

# Macroeconomics in One Equation

## Lecture 7: Federal Budget & Fiscal Policy

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## Questions for Discussion

Think-pair-share: discuss with your peers and write down summary answers.

- ① What is fiscal policy? What are the two major components?
- ② What are the major goals and functions of fiscal policy?
- ③ What income sources contribute most to the government receipts?
- ④ What is the difference between mandatory and discretionary spendings?
- ⑤ How does fiscal policy affect government budget and aggregate demand?
- ⑥ How would fiscal policy affect the economy ( $Y$ ,  $P$ ,  $M$ ,  $i$ ), in theory?
- ⑦ What is the "crowding-out" effect of the fiscal policy?
- ⑧ Why is fiscal policy an automatic stabilizer in the economy?
- ⑨ What is fiscal policy multiplier? What is Ricardian equivalence?
- ⑩ How do economists measure and assess government's fiscal condition?  
What is the big picture in the US today? How does the US government finance its budget deficit? Is the US government fiscally sustainable?

# Introduction

- Government can affect overall economic conditions via public policies.
- Fiscal policy refers to government spending and taxing decisions.
- The word "fiscal" relates to public treasury or revenues. Fiscal policy is a broad term used to refer to the taxation and spending policies of the federal government.
- Economics textbooks and various economic models usually think of fiscal policy in terms of the size of the government budget deficit, the difference between what the government spends and its revenue.
- Fiscal policy decisions are determined by the legislative branch and signed into law by the executive branch.
- The basic idea behind fiscal policy is that higher government spending and lower taxation play a powerful role in affecting aggregate demand in the economy. In recessions, fiscal policy can alleviate economic suffering and increase spending by households, firms, and governments.

<https://www.stlouisfed.org/open-vault/2018/october/difference-between-fiscal-monetary-policy>

# Basic Concepts

## Public Deficit

The public deficit is a flow variable—how much the government borrows during a given period of time.

## Public Debt

The debt is a stock variable—what the government owes in total as a result of all its past deficits.

## Primary Deficit

The difference between government spending on goods and services (excluding interest payment) and taxes (net of transfers).

## Government Budget Constraint

Government deficit, or change in debt, is equal to the primary deficit plus interest payment on the debt.

# Basic Concepts

## Expansionary Fiscal Policy

Fiscal policy decisions that use higher government expenditure or/and lower tax to increase economic growth.

## Contractionary Fiscal Policy

Fiscal policy decisions that use lower government expenditure or/and higher tax rates to slow down economic growth.

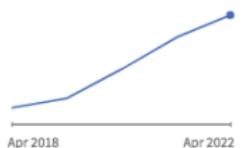
## Automatic Stabilizers

Components of the government budget (e.g., tax owed and welfare) that automatically adjust to smooth out economic fluctuations.

## Crowding Out

Fiscal policy effect that occurs when rising government expenditure partially (or even fully) displaces expenditures by households and firms.

What is the current national debt?

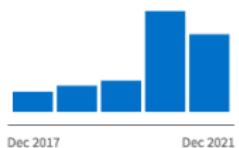


**\$30.3 T**

Apr 2022

[Dataset Details](#)

What is the national deficit by year?

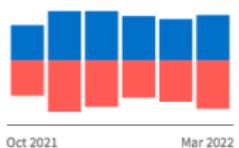


**\$2.6 T**

Dec 2021

[Dataset Details](#)

How much money goes into/out of the federal government?



**Net: -\$119.7 B**

Mar 2022

[Dataset Details](#)

What is the value of the U.S. Treasury-owned gold?



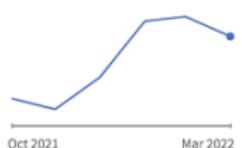
U.S. Treasury-Owned Gold

**\$11 B**

Mar 2022

[Dataset Details](#)

How much money does the U.S. have on hand?

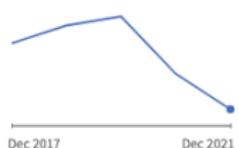


**\$651.5 B**

Mar 2022

[Dataset Details](#)

How has the average interest rate on national debt changed over time?

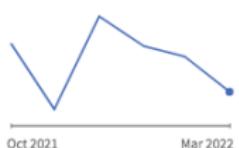


**1.62%**

Dec 2021

[Dataset Details](#)

How much does the federal government borrow from the public?

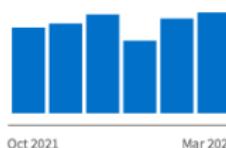


**\$99.7 B**

Mar 2022

[Dataset Details](#)

How much money does the government spend?



**\$575.3 B**

Mar 2022

[Dataset Details](#)

# Federal Budget Receipts and Outlays

[Billions of dollars]

Fiscal year or period	Total			On-budget			Off-budget			Federal debt (end of period)	
	Receipts	Outlays	Surplus or deficit (-)	Receipts	Outlays	Surplus or deficit (-)	Receipts	Outlays	Surplus or deficit (-)	Gross Federal	Held by the public
2004 .....	1,880.1	2,292.8	-412.7	1,345.4	1,913.3	-568.0	534.7	379.5	155.2	7,354.7	4,295.5
2005 .....	2,153.6	2,472.0	-318.3	1,576.1	2,089.7	-493.6	577.5	402.2	175.3	7,905.3	4,592.2
2006 .....	2,406.9	2,655.1	-248.2	1,798.5	2,230.0	-434.5	608.4	422.1	186.3	8,451.4	4,829.0
2007 .....	2,568.0	2,728.7	-160.7	1,932.9	2,275.0	-342.2	635.1	453.6	181.5	8,950.7	5,035.1
2008 .....	2,524.0	2,982.5	-458.6	1,865.9	2,507.8	-641.8	658.0	474.8	183.3	9,986.1	5,803.1
2009 .....	2,105.0	3,517.7	-1,412.7	1,451.0	3,000.7	-1,549.7	654.0	517.0	137.0	11,875.9	7,544.7
2010 .....	2,162.7	3,457.1	-1,294.4	1,531.0	2,902.4	-1,371.4	631.7	554.7	77.0	13,528.8	9,018.9
2011 .....	2,303.5	3,603.1	-1,299.6	1,737.7	3,104.5	-1,366.8	565.8	498.6	67.2	14,764.2	10,128.2
2012 .....	2,450.0	3,526.5	-1,076.6	1,880.5	3,019.0	-1,138.5	569.5	507.6	61.9	16,050.9	11,281.1
2013 .....	2,775.1	3,454.9	-679.8	2,101.8	2,821.1	-719.2	673.3	633.8	39.5	16,719.4	11,982.7
2014 .....	3,021.5	3,506.3	-484.8	2,285.9	2,800.2	-514.3	735.6	706.1	29.5	17,794.5	12,779.9
2015 .....	3,249.9	3,691.9	-142.0	2,479.5	2,948.8	-469.3	770.4	743.1	27.3	18,120.1	13,116.7
2016 .....	3,268.0	3,852.6	-584.7	2,457.8	3,077.9	-620.2	810.2	774.7	35.5	19,539.5	14,167.6
2017 .....	3,316.2	3,981.6	-665.4	2,465.6	3,180.4	-714.9	850.6	801.2	49.4	20,205.7	14,665.4
2018 .....	3,329.9	4,109.0	-779.1	2,475.2	3,260.5	-785.3	854.7	848.6	6.2	21,462.3	15,749.6
2019 .....	3,463.4	4,447.0	-983.6	2,549.1	3,540.3	-991.3	914.3	906.6	7.7	22,669.5	16,800.7
2020 .....	3,421.2	6,553.6	-3,132.4	2,455.7	5,598.0	-3,142.3	965.4	955.6	9.8	26,902.5	21,016.7
2021 .....	4,047.1	6,822.4	-2,775.3	3,094.8	5,818.6	-2,723.8	952.3	1,003.8	-51.5	28,385.6	22,284.0
2022 (estimates) .....	4,436.6	5,851.6	-1,415.0	3,389.4	4,763.7	-1,374.3	1,047.2	1,087.9	-40.7	31,291.9	24,836.2
2023 (estimates) .....	4,638.2	5,792.0	-1,153.9	3,537.6	4,605.3	-1,067.8	1,100.6	1,186.7	-86.1	32,583.2	26,033.3
Cumulative total, first 6 months: <sup>1</sup>											
Fiscal year 2021 .....	1,703.9	3,410.2	-1,706.3	1,231.5	2,915.7	-1,684.2	472.4	494.5	-22.1	28,080.9	21,981.0
Fiscal year 2022 .....	2,122.0	2,790.3	-688.3	1,617.2	2,264.8	-647.7	504.8	525.4	-20.6	30,348.9	23,876.7

<sup>1</sup> Data from current issue *Monthly Treasury Statement*.Note: Data (except as noted) are from *Budget of the United States Government, Fiscal Year 2023*, issued March 31, 2022.

Sources: Department of the Treasury and Office of Management and Budget.

Source: Council of Economic Advisers - Economic Indicators (2022) (w)

# Federal Budget by Categories

(Billions of dollars)

