



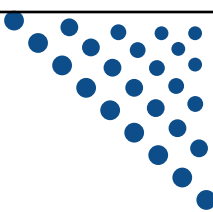
The US Federal Debt

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National Economic Education Delegation

- **Vision**
 - Someday, the public discussion of policy issues will be grounded in an accurate perception of the underlying economic principles and data.
- **Mission**
 - NEED unites the skills and knowledge of a vast network of professional economists to promote understanding of the economics of policy issues in the United States.
- **NEED Presentations**
 - Are **nonpartisan** and intended to reflect the consensus of the economics profession.



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Who Are We?

- **Honorary Board: 48 members**

- 2 Fed chairs: Janet Yellen, Ben Bernanke
- 6 chairs of the Council of Economic Advisers
 - o Furman (D), Rosen (R), Bernanke (R), Yellen (D), Tyson (D), Goolsbee (D)
- 3 Nobel Prize-winners
 - o Akerlof, Smith, Maskin

- **Delegates: 650+ members**

- At all levels of academia and government service
- All have a PhD in economics
- Crowdsource slide decks
- Give presentations

- **Global Partners: 45 PhD Economists**

- Aid in slide deck development



Credits and Disclaimer

- **This slide deck was created by:**

- Jon Haveman, Executive Director, NEED
- Geoffrey Woglom, Amherst College, Emeritus

- **Disclaimer**

- NEED presentations are designed to be nonpartisan.
- It is, however, inevitable that presenters will be asked for and offer their own views.
- Such views are those of the presenters and not necessarily those of the National Economic Education Delegation (NEED).



Submitting Questions

- Please submit questions of clarification in the chat.
 - I will try to handle them as they come up.
- We can have a verbal Q&A once the material has been presented.
- Slides will be available from the NEED website tomorrow (https://needelegation.org/delivered_presentations.php)



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The US Federal Debt

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What Does the US Govt. Budget Look Like?

2021 Budget Summary (in billions)

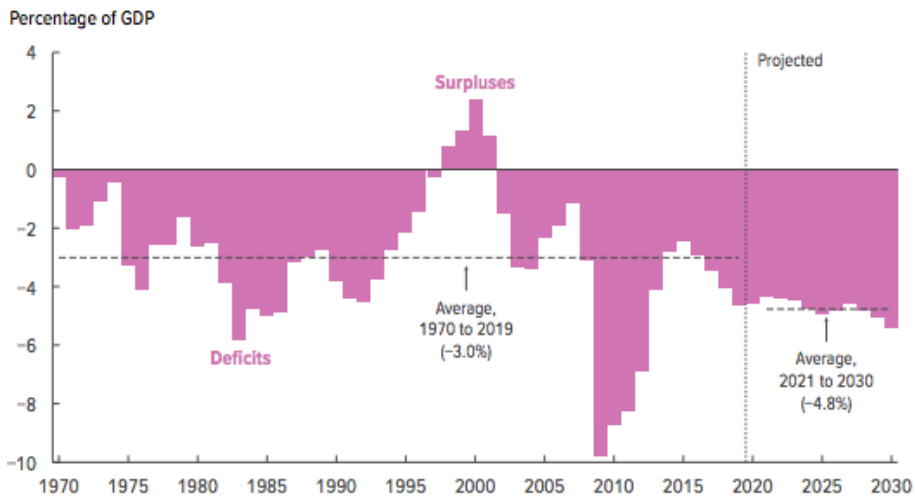
Revenue		Outlays	
Income Taxes	\$2,005	Mandatory	\$3,735
Payroll Taxes	\$1,416	Discretionary	\$1,667
Corporate Taxes	\$266	Interest	\$305
Other	\$301		
Total	\$3,988	Total	\$5,707

Budget Deficit **\$1,719 Billion**

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A Future of Deficits

Total Deficits and Surpluses



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Of Debt, Deficits, and Surpluses

• FLOW

- **Deficit:** The excess of outlays over revenues in a year.
- **Surplus:** The excess of revenues over outlays in a year.

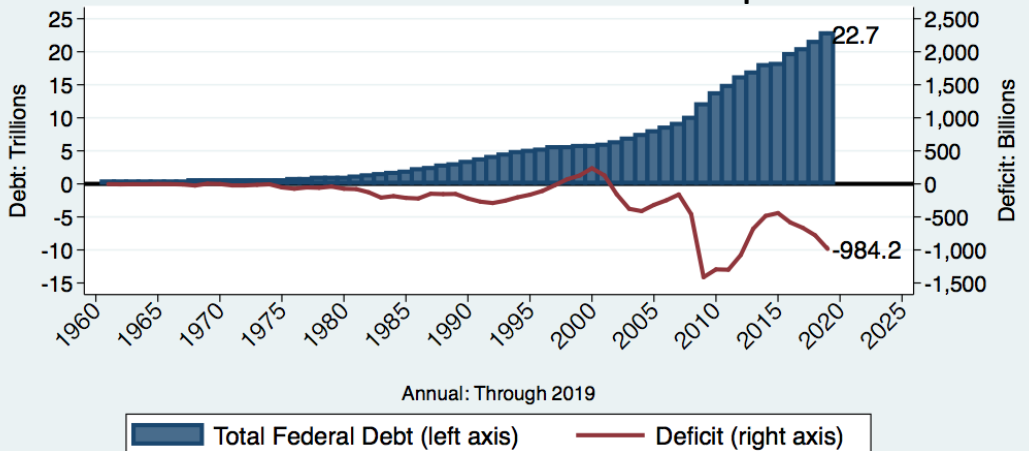
• STOCK

- **Debt:** The accumulation of debt over time.
 - The sum of all past deficits and surpluses.



Debt vs. Deficit

Debt = The Sum of All Past Deficits Less Surpluses



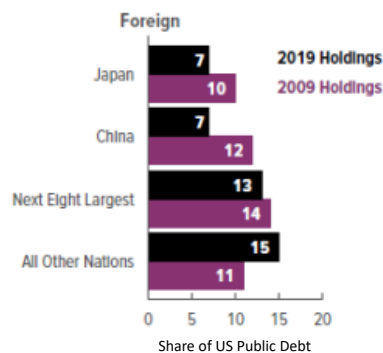
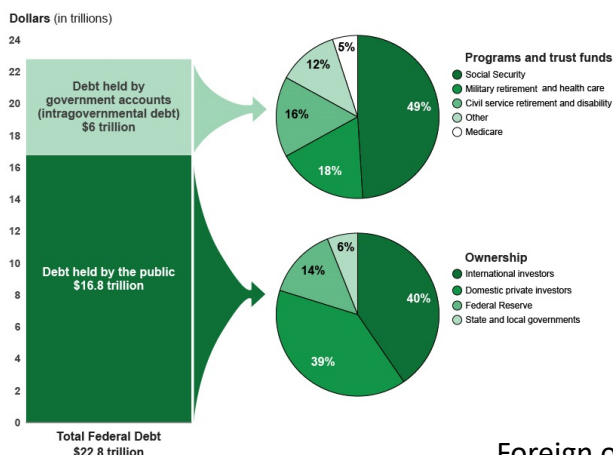
Source: Debt - Council of Economic Advisers; Deficit - U.S. Office of Management and Budget
 Graph by: National Economic Education Delegation (www.NEEDelegation.org)

How Does the US Government Borrow?

- **It issues debt.**
 - Treasury marketable securities:
 - Treasury bills, notes, and bonds
 - TIPS: Treasury inflation-protected securities
 - Savings bonds
- **Who buys the debt?**
 - Other federal agencies
 - Individuals and businesses
 - State and local governments
 - Foreign government and individuals
 - Federal Reserve

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A Breakdown of Total Federal Debt



Foreign ownership is relatively recent – in 1990 foreign ownership was less than 20%

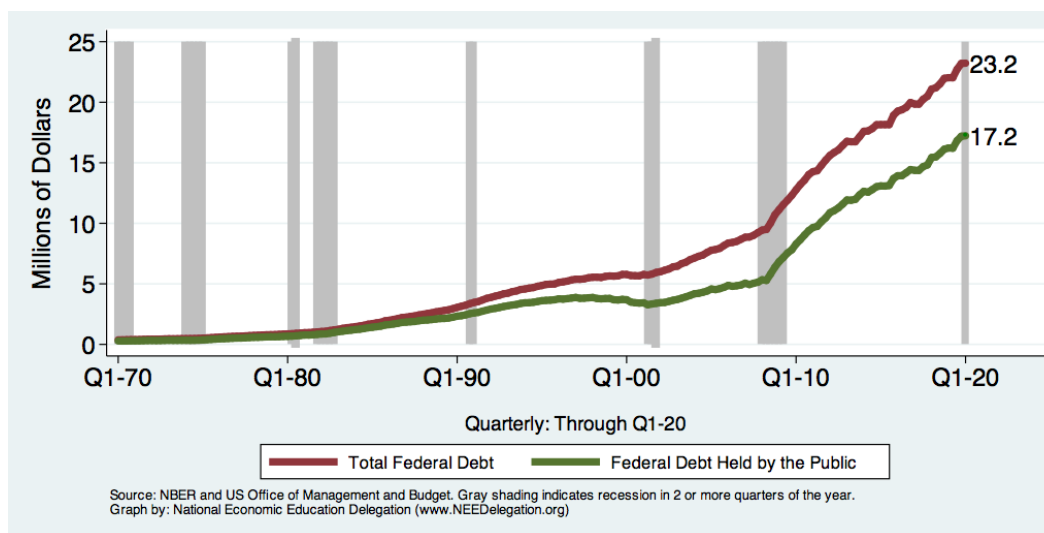
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Not All Debt Is Created Equal

- **Some debt can reduce the availability of investment funds to other borrowers.**
 - Often referred to as “crowding out” private investment
- **Intragovernmental debt is (important) bookkeeping.**
 - This debt **DOES NOT** crowd out private investment.
- **Debt held by the public**
 - This debt **MIGHT** crowd out private investment.
- **Most analyses of debt focus on federal debt held by the public.**

