Government Debt

Lutz Hendricks

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UNC Chapel Hill

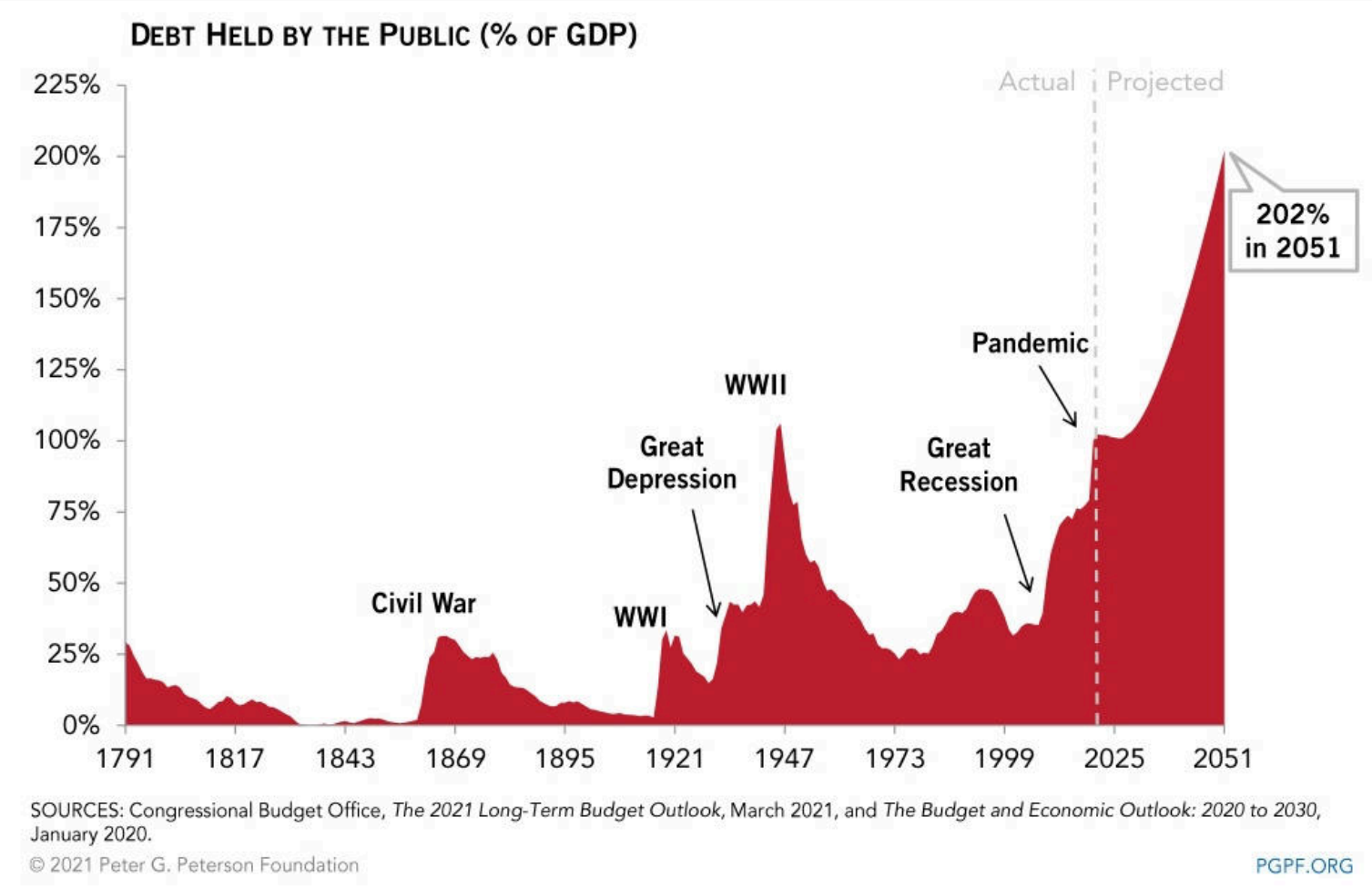
Introduction

In this section you will learn:

