



# The US Federal Debt

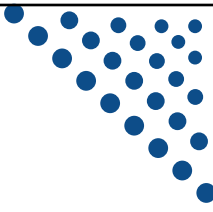
Kiwanis Club of San Jose  
April 12, 2021  
Geoffrey Woglom  
Amherst College  
Professor of Economics (Emeritus)



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## National Economic Education Delegation

- **Vision**
  - One day, 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 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: 500+ members**

- At all levels of academia and some in government service
- All have a Ph.D. in economics
- Crowdsource slide decks
- Give presentations

- **Global Partners: 45 Ph.D. Economists**

- Aid in slide deck development



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- 2017 Tax Law
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## Credits and Disclaimer

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

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

- **Disclaimer**

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

## What Does the U.S. Gov't Budget Look Like?

### Fiscal 2020 Budget Summary

Revenue	Billions		Outlays	Billions
Income Taxes	\$1,609	Programmatic Outlays	Mandatory	\$2,315
Payroll Taxes	\$1,310		Discretionary	\$3,850
Corporate Taxes	\$212		Interest	\$387
Other	\$289			
<b>Total</b>	<b>\$3,420</b>		<b>Total</b>	<b>\$6,552</b>

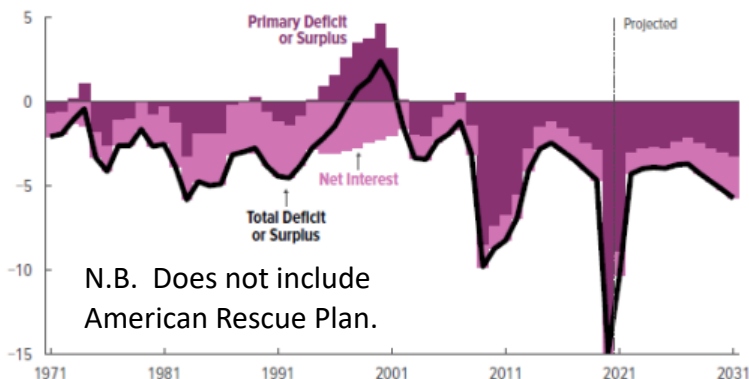
Budget Deficit **\$3,132**

# Past and Future of Deficits

Figure 1.

## Total Deficits and Surpluses

Percentage of GDP



Useful Deficit Decompositions:

$$\begin{aligned} \text{Total Deficit} &= (\text{Programmatic Outlays} + \\ &\text{Interest Expense}) - \text{Revenue} \\ &= (\text{Programmatic Outlays} - \\ &\text{Revenue}) + \text{Interest Expense} \end{aligned}$$

$$= \text{Primary Deficit} + \text{Net Interest}$$

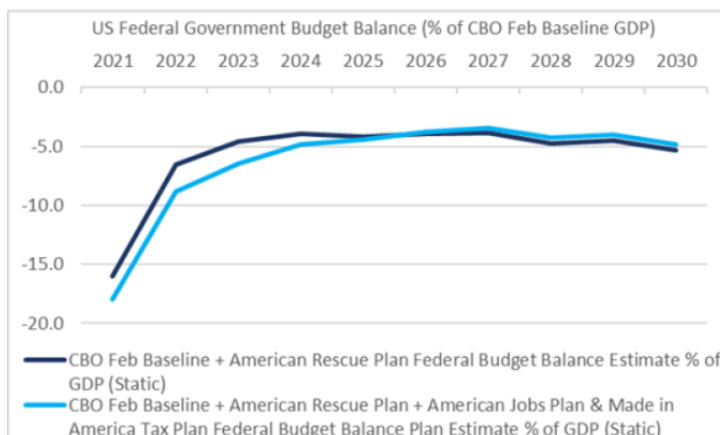
Data source: Congressional Budget Office. See [www.cbo.gov/publication/56996#data](http://www.cbo.gov/publication/56996#data).



Source: Congressional Budget Office, The Budget and Economic Outlook: 2020 to 2030, 9/20

# The Effect of the American Rescue Plan

Good News (?); 2021 deficit is still less than the 30% deficit in 1943

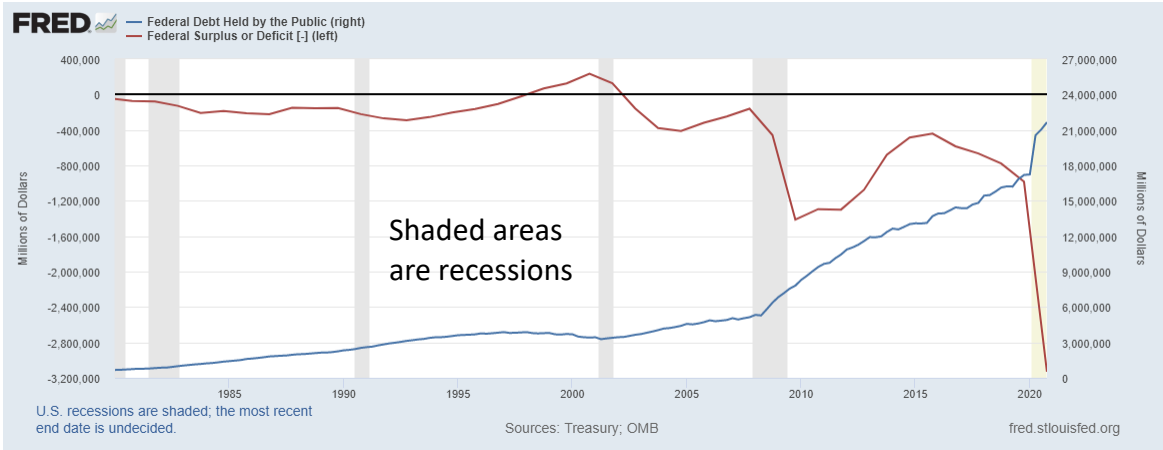


Sources: Congressional Budget Office, The Conference Board.

