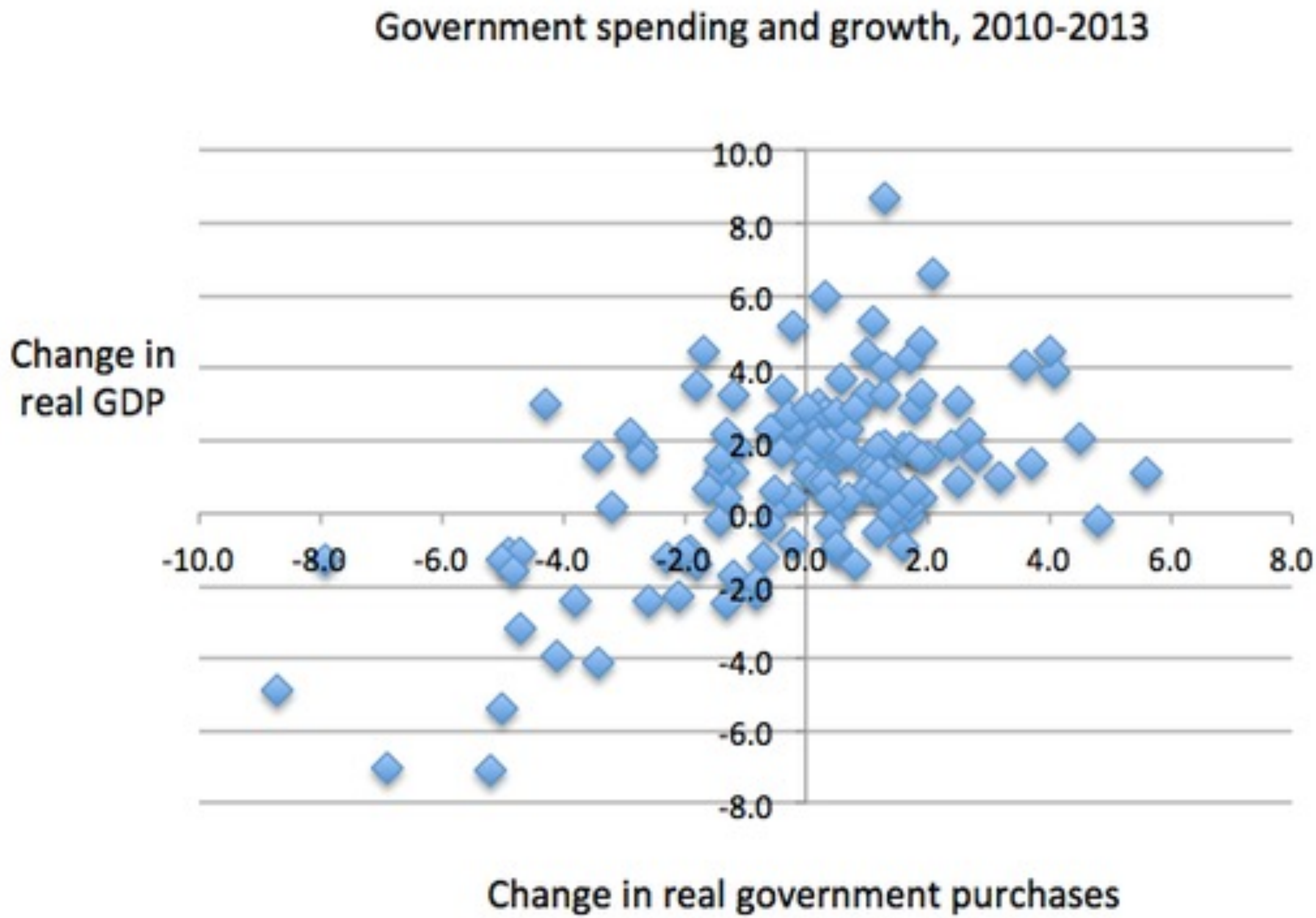
Budget Policies and Deficits at the State Level

- In contrast to Federal govt, States have budget balance requirements forcing spending to equate tax revenue each year
- States cannot use fiscal policy to fight downturns
  - Example: California had to cut spending drastically during Great Recession 2008-2010
- States have to rely on the federal govt to help
  - Example: 2021 COVID stimulus by Biden administration included lots of state funding

III. Empirical Evidence on the Effects of Fiscal Policy

Difficulty in Estimating the Effect of Fiscal Changes

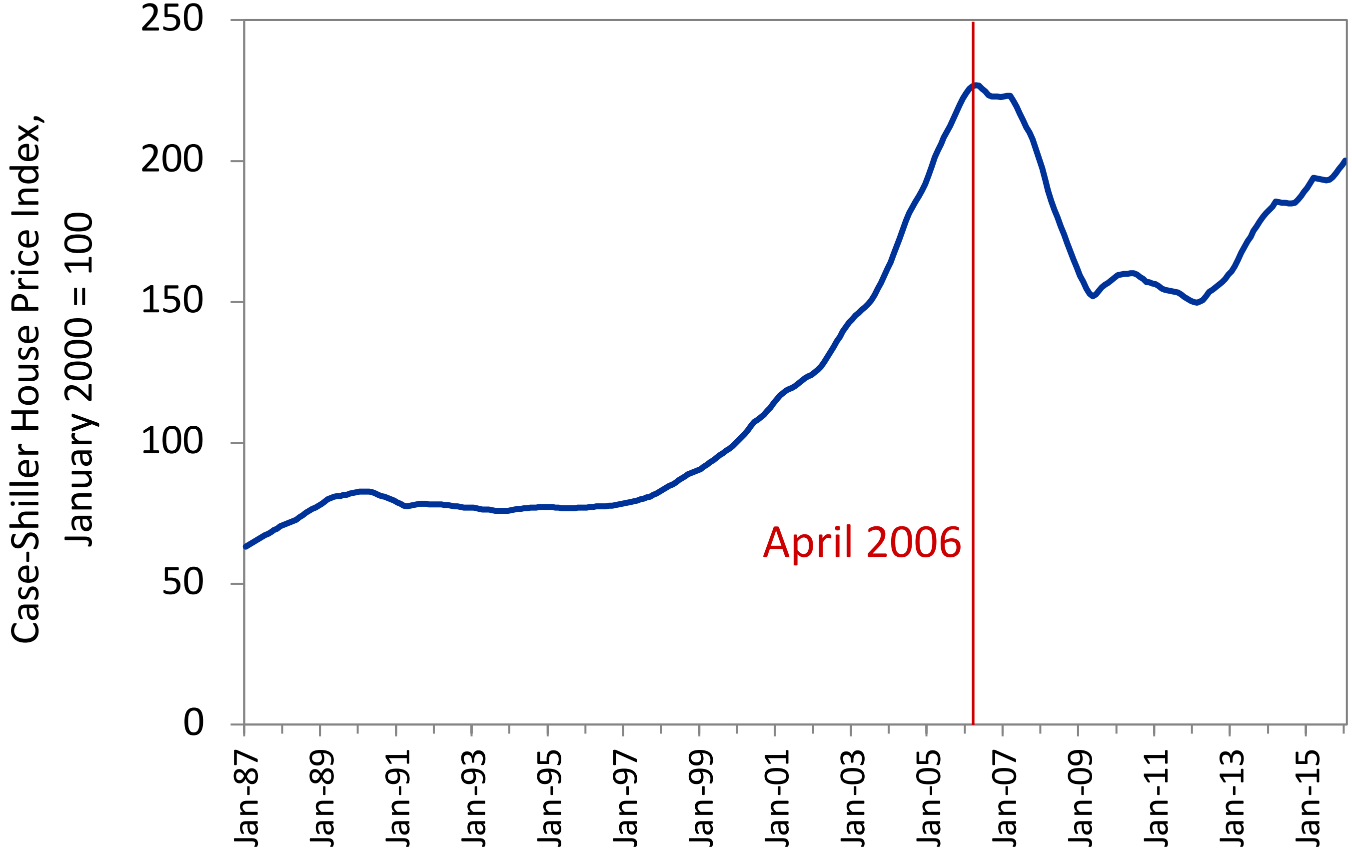
- Some fiscal changes happen ***because*** output is falling.
  - Example: Reverse causality situation of reduced output mechanically leads to reduced taxes.
- Need to find **exogenous** fiscal changes.
  - Simple illustration from Paul Krugman's blog:
  - During great recession in Europe in 2010-13, some countries like Greece forced to cut government spending a lot because they could not borrow anymore => countries where G fell a lot, GDP declined dramatically



Changes in annual real government spending (in GDP points) and changes in real GDP, 33 EU countries, 2010-11, 2011-2, 2012-3 (=99 dots). Some countries (like Greece) had to cut government spending drastically because of high borrowing costs: they experienced a much deeper recession consistent with Keynes' theory.
Source: Krugman NYtimes blog, January 6, 2015

IV. Fiscal Policy in Practice: The 2008 Recession and the Fiscal Policy Response

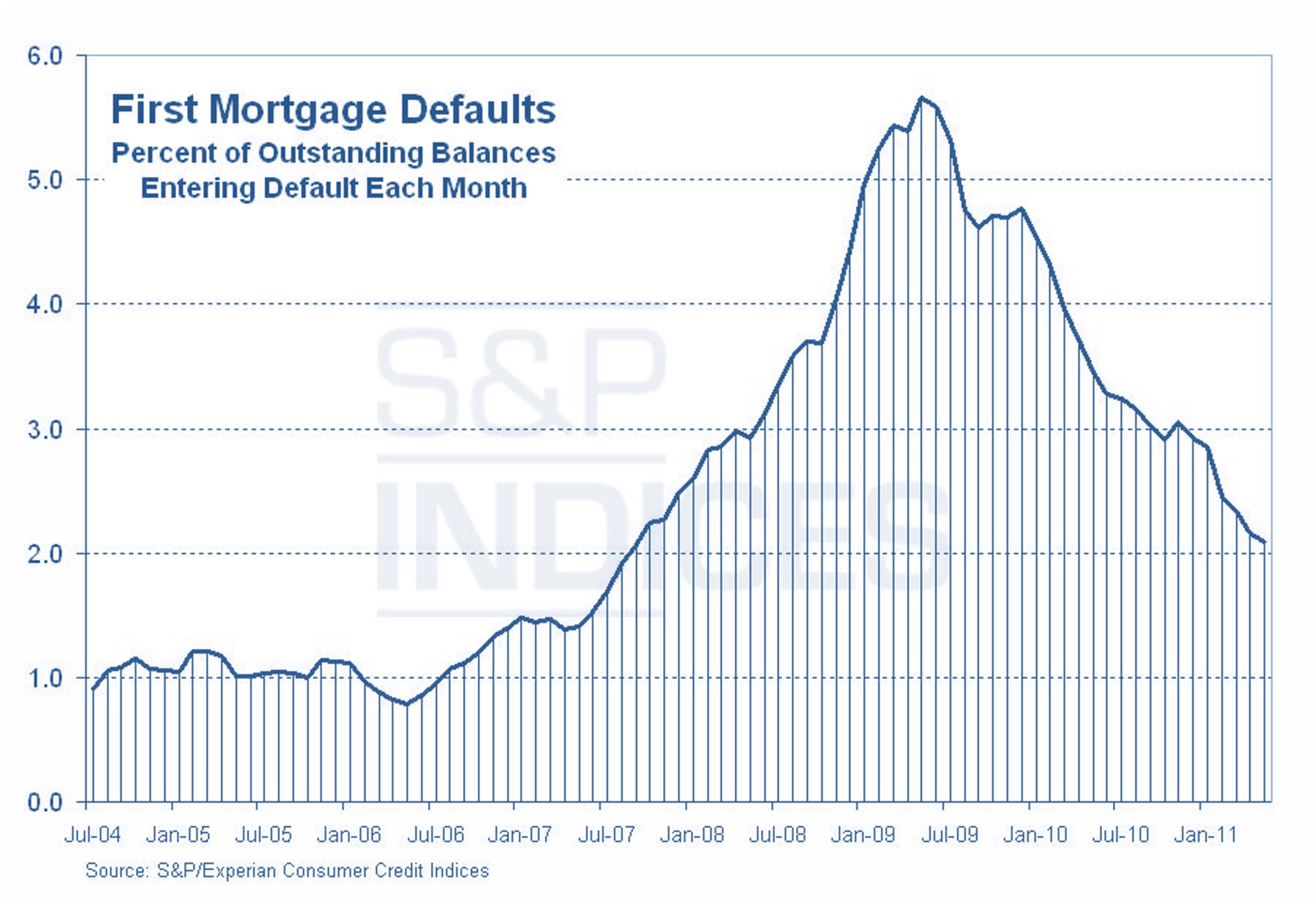
House Prices, 1987–2015



Source: Federal Reserve Bank of St. Louis, FRED.