1. what the outlook for the U.S. government budget looks like
2. what deficits do

Facts

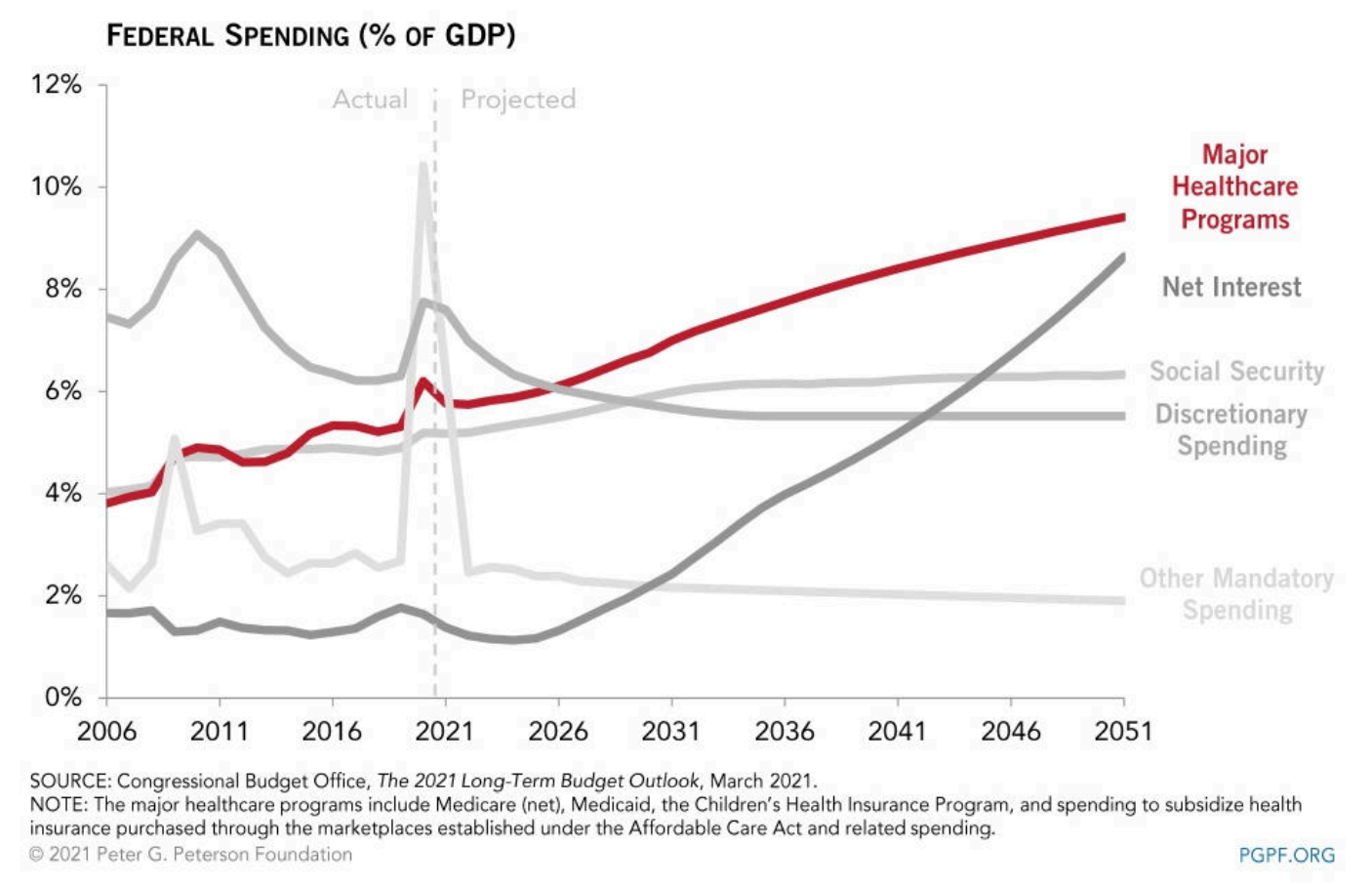
Facts: Deficits are Rising



Public debt is rising