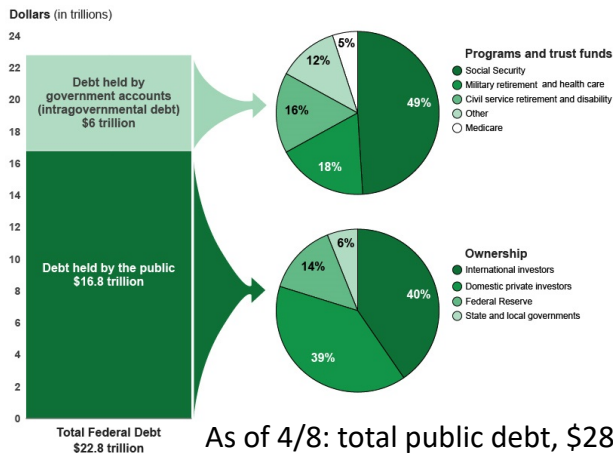


# Debt vs. Deficit

The Sum of All Past Deficits Less Surpluses Equals the Debt

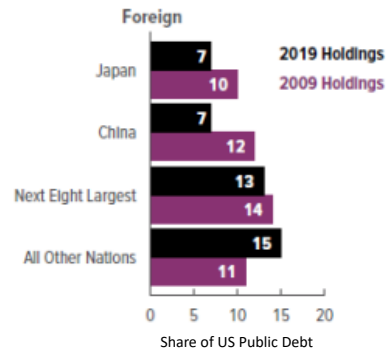


# A Breakdown of the Total Federal Debt



As of 4/8: total public debt, \$28.1 tr, held by the public, \$21.0 tr.

As of 1/21, Japan holds \$1.28 tr  
China Holds \$1.1 tr:  
<https://ticdata.treasury.gov/>



## Not All Debt Is Created Equal

### Intra-governmental debt is important bookkeeping.

- This debt **DOES NOT** require funding on credit markets

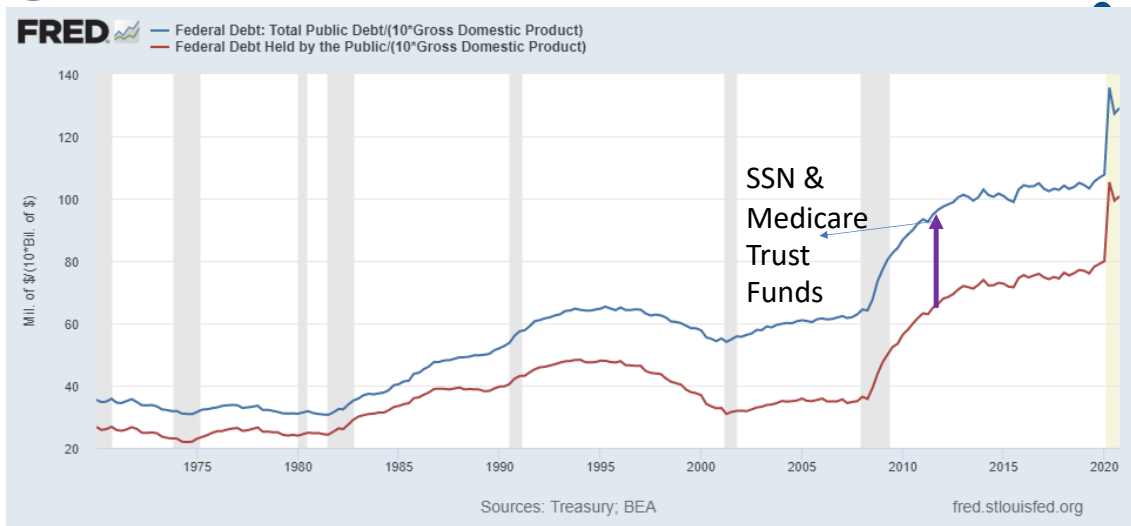
- **Debt held by the public**

- This debt is funded by borrowing on credit markets and competes with private funding.

- **Most analyses focus on the publicly 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.

## Two Measures of the Debt



## 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 – Budgetary Effects of Raise the Wage Act of 2021
  - Projections of Debt and Deficits – The Budget and Economic Outlook: 2020 to 2030

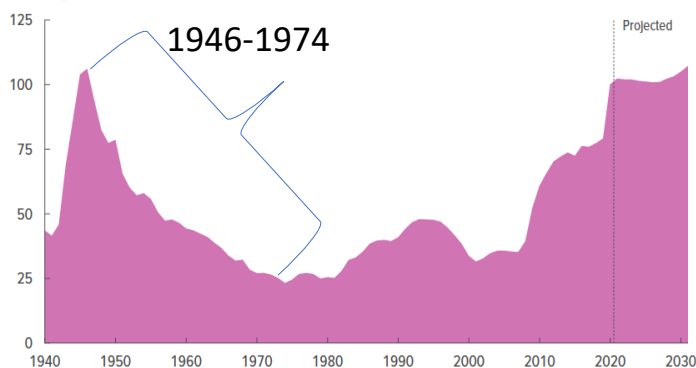
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## Relative Debt since 1940 and Projections

Figure 2.