Fiscal year or period	On-budget and off-budget receipts						On-budget and off-budget outlays								
	Total	Individual income taxes	Corporate income taxes	Social insurance and retirement receipts	Other	Total	National defense		International affairs	Health	Medicare	Income security	Social security	Net interest	Other
							Total	Department of Defense, military							
2004 .....	1,880.1	809.0	189.4	733.4	148.4	2,292.8	455.8	436.4	26.9	240.1	269.4	333.0	495.5	160.2	311.8
2005 .....	2,153.6	927.2	278.3	794.1	154.0	2,472.0	495.3	474.1	34.6	250.6	298.6	345.8	523.3	184.0	339.8
2006 .....	2,406.9	1,043.9	353.9	837.8	171.2	2,655.1	521.8	499.3	29.5	252.8	329.9	352.4	548.5	226.6	393.5
2007 .....	2,568.0	1,163.5	370.2	869.6	164.7	2,728.7	551.3	528.5	28.5	266.4	375.4	365.9	586.2	237.1	317.9
2008 .....	2,524.0	1,145.7	304.3	900.2	173.7	2,982.5	616.1	594.6	28.9	280.6	390.8	431.2	617.0	252.8	365.2
2009 .....	2,105.0	915.3	138.2	890.9	160.5	3,517.7	661.0	636.7	37.5	334.4	430.1	533.1	683.0	186.9	651.7
2010 .....	2,162.7	898.5	191.4	864.8	207.9	3,457.1	693.5	666.7	45.2	369.1	451.6	622.1	706.7	196.2	372.6
2011 .....	2,303.5	1,091.5	181.1	818.8	212.1	3,603.1	705.6	678.1	45.7	372.5	485.7	597.3	730.8	230.0	435.7
2012 .....	2,450.0	1,132.2	242.3	845.3	230.2	3,526.6	677.9	650.9	36.8	346.8	471.8	541.2	773.3	220.4	458.4
2013 .....	2,775.1	1,316.4	273.5	947.8	237.4	3,454.9	633.4	607.8	46.5	358.3	497.8	536.4	813.6	220.9	348.0
2014 .....	3,021.5	1,394.6	320.7	1,023.5	282.7	3,506.3	603.5	577.9	46.9	409.5	511.7	513.6	850.5	229.0	341.7
2015 .....	3,249.9	1,540.8	343.8	1,065.3	300.0	3,691.9	589.7	562.5	52.0	482.3	546.2	508.8	887.8	223.2	402.0
2016 .....	3,268.0	1,546.1	299.6	1,115.1	307.3	3,852.6	593.4	565.4	45.3	511.3	594.5	514.1	916.1	240.0	437.9
2017 .....	3,316.2	1,587.1	297.0	1,161.9	270.1	3,981.6	598.7	568.9	46.3	533.2	597.3	503.4	944.9	262.6	495.3
2018 .....	3,329.9	1,683.5	204.7	1,170.7	270.9	4,109.0	631.1	600.7	49.0	551.2	588.7	495.3	987.8	325.0	480.9
2019 .....	3,463.4	1,717.9	230.2	1,243.1	272.1	4,447.0	686.0	654.0	52.7	584.8	651.0	514.8	1,044.4	375.2	538.0
2020 .....	3,421.2	1,608.7	211.8	1,310.0	290.7	6,550.4	724.6	690.4	67.7	747.6	778.2	1,263.6	1,095.8	345.5	1,529.4
2021 .....	4,047.1	2,044.4	371.8	1,314.1	316.8	6,818.2	753.9	717.6	46.9	796.5	696.5	1,647.7	1,134.6	352.3	1,389.7
2022 (estimates) .....	4,436.6	2,263.4	382.6	1,445.6	345.1	6,011.1	779.7	741.0	61.6	868.4	760.9	926.1	1,219.5	357.1	1,037.8
2023 (estimates) .....	4,638.2	2,345.2	500.9	1,509.9	282.1	6,011.1	808.6	767.6	63.4	782.4	854.5	688.2	1,318.7	395.5	1,099.7
Cumulative total, first 6 months: <sup>1</sup>															
Fiscal year 2021 .....	1,703.9	824.7	104.4	641.3	133.6	3,410.2	381.7	363.4	29.4	385.2	345.0	1,009.2	560.3	169.4	530.0
Fiscal year 2022 .....	2,122.0	1,124.5	127.3	697.8	172.5	2,790.3	377.1	358.4	29.2	463.4	346.6	492.4	594.0	211.5	276.0

<sup>1</sup> Data from current issue *Monthly Treasury Statement*. Data for Department of Defense, military, include a small amount that is classified and listed under international affairs, and not included in national defense.

Note: Data (except as noted) are from *Budget of the United States Government, Fiscal Year 2023*, issued March 31, 2022.

Sources: Department of the Treasury and Office of Management and Budget.

Source: Council of Economic Advisers - Economic Indicators (2022) (w)

# Federal Budget by Source and Function

(Billions of dollars; quarterly data at seasonally adjusted annual rates)

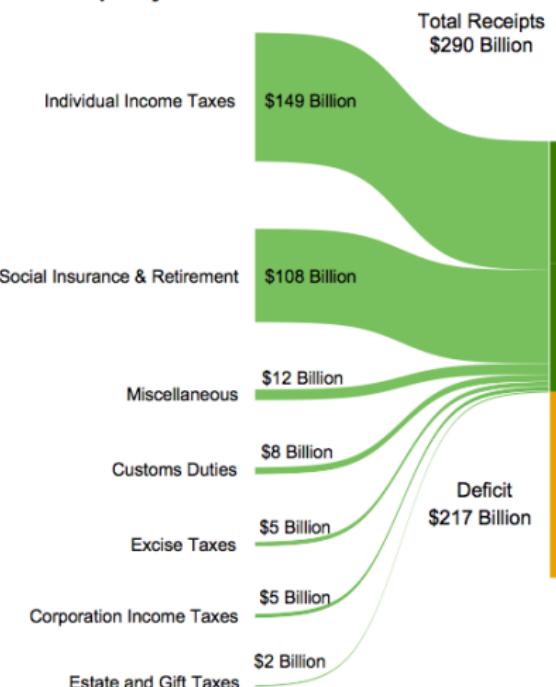
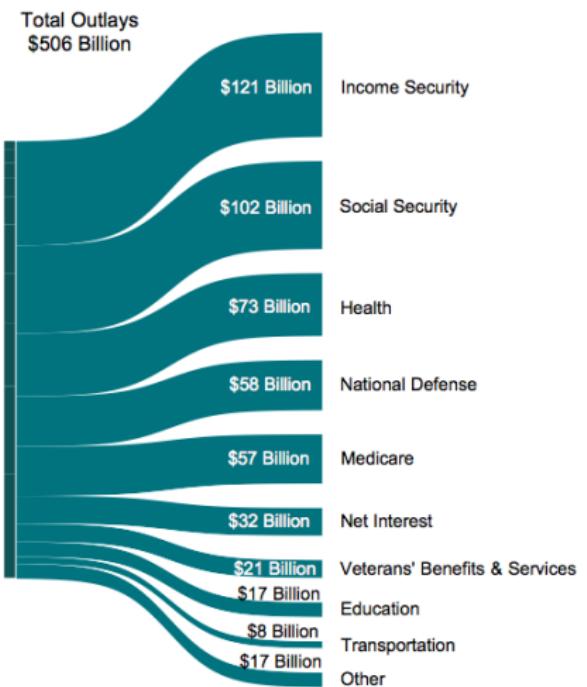
Period	Federal Government current receipts							Federal Government current expenditures					Net Federal Govern- ment saving		
	Total	Current tax receipts			Contribu- tions for gov- ern- ment social insur- ance	Income receipts on assets	Current transfer receipts	Current surplus of gov- ern- ment enter- prises	Total	Con- sump- tion expendi- tures	Current trans- fer pay- ments <sup>2</sup>	Interest payments			
		Total <sup>1</sup>	Personal current taxes	Taxes on production and imports											
Calendar year:															
2012 .....	2,700.8	1,573.0	1,166.4	115.2	274.7	938.0	141.6	56.1	-7.8	3,773.5	999.7	2,293.6	422.6	57.6	-1,072.7
2013 .....	3,139.6	1,744.9	1,302.9	125.5	298.4	1,091.8	243.7	69.3	-10.1	3,771.3	957.5	2,338.3	416.3	59.2	-631.8
2014 .....	3,293.0	1,900.1	1,403.7	136.3	339.6	1,140.1	172.7	87.3	-7.1	3,890.4	952.2	2,441.5	439.1	57.6	-597.4
2015 .....	3,449.0	2,024.2	1,532.6	140.3	329.1	1,190.8	161.1	76.2	-3.2	4,009.2	955.1	2,568.1	429.3	56.7	-560.2
2016 .....	3,463.8	2,020.4	1,547.9	136.5	311.9	1,224.4	140.8	79.7	-1.4	4,131.4	965.7	2,650.1	454.3	61.2	-667.6
2017 .....	3,525.2	2,015.5	1,613.6	131.6	245.4	1,284.2	139.6	85.0	1.0	4,245.9	982.7	2,772.1	476.8	59.3	-720.7
2018 .....	3,569.8	2,014.6	1,616.5	163.6	208.8	1,345.4	123.3	86.3	-6	4,497.1	1,039.4	2,853.2	541.8	62.7	-928.1
2019 .....	3,713.7	2,127.6	1,708.6	174.7	217.0	1,406.2	109.9	72.5	-2.6	4,761.1	1,097.4	3,007.9	583.5	72.4	-1,047.5
2020 .....	3,684.0	2,057.8	1,679.6	158.0	192.7	1,444.6	119.8	62.9	-6	6,794.8	1,161.4	4,338.0	534.2	760.8	-3,110.0
2021 .....	4,232.9	2,463.5	1,987.4	173.8	272.1	1,574.6	138.0	58.1	-1.2	7,021.4	1,205.0	4,811.7	514.8	490.0	-2,788.5
2019: I .....	3,676.4	2,107.7	1,696.4	173.4	211.3	1,392.4	109.5	69.3	-2.4	4,691.8	1,075.5	2,967.5	580.5	68.4	-1,015.4
II .....	3,706.0	2,120.4	1,701.9	172.2	218.9	1,399.3	120.8	68.4	-2.9	4,739.1	1,095.7	2,996.0	589.2	58.2	-1,033.2
III .....	3,708.9	2,117.1	1,707.8	175.3	206.5	1,406.9	100.0	87.8	-2.8	4,789.8	1,105.1	3,018.5	585.6	80.6	-1,080.9
IV .....	3,763.4	2,165.3	1,728.6	177.9	231.4	1,426.4	109.3	64.5	-2.2	4,823.8	1,113.3	3,049.6	578.7	82.2	-1,060.4
2020: I .....	3,751.2	2,119.0	1,737.9	185.8	166.7	1,457.1	116.5	59.5	-9	4,909.2	1,124.7	3,137.8	566.4	80.3	-1,158.0
II .....	3,481.1	1,913.3	1,581.5	138.3	167.4	1,391.6	114.1	62.7	-6	9,106.7	1,187.6	6,258.2	537.3	1,123.6	-6,526.5
III .....	3,690.5	2,051.8	1,662.2	151.3	211.7	1,443.8	132.4	62.6	-2	7,206.8	1,169.4	4,295.4	521.5	1,220.5	-3,516.3
IV .....	3,815.1	2,147.0	1,738.9	156.6	225.1	1,486.0	116.3	66.6	-8	5,955.2	1,164.1	3,660.9	511.7	618.6	-2,140.1
2021: I .....	3,982.6	2,294.0	1,851.9	166.2	246.4	1,517.9	109.5	62.8	-1.6	8,071.4	2,119.9	5,945.2	502.5	403.8	-4,088.9
II .....	4,177.8	2,428.3	1,946.1	177.8	275.1	1,555.7	139.0	56.7	-1.9	7,490.5	1,208.1	5,081.5	503.8	697.0	-3,312.7
III .....	4,324.8	2,525.0	2,036.0	172.9	285.9	1,594.4	150.1	55.6	-3	6,560.4	1,198.1	4,298.2	511.6	554.5	-2,235.6
IV .....	4,446.4	2,606.7	2,115.8	178.3	281.2	1,630.1	153.2	57.5	-1.0	5,963.5	1,195.6	3,921.7	541.5	304.7	-1,517.1
2022: I <sup>1</sup> .....	.....	2,130.9	193.2	.....	1,669.7	174.5	55.6	-4.6	5,799.0	1,197.3	3,894.2	561.1	146.4	.....	