Source: PGPF 2021

Main Driver: Health Spending

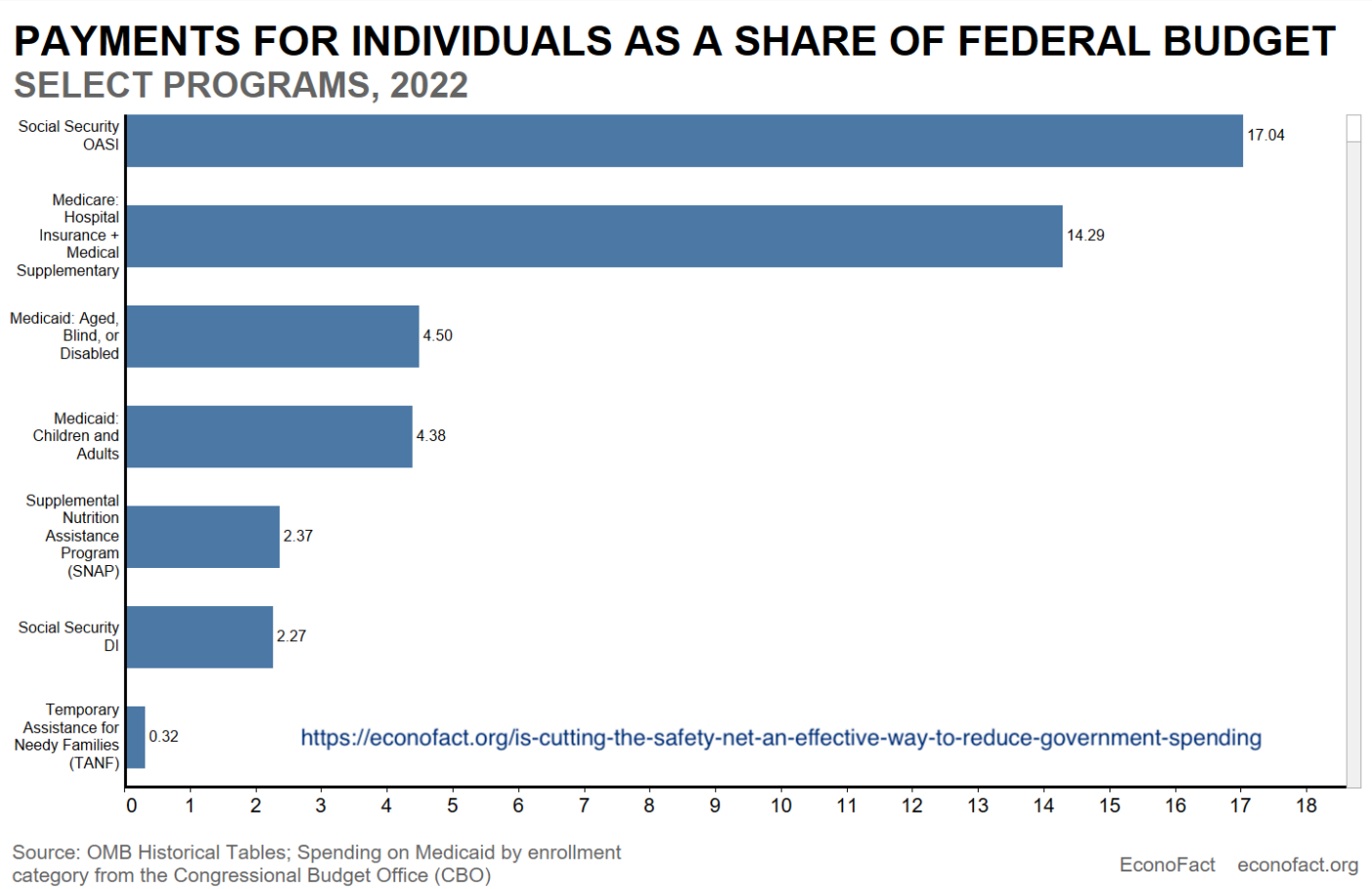


Main drivers:

Rising fraction of older people.
Rising health care prices.