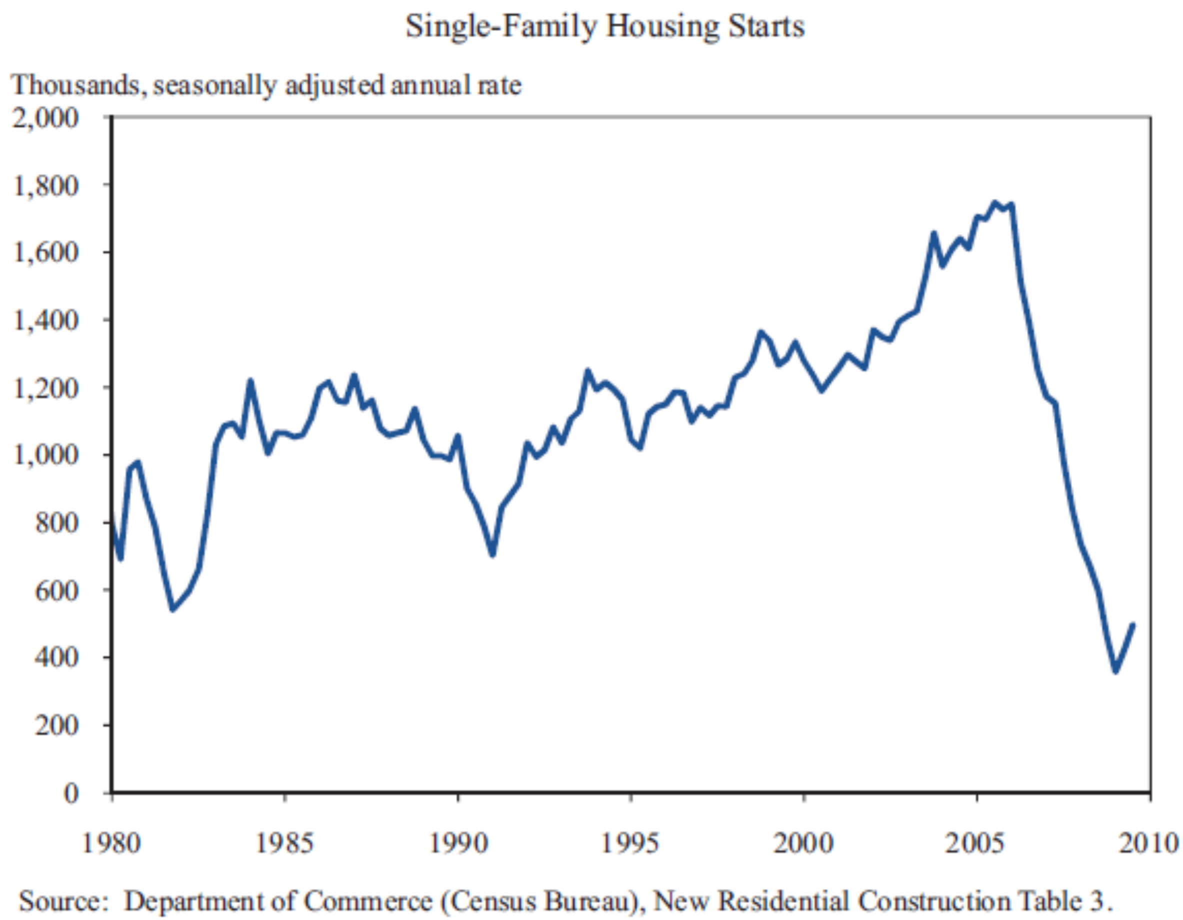
Effects of the Housing Bubble

- Housing price increases driven by financial deregulation:
  - Easier for buyers to get mortgages: smaller down-payments and don’t need very good credit score
  - Led to a boom in housing purchases, prices, and home construction
- But housing price increase was a bubble that eventually crashed, leading to massive defaults in mortgages creating a financial crisis



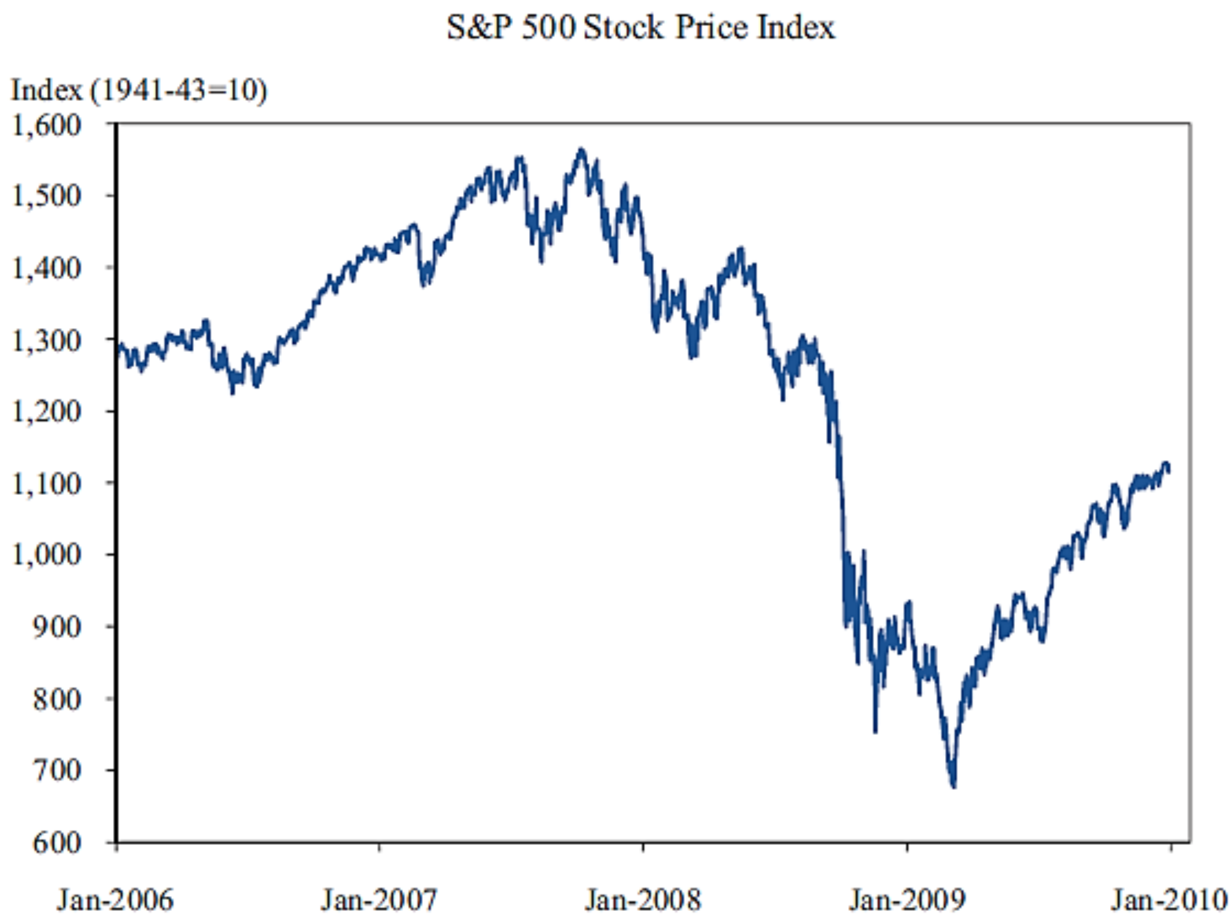
Source: http://www.housingviews.com.

Single-Family Housing Starts (New construction)



Source: *Economic Report of the President*, February 2010.

Stock Prices during the Financial Crisis

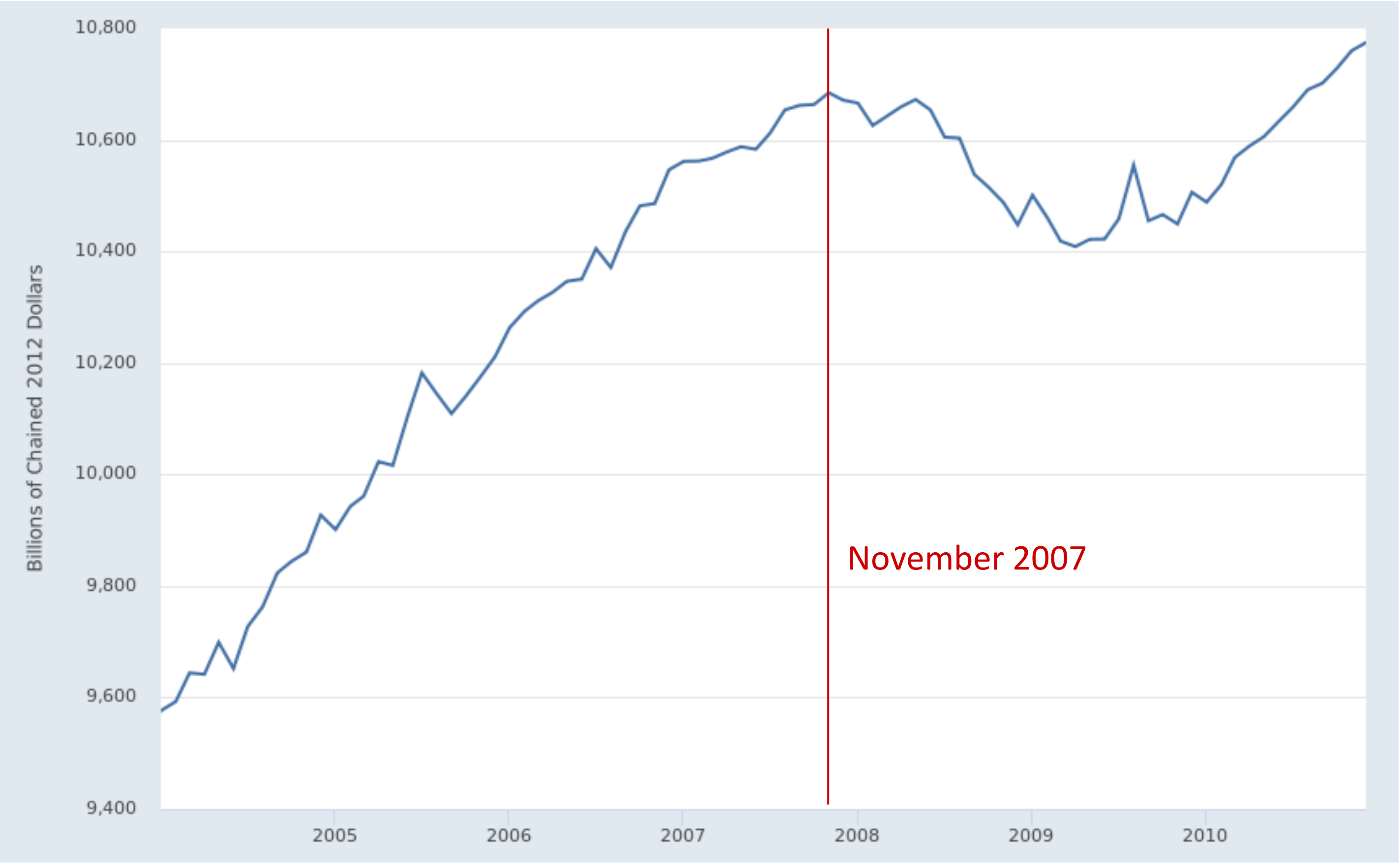


Source: *Economic Report of the President*, February 2010.