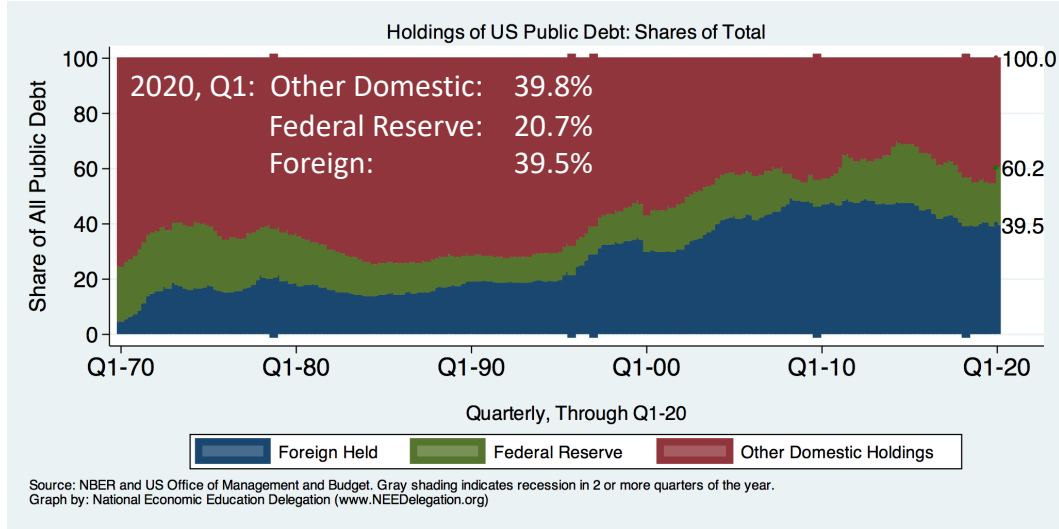
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Two Measures of the Debt



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Trends in US Debt Over Time

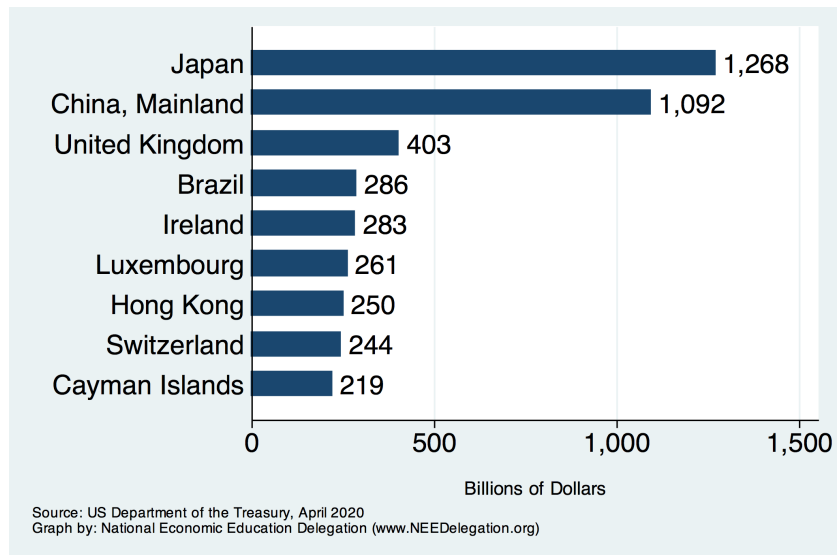


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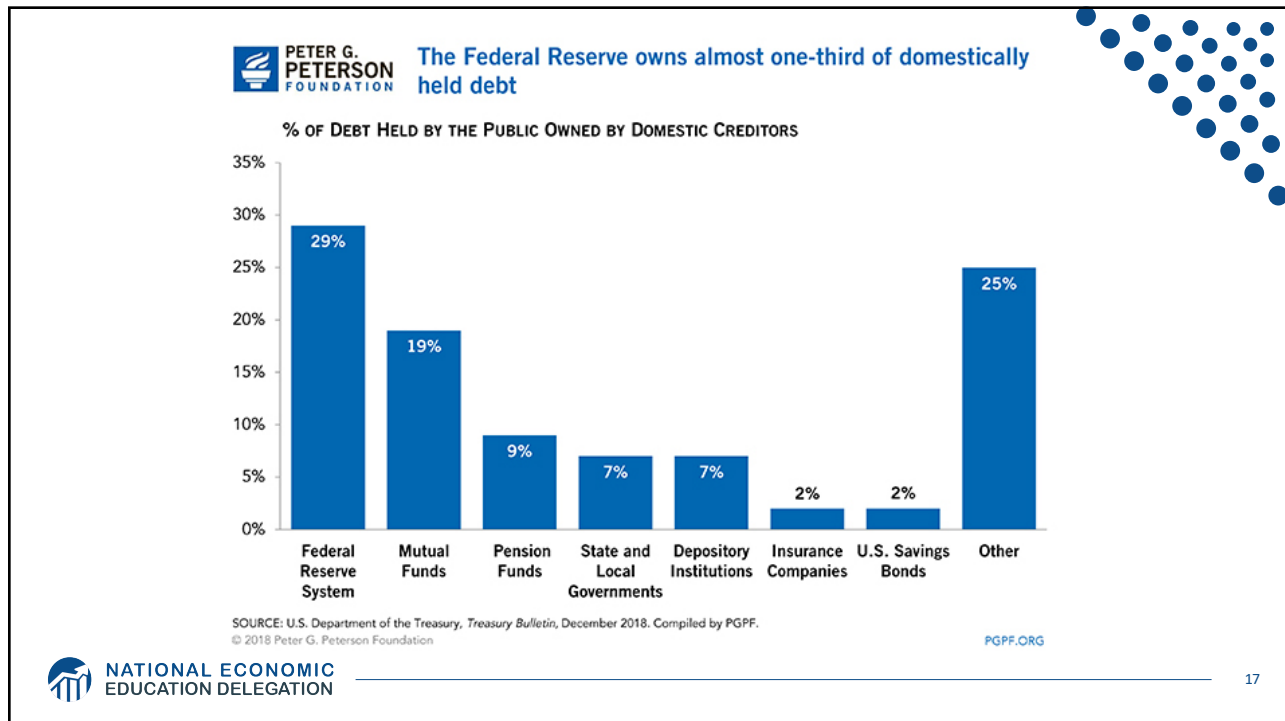
Who Holds Debt to Foreigners



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CBO: Budget Analysts in Chief

- **The Congressional Budget Office was founded in 1974 to provide Congress with information about the budgetary implications of legislation.**
- **Two kinds of reports**
 - Cost Estimates: HR 6036 VA Family Leave Act of 2020
 - Projections of Debt and Deficits: The Budget and Economic Outlook, 2020 to 2030

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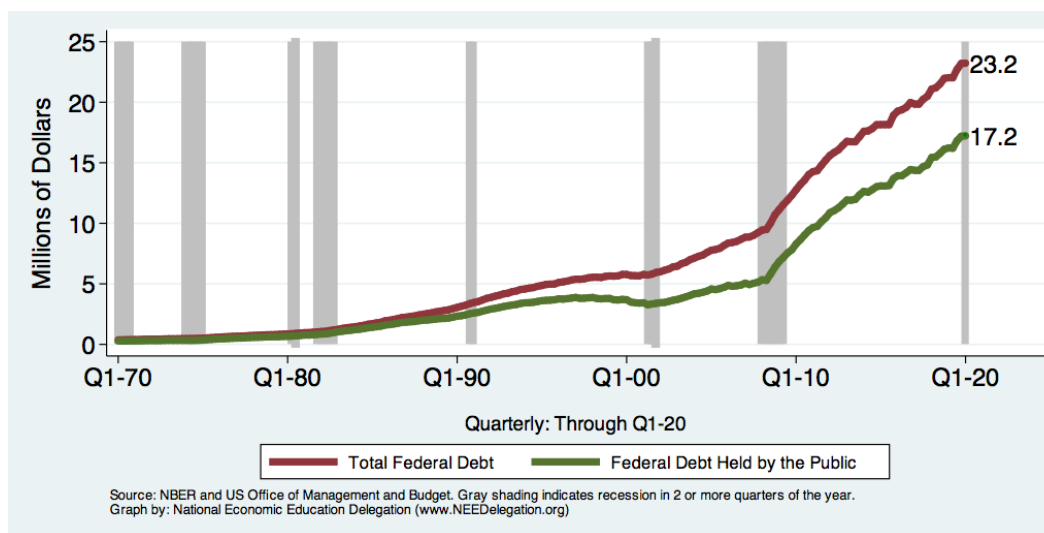
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The All-Important *Relative Debt*

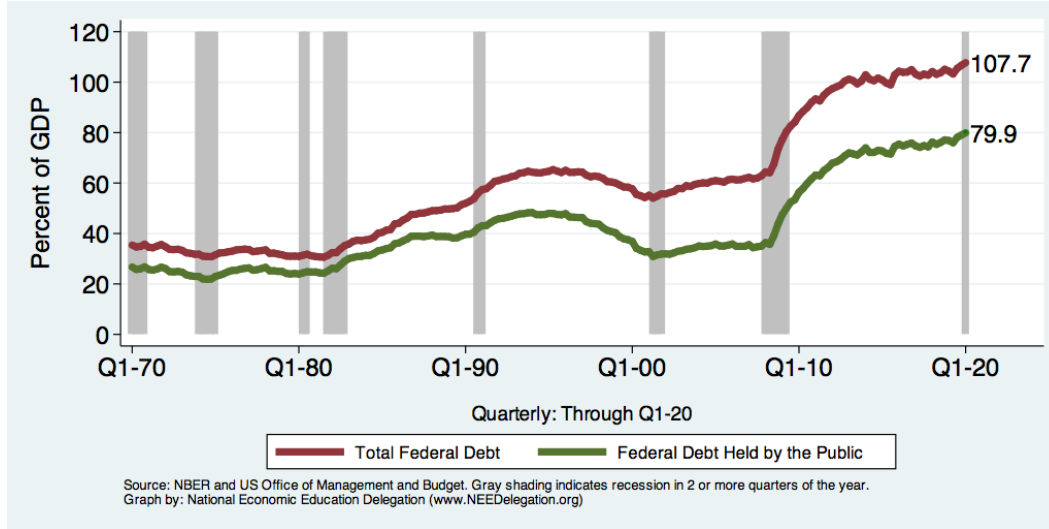
- CBO analyzes the debt *relative* to GDP because:
 - To the extent that debt and deficits have burdens, these burdens depend on the size of the debt *relative* to the size of the economy.