Source: PGPF, 2021

How to balance the budget?

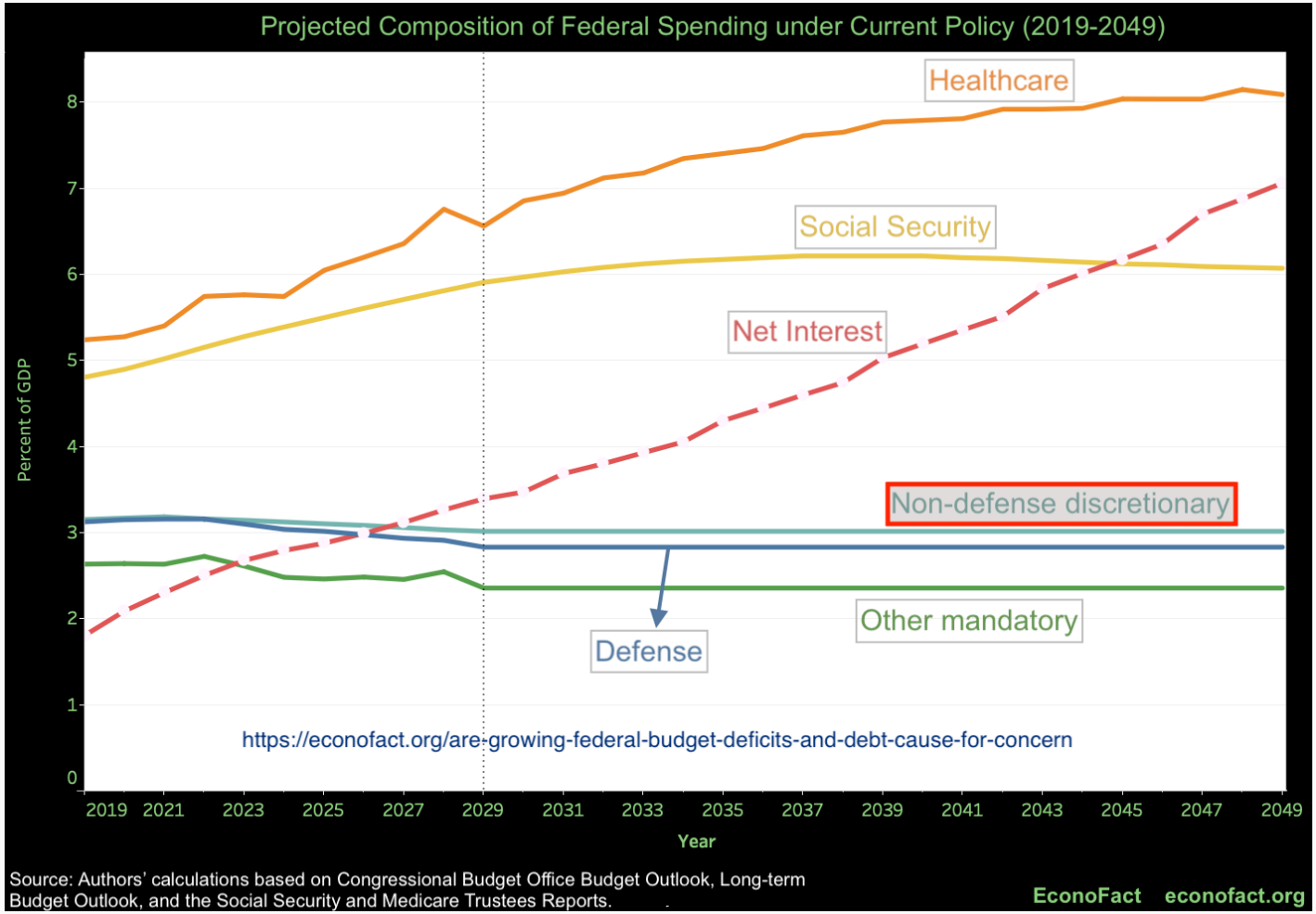


What would it take to balance the budget?

Transfer payments other than Social Security and Medicare are small fry.

Source: Econofact

How to balance the budget?



Discretionary spending is also small fry.

That's why nobody makes serious proposals to fix the deficit.

Source: Gale (2022)

Key Facts

1. At given levels of spending and revenues, the deficit will continue to climb.
2. The main problem is rising health care spending.

   But there is also a big Social Security imbalance

   (which does not appear in the budget).
3. Rising interest payments may be a big part of the problem.

   But keep in mind that **real** interest payments matter

   While nominal interest rates have risen, real interest rates have not (much).

How Worried Should We Be?

One view:

> THE NATIONAL DEBT IS ON AN UNSUSTAINABLE PATH
>
> CBO estimates that federal debt, which is already at high levels, will climb significantly over the next 30 years. In CBO's latest projections, debt is expected to climb from 77 percent of GDP in 2017 to 150 percent of GDP in 2047, based on current law.
>
> Debt at those levels would be unprecedented. – Peterson Foundation, 2017

How Worried Should We Be?

An opposing view:

> Low interest rates also create numerous opportunities. They expand the scope for expansionary fiscal policy, make the debt more sustainable and increase the scope of public investments that will pay for themselves over time. Furman Summers

Questions About Debt

1. What do big deficits do?

   Crowding out?

   Slower growth?