### Federal Debt Held by the Public

Percentage of GDP



By 2031, federal debt held by the public is projected to reach 107 percent of GDP, the highest in the nation's history.

Data source: Congressional Budget Office. See [www.cbo.gov/publication/56996#data](http://www.cbo.gov/publication/56996#data).

GDP = gross domestic product.

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## Key Points About the U.S. Relative Debt

1. Relative debt peaked during WWII (106%) - followed by a steady decline until the 1980s.
2. Prior to 1983, relative debt rose purposefully (wars, recessions, infrastructure) and then fell.
3. Recently, relative debt has been and is expected to continue to rise for the next 30 years w/o strategic purpose.



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## Debt Dynamics

- Between 1946-1974, relative debt fell continuously in spite of deficits in 21 of the 29 years, with the debt increasing by 42%.  
How?
- 1946-1974, deficits caused the debt to grow, but not as fast as GDP.
- While the debt grew by 42%, GDP (nominal) grew by 550%

You don't need a surplus to reduce the *relative* debt



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## Traditional Views of the Cost of the Debt

- **First 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
- **Economist View of the Debt circa 1980, very little cost because relative debt is falling. That changes in 1983.**

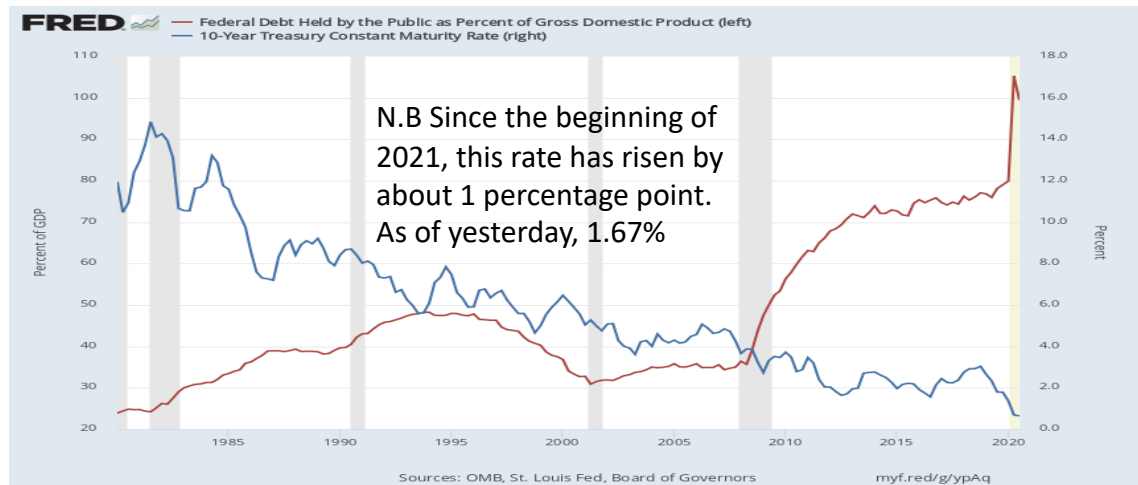


## Traditional View: Debt and Deficits Raise Interest Rates

1. **Crowding Out:** Higher interest rates lead to less investment and over time to a smaller capital stock and reduced future output.
2. **Foreign Borrowing:** Higher interest rates lead to foreign capital inflows or foreign borrowing. With foreign borrowing, some of our GDP is paid to foreigners as interest.



## The Dog that Didn't Bark; Rising Interest Rates?



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## Olivier Blanchard's Presidential Address to the AEA 1/2019

**“If the future is like the past [with low interest rates],...the issuance of debt without a later increase in taxes may well be feasible. Put bluntly, public debt may have no fiscal cost.”**

**But,**

**“My purpose...is not to argue for more public debt, especially in the current political environment. It is to have a richer discussion of the costs of debt...than is currently the case.”**



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## What the Traditional View Got Wrong