<sup>1</sup> Includes taxes from the rest of the world, not shown separately.

<sup>2</sup> Includes Federal grants-in-aid to State and local governments, not shown separately.

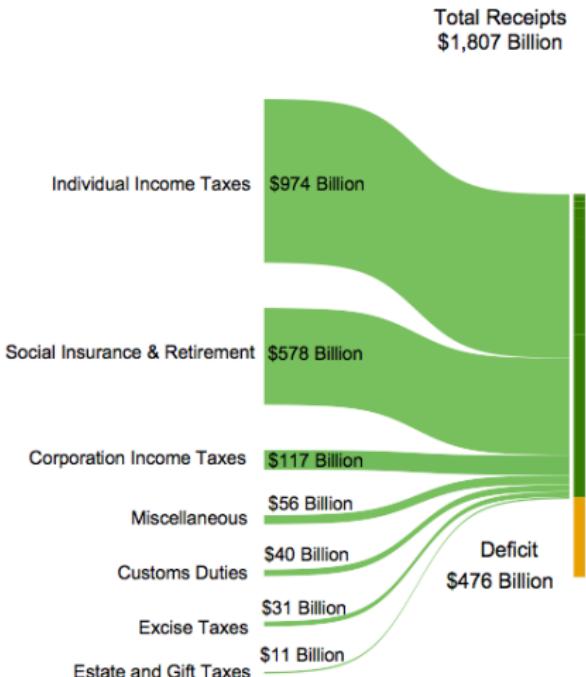
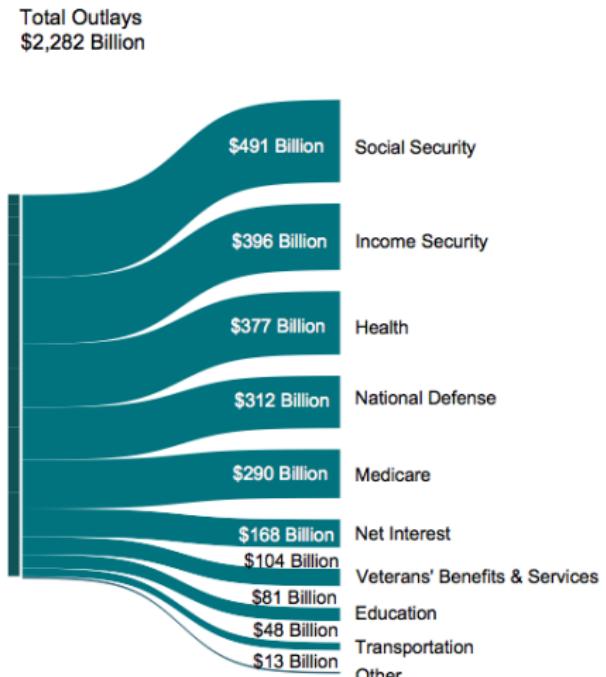
Source: Department of Commerce (Bureau of Economic Analysis).

Source: Council of Economic Advisers - Economic Indicators (2022) (w)

**Figure 1. Receipts, Outlays, and Surplus/Deficit for February 2022****Receipts by Source:****Outlays by Function:**

Source: Monthly Treasury Statement (2022)

<https://www.fiscal.treasury.gov/reports-statements/mts/current.html>

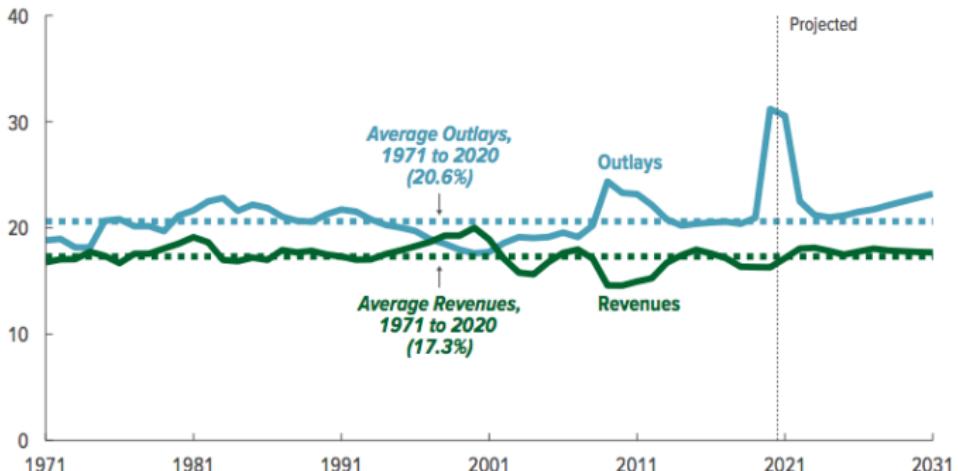
**Figure 2. Cumulative Receipts, Outlays, and Surplus/Deficit through Fiscal Year 2022****Receipts by Source:****Outlays by Function:**

Source: Monthly Treasury Statement (2022)

<https://www.fiscal.treasury.gov/reports-statements/mts/current.html>

## Total Outlays and Revenues

Percentage of Gross Domestic Product



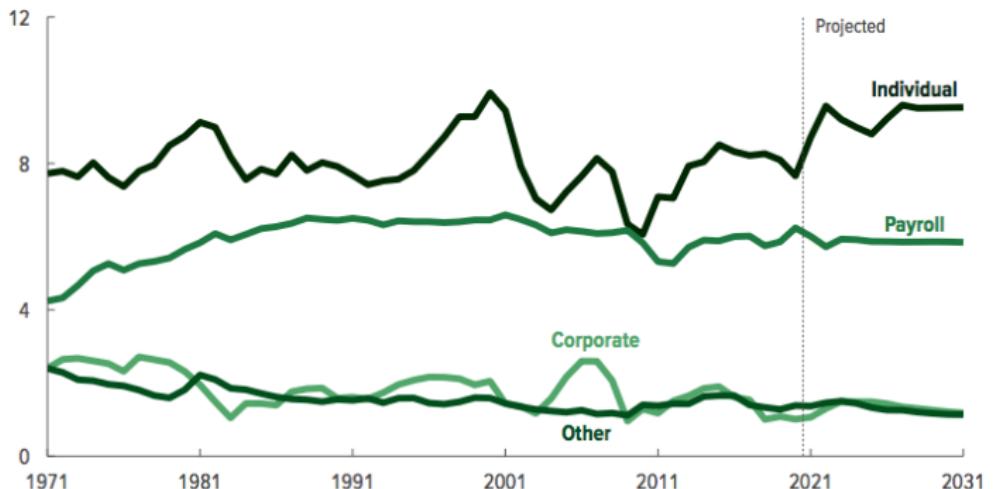
Data source: Congressional Budget Office. See [www.cbo.gov/publication/57263#data](https://www.cbo.gov/publication/57263#data).

When October 1 (the first day of the fiscal year) falls on a weekend, certain payments that would have ordinarily been made on that day are instead made at the end of September and thus are shifted into the previous fiscal year. All projections presented here have been adjusted to exclude the effects of those timing shifts. Historical amounts have been adjusted as far back as the available data will allow.

Source: CBO Budget Outlook (2022) <https://www.cbo.gov/topics/budget>  
[https://www.pgpf.org/chart-archive/0173\\_revenues\\_spending](https://www.pgpf.org/chart-archive/0173_revenues_spending)

## Revenues, by Category

Percentage of Gross Domestic Product



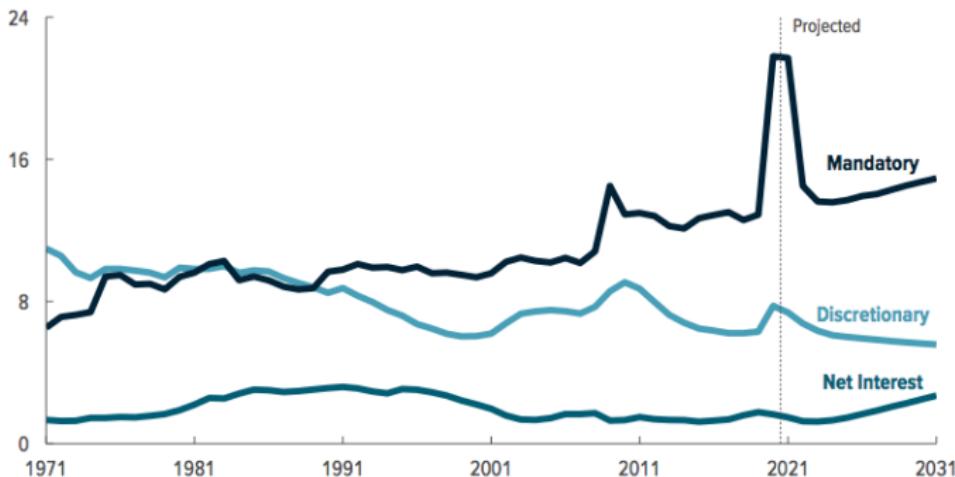
Data source: Congressional Budget Office. See [www.cbo.gov/publication/57263#data](https://www.cbo.gov/publication/57263#data).

Source: CBO Budget Outlook (2022) <https://www.cbo.gov/topics/budget>  
[https://www.pgpf.org/chart-archive/0043\\_revenue-composition](https://www.pgpf.org/chart-archive/0043_revenue-composition)

Receipts of individual and corporate income taxes are expected to rise in 2022 as the economy recovers and temporary provisions enacted in response to the pandemic expire. Individual income taxes are projected to rise again following scheduled increases in taxes after 2025.

## Outlays, by Category

Percentage of Gross Domestic Product



Every category of spending drops in the near term. In later years, rising spending for Social Security and the major health care programs boosts mandatory outlays, and net interest costs increase as interest rates and federal debt rise.

Data source: Congressional Budget Office. See [www.cbo.gov/publication/57263#data](https://www.cbo.gov/publication/57263#data).