2. How much debt is “sustainable?”

   What happens when debt gets “too large?”

Sustainability

Sustainability

We don't know how much debt is 'sustainable.'

- Some countries have lived with high debt/GDP ratios for decades without trouble (Japan)
- Other countries got into trouble quite suddenly (Greece, Italy, Asian Tigers)

"Trouble" means: countries could not find lenders to roll over debt.

- "debt crisis"

But clearly **debt / GDP has to be stabilized** at some level.

What does it take to prevent debt / GDP from exploding?

Stabilizing Debt

To keep debt / GDP (B/Y) bounded, the government needs to ensure that

$$g(B/Y) \leq 0$$

Debt cannot grow faster than GDP.

$$g(B/Y) = g(B) - g(Y) \leq 0$$

The growth rate of debt

Government budget constraint:

$$\underbrace{T + \Delta B}_{\text{income}} = \underbrace{G + rB}_{\text{spending}}$$

New bond issues:

$$\Delta B_t = r_t B_t - \underbrace{T - G}_{\text{primary surplus}}$$

Growth rate of debt:

$$g(B_t) = \frac{\Delta B_t}{B_t} = r_t - S_t/B_t$$

The growth rate of debt

$$g(B_t) = \frac{\Delta B_t}{B_t} = r_t - S_t/B_t$$

When the primary surplus is zero:

- $S = 0$
- all principal and interest is rolled over
- debt grows at rate r

A primary surplus is needed to keep $g(B) < r$

Growth of Debt/Output

$$g(B_t/Y_t) = \underbrace{r_t - S_t/B_t}_{g(B_t)} - g(Y_t)$$

Keeping debt/output bounded requires

$$r - g - S/B \leq 0$$

where $g \equiv g(Y)$.

r versus g

r versus g

Key question:

Does the government have to run larger primary surpluses when it issues more debt?

$$r - g - S/B \leq 0$$

The answer depends on r versus g.