	Total Public Debt	Relative Debt Debt/GDP
United States	\$23.4 Trillion	112%
Greece	\$0.215 Trillion	170%

Two Measures of the Debt



Two Measures of RELATIVE Debt

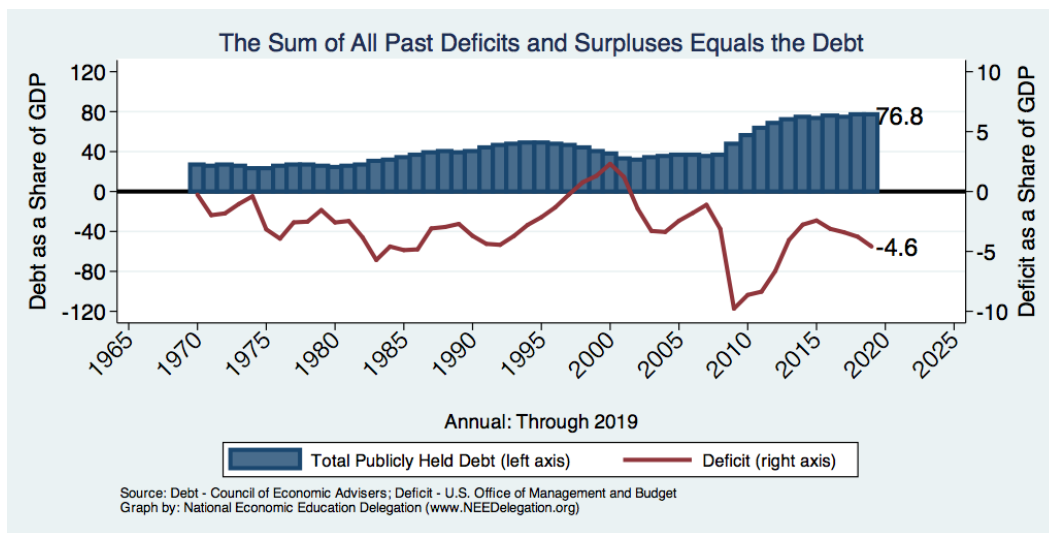


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Relative Debt and Deficit

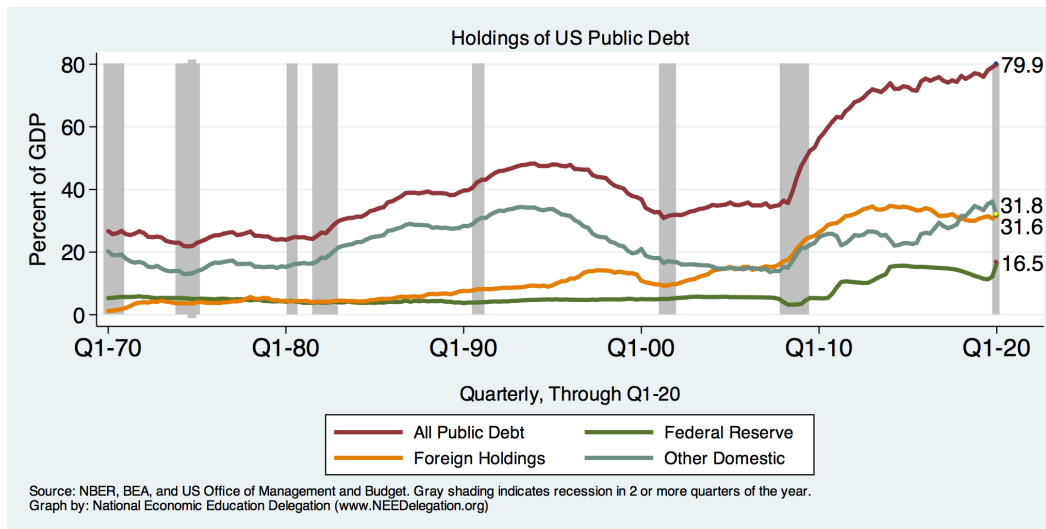


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Summary: Who Holds US Public Debt?



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Key Points About US Relative Debt



1. Prior to 1983, relative debt rose purposefully (wars and recessions) and then fell.
2. Relative debt peaked during World War II, followed by a long decline.
3. Relative debt has been and is expected to rise for the next 30 years w/o a strategic purpose.

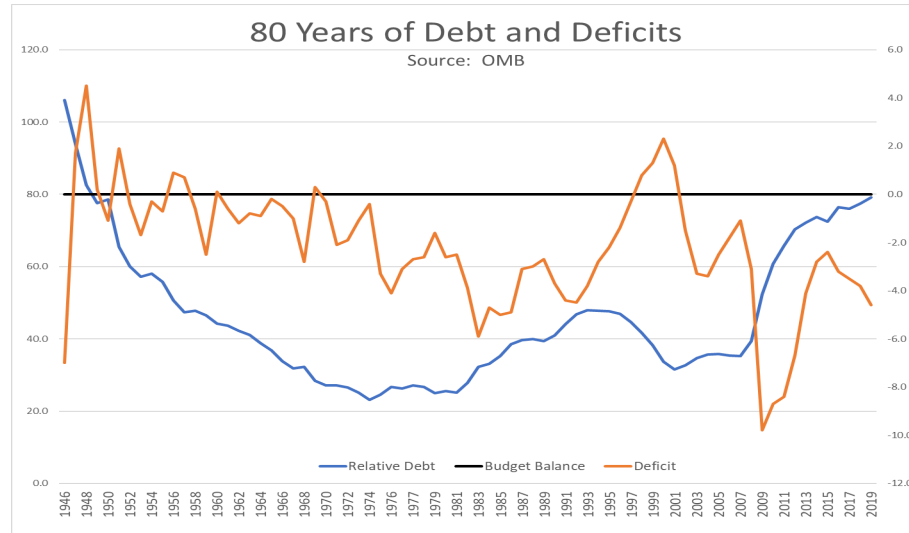


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The Post-WWII Fall in Relative Debt



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Debt Dynamics

• Surprising (?) Facts

- From 1945 to 1979, relative debt fell from 100% of GDP to 25% of GDP.
- During this period, the federal budget was in surplus only once, in 1969.

• Relative debt is a fraction: Debt/GDP; fractions fall if:

- The *numerator* falls (budget surplus)
- The *denominator* rises (nominal GDP growth)
- The *denominator* grows faster than the *numerator*



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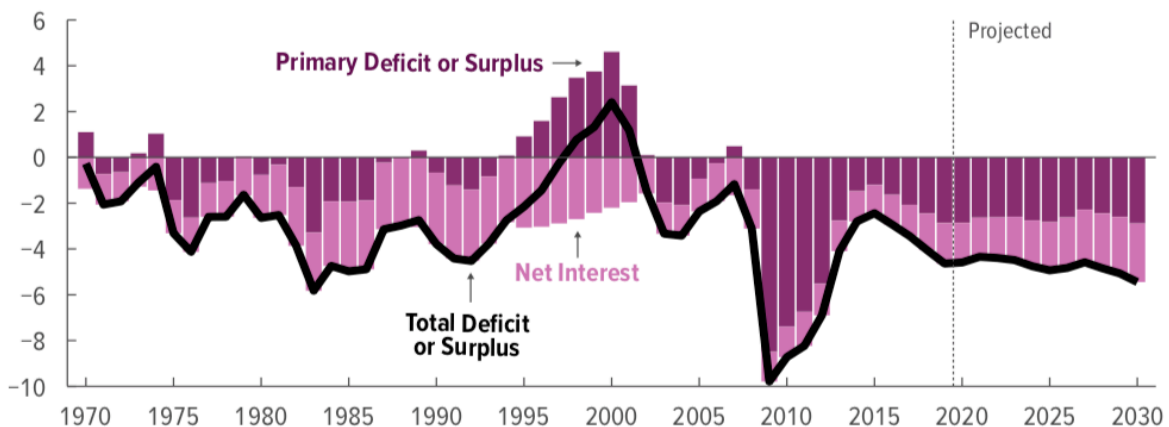
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Two Measures of the Deficit

- (1) Primary deficit = current programmatic outlays – revenues
- (2) Total deficit = primary deficit + interest
- Interest on the debt is
 - The part of the total deficit that is due to past deficits.
- This distinction becomes important for understanding:
 - The future course of relative debt.
 - The costs borne by future generations because of the debt.

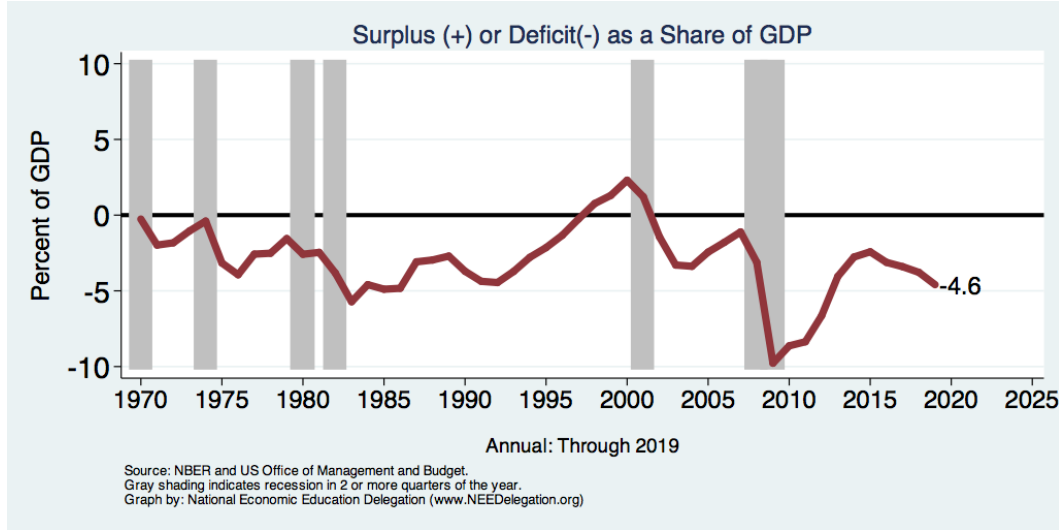
Rising Debt Levels Due to a Future of Deficits

Percentage of Gross Domestic Product



This graph was done before Covid-19

Deficits and Recessions



How to Think About the Debt



Perspectives on Increased Debt

- **Government borrowing crowds out private capital and investments.**
 - Weakened by the ability to borrow from other countries.
- **Does debt impose a burden on future generations?**
 - Does it inevitably have to be paid off?
- **In time, debt service might crowd out other government spending.**
 - Diminishing policy priorities in the budget.
- **Is it reasonable to borrow at low interest rates for investment?**
 - For example, for infrastructure.



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Not All Borrowing Is Bad!