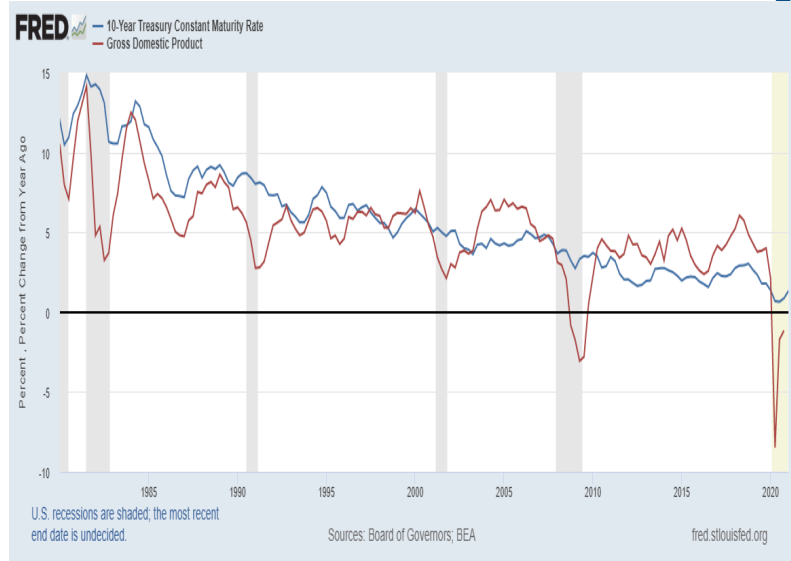
- **The growth rate in debt :**
  - One part of the debt grows at the interest rate.
  - Total debt grows *by more* than the interest rate when there is a primary deficit.
- **The traditional view assumes that the interest rate on debt is greater than the growth rate of GDP**
  - So, there must be a *primary surplus* to offset the interest rate
  - i.e., programmatic outlays must be less than revenues to stabilize the debt.

## An Almost Free Lunch

- If the interest rate is *less* than the growth rate of GDP, then Debt to GDP can be stabilized with a (small) *primary deficit*: programmatic outlays can be less than revenues!
- **Blanchard does believe that the relative debt must be stabilized**
  1. At some point deficits must be reduced.
  2. But it may not be crucial at what level of debt we stabilize.

## Blanchard's Evidence

Since 2000  
(except for  
recessions),  
which is bigger?



## But why must the relative debt be stabilized

- For practical purposes, the US cannot default on its debt, but...
- International investors, however, can still lose if the exchange value of the dollar falls.
- Remember, foreign holdings of the public debt amount to 40 percent of the total

## Why do Foreigners Buy US Treasuries?

- **Market for Treasuries is the deepest, the most liquid and safest capital market in the world.**
- **What would happen if foreigners lost confidence in the stability of the dollar?**

### **CBO, *The 2020 Long-Term Budget Outlook*, 9/2020**

The risk of a fiscal crisis appears to be low in the short run despite the higher deficits and debt stemming from the pandemic.... Nonetheless, the much higher debt over time would raise the risk of a fiscal crisis in the years ahead.



## What would a Fiscal Crisis Look Like?

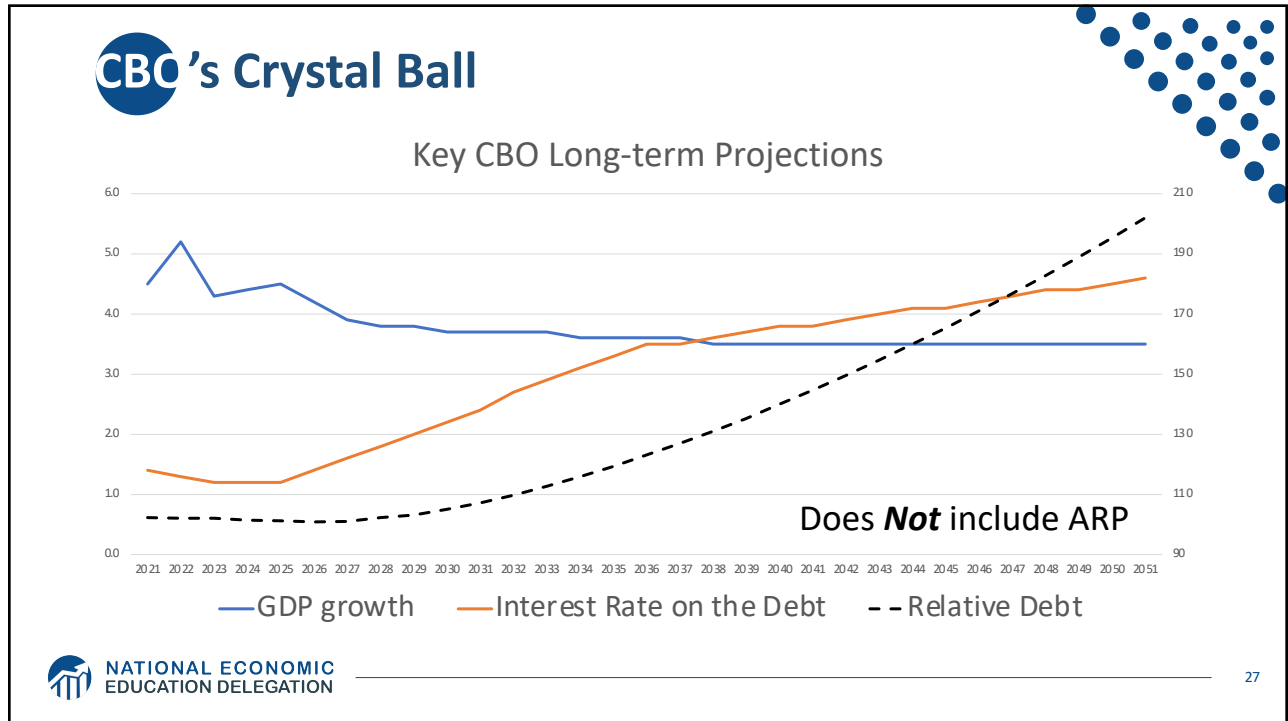
**Foreigners lose confidence in the dollar and sell Treasuries in exchange for assets denominated in their own currency,**

1. Sale of Treasuries raises interest rates, worsening or fiscal outlook.
2. Trading of Foreign for US assets lowers US exchange rate.
  - a. Raising the price of imports thereby increasing inflation.
  - b. Lowering the foreign currency returns on all US assets, exacerbating 1.