Traditional view: $r > g$

Output growth g: perhaps 3% p.a.

Real interest rate r (on stocks!):

averages about 7% p.a. over that last 100 years.

If the government has debt today, it needs to save (enough).

If $S_t = 0$, B/Y grows at rate $r - g > 0$.

- The interest share of the government budget grows without bounds.
- Not sustainable.

Traditional view

If the government borrows today, it has to save in the future.

This is true even though

- government debt can grow without bounds
- the government never has to repay its debts

The constraint simply comes from the need to keep debt-to-output finite.

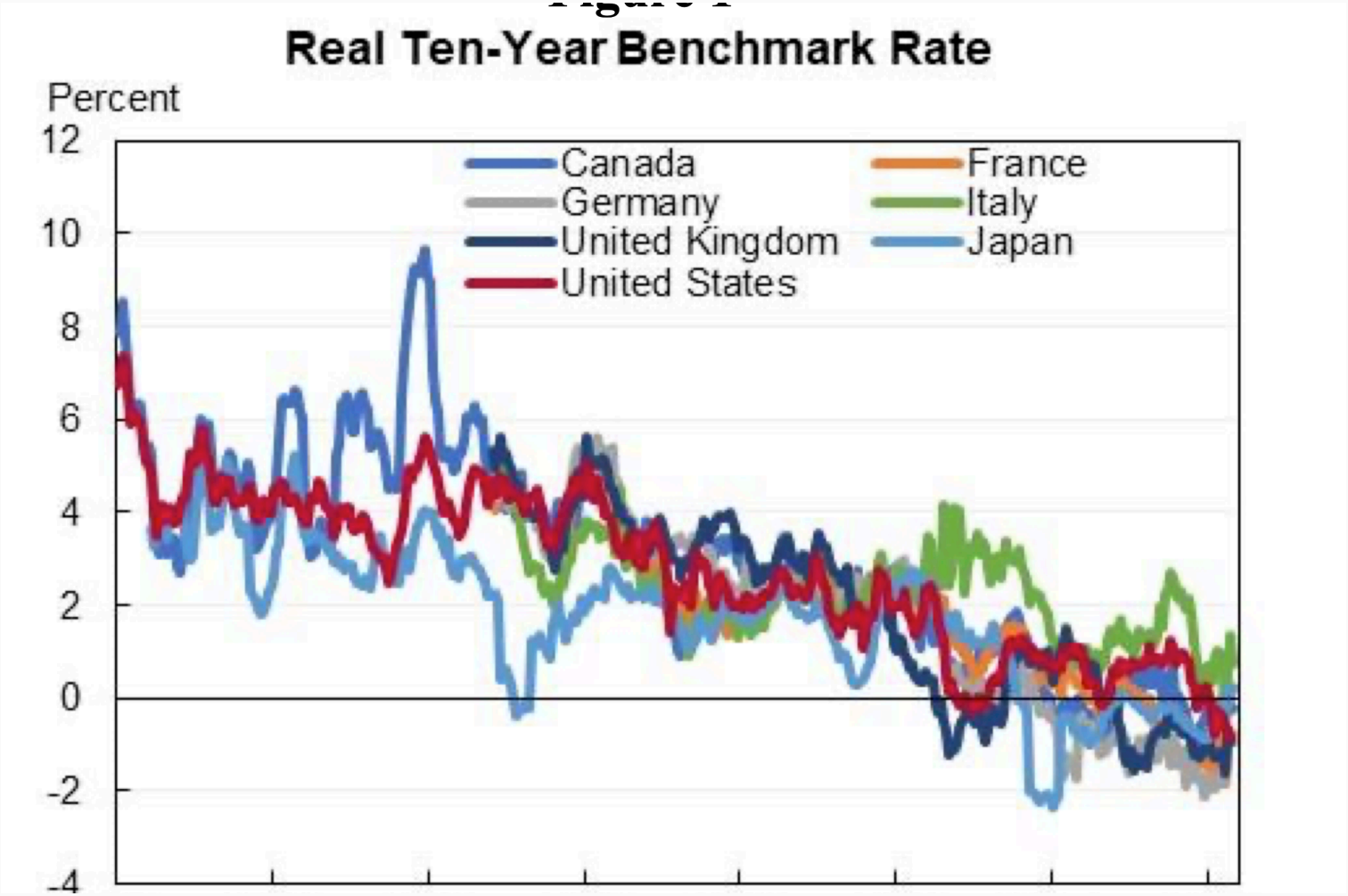
Implications

1. If the government borrows today, taxes will be higher in the future (or spending must be cut)
2. The longer the government waits before stabilizing the debt, the higher taxes must rise