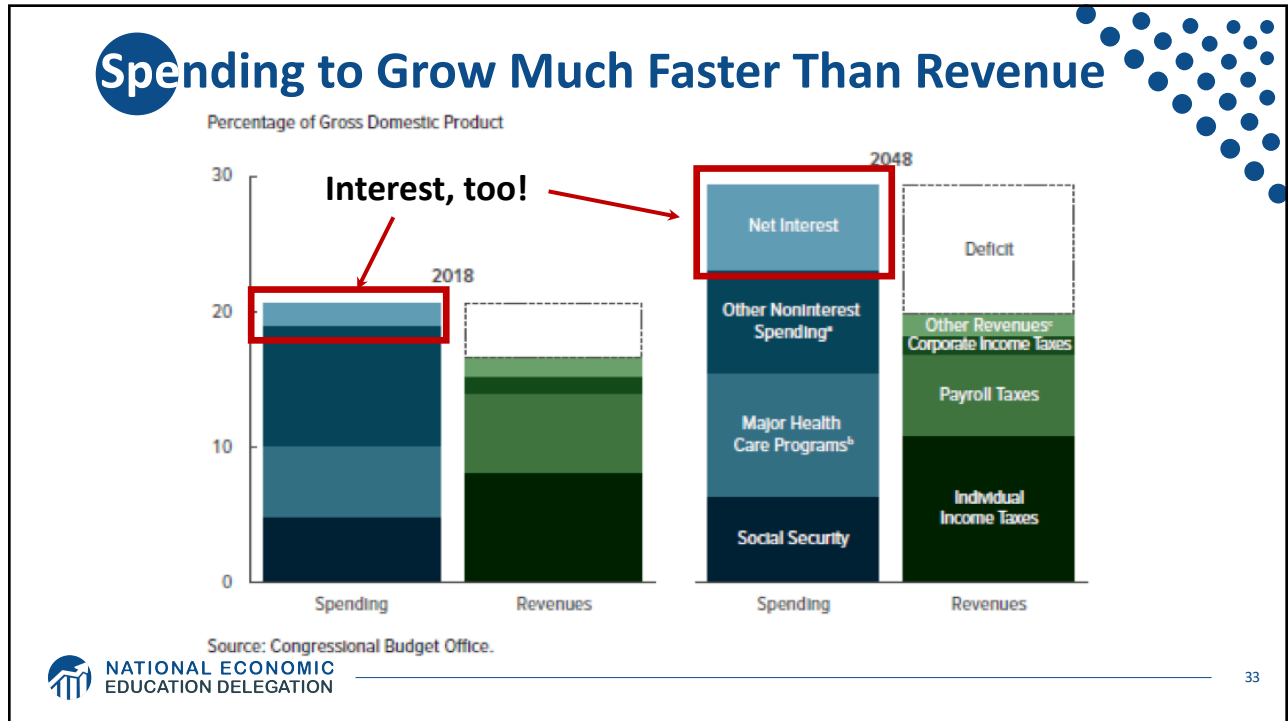
- **Two good reasons to borrow:**
 1. During a temporary crisis
 1. Recession
 2. War
 3. Pandemic
 2. Productive public investment
 1. Infrastructure
 2. Education



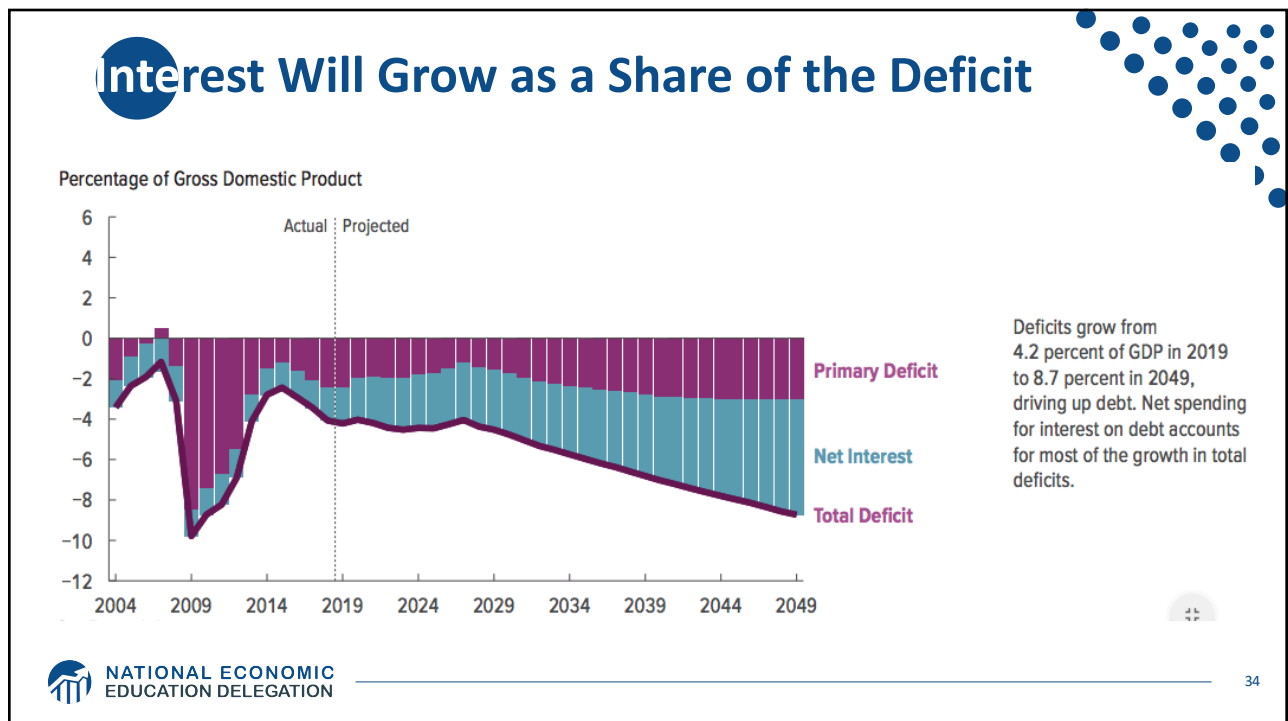
- **These deficits did not and do not permanently increase relative debt.**
 - Great Depression, WWII
 - Public investment expands GDP and tax revenue



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Is The Debt a Problem Today? (Pre-COVID 19)

- **Currently borrow about \$100 billion each month with little difficulty.**
- **Very little evidence of "crowding out."**
- **Interest rates are very low, less than 1% on 10-year notes.**



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So, Why Worry About it?

- **If debt become too high:**
 - Investors might start questioning the creditworthiness of the US government.
 - Problem: Nobody knows how high is too high.
 - It becomes more difficult to borrow in times of crisis.
 - War, severe recession
 - "Fiscal space"
 - Impossible to measure how much we have.
 - Clearly, we have less now than in 2007.
 - Could start to crowd out investment by consumers and businesses.
 - Not currently a problem. No idea if/when it might become one.
 - Could be inflationary.



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So, Why Worry About It?

- **If debt continues to grow:**

- Interest payments will grow with it.
 - 8% of spending in 2018.
 - 22% of spending in 2048.
 - Less room for using the budget for policy priorities.
 - 40% of payments go to other countries.
- The longer we wait to address it, the harder and more disruptive addressing it will be.
- Interest rates might increase.



Growth in Relative Debt

- **Remember:**

- the denominator of relative debt is GDP
- the numerator is debt

- **The denominator grows at the rate of growth of GDP.**

- **The numerator grows with:**

- the *interest rate* on the debt plus (or minus)
- the effect of the primary deficit (surplus)

- **Notes:**

- relative debt can fall, even with chronic deficits, if they cause the debt to grow more slowly than GDP.
- Relative debt can rise with a surplus if interest rates increase enough.



Economists' Views on the Debt Evolve



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Traditional View: A Non-Issue

- **The analogy between household and government debt is inaccurate.**

- The government does not have to pay back the debt.
 - Retirees cash in maturing bonds, which are financed with new bond issues sold to younger people.
 - Interest on the debt is essentially paid by the young to their parents.
 - When the young are old, their young will do the same for them.



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Reagan's Experiment in Supply-Side Economics

- **Tax cuts were supposed to be “investments.”**
 - Lower marginal tax rates, and people will work more/harder and save.
 - Higher GDP will raise tax revenue to pay for the deficit.
- **Sadly, in 1981-89, debt rises from 25% to 40%.**
 - For the first time, relative debt rises during a non-recessionary peacetime.
 - Reignites concern about debt and deficits.
- **Failed experiment?**



Traditional View: Four True Costs

- **Crowding out:**
 - The Treasury's borrowing needs compete with private borrowers, so debt and deficits raise interest rates.
- **Higher interest rates lead to foreign capital inflows or foreign borrowing.**
 - With foreign borrowing, some of the interest on the debt goes to foreign countries.
- **Larger primary surpluses are needed to stabilize the relative debt.**
 - The larger the relative debt, the bigger the needed primary surplus.
 - Thus higher taxes or programmatic outlays must be reduced.
- **Government bias toward higher inflation**
 - GDP grows if either prices rise or real output rises.