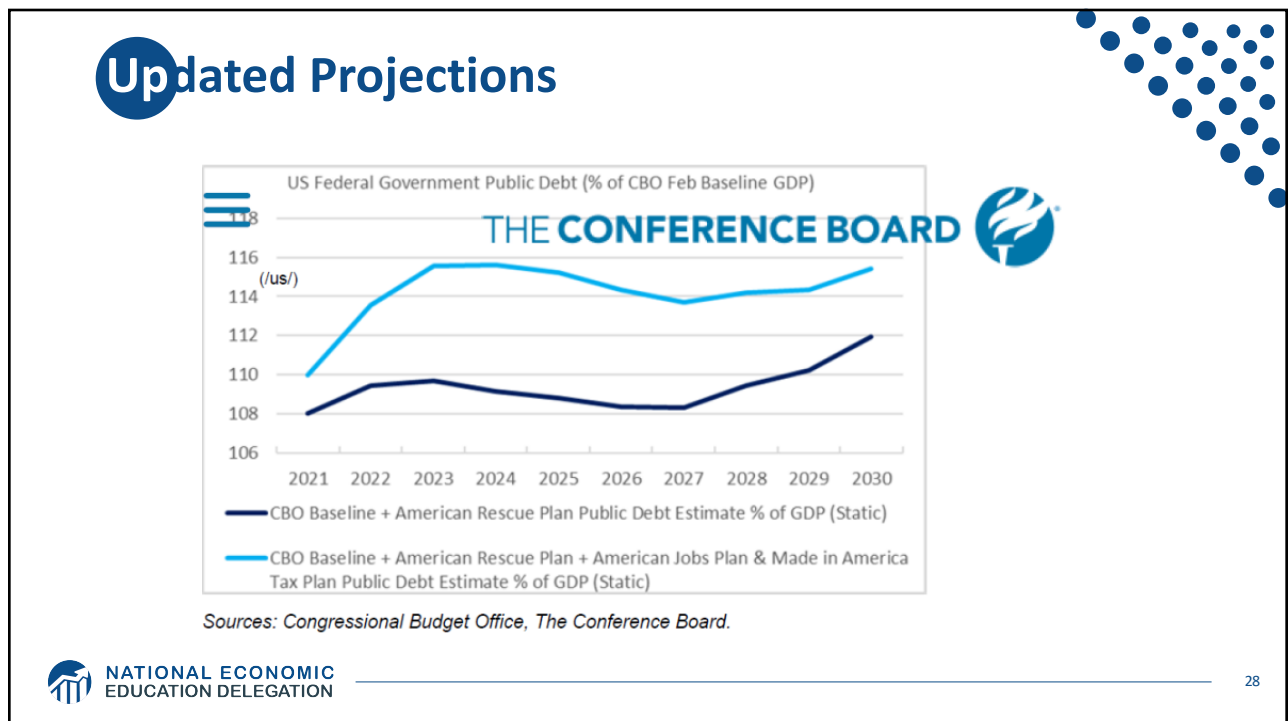
### **Could the Fed Bail us Out?**

1. It could buy Treasuries and prevent the rise in interest rates.
2. Insufficient foreign assets to prevent the fall in the exchange rate,





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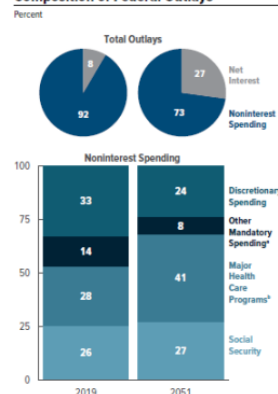
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# Bottom Line: We Need to Worry about the Debt

1. Interest rates may not stay this low forever.
2. A fiscal crisis should be avoided at all costs.
3. The good news is we may be able to stabilize the relative debt without a running a surplus.

But, we must substantially reduce deficits after the pandemic: CBO (9/2020) suggests deficits in 2025 be reduced from 5 to 2.5 percent of GDP, but it won't be easy

Figure 6. Composition of Federal Outlays



# Thank you!

## Any Questions?

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# What Is Infrastructure?

American Jobs Plan & Made In America Tax Plan (Billions of US\$)