What happened to PAE in 2008?

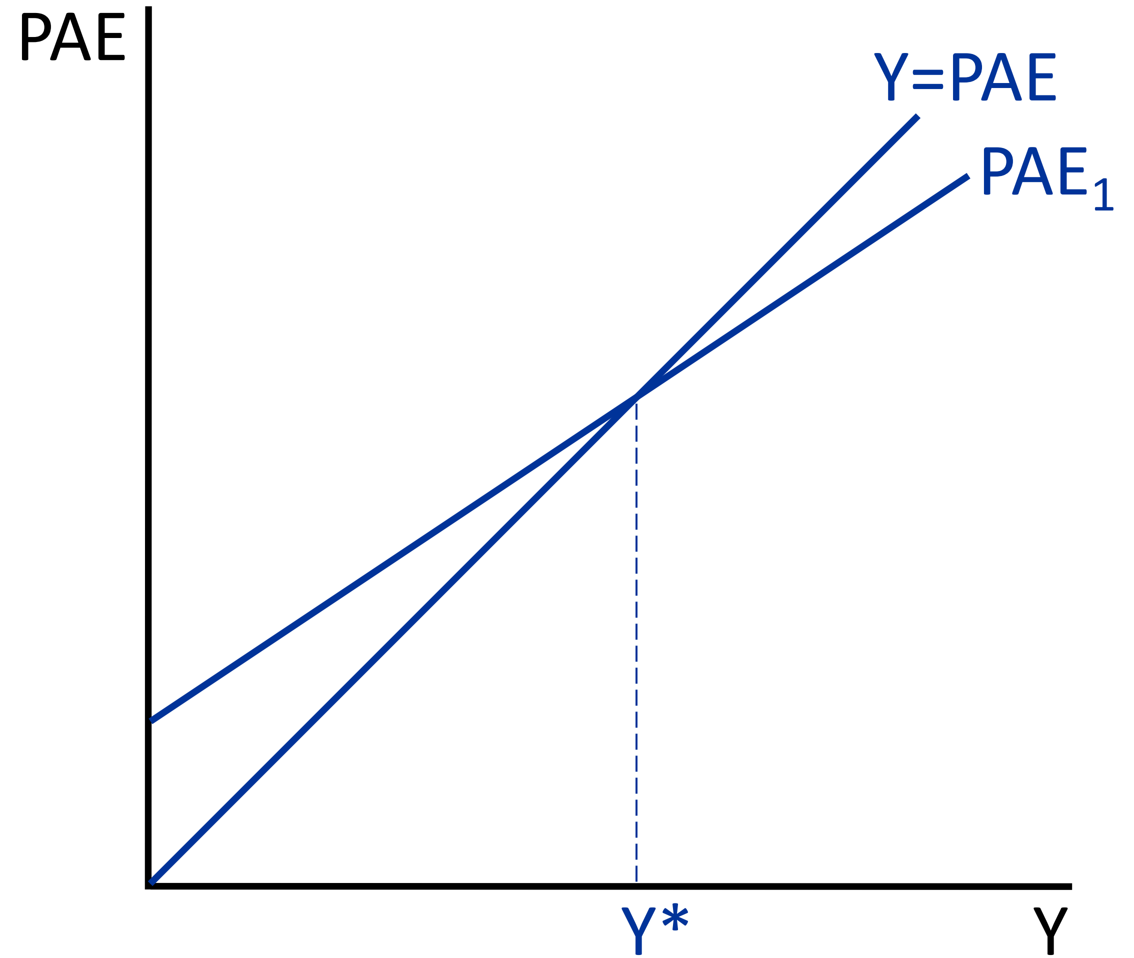
- Decline in investment (particularly in housing)
  - Housing bust reduced expected future MRP_K of housing (which is a kind of capital).
  - Financial crisis hurt animal spirits and made it hard for firms to get credit.
- Decline in consumption
  - Housing bust and stock market decline destroyed wealth.
  - Financial crisis hurt consumer confidence and made it hard for households to get credit.

Real Personal Consumption Expenditures



Source: FRED, Bureau of Economic Analysis.

Effect of the Housing Bust and the Financial Crisis on Output



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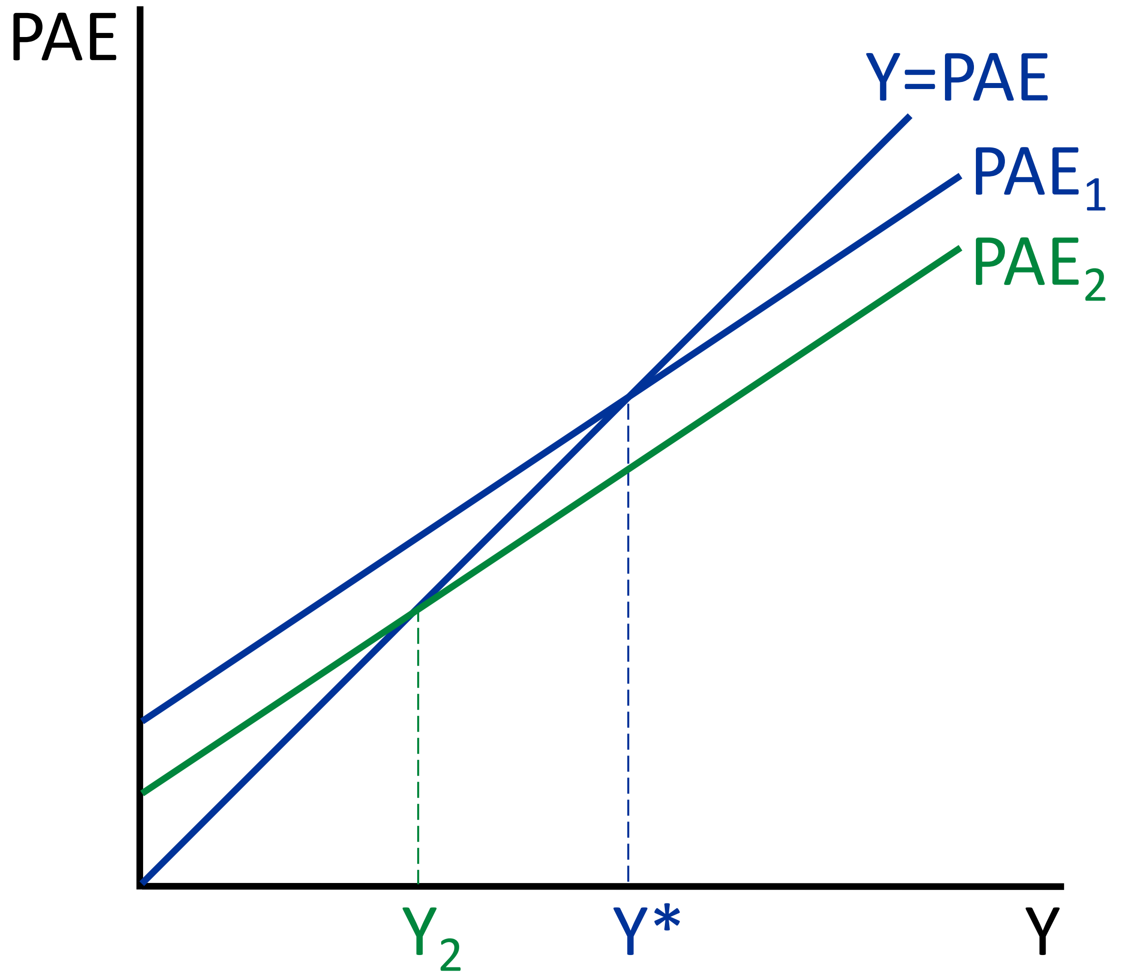
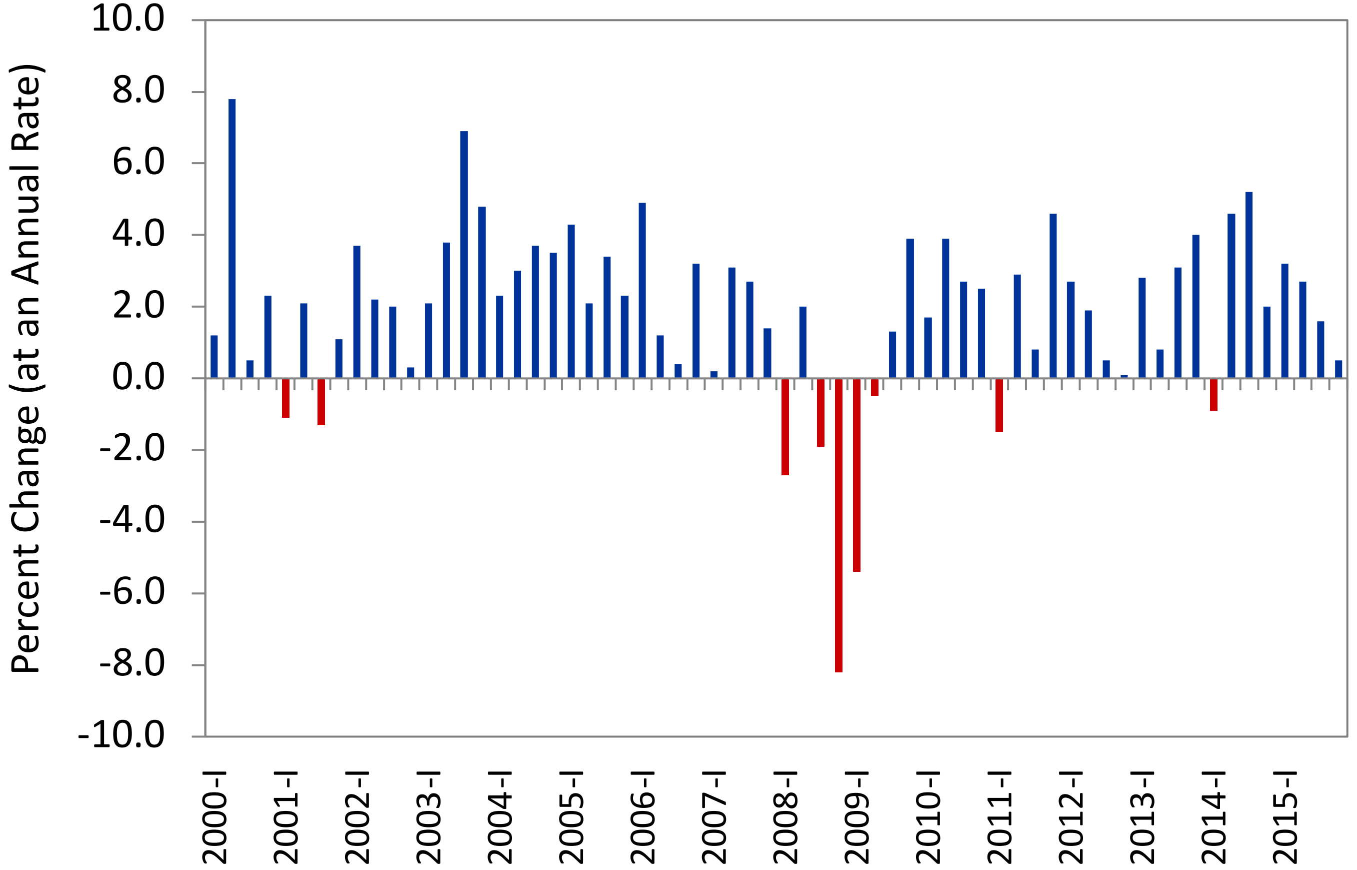