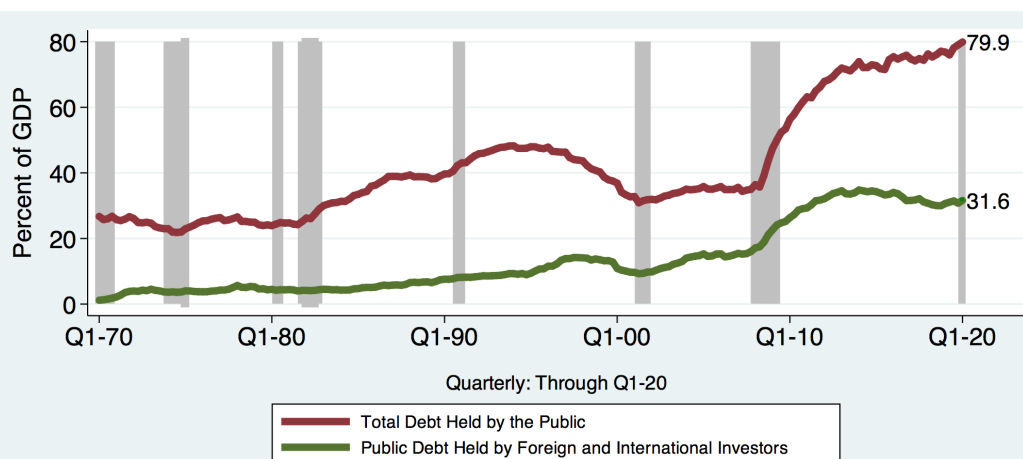


Traditional View: Cost 1

- **Rising debt reduces investment.**

- Deficits and debt raise aggregate demand.
 - o Direct government spending.
 - o Lower taxes lead households to spend more.
- To offset this increase in demand, the Fed has to raise interest rates, reducing investment and future GDP.
- By causing interest rates to rise:
 - o debt and deficits *“crowd out” investment.*

The International Appetite for US Treasuries



Source: NBER and US Office of Management and Budget
Gray shading indicates recession in 2 or more quarters of the year.
Graph by: National Economic Education Delegation (www.NEEdelegation.org)

2005: The International Dimension to Debt

- **Interest on foreign-held debt reduces US residents' welfare.**
 - Interest payments go to other countries.
- **When the Fed raises interest rates, the exchange rate of the dollar rises, causing:**
 1. Increases in the trade deficit
 2. Foreign borrowing.
- **Sharp increases in interest rates and the cost of imports raises the possibility of a fiscal crisis or a "run on the dollar."**

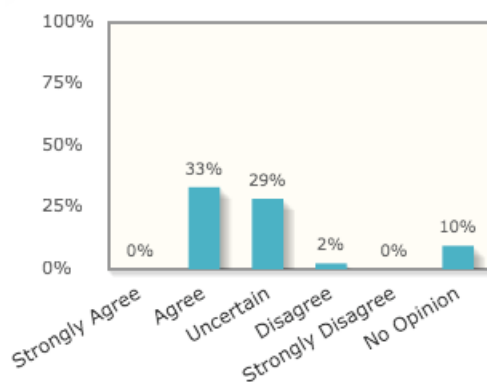


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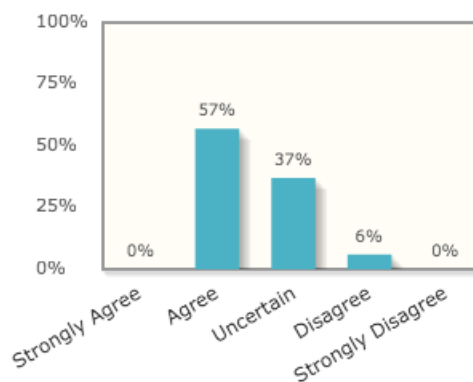
General Agreement Among Economists

If the US reduced its fiscal deficit, then its trade deficit would also shrink.

Responses

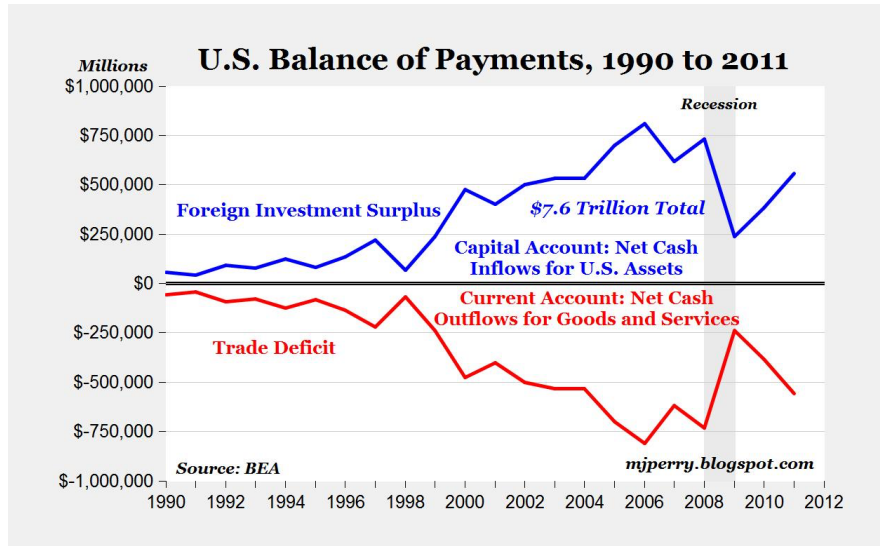


Responses weighted by each expert's confidence



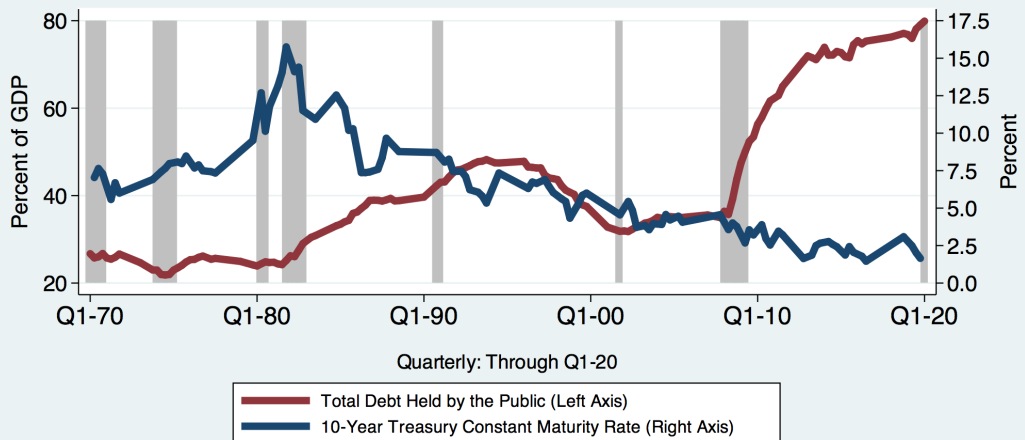
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Trade and Investment Flows Balance Out



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Costs 1-2: The Dog That Didn't Bark



Source: NBER and US Office of Management and Budget
 Gray shading indicates recession in 2 or more quarters of the year.
 Graph by: National Economic Education Delegation (www.NEEDelegation.org)

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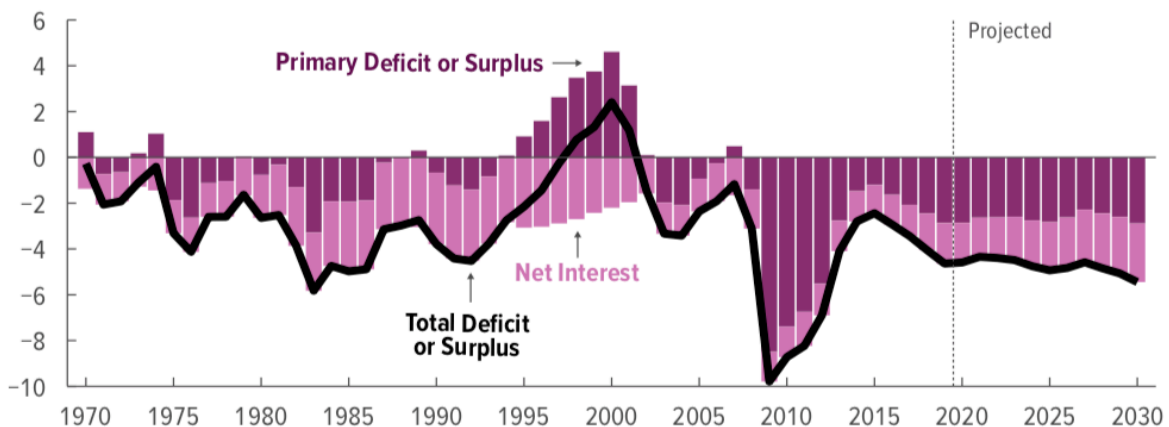
Traditional View: Cost 3

- **Rising debt reduces budgetary options.**

- More debt means higher interest costs.
- Therefore, greater relative debt:
 - o requires a bigger primary surplus to stabilize the relative debt.
- Larger primary surplus means either higher tax rates or less government spending:
 - o “crowding out” of outlays and/or tax cuts.

Cost 3: No Primary Surplus Since 2007!

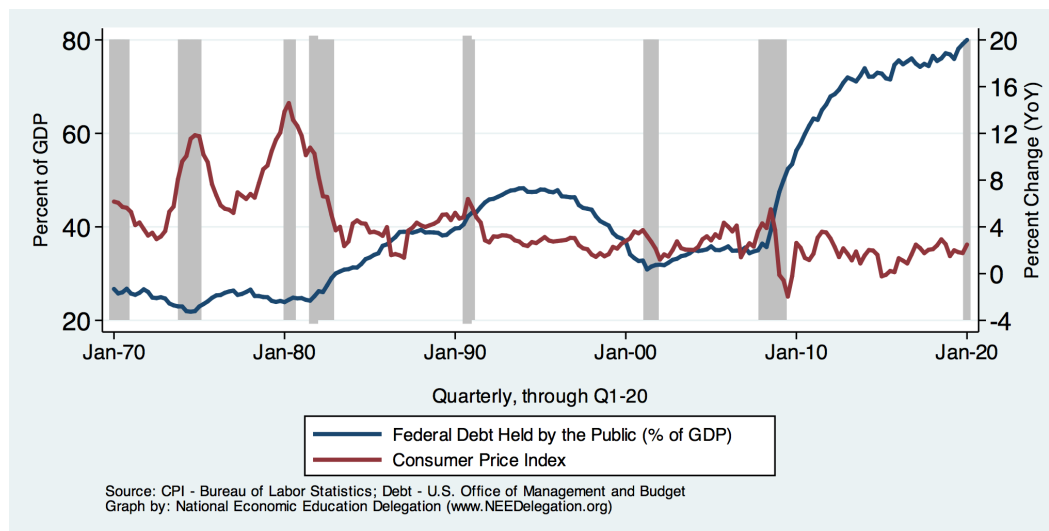
Percentage of Gross Domestic Product



This graph was done before Covid-19

Source: Congressional Budget Office, The Budget and Economic Outlook: 2020 to 2030

Cost 4: Anybody See Any Inflation?



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What the Traditional View Got Wrong

- **Stabilizing relative debt, debt/GDP, requires that the growth rate in debt equal the growth rate of GDP.**
- **The growth rate in debt has two parts:**
 1. The growth rate in interest on the debt, or just the interest rate.
 2. A contribution due to the primary surplus (–) or deficit (+).
- **The traditional view assumes that the interest rate on debt is greater than the growth rate of GDP**
 - So, 2 must be negative to offset excess of 1.
 - i.e., debt stabilization requires a primary surplus.