When October 1 (the first day of the fiscal year) falls on a weekend, certain payments that would have ordinarily been made on that day are instead made at the end of September and thus are shifted into the previous fiscal year. All projections presented here have been adjusted to exclude the effects of those timing shifts. Historical amounts have been adjusted as far back as the available data will allow.

Source: CBO Budget Outlook (2022) <https://www.cbo.gov/topics/budget>

# OUTLINE

- ① Federal Budget Basics
- ② Fiscal Policy & Multipliers
- ③ Government Deficit & Debt

# Understanding the Budget

- The federal budget is one of the most important policy instruments of our government. Through their budget decisions, our elected leaders fulfill their constitutional responsibilities, signal their policy priorities, and manage the federal purse.
- The budget reflects their decisions to tax and spend, to borrow and lend, and to consume and invest. Those decisions define the size of the federal government and its role in the national economy.
- Policymakers use the federal budget process to establish spending priorities and identify revenue to pay for those activities. The size and scope of those decisions make the budget process one of the most important and complex exercises in public policy making.
- The formulation of the budget is an annual process that involves the Congress, the White House, and virtually all federal agencies. From start to finish, the process of formulating, legislating, executing, and auditing the budget is complex and lasts over a period of four fiscal years.

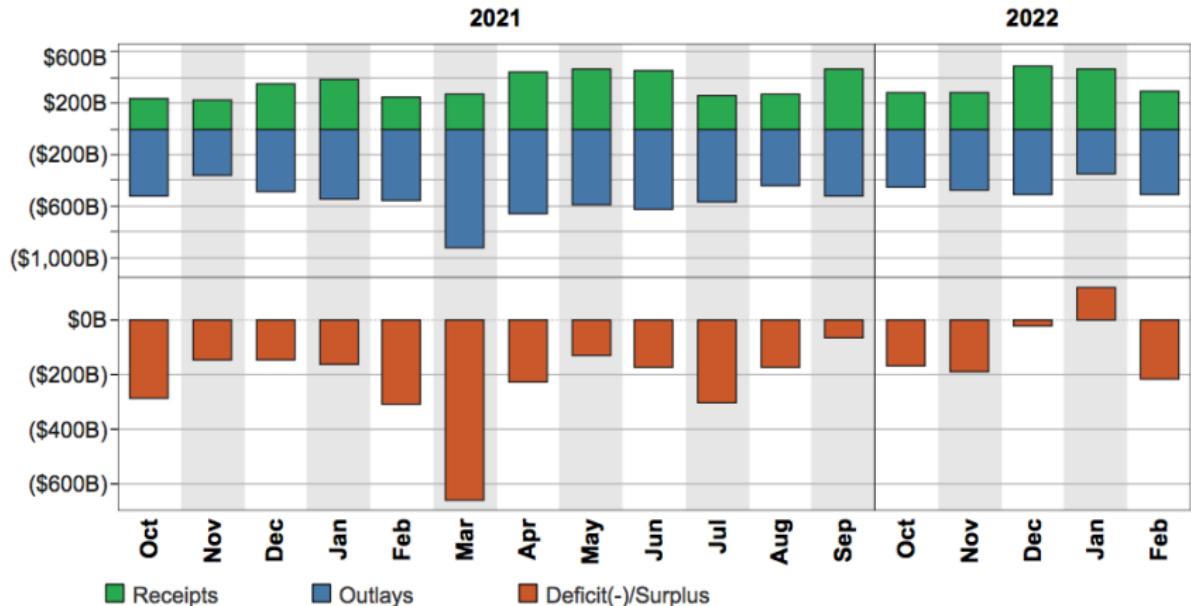
<https://www.pgpf.org/finding-solutions/understanding-the-budget>

## Fiscal Year and Calendar Year

- The terms calendar year and federal fiscal year describe periods in which funds are made available or spent, changes are made to certain benefit amounts, and taxes are assessed or collected.
- Federal fiscal years run from October 1 to September 30 and are designated by the calendar year in which they end: Fiscal year 2021 began on October 1, 2020, and ended on September 30, 2021. Funding for federal programs is provided on a fiscal year basis, and federal budget data and CBO's cost estimates and budget projections identify spending and revenues by fiscal year.
- Calendar years begin on January 1 and end on December 31. Although most federal programs operate on a fiscal year basis, some aspects of programs are set to the calendar year. Cost-of-living adjustments for Social Security and other programs, for example, are set on a calendar year basis. In addition, individual income taxes are levied on a calendar year basis, and economic data are typically reported for calendar years.

Source: CBO (2021) Common Budgetary Terms Explained.

**Figure 3. Monthly Receipts, Outlays, and Budget Deficit/Surplus of the U.S. Government, Fiscal Years 2021 and 2022**



Source: Monthly Treasury Statement (2022)

<https://www.fiscal.treasury.gov/reports-statements/mts/current.html>

# Government Budget: Receipts and Outlays

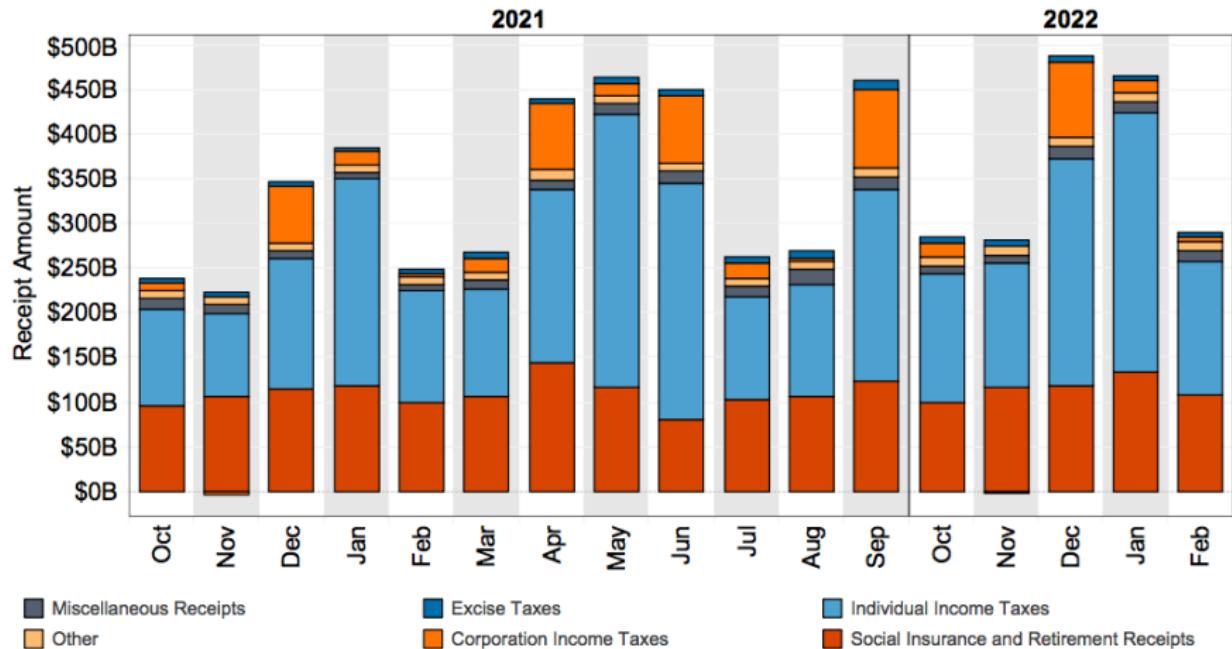
## Federal Government Revenue

- ① Individual income tax (labor, capital, and other incomes)
- ② Payroll taxes (social insurance)
- ③ Corporate income tax (profits)
- ④ Excise taxes (consumption taxes)
- ⑤ Customs duties (import tariffs)
- ⑥ Other receipts (estate and gift taxes)

## Federal Government Expenditure

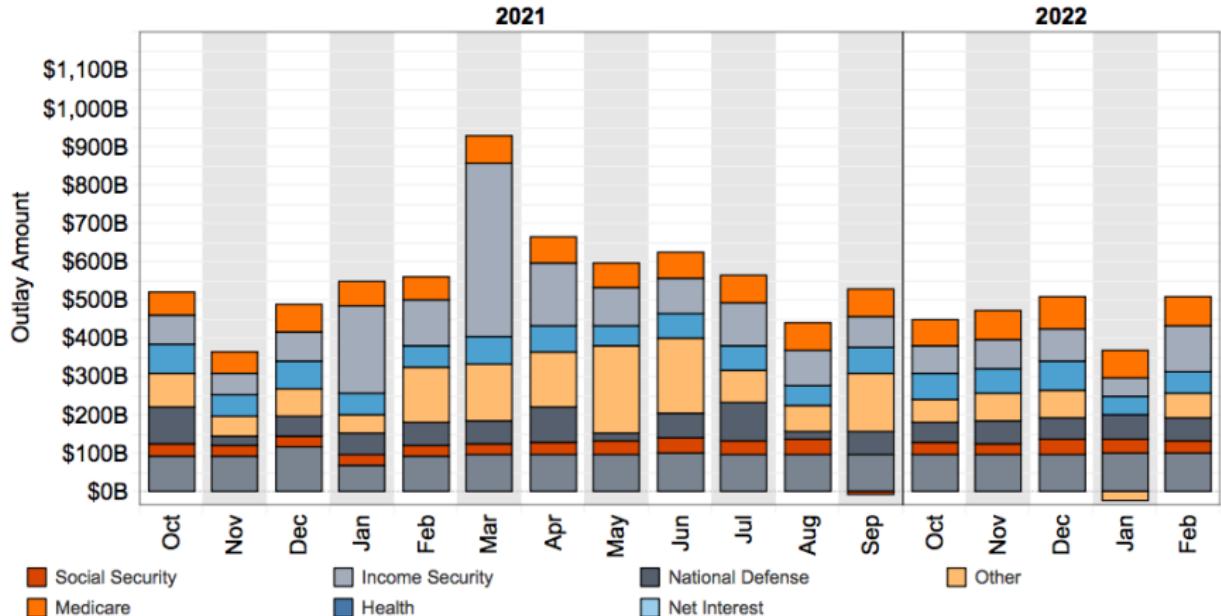
- ① Mandatory spending (entitlement) consists of programs that are governed by permanent laws.
- ② Discretionary spending is determined by Congress and the President through enactment of appropriations on an annual basis.
- ③ Interest on the national debt.