Percentage Change in Real GDP



Source: Federal Reserve Bank of St. Louis, FRED. Shows quarterly growth of use GDP expressed in annualized rate (e.g., if GDP contracts by 2% in 2008-Q4 relative to 2008-Q3, that's an 8% annualized rate of contraction)

Issues in Designing the 2009 Fiscal Stimulus

- How big should it be?
    - Need an estimate of how much PAE has shifted down.
    - We don't observe this directly or rapidly.

Issues in Designing the 2009 Fiscal Stimulus

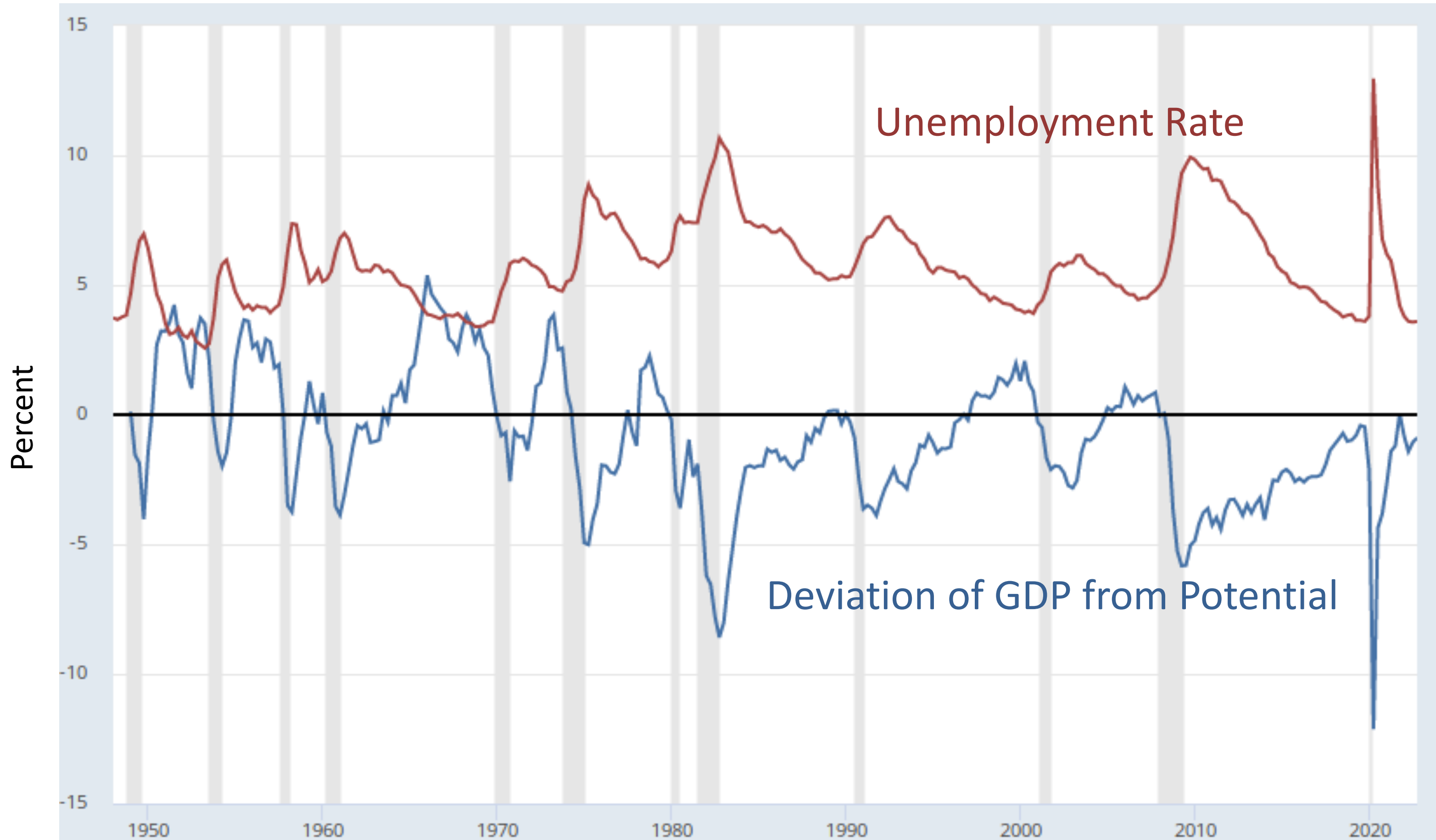
What should the composition be?

- Fiscal stimulus has different effects on PAE:
  - \$100 billion increase in G increases PAE by \$100 billion
  - \$100 billion of tax cuts increases PAE by MPC·\$100 billion
- Different types of stimulus affect the economy with different speeds:
  - Tax cuts/rebates can be done quickly and have fast impact
  - Government spending G needs “shovel ready projects” so slower

Issues in Designing the 2009 Fiscal Stimulus

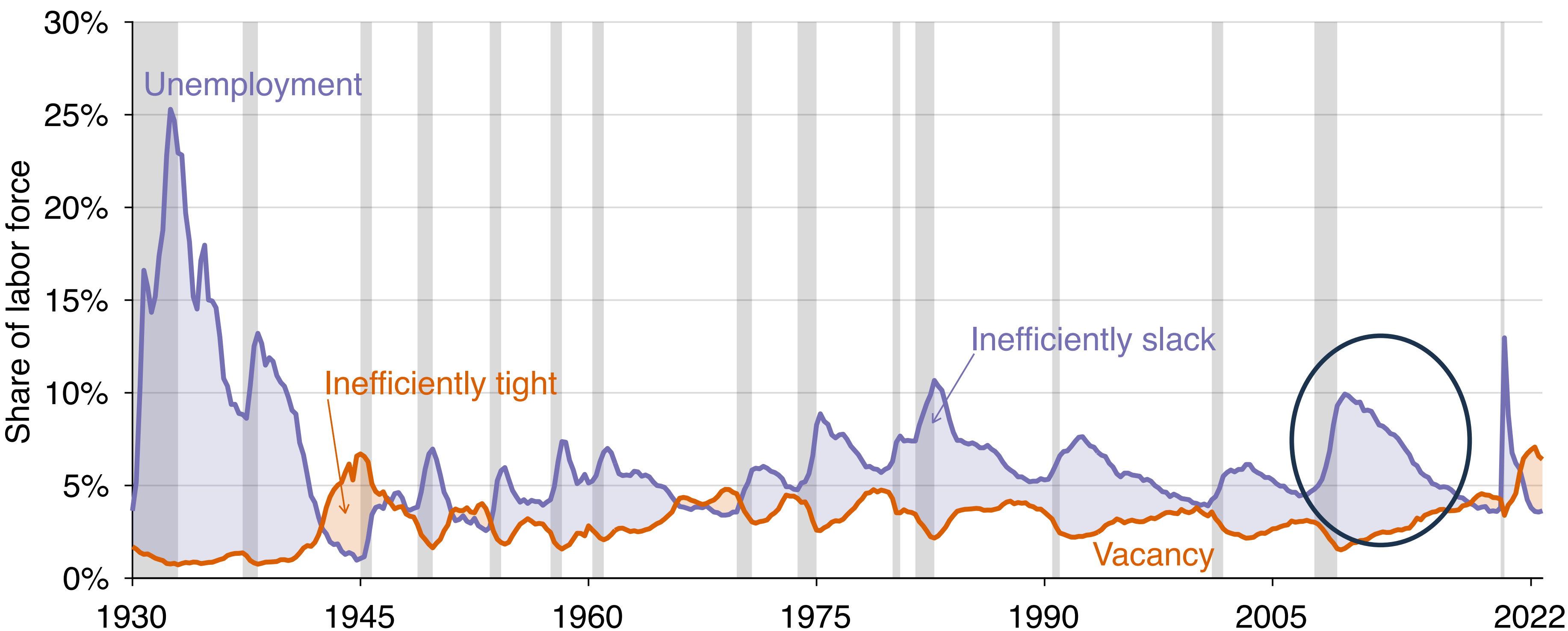
- How long should it last?
  - Need a forecast of how long PAE will be depressed.
  - If PAE will be low for more than a year, fiscal stimulus needs to last for more than a year as well.
  - View of most economists: Fiscal stimulus response to Great Recession was too small and left economy depressed for too long

Fiscal Stimulus too small: Unemployment Rate stayed high for years after the Great Recession



Source: FRED; data from Bureau of Labor Statistics, BEA, CBO.