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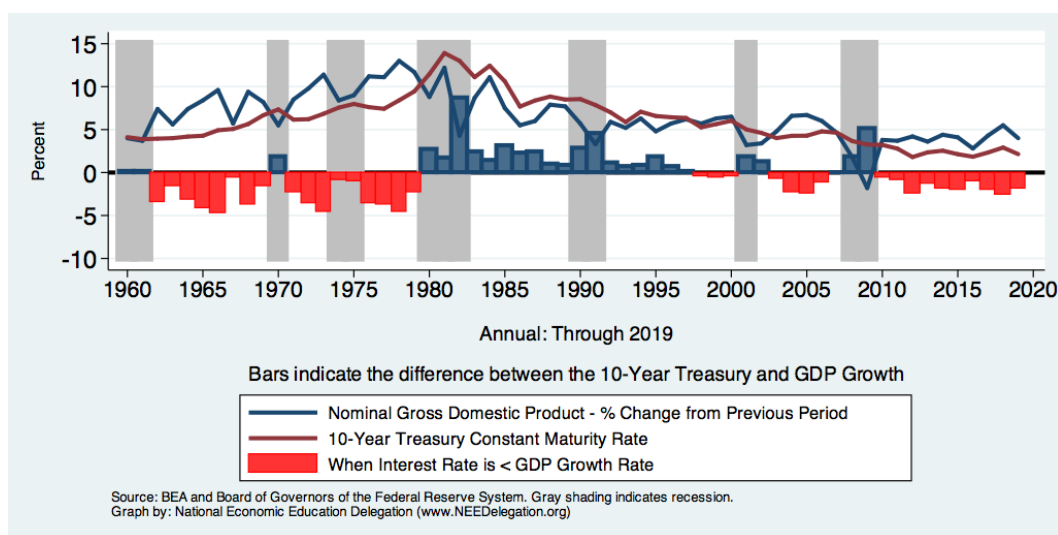
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An Almost Free Lunch

- If the interest rate is *less* than the growth rate of GDP, then the contribution from the primary budget can be positive, or
- Debt to GDP can be stabilized with a (small) primary *deficit*.

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Evidence?



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The Key: Stabilization of Relative Debt

- **Stabilization of relative debt might forestall the consequences of chronic deficits.**
- **Problem: The US federal debt is in no way stable.**
- **W/o stability, interest rates might rise, causing crowding out of:**
 - policy priorities
 - domestic investment
- **Budget surpluses are not necessary, but budget control is.**



A New and Possibly Catastrophic Cost

- **International investors can still lose if the exchange rate of the dollar falls.**
- **Remember, foreign holdings of public debt are 40 percent of the total.**



Why Do Foreign Investors Buy US Treasuries?

- **Market for Treasuries is the deepest, most liquid capital market in the world.**
- **The US economy has a history of political and economic stability.**
- **The dollar is the largest international reserve currency.**
 - Most trade transactions (e.g., oil) are quoted in dollars.
 - With some exceptions, foreign citizens borrow in dollars.

Fiscal Crisis, or a Run on the Dollar

- **With an exploding relative debt, what happens if foreigners lose confidence in the stability of the dollar?**
- **CBO (*Federal Debt: A Primer*, March 2020):**

because the United States currently benefits from the dollar's position as the world's reserve currency and because the federal government borrows in dollars, a financial crisis—similar to those that befell Argentina, Greece, or Ireland—is less likely in the United States.

Although no one can predict whether or when a fiscal crisis might occur or how it would unfold, the risk is almost certainly increased by high and rising federal debt.

- **Crises of confidence, in addition to being unpredictable, happen very quickly.**

What Is a Fiscal Crisis?

- **Increased perception of risk in government debt.**
- **Potential manifestations:**
 - Sudden major increase in interest rates
 - Plunging exchange rates
- **Why?**
 - Increased expectation of default
- **Potential results:**
 - Dramatic budget reforms may be quickly necessary to stave off actual default.
 - Recession from declines in:
 - investment (interest rates)
 - consumption (interest rates)
 - Government spending
 - Higher interest bill on existing debt

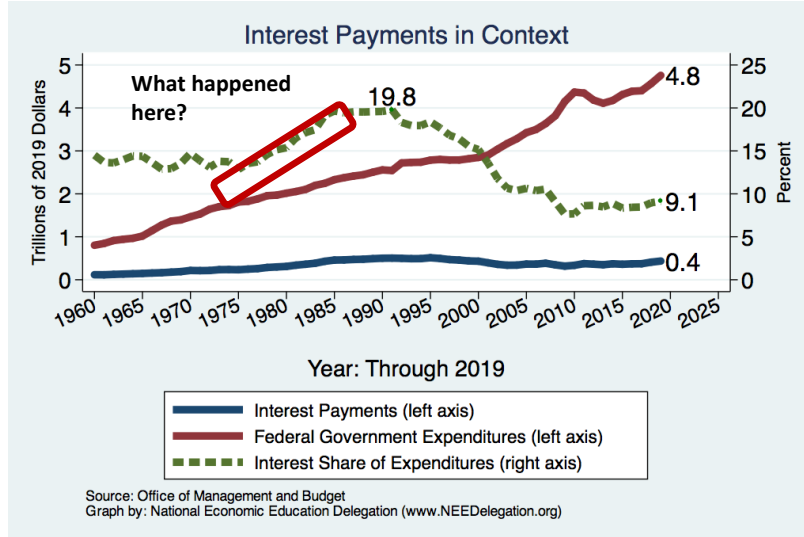
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Bottom Line: We Need to Worry about the Debt

1. **Interest rates will not stay this low forever.**
 2. **A fiscal crisis should be avoided at all costs.**
 3. **Stabilizing relative debt would substantially reduce the possibility of a crisis.**
 4. **The good news is we might be able to stabilize relative debt without a primary surplus.**
- But (after the pandemic is over) we must substantially reduce primary deficits.**

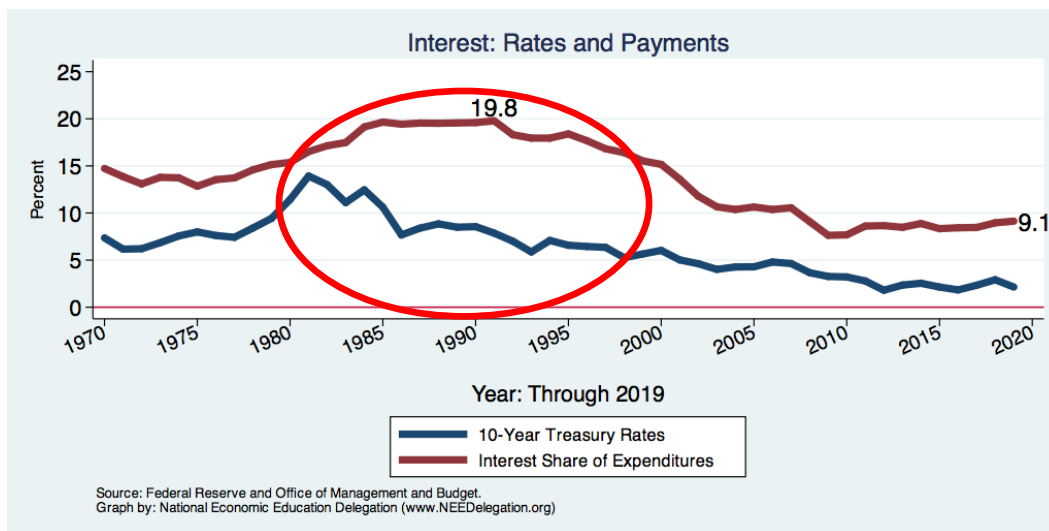
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History: A Cautionary Tale of Interest Rates?