<https://www.pgpf.org/finding-solutions/understanding-the-budget>

**Figure 6. Monthly Receipts of the U.S. Government, by Source, Fiscal Years 2021 and 2022**

Source: Monthly Treasury Statement (2022)

<https://www.fiscal.treasury.gov/reports-statements/mts/current.html>

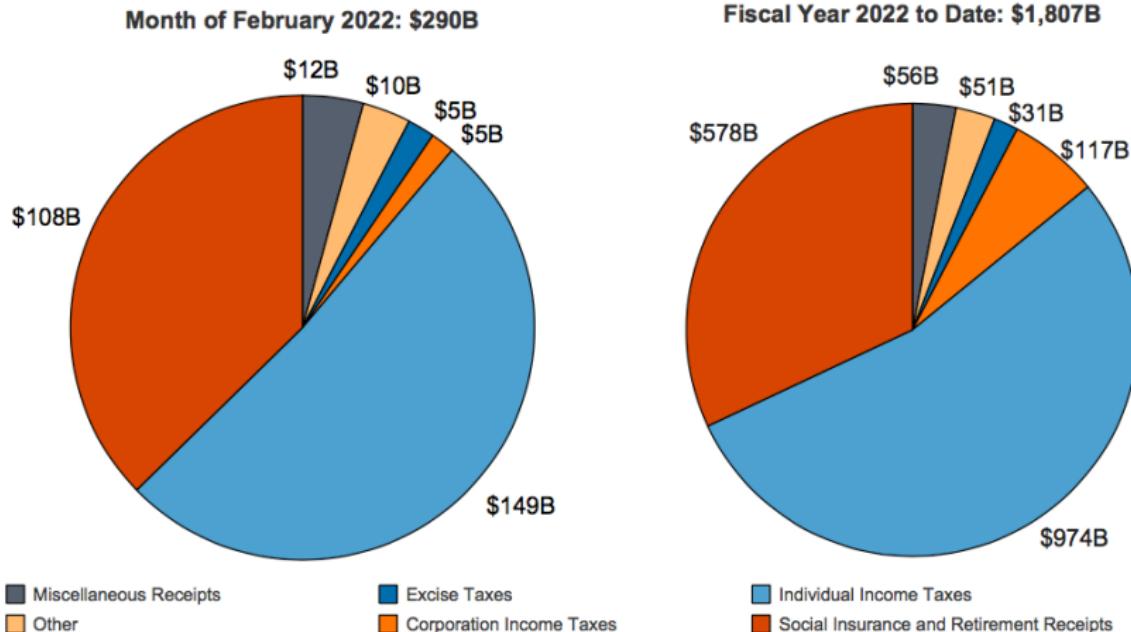
**Figure 8. Monthly Outlays of the U.S. Government, by Source, Fiscal Years 2021 and 2022**

"Other" Includes: Administration of Justice, Agriculture, Community and Regional Development, Education, Training, Employment, and Social Services, Energy, General Government, General Science, Space, and Technology, International Affairs, Natural Resources and Environment, Transportation, Undistributed Offsetting Receipts, Veterans' Benefits and Services.

Note: Details may not add to totals due to rounding

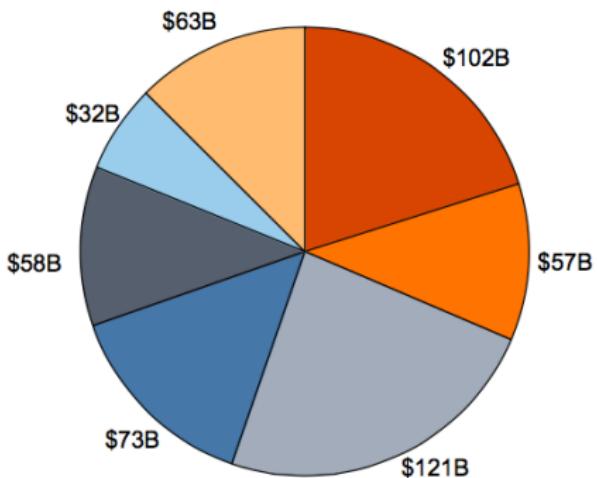
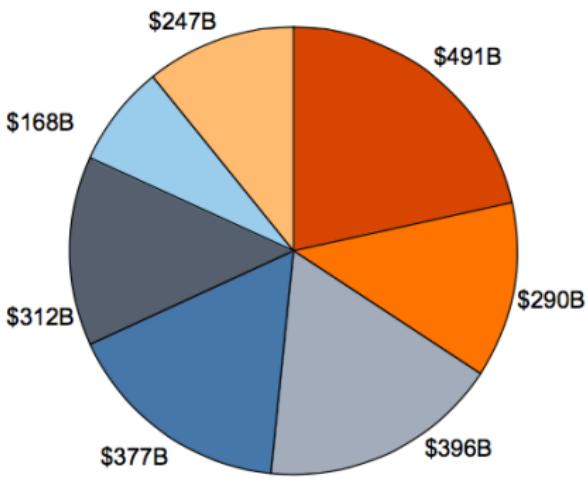
Source: Monthly Treasury Statement (2022)

<https://www.fiscal.treasury.gov/reports-statements/mts/current.html>

**Figure 5. Receipts of the U.S. Government, by Source, Fiscal Year 2022**

Source: Monthly Treasury Statement (2022)

<https://www.fiscal.treasury.gov/reports-statements/mts/current.html>

**Figure 7. Outlays of the U.S. Government, by Source, Fiscal Year 2022****Month of February 2022: \$506B****Fiscal Year 2022 to Date: \$2,282B**

■ Social Security  
■ Medicare  
■ Health

■ Income Security  
■ Net Interest

■ National Defense  
■ Other

\*Disclaimer: Other category is subject to change due to negative balances held.

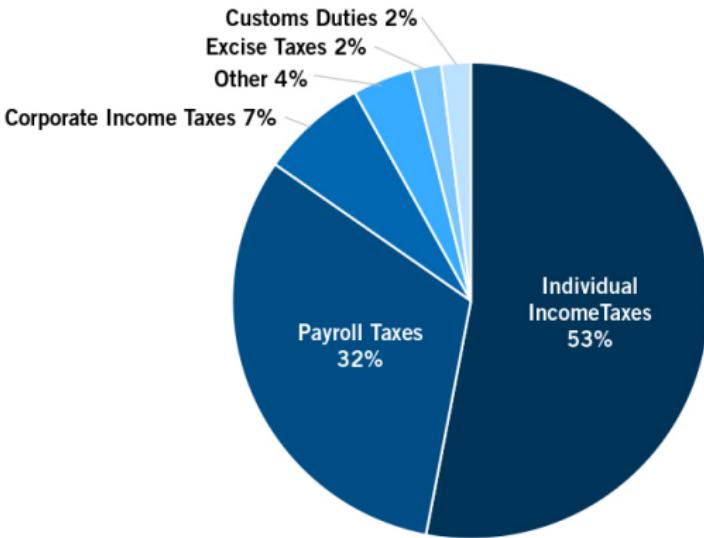
**Source: Monthly Treasury Statement (2022)**

<https://www.fiscal.treasury.gov/reports-statements/mts/current.html>



## The federal government collects revenues from a variety of sources

2022 Projected Revenues  
\$4,390 Billion



SOURCE: Congressional Budget Office, An Update to the Budget and Economic Outlook: 2021 to 2031, July 2021.

NOTE: Other includes estate and gift taxes, income from the Federal Reserve, and miscellaneous fees and fines.

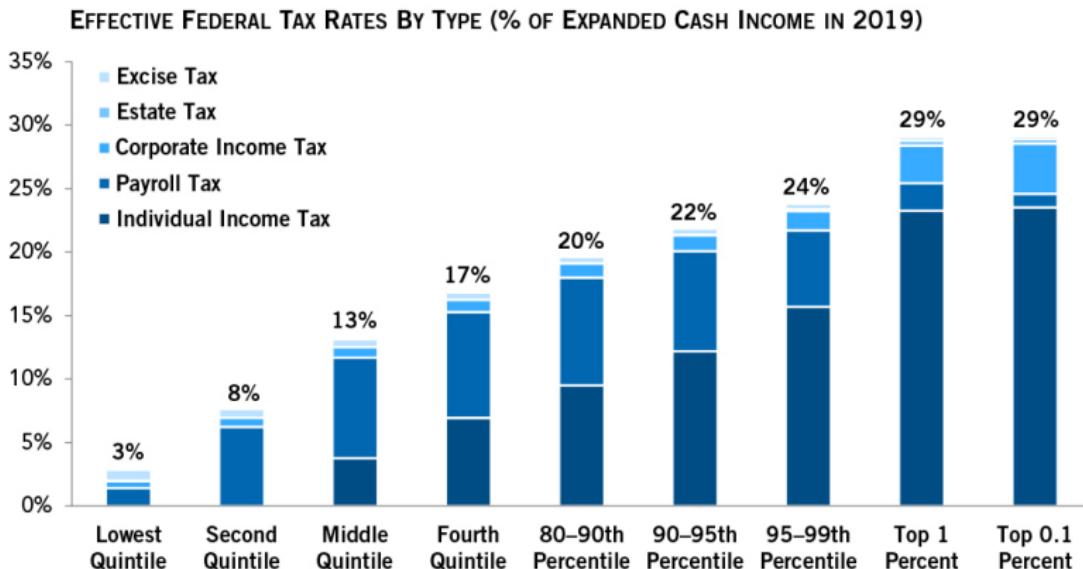
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<https://www.pgpf.org/finding-solutions/understanding-the-budget/revenues>



## The U.S. tax system is progressive, with higher-income taxpayers facing higher tax rates



SOURCE: Tax Policy Center, Baseline Share of Federal Taxes, August 2021.

NOTES: Individual income tax rates for the lowest and second quintiles are negative and are netted against the payroll tax rate. A quintile is one-fifth of the population. In 2020 dollars, the income breaks are: 20% \$26,000; 40% \$51,600; 60% \$92,200; 80% \$166,900; 90% \$246,100; 95% \$349,900; 99% \$842,600; 99.9% \$3,731,700.