<b>Infrastructure Spending (Public)</b>	<b>621</b>	<b>Care Economy</b>	<b>Housing for the Aged and disabled persons</b>	<b>400</b>
Highways, Roads, Bridges Repair	115	<b>R&amp;D, Manufacturing &amp; Training Spending</b>	<b>R&amp;D</b>	<b>180</b>
Road Safety	20	Strengthen Supply Chains	Semiconductor Manufacturing	50
Modernize Transit Systems	85	Pandemic Preparedness	Clean Manufacturing	30
Amtrak Repair	80	Regional Innovation Hubs	NIST	14
Electric Vehicle Charger Grants	174	Domestic Manufacturing	Small Business Aid	31
Revamp Airports	25	Workforce Development	Other	7
Inland Waterways and Ports	17			
Transportation Infrastructure	45			
Infrastructure resilience	50			
Other	10			
<b>Infrastructure Spending "At Home"</b>	<b>650</b>	<b>Revenue</b>	<b>Total over 15 years</b>	<b>2000</b>
Retrofit 2 million homes	213	Raise corporate tax rate from 21 to 28%	Raise global min tax rate from 13 to 21%	
High speed Broadband	100	All Other	End federal tax breaks for fossil fuel companies	
Rehab Public Housing	40		Loophole closure	
Clean Drinking Water	45		Inversion elimination	
Public School Building	100		Eliminate expense deductions for offshoring	
Grants	50		Eliminate cred expenses for onshoring	
Bonds	50		Min Tax on Large Corporations Book Income	
Community College Infrastructure	12		Ramp up enforcement against corporations	
Upgrade child care Facilities	25			
VA Hospital Modernization	18			
Federal Buildings Revamp	10			
Conservation and Resilience Workers	10			
Clean Energy Accelerator	27			
Other	50			

Sources: The White House, The Conference Board.

# Taking It One Step Further: (St. Augustine)

Jason Furman and Larry Summers, 12/1 presentation to Brookings

- **Low Interest Rates are Here to Stay, but not clear why.**
  - private saving higher due to longer retirement periods, increased inequality, and rising uncertainty.
  - Bernanke's "Savings Glut" from China and Japan
- **Low Interest Rates Are a Problem:**
  - Fed fights recessions by lowering interest rates. This time by 2.25 pct. pts, vs. 6.3 pct. pts on average in the past recessions.
  - Low interest rates lead to financial instability in "search for yield."

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<https://www.brookings.edu/wp-content/uploads/2020/11/furman-summers-fiscal-reconsideration-discussion-draft.pdf>

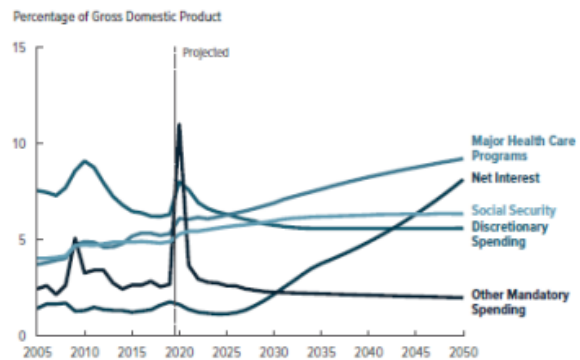
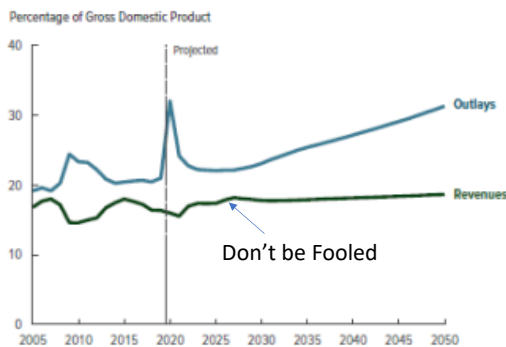


## Furman & Summers Conclude

1. Low Interest Rates Imply Public Investment may be quite profitable.
2. Expand Debt-Financed Public Investment *as long as* there are profitable investments and interest rates are at moderate levels (Good Reason to Borrow #2).
3. But, infrastructure investment is stimulus and there may not be room for it in 2021 (which is why Summers that ARP was too big)

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## Bending the Curves!



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## You've Convinced Me: Let's Act Now!

**Janet Yellen** as reported in *Bloomberg*, 1/19/21: "Right now, short term, I feel that we can afford what it takes to get the economy back on its feet, to get us through the pandemic," Yellen told the Senate Finance Committee, highlighting that interest rates are historically low...

Yellen said that "it's essential we put the federal budget on a path that's sustainable" over time, but that the situation will be worse if investments aren't made now to support economic growth.



## Legitimate Disagreement

**Douglas Holtz-Eakin's views have evolved:**

- In April: "I'm a fiscal hawk from way back, and all of my heebie-jeebies are going off when I see these numbers, but then I look at the scale of the problem, and I think, yeah, that's that. Gotta do it." *Politico*, 4/29
- In January: "Facts are stubborn things; and whatever may be our wishes, our inclinations, or the dictates of our passion, they cannot alter the state of facts and evidence." It is useful to remember the words of the 2<sup>nd</sup> president as we are bombarded daily by administration spokespeople about the dire state of the economy and the need for (another) multi-trillion dollar federal response

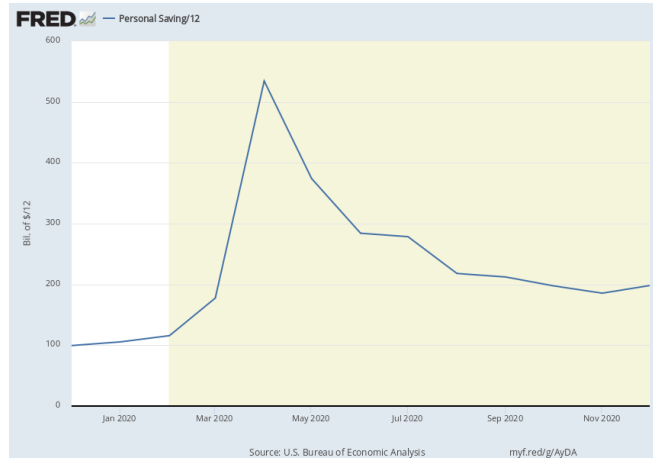


## Much of the March Stimulus Was Saved

Estimates that personal saving increased by up to \$1.56 trillion between March and November, *Why Markets Boomed in a Year of Human Misery*, NYT, 1/1/21