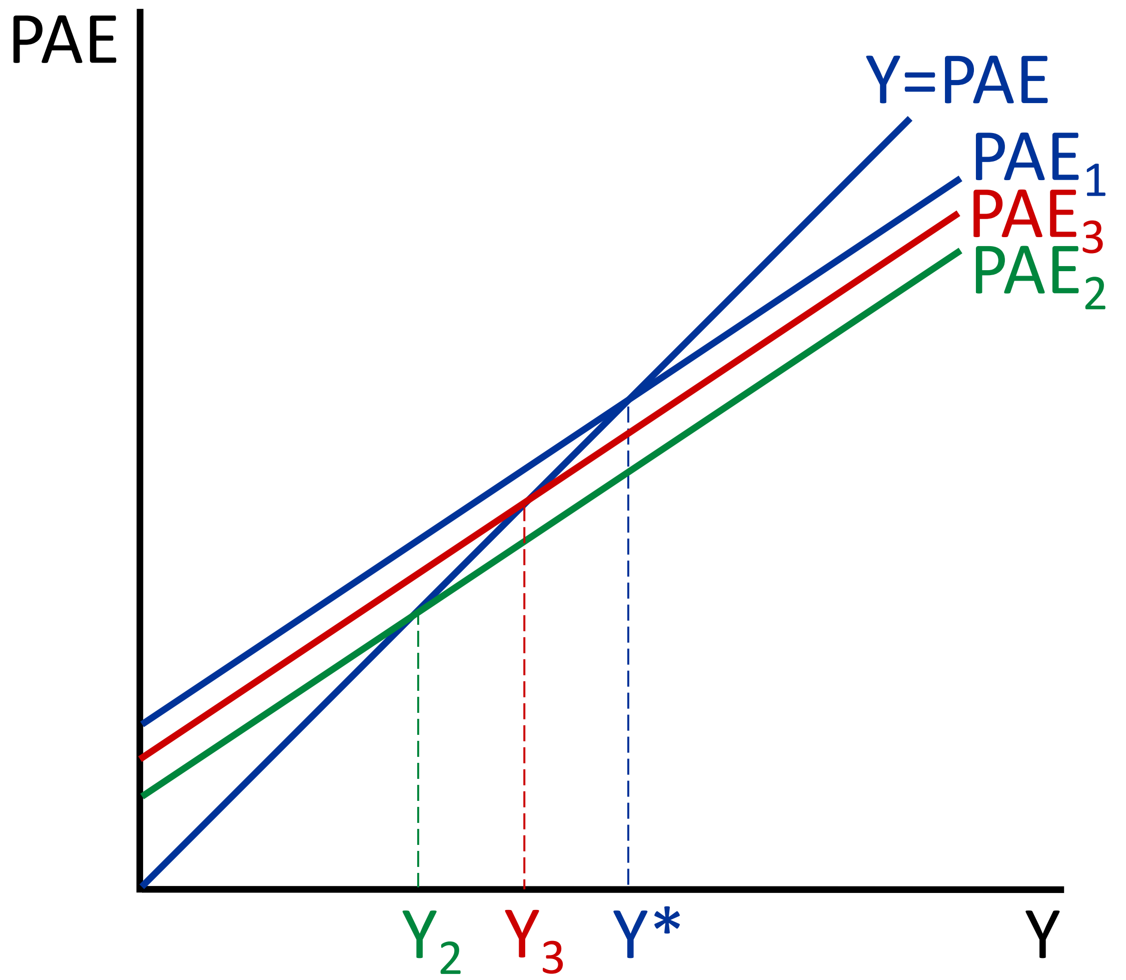
EFFICIENCY CRITERION FOR US LABOR MARKET



Unemployment Rate stayed too high for years after the Great Recession => Fiscal Stimulus too small:

Source: [Michaillat and Saez (2022)](): labor market too slack when unemployed exceed vacancies (common) and too tight when vacancies exceed unemployed

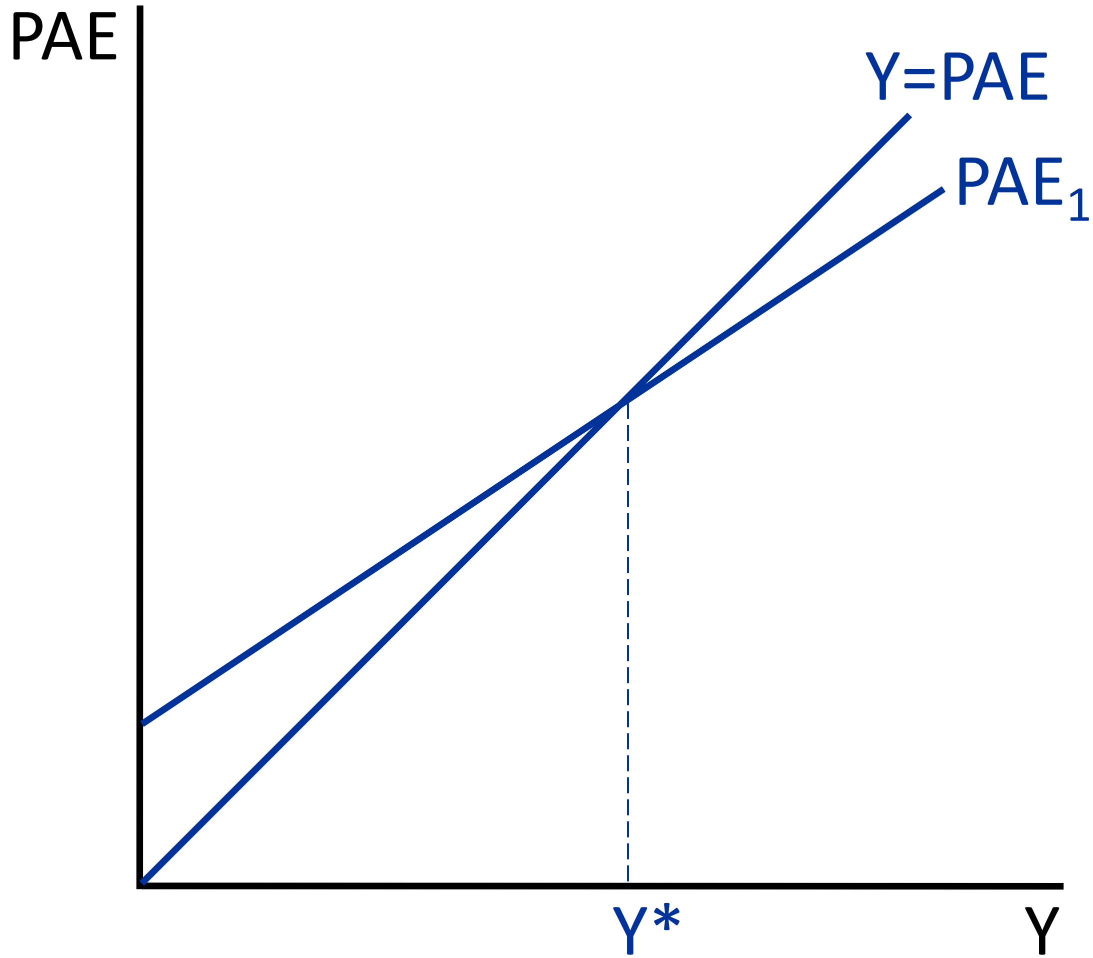
Effect of the 2009 Fiscal Stimulus on Output



The Recovery Act counteracted some, but by no means all of the fall in output.

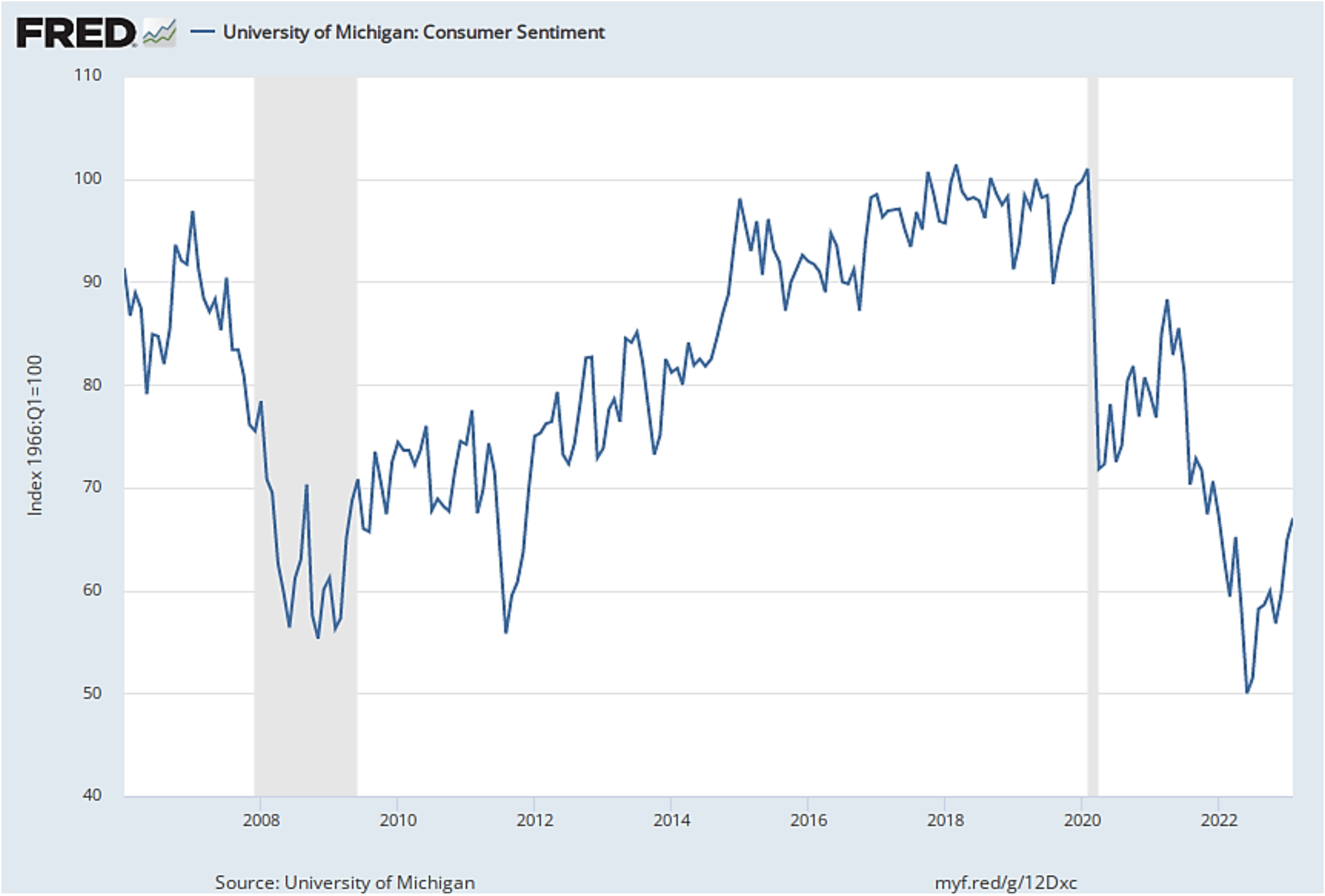
V. Fiscal Policy in Practice: The COVID Recession and the Fiscal Policy Response