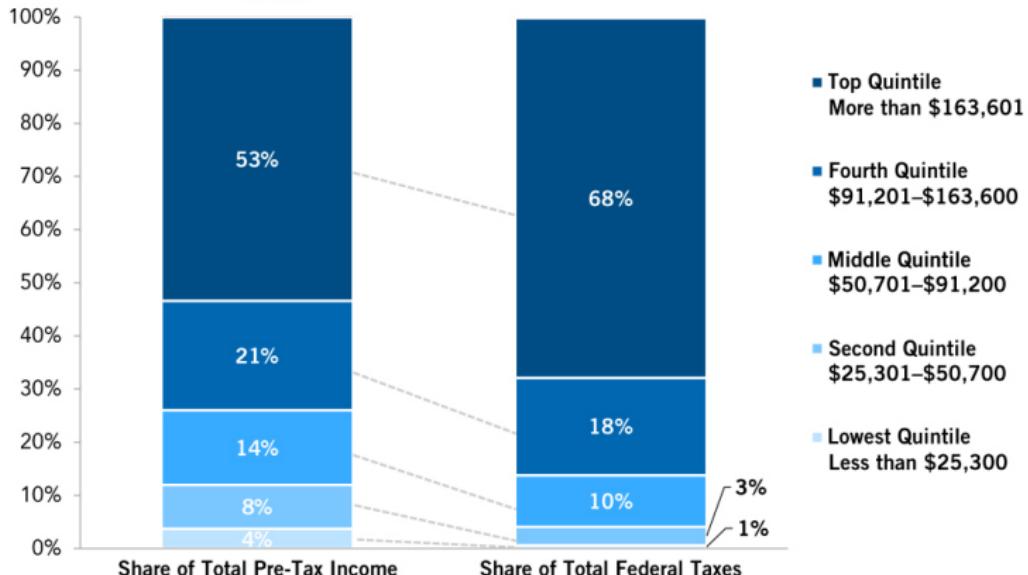
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<https://www.pgpf.org/finding-solutions/understanding-the-budget/revenues>



## High-income households earn a disproportionate share of pre-tax income and pay an even larger share of total federal taxes



SOURCE: Tax Policy Center, *Baseline Share of Federal Taxes*, February 2020.

NOTES: Federal taxes include the excise tax, estate tax, corporate income tax, payroll tax, and individual income tax. Quintiles and pre-tax income are measured by expanded cash income. Each quintile contains one-fifth of the population. Data are for 2019.

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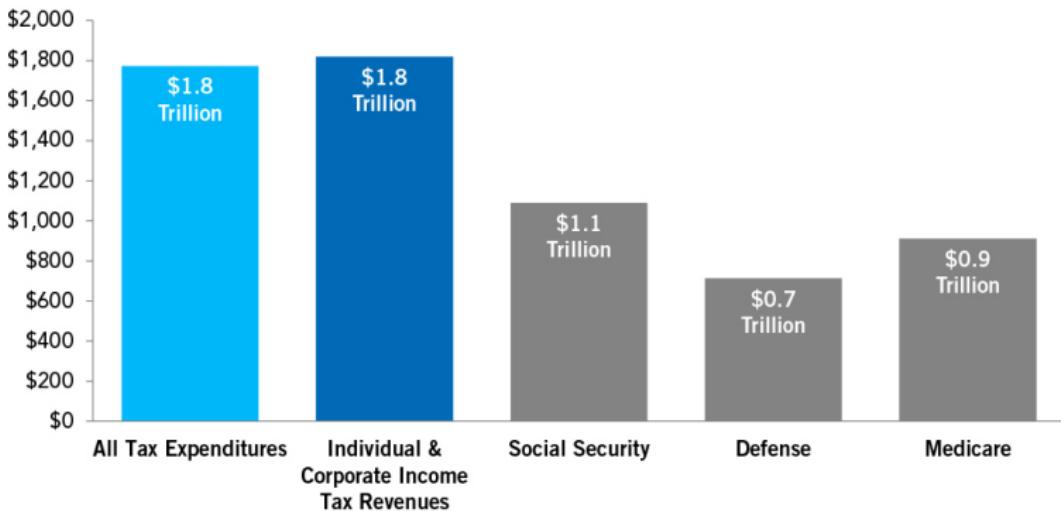
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<https://www.pgpf.org/budget-basics/who-pays-taxes>



Total tax expenditures are large in comparison to annual income taxes collected and to the government's major programs

BUDGETARY COST IN 2020 (BILLIONS OF DOLLARS)



SOURCES: Congressional Budget Office, *An Update to the Budget and Economic Outlook: 2021 to 2031*, July 2021; and The Joint Committee on Taxation, *Estimates of Federal Tax Expenditures for Fiscal Years 2020–2024*, November 2020.

NOTES: Tax expenditures are deductions, credits, exclusions, and preferential rates. The estimates for tax expenditures do not account for any interactive effects of combining various provisions. Medicare spending is net of premiums and payments from the states. Defense represents discretionary defense spending.

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<https://www.pgpf.org/finding-solutions/understanding-the-budget/revenues>

## Federal Budget: Mandatory Spending

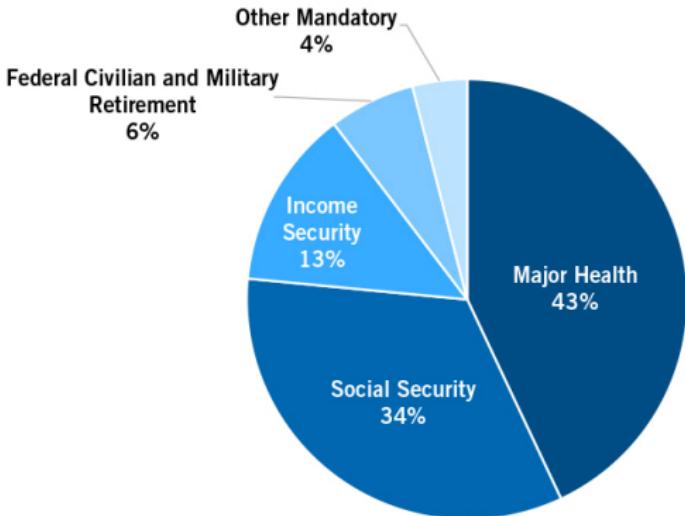
- Mandatory spending (also called direct spending) consists of outlays for certain federal benefit programs and other payments to individuals, businesses, non-profit institutions, and state and local governments.
- That spending is generally governed by statutory criteria and, in most cases, is not constrained by the annual appropriation process. Social Security, Medicare, and Medicaid are the three largest mandatory programs.
- Funding amounts for a mandatory program can be specified in law or, as is the case with Social Security, determined by complex eligibility rules and benefit formulas.
- Funding for some mandatory programs—for example, the Supplemental Nutrition Assistance Program, veterans' disability compensation and pensions, and Medicaid—is appropriated annually.

Source: CBO (2021) Common Budgetary Terms Explained.  
[https://www.pgpf.org/Chart-Archive/0191\\_mandatory\\_spending](https://www.pgpf.org/Chart-Archive/0191_mandatory_spending)



## Social Security and major health programs account for over three-quarters of mandatory spending

2022 Mandatory Outlays: \$3,589 Billion



SOURCE: Congressional Budget Office, *An Update to the Budget and Economic Outlook: 2021 to 2031*, July 2021.

NOTES: Major health includes Medicare (net), Medicaid, the Children's Health Insurance Program, and spending to subsidize health insurance purchased through the marketplaces established under the Affordable Care Act and related spending. Other mandatory includes veterans' programs, agriculture, deposit insurance, higher education, other programs, and offsetting receipts. Numbers may not sum due to rounding.

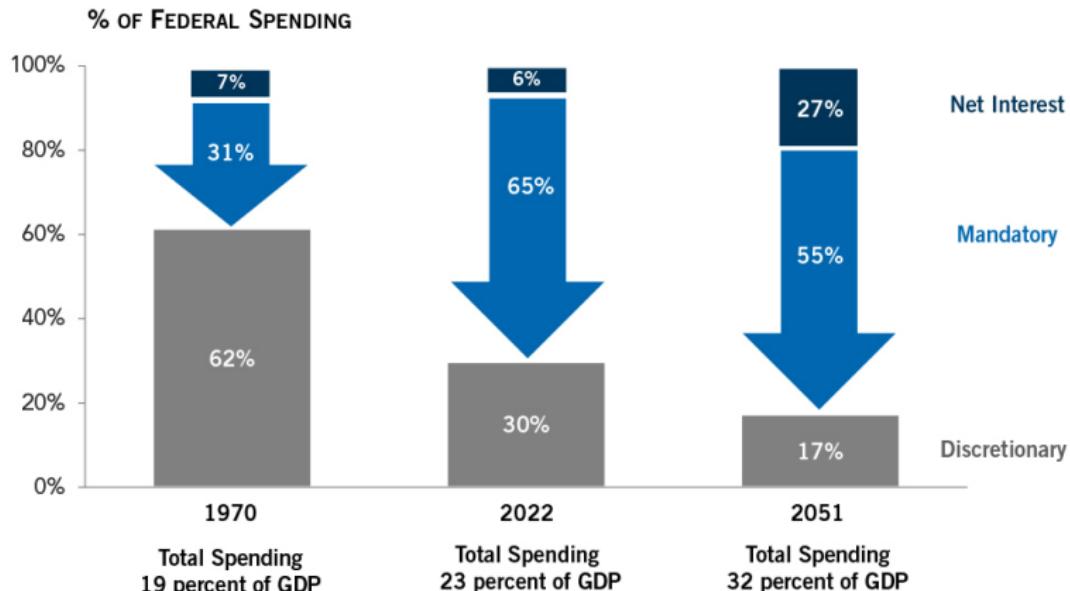
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<https://www.pgpf.org/finding-solutions/understanding-the-budget/spending>



## Mandatory programs and interest costs will take over more of the federal budget, squeezing discretionary programs



SOURCES: Congressional Budget Office, *The Long-Term Budget Outlook*, March 2021, and *An Update to the Budget and Economic Outlook: 2021 to 2031*, July 2021.

NOTE: Mandatory programs include Social Security, the major federal health programs, other entitlement programs, and offsetting receipts.