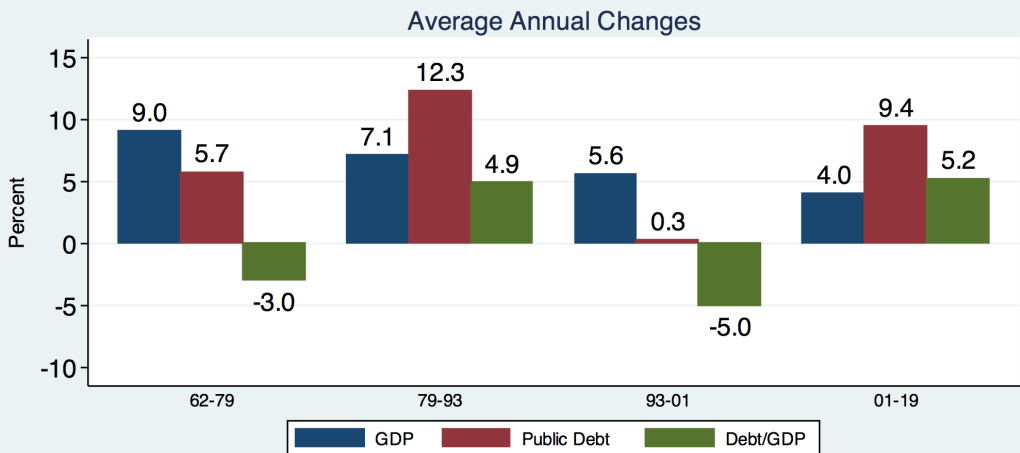
\$2,400 was sent to joint filers with AGI of \$150,000 (Median Household Income is about \$70,000).

Compare this to enhanced unemployment benefits, which are **targeted** at households in distress



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## The Periods of Rising and Falling Rel Debt.



Source: Council of Economic Advisers and BEA  
Graph by: National Economic Education Delegation (www.NEEDelegation.org)

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# What Is and Isn't "Rescue"

Comparing Two Rescue Plans			
	American Rescue	Republican Plan	Difference
Direct Payments	\$465 billions	\$220	\$245
Aid to State and Local Governments	\$350	0	\$350
Pandemic Unemployment	\$350	\$130	\$220
School Reopening	\$170	\$20	\$150
Vaccines	\$160	\$160	0
Expand Child Tax Credit	\$120	0	\$120
Rent and Landlord Support	\$30	0	\$30
Child Care Providers	\$25	\$20	\$5
Other	~\$200	\$68	\$132
<b>Total</b>	<b>\$1,870</b>	<b>\$618</b>	<b>\$1,252</b>

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# UI Replacement rates and Expanded Benefits

Unemployment Insurance Benefits				
Income Quartile:	Weekly Earnings	Regular Benefits	Expanded (\$300)	Expanded (\$400)
25%	\$445	\$231 (52%)	\$531 (119%)	\$631 (1.42%)
50%	\$668	\$346 (50%)	\$646 (97%)	\$746 (1.12%)
75%	\$1,207	\$456 (38%)	\$756 (63%)	\$856 (71%)

P. Ganong, P. Noel, and J. Varva, "US Unemployment Insurance Replacement Rates During the Pandemic, Working Paper 202-62, BFI Institute

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# American Rescue Plan and Income Distribution

11-Mar-21 REVISED RESULTS <http://www.taxpolicycenter.org>  
 Click on PDF or Excel link above for additional tables containing more detail and breakdowns by filing status and demographic groups.

**Table T21-0038**  
**Major Individual Income Tax Provisions in H.R.1319, The American Rescue Plan Act of 2021**  
**As Passed by the Senate**  
**Baseline: Current Law**  
**Distribution of Federal Tax Change by Expanded Cash Income Level, 2021<sup>1</sup>**  
**Summary Table**

Expanded Cash Income Level (thousands of 2020 dollars) <sup>2</sup>	Tax Units		Percent Change in After-Tax Income <sup>3</sup>	Share of Total Federal Tax Change	Average Federal Tax Change (\$)	Average Federal Tax Rate <sup>4</sup>	
	Number (thousands)	Percent of Total				Change (%)	Under the Proposal
Less than 10	12,510	7.1	45.3	5.4	-2,300	-43.2	-38.7
10-20	20,870	11.9	19.7	11.5	-2,940	-19.3	-17.3
20-30	19,290	11.0	13.7	12.0	-3,330	-13.2	-9.9
30-40	15,710	9.0	9.9	9.6	-3,290	-9.3	-3.1
40-50	13,070	7.4	7.6	7.7	-3,160	-7.0	1.4
50-75	24,860	14.2	6.0	15.3	-3,300	-5.3	5.8
75-100	17,380	9.9	4.6	11.2	-3,470	-4.0	9.7
100-200	31,460	17.9	3.2	22.4	-3,820	-2.7	14.0
200-500	14,570	8.3	0.6	3.4	-1,260	-0.4	20.7
500-1,000	1,860	1.1	0.0	0.0	-30	0.0	25.0
More than 1,000	790	0.5	0.0	0.0	20	0.0	29.5
All	175,540	100.0	3.8	100.0	-3,060	-3.1	14.9