   because the debt grows due to accumulated interest

The $r > g$ logic explains why in budget projections the share of interest payments grows over time.

Alternative view: $r < g$



Real interest rates have been falling for a long time (why?).

Source: Furman & Summers

Low Interest Rates: $r < g$

Now output grows faster than the interest burden on debt.

- Even if the government runs primary deficits $(S < 0)$
- The government can keep rolling over interest payments.

The debt-to-output ratio does not blow up.

The government can invest in future growth without having to worry too much about debt repayment.

- The opportunities that Furman & Summers have in mind.

Interest Payments

Figure 14a

U.S. Federal Debt Held by The Public

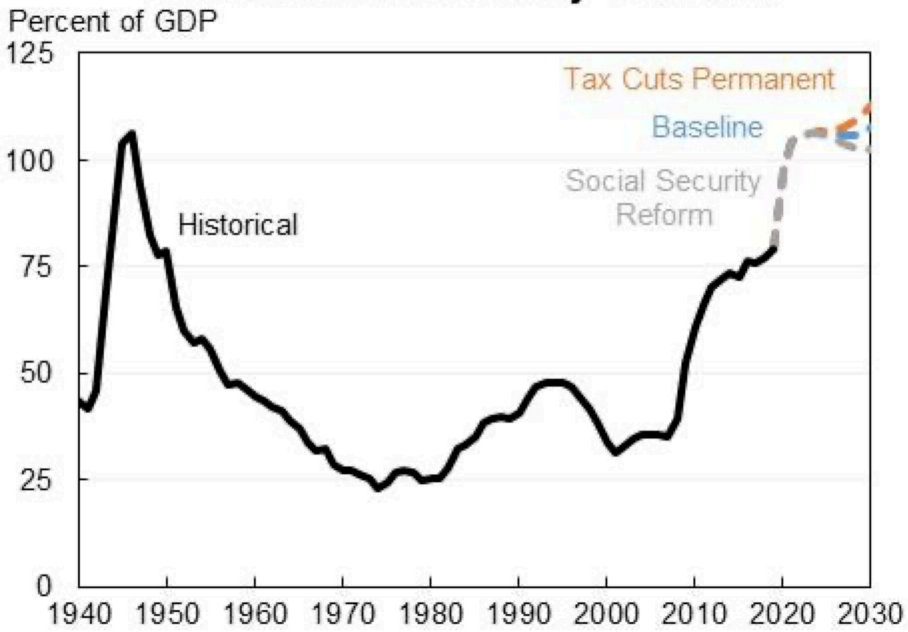
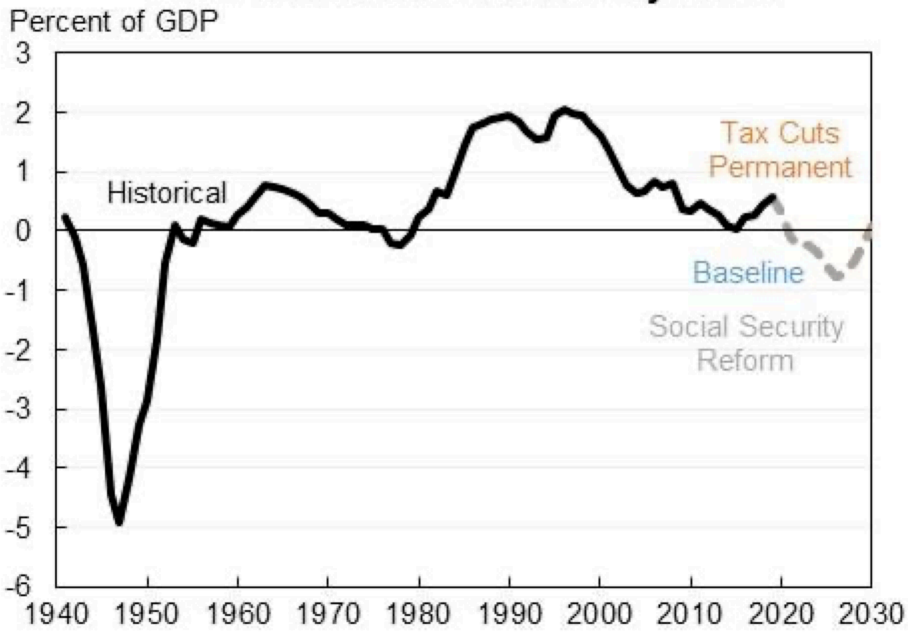