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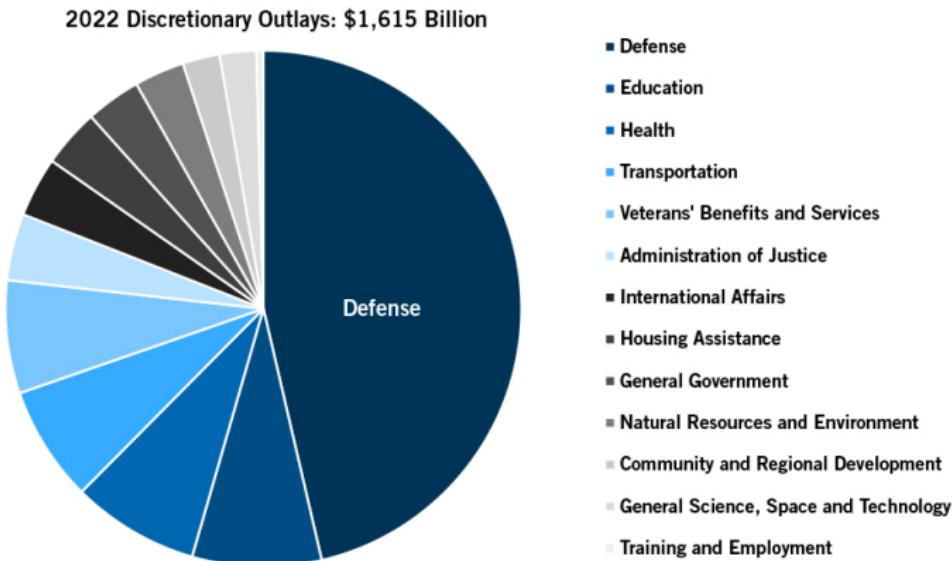
<https://www.pgpf.org/finding-solutions/understanding-the-budget/spending>

# Federal Budget: Discretionary Spending

- Discretionary spending is determined on an annual basis by Congress and the President through enactment of appropriations. As opposed to the "automatic" nature of mandatory spending, discretionary spending must be revisited each year.
- Defense spending represents more than half of all discretionary spending. Other major activities funded through appropriations include homeland security, education, transportation, research, food safety, science and space programs, disaster assistance, environmental protection, public housing, and federal law enforcement.
- As discretionary spending's share of total federal spending has declined, mandatory spending's share has grown, from about 30 percent in the early 1970s to 60 percent in recent years. The remaining 10 percent of total federal outlays consists of net spending on interest (primarily interest payments on the federal debt).



## Defense spending accounts for about half of total discretionary spending



SOURCE: Congressional Budget Office, *The Budget and Economic Outlook: 2021 to 2031*, February 2021.

NOTES: Health includes funding for agencies that provide healthcare services or engage in health research, such as the National Institutes of Health, Centers for Disease Control and Prevention, and Indian Health Service. General government includes central executive and legislative functions as well as the administrative costs of Social Security, Medicare, and income security programs. Energy is included in Transportation and Agriculture is included in Natural Resources and Environment. Veterans' benefits primarily consists of medical and hospital care.

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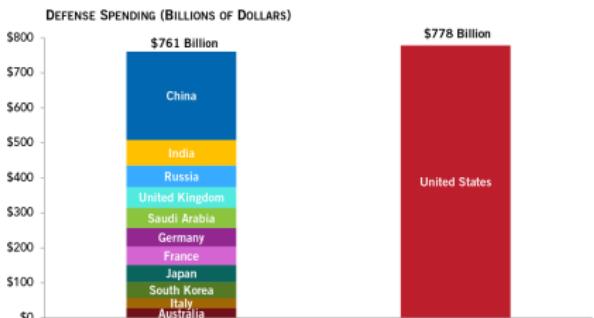
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<https://www.pgpf.org/finding-solutions/understanding-the-budget/spending>

# National Defense Spending: Comparisons



The United States spends more on defense than the next 11 countries combined



SOURCE: Stockholm International Peace Research Institute, SIPRI Military Expenditure Database, April 2021.

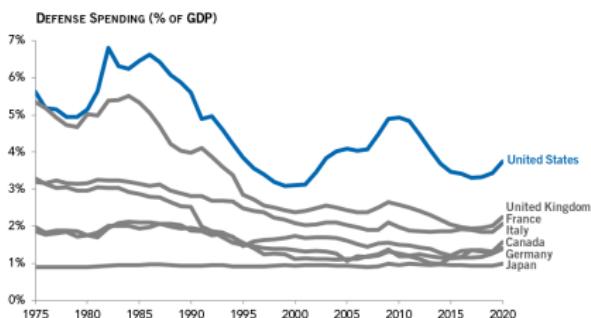
NOTES: Figures are in U.S. dollars converted from local currencies using market exchange rates. Data for the United States are for fiscal year 2020, which ran from October 1, 2019 through September 30, 2020. Data for the other countries are for calendar year 2020. The source for this chart uses a definition of defense spending that is more broad than budget function 050 and defense discretionary spending.

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The United States has historically devoted a larger share of its economy to defense than other members of the G7



SOURCE: Stockholm International Peace Research Institute, SIPRI Military Expenditure Database, May 2021.

NOTES: Data for the United States are for the fiscal year that ended on September 30 of the stated year. Data for all other countries are based on calendar years. The G7, or Group of Seven, is a forum for the countries that have the world's largest advanced economies. The source for this chart uses a definition of defense spending that is more broad than budget function 050 and defense discretionary spending.

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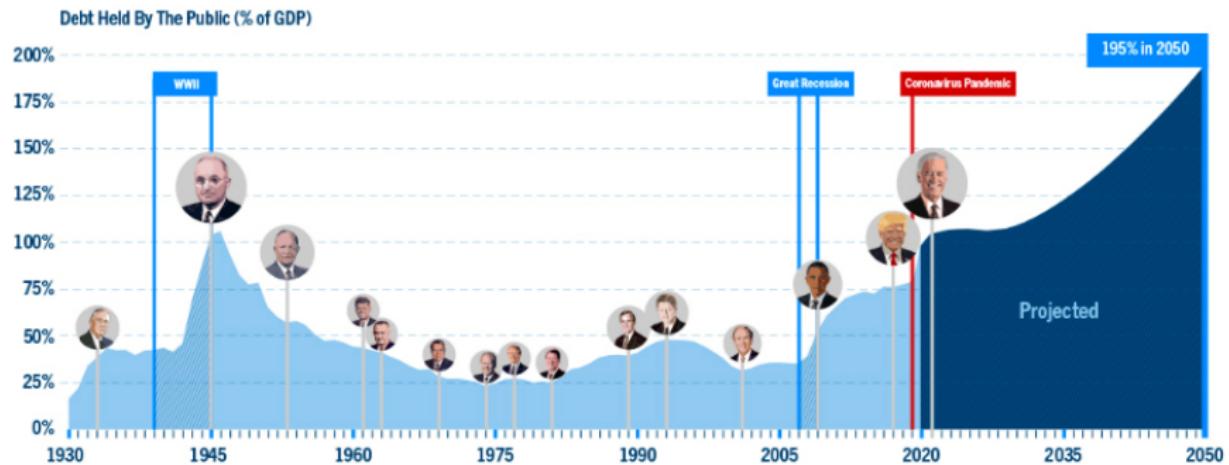
[https://www.pgpf.org/chart-archive/0053\\_defense-comparison](https://www.pgpf.org/chart-archive/0053_defense-comparison)

[https://www.pgpf.org/chart-archive/0184\\_defense\\_spending\\_G7](https://www.pgpf.org/chart-archive/0184_defense_spending_G7)

# OUTLINE

- ① Federal Budget Basics
- ② Fiscal Policy & Multipliers
- ③ Government Deficit & Debt

# President Biden and the New Congress (w)



- 1933 | Franklin D. Roosevelt
- 1945 | Harry S. Truman
- 1953 | Dwight D. Eisenhower
- 1961 | John F. Kennedy
- 1969 | Richard M. Nixon
- 1963 | Lyndon B. Johnson
- 1974 | Gerald R. Ford
- 1977 | James Carter
- 1981 | Ronald Reagan
- 1989 | George H. W. Bush
- 1993 | William J. Clinton
- 2001 | George W. Bush
- 2009 | Barack Obama
- 2017 | Donald J. Trump
- 2021 | Joseph R. Biden Jr.



President Biden and the New Congress Face a Range of Complex and Urgent Policy Issues. Defeating COVID-19 and putting our economy on a path to recovery continue to be the most pressing priorities for our nation. At the same time, our fiscal outlook has worsened considerably—and once the pandemic is over, lawmakers will need to return to managing our historically high national debt (Peterson Foundation, 2021)

## Fiscal Policy: A Brief Introduction

- Fiscal policy involves the changing of government expenditures or taxes in order to achieve national economic goals, such as high employment, price stability, and economic growth.
- An increase in government spending will stimulate economic activity. Changes in government spending include military spending, education spending, budgets for government agencies.
- A rise in taxes causes a reduction in aggregate demand because it can reduce consumption spending, investment expenditures, and net exports.
- Over the business cycle, the economy experiences recessions and expansions in the short run. Countercyclical policies attempt to reduce the intensity of economic fluctuations and smooth the GDP growth rate.
- Expansionary fiscal policy increases government expenditure and decreases taxes. Contractionary fiscal policy decreases government expenditure and increases taxes.

## Fiscal Policy and Government Budget

- Fiscal policy is the use of government spending and taxation to influence the economy. When the government decides on the goods and services it purchases, the transfer payments it distributes, or the taxes it collects, it is engaging in fiscal policy.
- The primary economic impact of any change in the government budget is felt by particular groups—a tax cut for families with children, for example, raises their disposable income. Discussions of fiscal policy, however, generally focus on the effect of changes in the government budget on the overall economy.
- Fiscal policy is said to be tight or contractionary when revenue is higher than spending (government budget surplus) and loose or expansionary when spending is higher than revenue (budget deficit).
- The focus is not on the level of the deficit, but on the change in the deficit. Thus, a reduction of the deficit from \$200 billion to \$100 billion is said to be contractionary policy, even though the budget is still in deficit.

Source: David N. Weil: *Fiscal Policy*. Econlib Encyclopedia. (w)

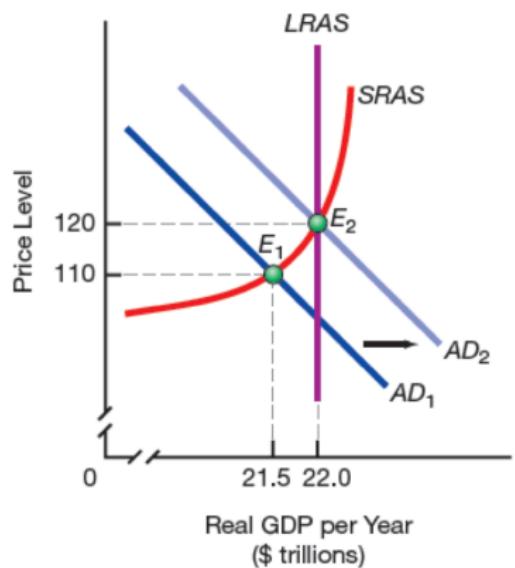
## Fiscal Policy and Aggregate Demand

- The most immediate effect of fiscal policy is to change the aggregate demand for goods and services. A fiscal expansion, for example, raises aggregate demand through one of two channels.
- First, if the government increases its purchases but keeps taxes constant, it increases demand directly. Second, if the government cuts taxes or increases transfer payments, households' disposable income rises, and they will spend more on consumption. This rise in consumption will in turn raise aggregate demand.
- Fiscal policy also changes the composition of aggregate demand. When the government runs a deficit, it meets some of its expenses by issuing bonds. In doing so, it competes with private borrowers for money loaned by savers. Holding other things constant, a fiscal expansion will raise interest rates and "crowd out" some private investment, thus reducing the fraction of output composed of private investment.