Source: Urban-Brookings Tax Policy Center Microsimulation Model (version 0920-2).  
 Number of AMT Taxpayers (millions). Baseline: 0.1 Proposal: 0.2  
 (1) Calendar Year. Baseline is the law currently in place as of March 7, 2021. Includes certain provisions affecting: economic impact payments (additional recovery rebates for individuals); child tax credit (CTC); child and dependent care tax credit (CDCTC); and earned income tax credit (EITC). See Tables T21-0036, T21-0037, and T21-0030 through T21-0035 for details of the proposals included. These estimates revise TPC's earlier analysis in which the non-filer take-up rate for the childless EITC was too low. <http://www.taxpolicycenter.org/taxtopics/Baseline-Definitions.cfm>  
 (2) Includes both filing and non-filing units but excludes those that are dependents of other tax units. Tax units with negative adjusted gross income are excluded from their respective income class but are included in the totals. For a description of expanded cash income, see <http://www.taxpolicycenter.org/TaxModel/income.cfm>  
 (3) After-tax income is expanded cash income less: individual income tax net of refundable credits; corporate income tax; payroll taxes (Social Security and Medicare); estate tax; and excise taxes.  
 (4) Average federal tax (includes individual and corporate income tax, payroll taxes for Social Security and Medicare, the estate tax, and excise taxes) as a percentage of average expanded cash income.



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# Trump 2017 Tax Cut (TCJA) and Inc. Distribution

8-Mar-21 PRELIMINARY RESULTS <http://www.taxpolicycenter.org>  
 Click on PDF or Excel link above for additional tables containing more detail and breakdowns by filing status and demographic groups.

**Table T21-0039**  
**Major Individual Income Tax Provisions in H.R.1319, The American Rescue Plan Act of 2021**  
**As Passed by the Senate**  
**Baseline: Current Law**  
**Distribution of Federal Tax Change by Expanded Cash Income Percentile, 2021<sup>1</sup>**  
**Summary Table**

Expanded Cash Income Percentile <sup>2,3</sup>	Tax Units		Percent Change in After-Tax Income <sup>4</sup>	Share of Total Federal Tax Change	Average Federal Tax Change (\$)	Average Federal Tax Rate <sup>5</sup>	
	Number (thousands)	Percent of Total				Change (%)	Under the Proposal
Lowest Quintile	44,330	25.3	20.1	23.3	-2,810	-19.6	-17.0
Second Quintile	38,420	21.9	9.3	23.4	-3,250	-8.6	-1.7
Middle Quintile	35,490	20.2	5.5	22.3	-3,350	-4.8	7.2
Fourth Quintile	29,440	16.8	3.6	20.8	-3,770	-3.1	12.7
Top Quintile	24,680	14.1	0.7	8.8	-1,900	-0.5	22.8
All	175,540	100.0	3.8	100.0	-3,040	-3.1	14.9
<b>Addendum</b>							
80-90	12,740	7.3	2.0	7.7	-3,210	-1.6	17.4
90-95	6,080	3.5	0.4	1.0	-870	-0.3	20.7
95-99	4,720	2.7	0.1	0.2	-180	0.0	23.2
Top 1 Percent	1,150	0.7	0.0	0.0	20	0.0	29.1
Top 0.1 Percent	120	0.1	0.0	0.0	20	0.0	29.5

Source: Urban-Brookings Tax Policy Center Microsimulation Model (version 0920-2).  
 Number of AMT Taxpayers (millions). Baseline: 0.1 Proposal: 0.2  
 (1) Calendar Year. Baseline is the law currently in place as of March 7, 2021. Includes certain provisions affecting: economic impact payments (additional recovery rebates for individuals); child tax credit (CTC); child and dependent care tax credit (CDCTC); and earned income tax credit (EITC). See Tables T21-0036, T21-0037, and T21-0030 through T21-0035 for details of the proposals included. <http://www.taxpolicycenter.org/taxtopics/Baseline-Definitions.cfm>  
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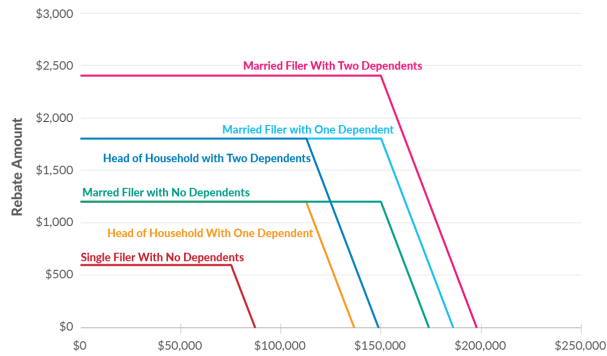


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# The Problem with Stimulus Checks

Relief Rebates in the New Coronavirus Relief Package, Dec. 2020  
Individual Economic Relief Rebate by Filing Status



Source: Consolidated Appropriations Act, 2021.

TAX FOUNDATION @TaxFoundation