Figure 14b

U.S. Federal Real Interest Payments



Source: Furman & Summers (2020)

Key point

It's not the size of the debt that matters, it's the size of interest payments **relative to output**.

One risk: what if interest rates rise in the future?

Summary

1. Does the government **need to save** to stabilize debt/GDP?

   The answer depends on r versus g.

2. Recently, r has been very low. More debt is sustainable.

   But future r could be higher.

3. How much debt is sustainable?

   Nobody knows.

Effects of Debt

What do Deficits Do?

- Does a higher deficit imply that interest rates rise?
- Does government borrowing crowd out private investment?

Crowding Out

Start from the NIPA identity

$$Y = C + I + G + EX - IM$$

Rewrite as $I = (Y - C) - G - (IM - EX)$ or

$$\underbrace{Y - C - T}_{\text{private saving}} + \underbrace{T - G}_{\text{public saving}} + \underbrace{IM - EX}_{\text{foreign saving}} = I$$

Everything else equal, higher government deficits reduce investment.

- Analyze the MR AS/AD equilibrium to see this …

But everything else is not equal…

Crowding Out

Key question

Do private or foreign savings rise when public deficits rise?

Does Public Debt Raise Private Saving?

Forward looking consumers

- Present value of consumption = present value of income

If higher debt today raises future taxes

- present value of income falls
- consumption falls

“Ricardian Equivalence” is the theoretical extreme case.

Does Public Debt Attract Foreign Saving?

How might that work?

Empirical Evidence

All of the above happens.

Higher government debt

- raises interest rates
- crowds out investment
- increases the trade deficit

Review Questions

1. What is the growth rate of debt if primary surpluses are zero?
2. The U.S. government has a lot more outstanding debt today (relative to GDP), but debt payments / GDP are flat. How can that be?
3. If the government raises the deficit today, does it have to reduce the deficit in the future?

   How does the answer depend on r vs g?
4. Why would private saving rise when public debt rises?
5. If the government reduces its debt burden by inflating away debt, what do you expect to happen to AD?

Review Questions

Hint: Does it matter who holds the debt? How does it differ from taxing people to pay down debt?

Reading

Blanchard (2018), ch. 23

Also useful:

- Time to Worry Less about Federal Budget Deficits?

  Timothy Taylor's summary of Furman & Summers
- Karen Dynan (2023), High and Rising US Federal Debt: Causes and Implications
- Rubin et al. (2004)

  Nice summary of possible consequences of budget deficits

Bibliography

Blanchard, Olivier J. 2018. Macroeconomics. 7th ed. Pearson.