The Keynesian Cross



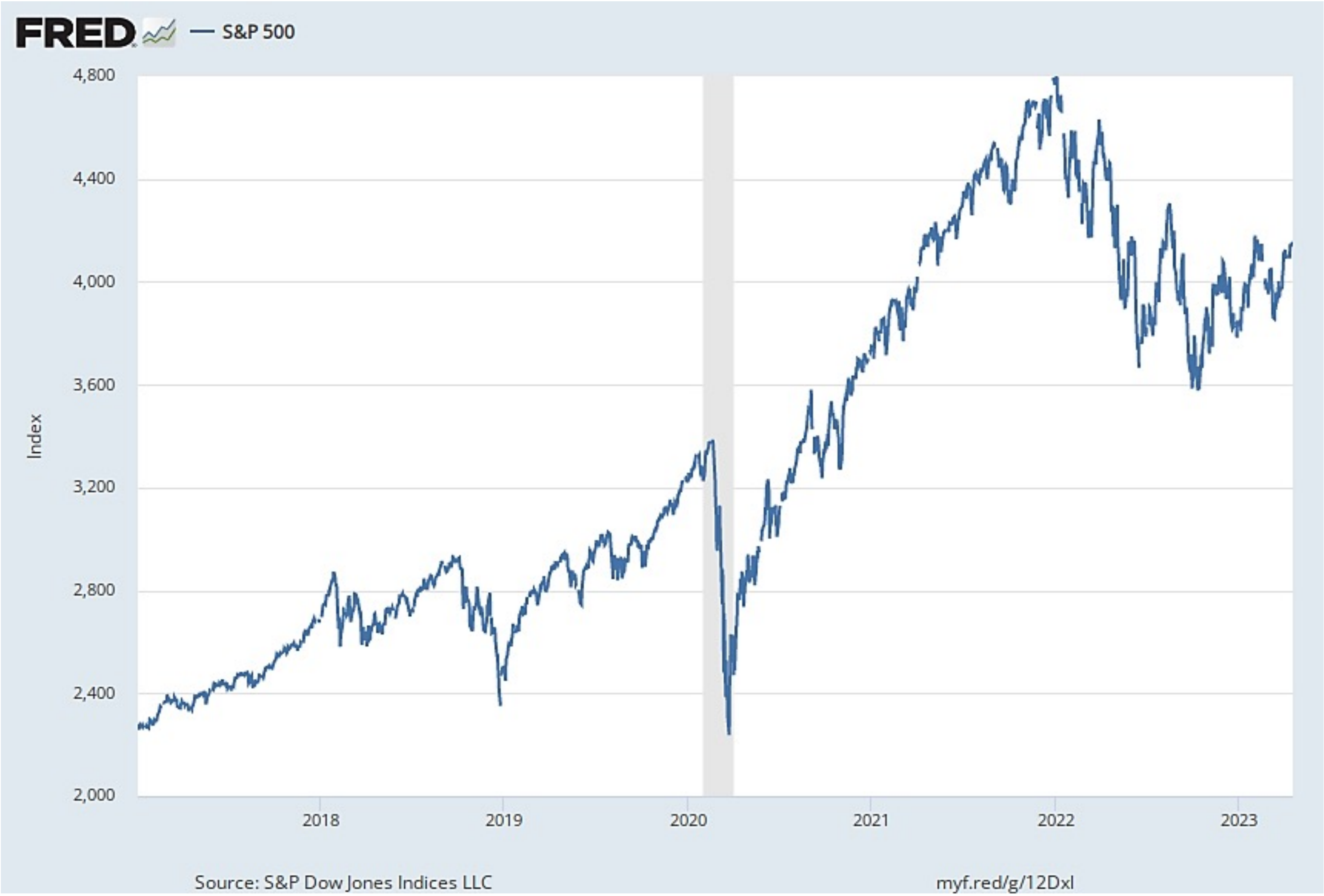
We began the pandemic with output roughly at Y*

Consumer Confidence



Source: FRED; data from University of Michigan.

Stock Prices

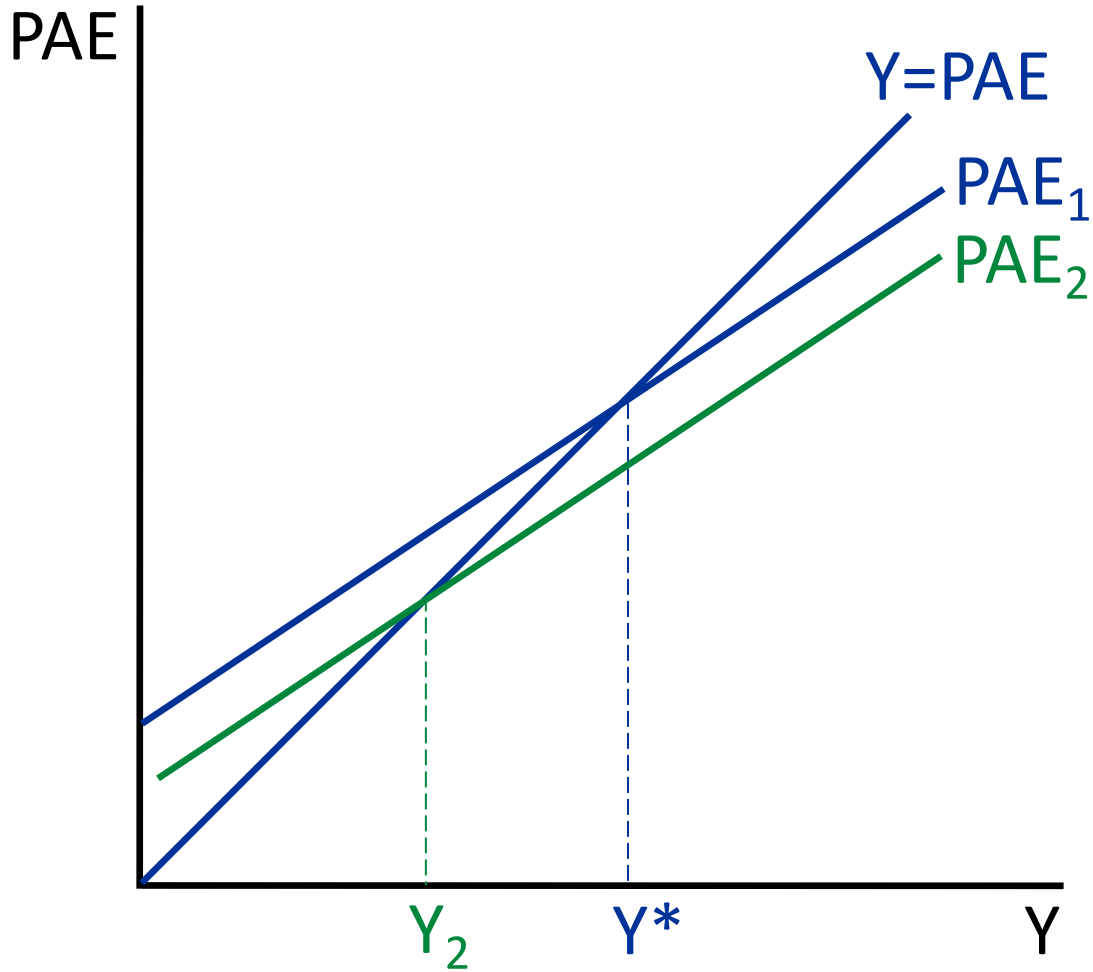


Source: FRED; data from S&P.

Effects Through Confidence, Wealth, and Uncertainty

- Reduced consumption.
- Reduced planned investment.
- As a result, the PAE line shifted down (a lot!).

Covid-19 and the Keynesian Cross

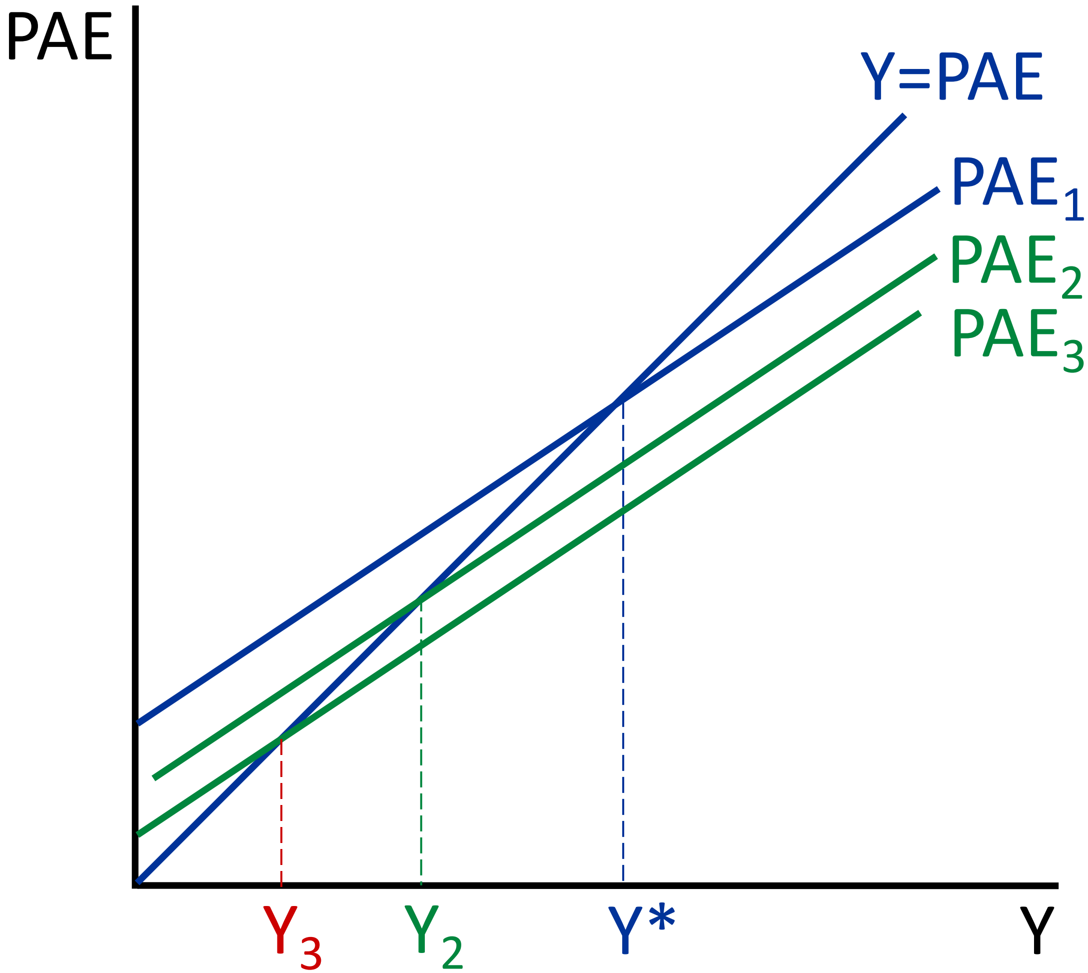


PAE_2 reflects the effects of fear and uncertainty.

Effect of Shelter-in-Place Orders

- Can think of them as another impact on PAE.
  - People weren't allowed to go to bars, restaurants, gyms, and hotels in some areas.
  - C was reduced as a result of the restrictions.

Covid-19 and the Keynesian Cross



PAE_3 reflects the added effects of shelter-in-place orders.

Short-Run Outcomes

- Unemployment skyrocketed.
- GDP plummeted.
- The economy went into a severe recession.

Unemployment Rate

Source: FRED; data from Bureau of Labor Statistics.

Policy Considerations in a Pandemic Recession

The impact of a pandemic recession on people is likely to be highly uneven.

- Some people can work remotely and face little change in their income.
- Others face devastating unemployment.
- Some do critical, but dangerous, jobs (like healthcare).

The benefits of general fiscal stimulus can’t flow throughout the economy.

- Normally stimulus anywhere in the economy helps put people back to work everywhere.
- But general stimulus won’t help people whose jobs can’t take place because of health concerns.

What do these considerations suggest about the fiscal policy response to a pandemic?