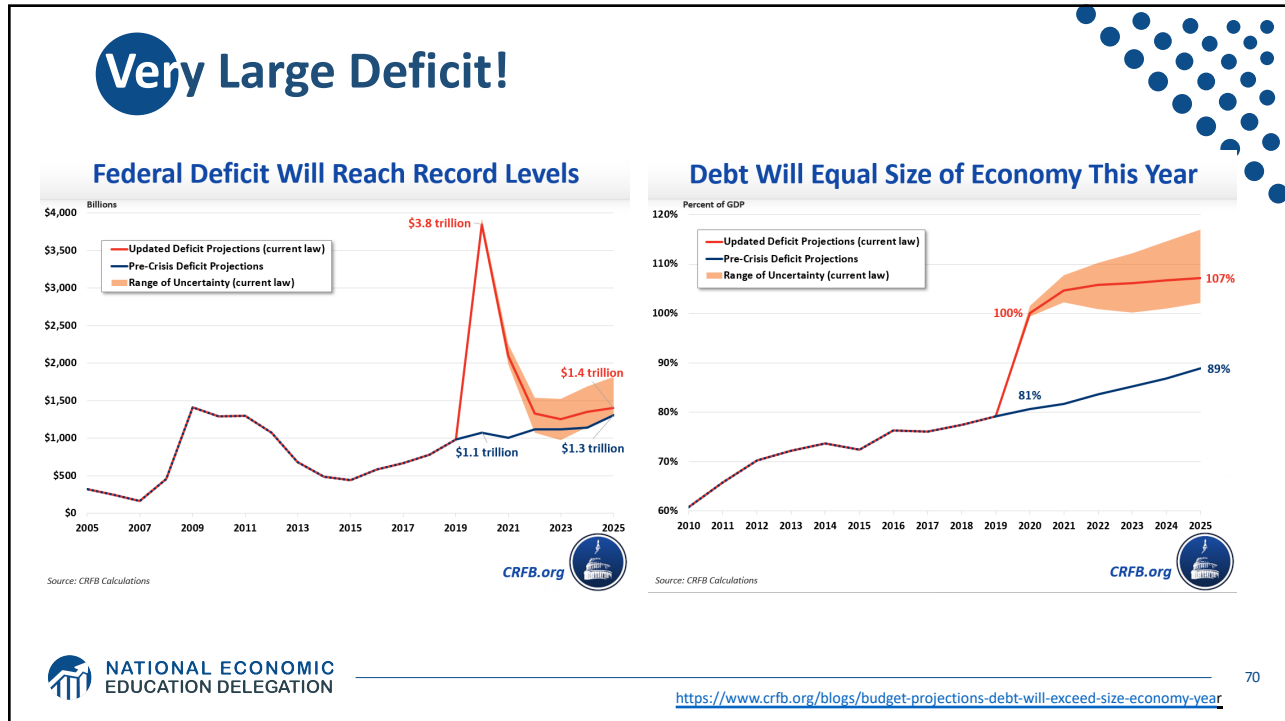


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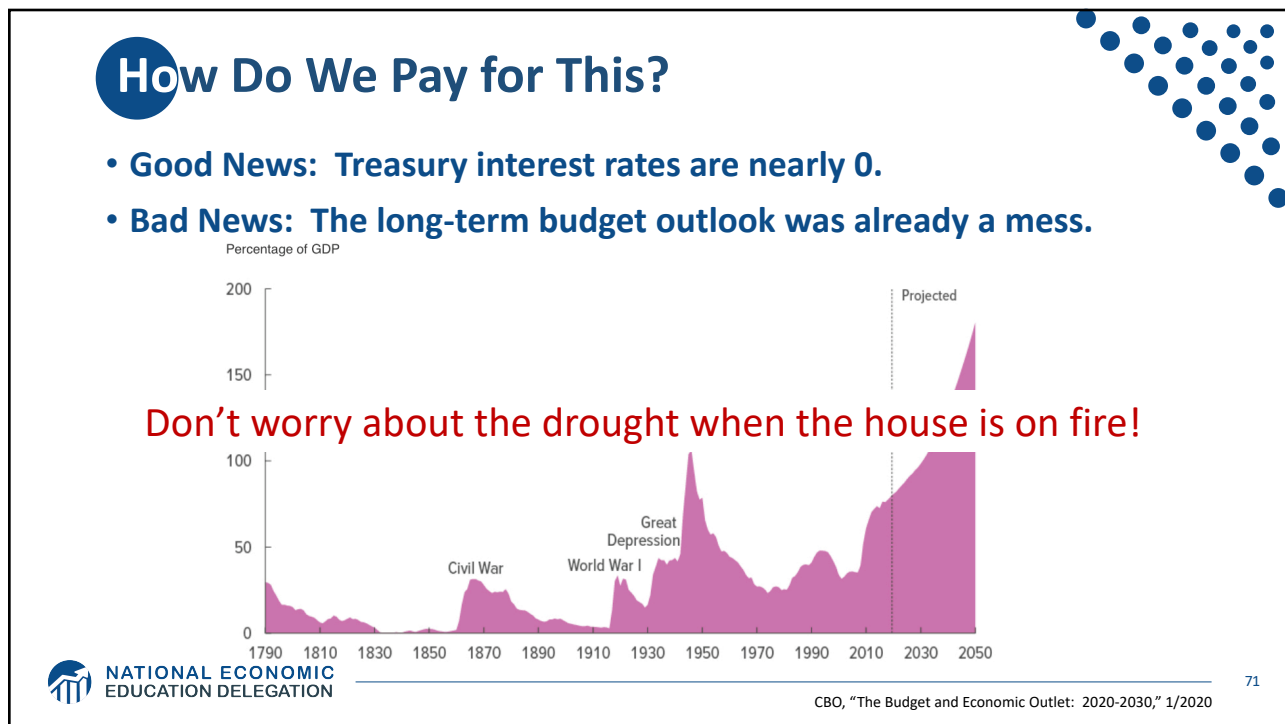
Interest Payments and Interest Rates



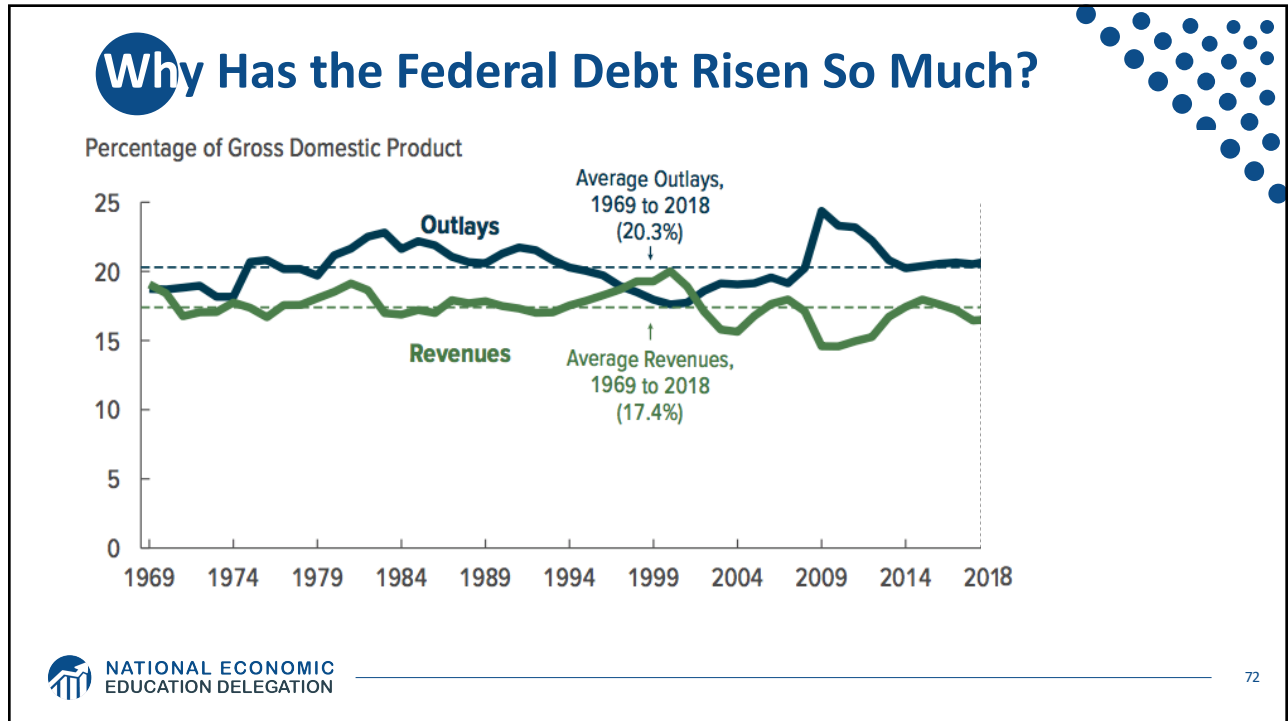
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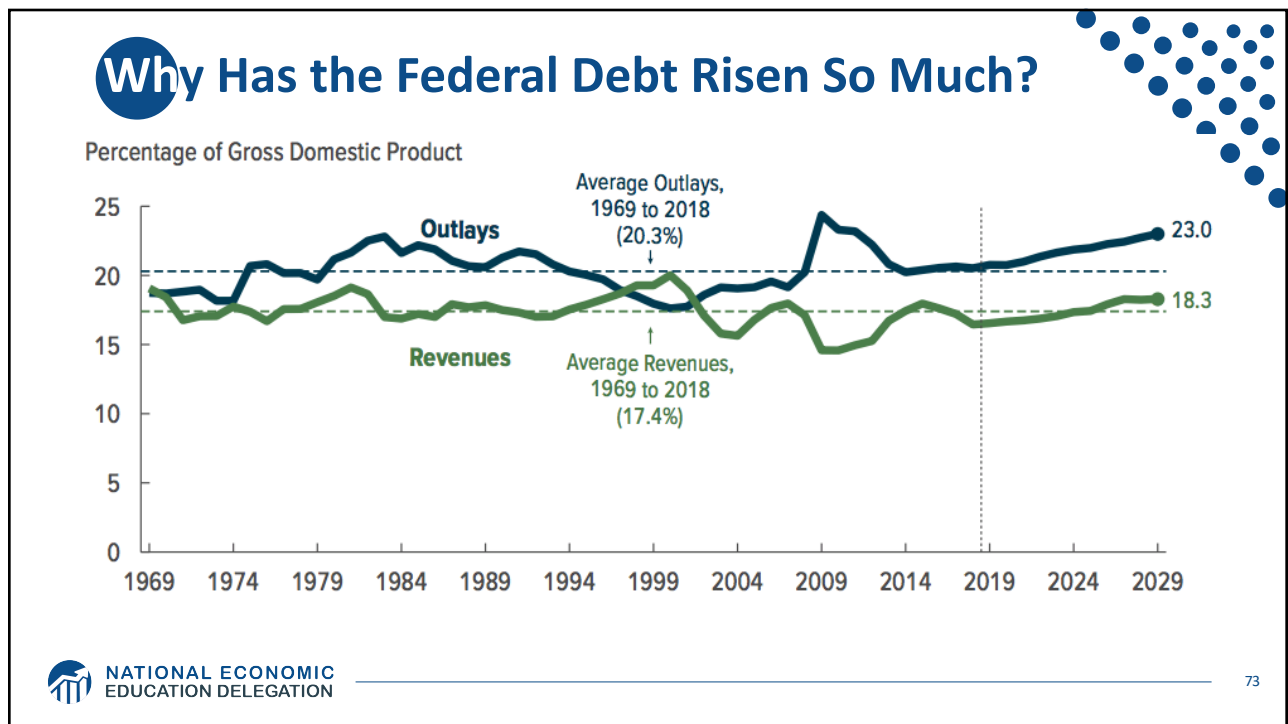
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Why Has the Federal Debt Risen So Much?

• Expenditures:

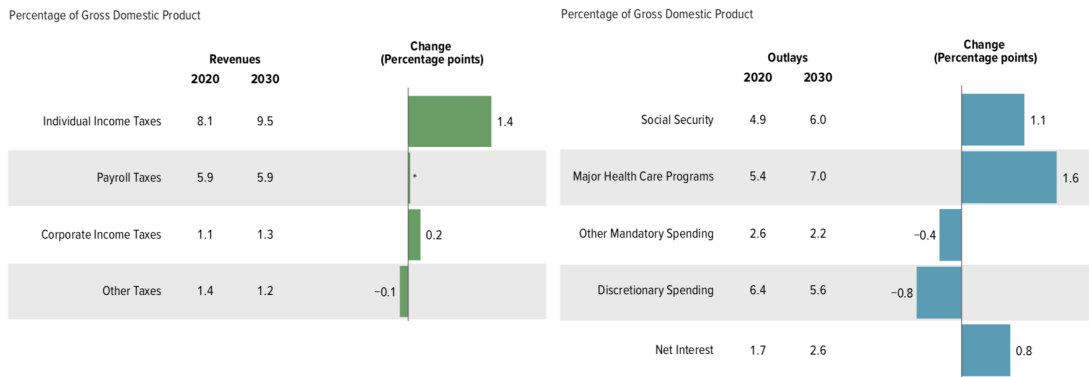
- Social Security
- Health-care costs
- Economic stimulus
 - o In particular, during the Great Recession.
- Military engagements overseas

• Revenues

- Declining income tax revenues
 - o Stagnant wages
 - o Tax cuts
- Social security
 - o Declining revenues
- Corporate income taxes



Growth in Outlays Exceeds Revenue



OK: Relative Debt Cannot Grow Forever, But

- Does it matter at what level we stabilize relative debt?
- Relative debt stops growing:
 - when the growth of debt is less the growth in GDP (on average).
- Arithmetic: growth rate of the debt equals the interest rate plus the effect of the primary surplus or deficit.
- The bigger the relative debt, the smaller the effect of the primary surplus or deficit.