- Fiscal policy should focus on social insurance.
- That is: help those who have been directly harmed by unemployment or dangerous jobs.
- It should not just try to stimulate all types of spending.
  - US approach: let businesses lay off workers and help the unemployed with large transfers
  - EU approach: help businesses pay the salaries of idled workers

Figure 1. Early Pandemic Fiscal Packages in OECD Countries

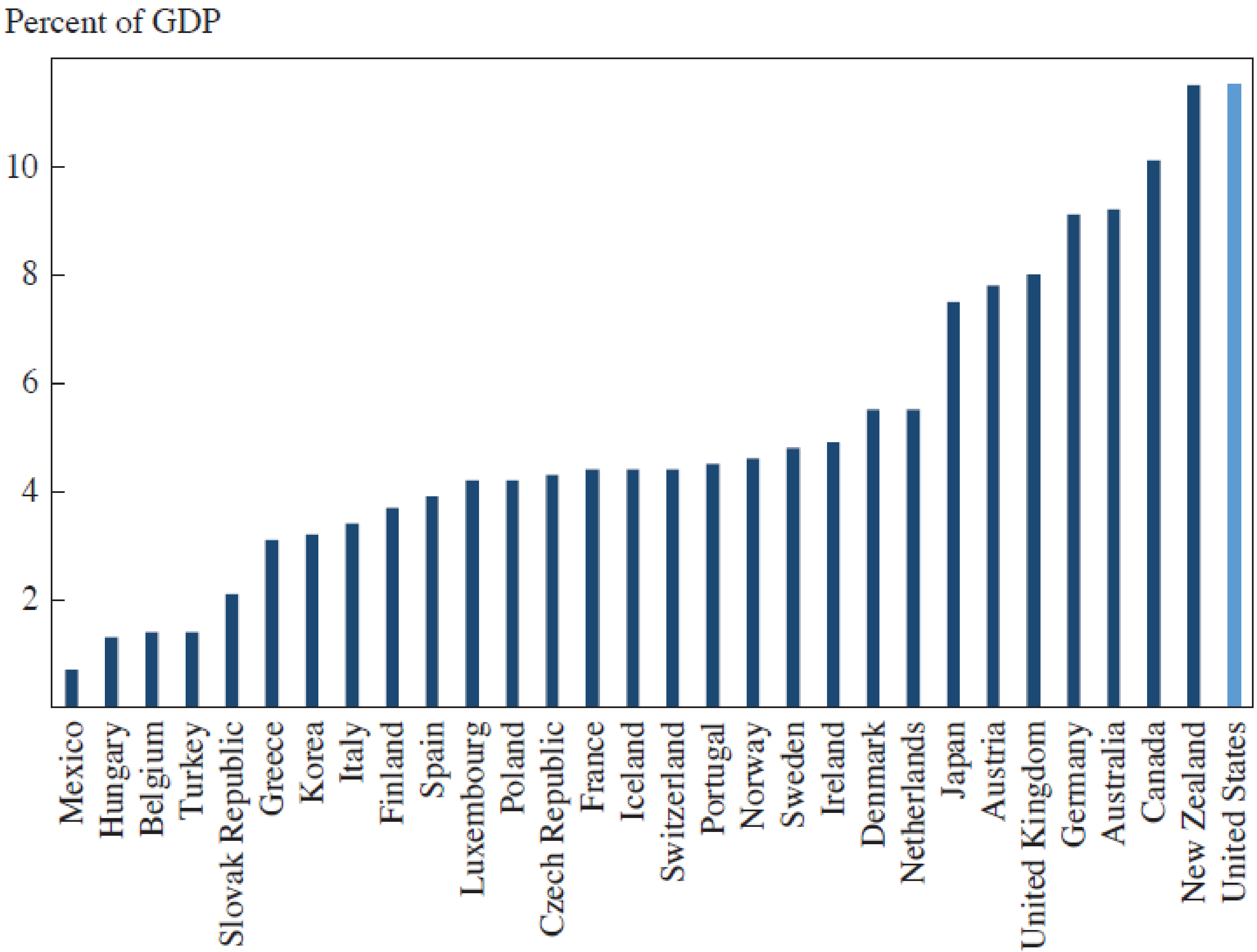
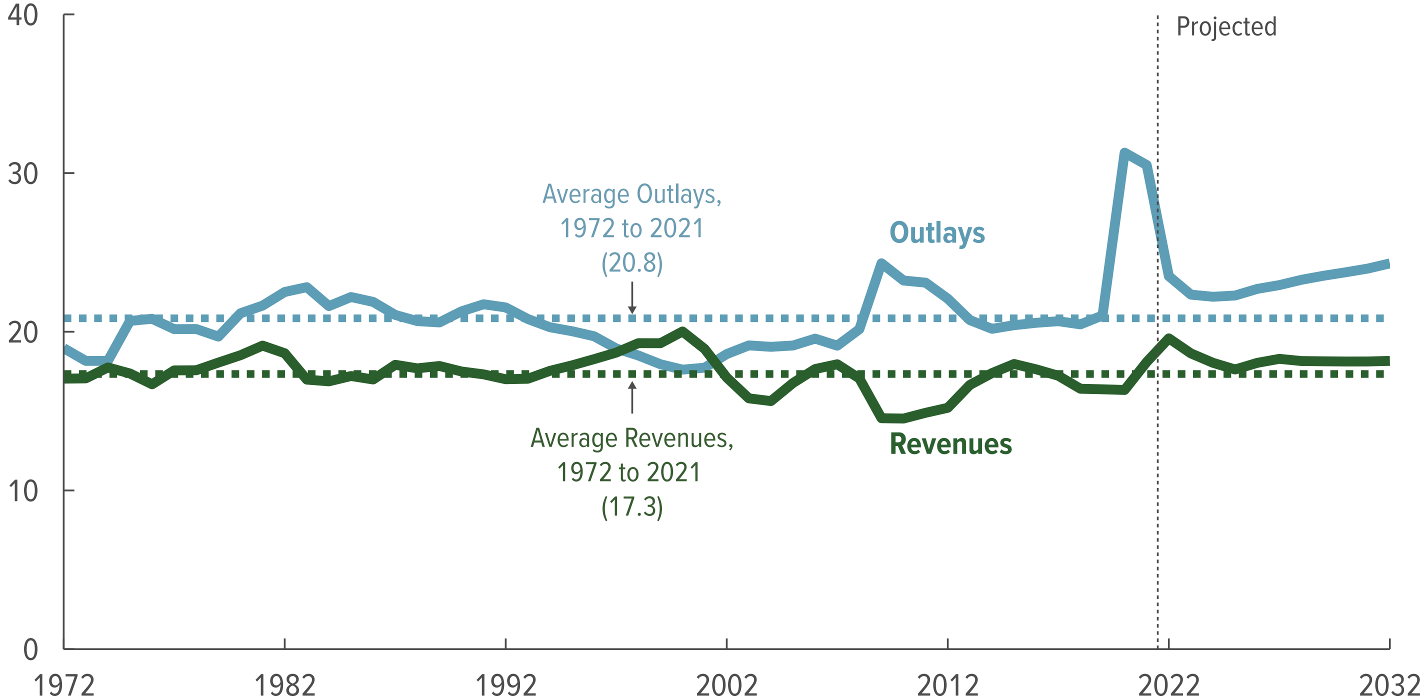


Figure 1-2.

Total Outlays and Revenues

Percentage of Gross Domestic Product



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Data source: Congressional Budget Office. See www.cbo.gov/publication/57950#data.

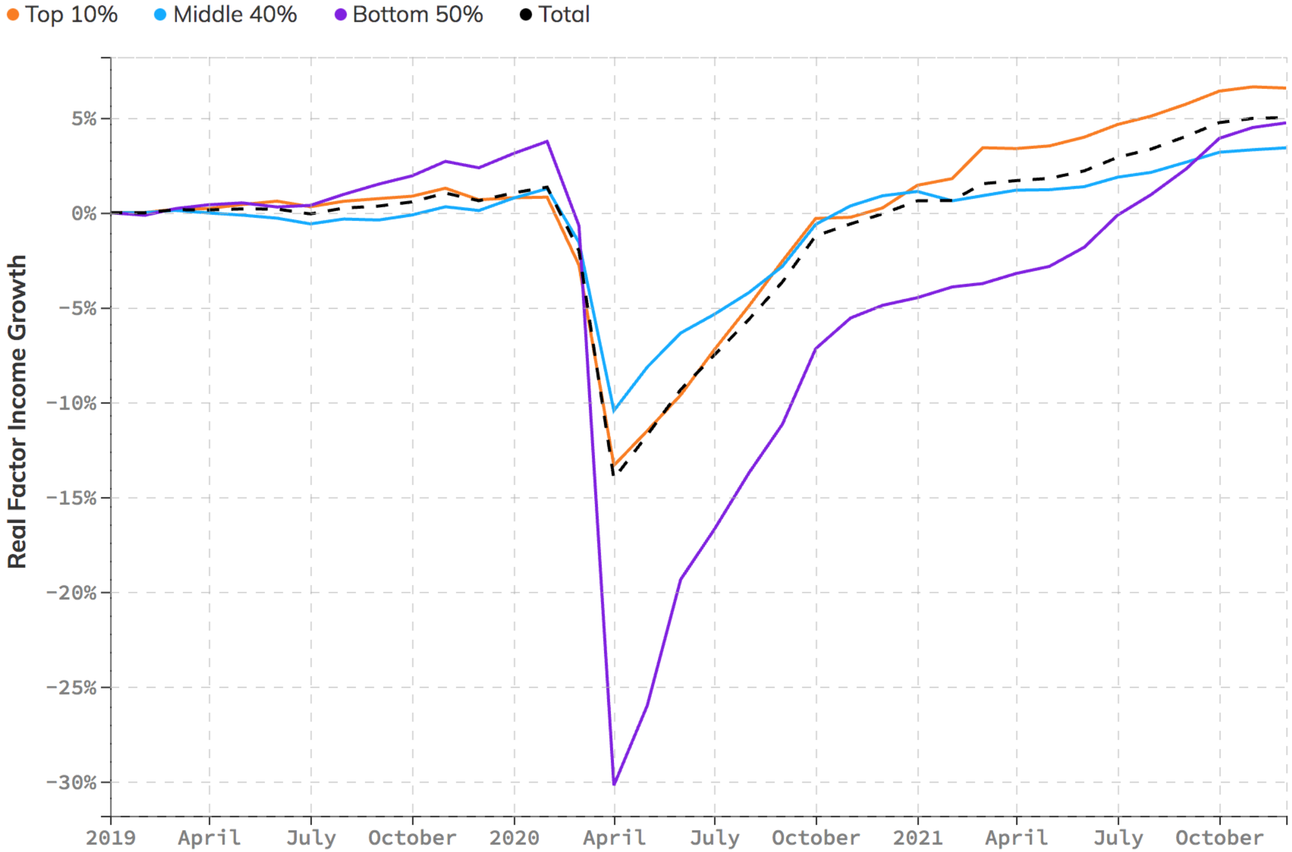
Source: CBO. Federal government outlays (=govt spending+transfers) exceed revenue from taxes, especially so in recessions (2009-2010, 2020-21)

Evaluation of the Fiscal Response in U.S.

- Some pieces were very consistent with a social insurance approach (expanded Unemployment Insurance, health spending, food stamps SNAP).
- Some pieces were aiming at supporting impacted businesses: payment protection program
- Some were more general stimulus and not well targeted (stimulus check payments to households, extra benefits for kids).
- Overall the fiscal response was almost surely too large and led in part to overheating in 2022-3

Factor Income During the Pandemic

Factor income (defined as labor income from work and capital income from ownership) fell a lot during COVID and the fall was much more dramatic for people in the Bottom 50%. But factor income recovered fast for all groups. All income figures adjust for price inflation.



Factor income growth per unit

From 01/2019 to 12/2021

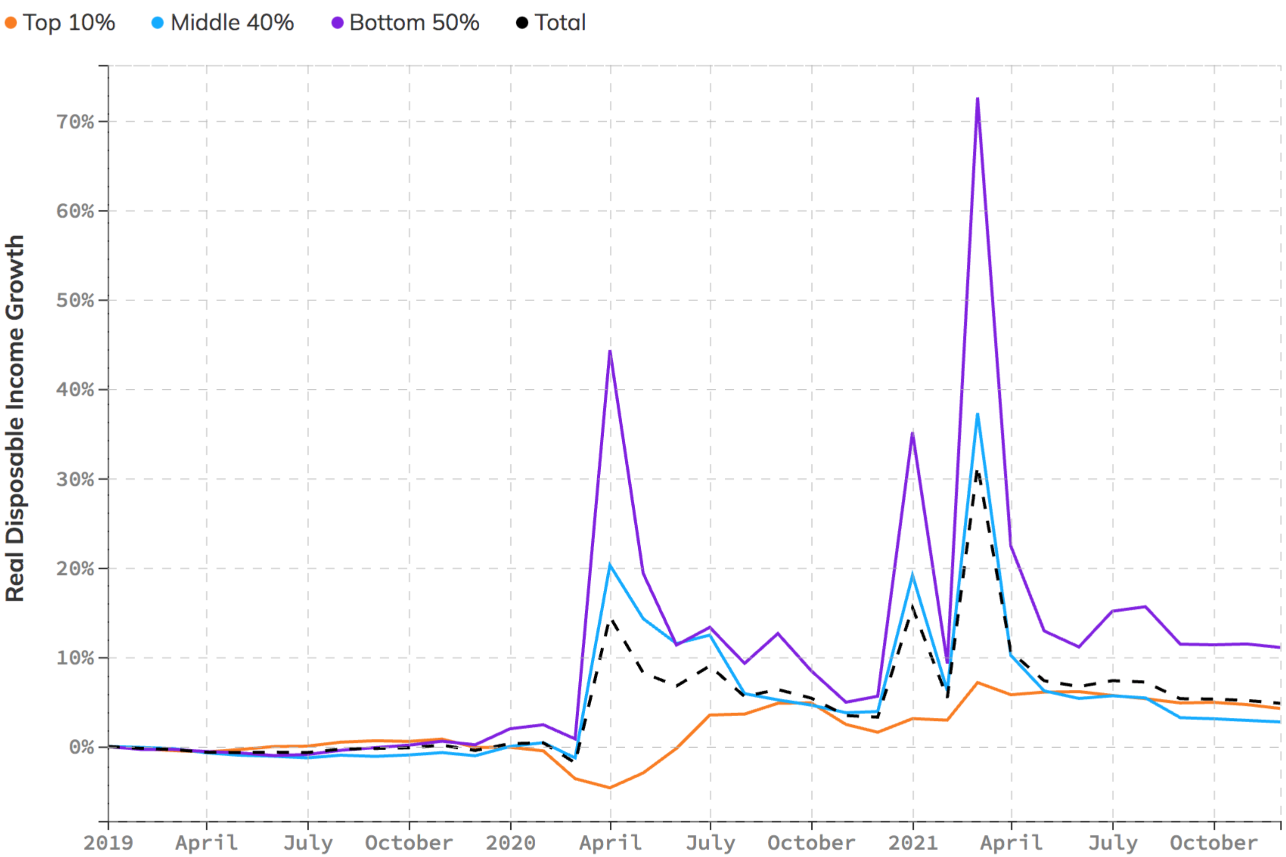
Group	Growth (%)	Gain ($)
Top 0.01%	5.7%	$1.8M
Top 0.1%	6.9%	$470k
Top 1%	8.2%	$120k
Top 10%	6.6%	$24k
Middle 40%	3.4%	$2.9k
Bottom 50%	4.7%	$870
Total	5%	$4.0k

Pre-tax incomes dropped sharply at the onset of COVID but then rebounded quickly

Source: Blanchet, Saez, Zucman (2022), real time inequality.

Disposable Income During the Pandemic

> Thanks to government transfers to help with covid losses (such as checks to families, extra unemployment benefits, the paycheck protection program, etc.), disposable income (defined as income after taxes and cash transfers) increased a lot, especially so for the Bottom 50%.

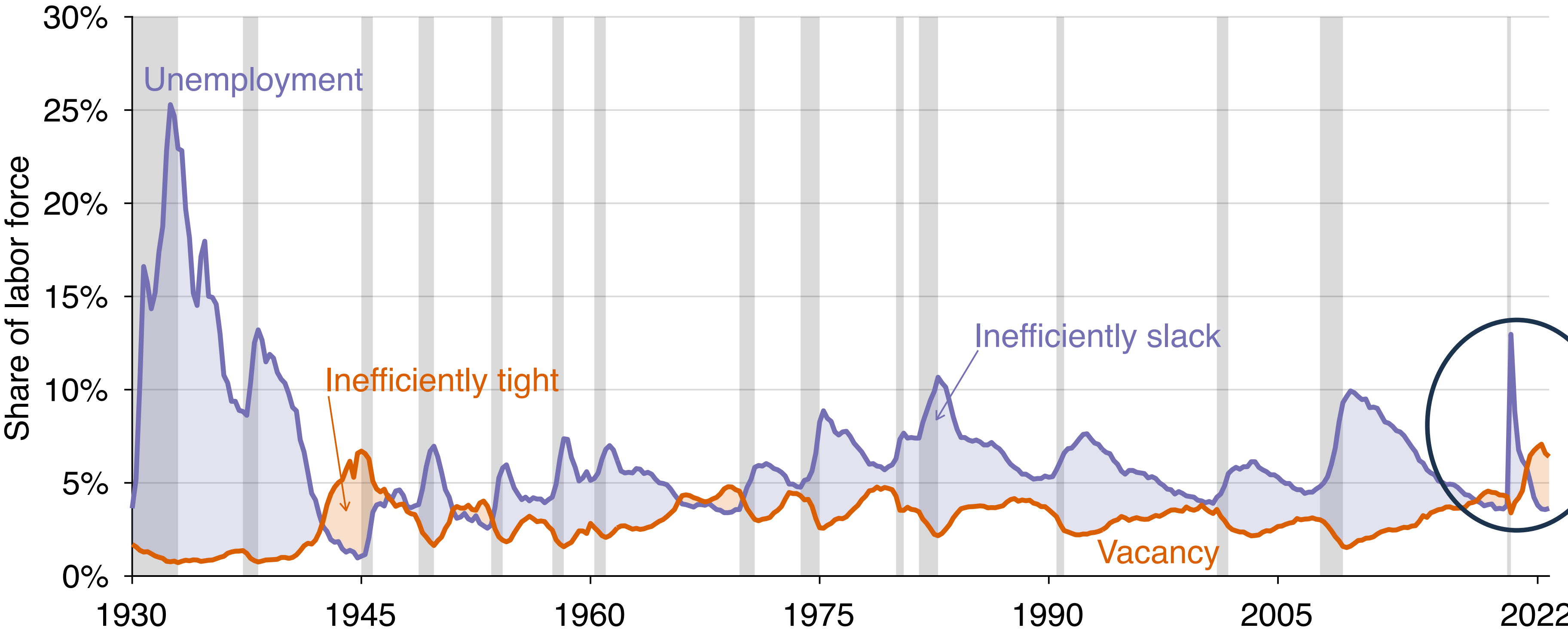


Disposable income growth per unit
From 01/2019 to 12/2021

Group	Growth (%)	Gain ($)
Top 0.01%	4.6%	$910k
Top 0.1%	5.8%	$260k
Top 1%	6.4%	$67k
Top 10%	4.2%	$11k
Middle 40%	2.7%	$1.9k
Bottom 50%	11.1%	$2.6k
Total	4.8%	$3.2k

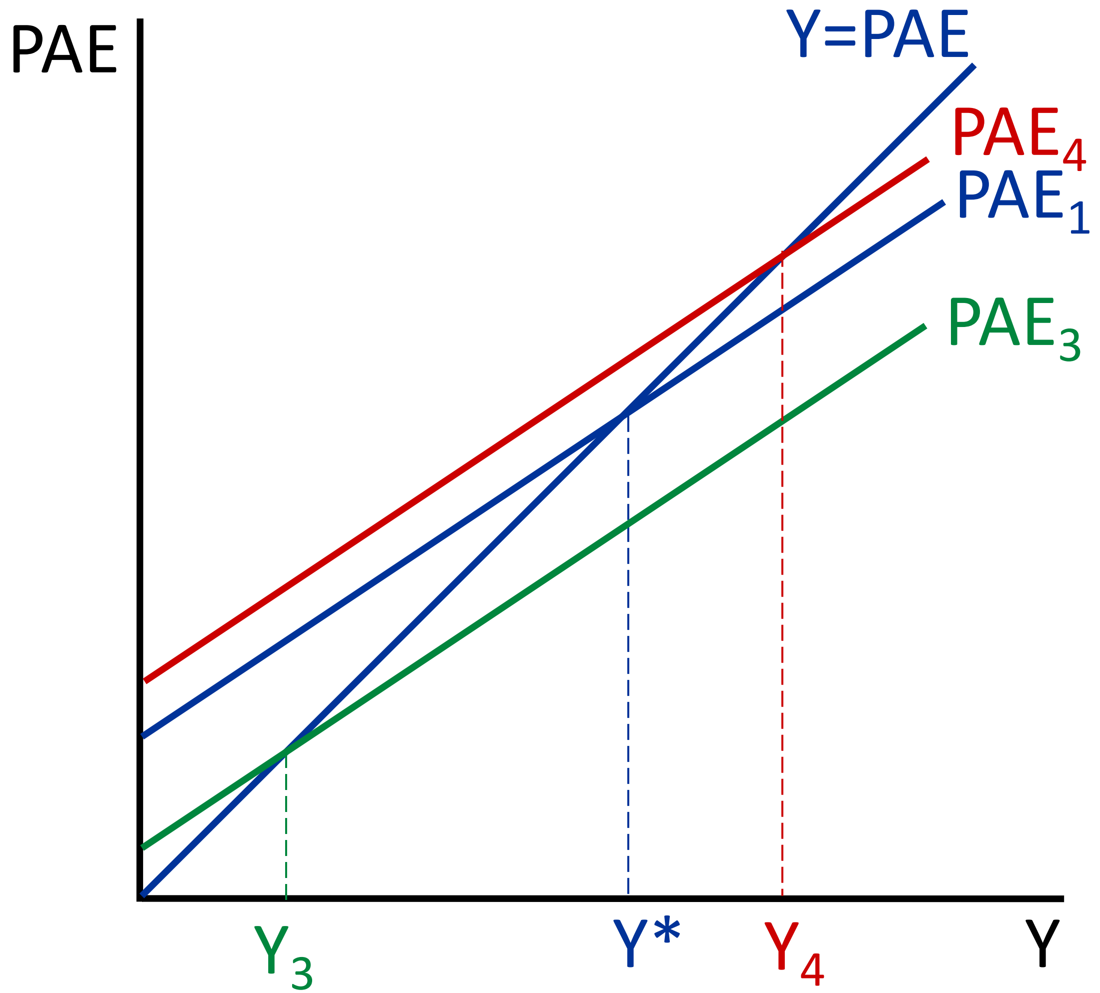
Disposable incomes (after taxes and adding transfers) increased dramatically due to Very large fiscal stimulus in 2020-2021, but temporarily.
Source: [Blanchet, Saez, Zucman (2022), real time inequality.]

EFFICIENCY CRITERION FOR US LABOR MARKET



Unemployment quickly fell below vacancies after COVID
=> COVID Fiscal Stimulus too large (and led to inflation next lecture)
Source: Michaillat and Saez (2022): labor market too slack when unemployed exceed vacancies (common) and too tight when vacancies exceed unemployed

Covid-19 stimulus too large, overshot Y*



PAE_4 reflects the fact that the fiscal stimulus response was too large.

References

- CORE-The Economy, Chapter 14.
- Principles of Economics, Chapter 25.