CBO on the Possibility of a Fiscal Crisis

- Moreover,
 - because the United States currently benefits from the dollar's position as the world's reserve currency and
 - because the federal government borrows in dollars,
 - a financial crisis—similar to those that befell Argentina, Greece, or Ireland—is less likely in the United States.
- Although no one can predict whether or when a fiscal crisis might occur or how it would unfold, the risk is almost certainly increased by high and rising debt.



Takeaways (Continued)

- After the virus is defeated, some combination of spending cuts and tax increases must be enacted.
- The particular combination of spending cuts and revenue increases is a political question.
- But high debt levels should not deter:
 - Productive infrastructure investment.
 - Fiscal responses to crises.
- Given the fiscal challenges of an aging population and climate change, it is better to do this sooner rather than later.



Bottom Line

- Question is not **WHETHER** the US will have to act...
but **WHEN**.
- Some combination of the following **WILL** be necessary:
 - Raising taxes
 - Cutting spending
 - Reining in health-care costs

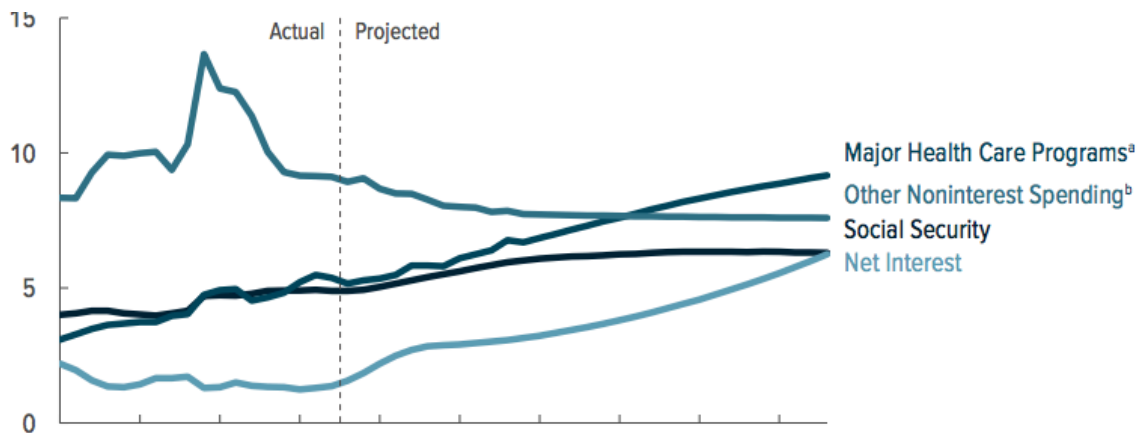


Are There Reasons to Wait?

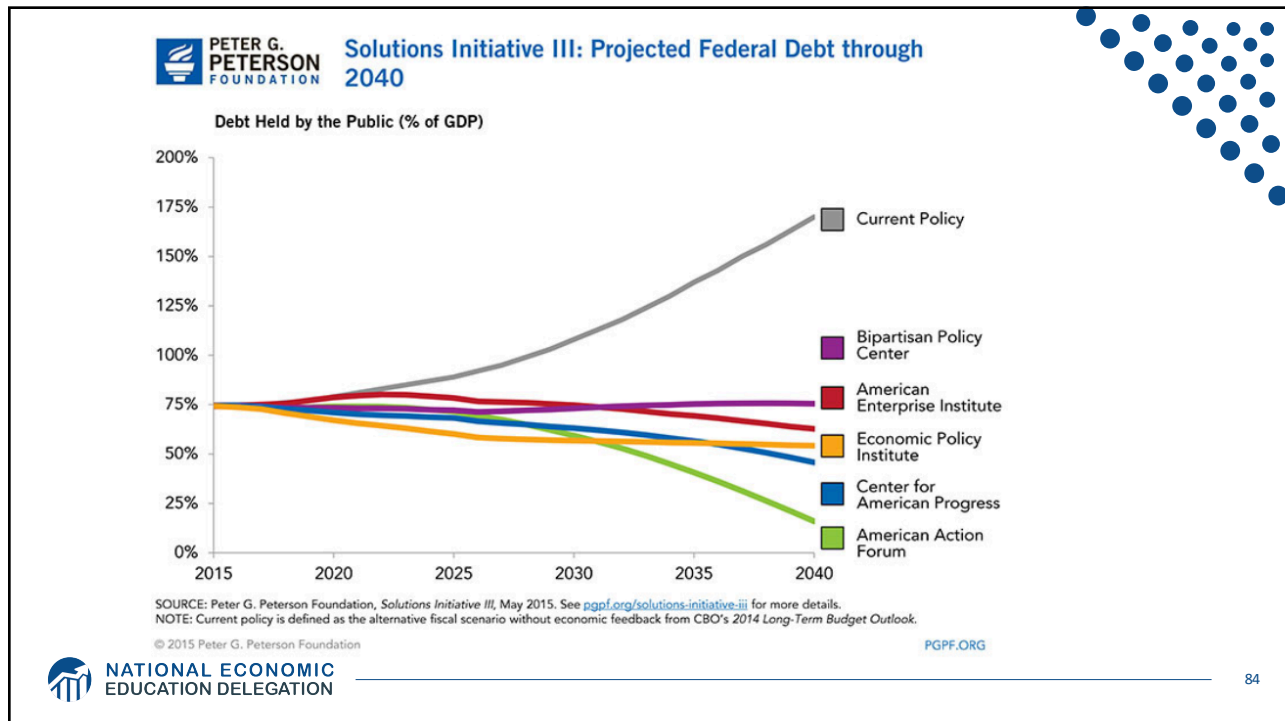
- **Very little evidence of:**
 - Crowding out
 - Inflationary impact
- **Uncertainty about the future**
 - Economic growth might render action today unnecessary.
- **There are a great many investments to be made by the govt.**
 - Infrastructure
 - Education
 - Much, much more ...

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What Are the Primary Drivers Going Forward?



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There Are Other (Bad/Costly) Solutions

- **Financial repression**
 - Using regulation to force down interest rates.
- **Paying the interest by printing money.**
 - Risks inflation, hyper or otherwise.
- **Or defaulting on the debt.**
 - This will forever raise the cost of government borrowing.

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Summary: Address the Debt?

- **Risks:**

- Inflation
- Slower economic growth
 - o Higher interest rates
 - o Crowding out
- Default

- **Reasons to wait:**

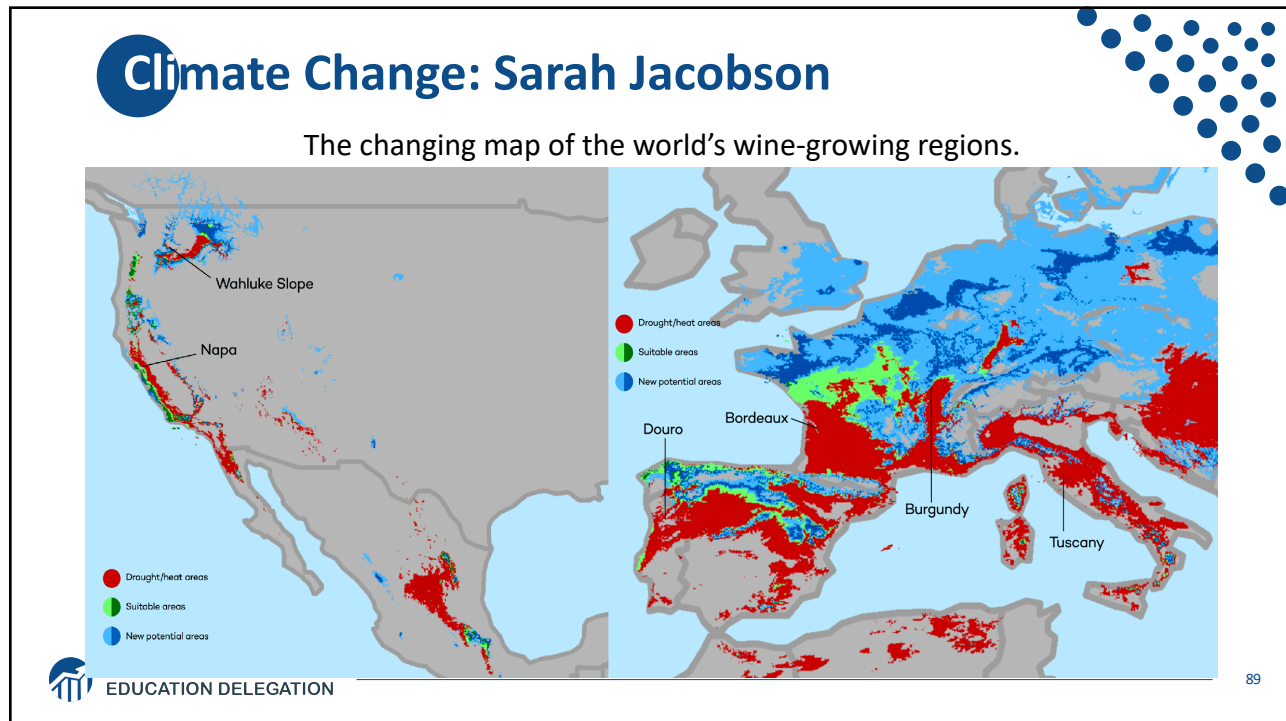
- Interest rates are very low
- Lots of important investments to make
- Economic growth may take care of it



Bottom-Line Takeaways

- **Relative debt must be stabilized, so it is imperative to reduce primary deficits after the virus has been defeated.**
- **Given the fiscal challenges of an aging population and climate change, it is better to do this sooner rather than later.**
- **But high debt levels should not deter:**
 - Productive infrastructure investment.
 - Fiscal responses to crises:
 - o “When the house is on fire, you don’t worry about being in a drought; you just put it out.”





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Thank you!

Any Questions?

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