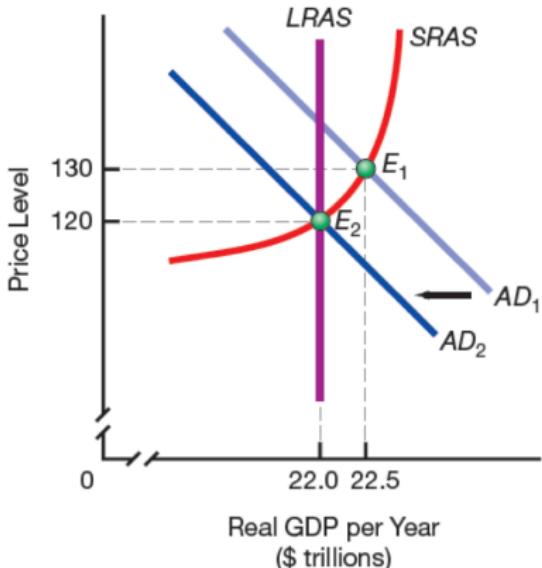
Source: David N. Weil: Fiscal Policy. Econlib Encyclopedia. (w)

## Fiscal Policy: AD-AS Analysis

Expansionary Fiscal Policy ( $E_1 \rightarrow E_2$ )



Contractionary Fiscal Policy ( $E_1 \rightarrow E_2$ )



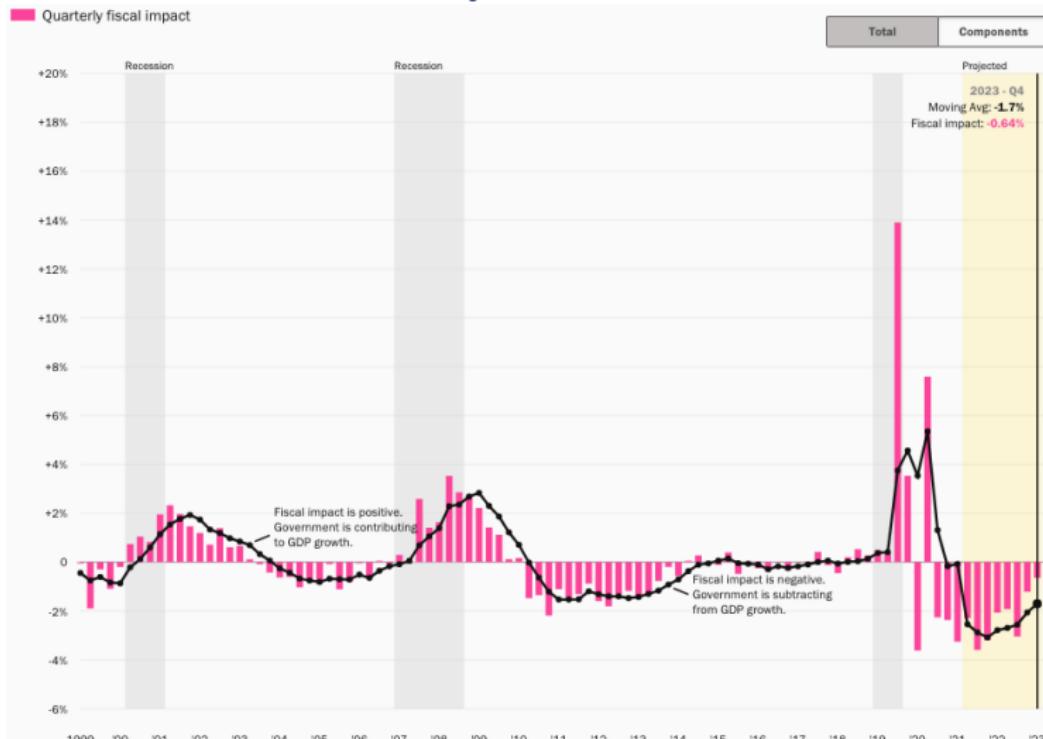
Source: Roger Leroy Miller (2021) CH13, Economics Today - Macro View, 20e, Pearson

## Fiscal Policy and National Output

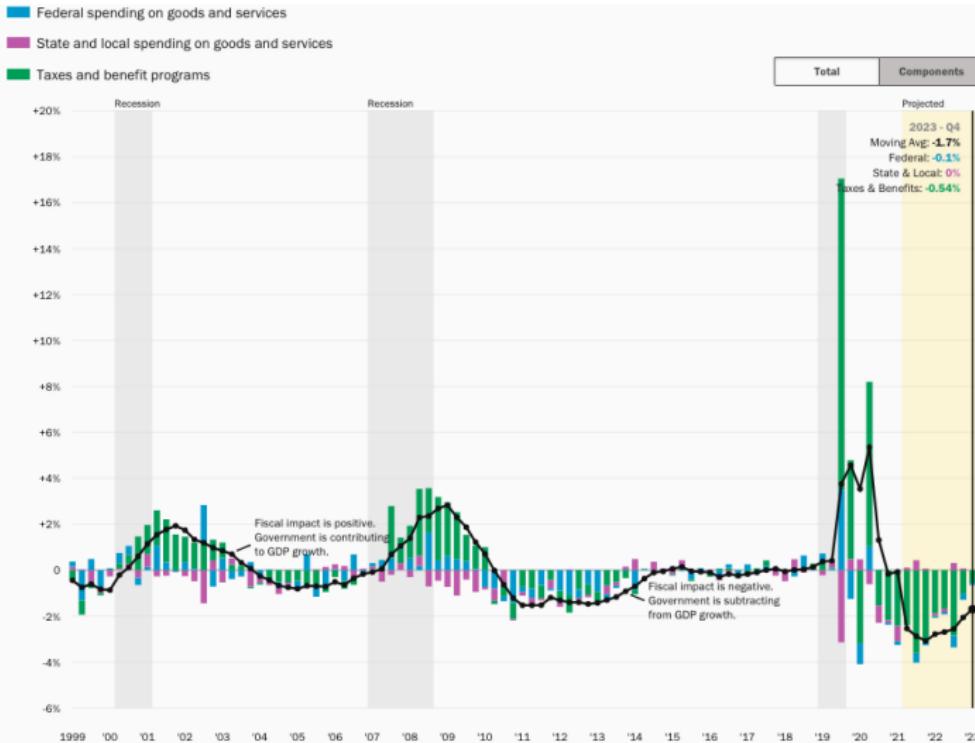
- Fiscal policy is an important tool for managing the economy because of its ability to affect the total amount of output produced (GDP).
- The first impact of a fiscal expansion is to raise the demand for goods and services. This greater demand leads to increases in both output and prices. The degree to which higher demand increases output and prices depends, in turn, on the state of the business cycle.
- If the economy is in recession, with unused productive capacity and unemployed workers, then increases in demand will lead mostly to more output without changing the price level.
- If the economy is at full employment, by contrast, a fiscal expansion will have more effect on prices and less impact on total output.
- Fiscal policy's ability to affect the level of output via aggregate demand wears off over time. Higher aggregate demand due to a fiscal stimulus, for example, eventually shows up only in higher prices and does not increase output at all.

Source: David N. Weil: *Fiscal Policy*. Econlib Encyclopedia. (w)

# Contribution of Fiscal Policy to Real GDP Growth

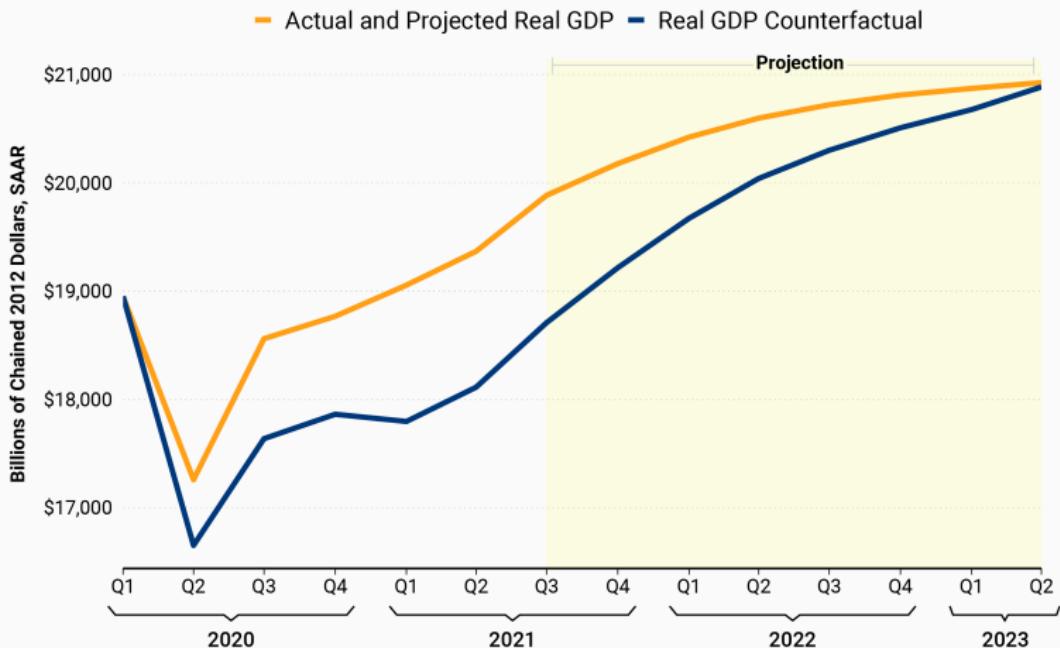


# Components Contribution to Real GDP Growth



<https://www.brookings.edu/interactives/hutchins-center-fiscal-impact-measure/>

## Effects of Fiscal Policy on the Level of GDP

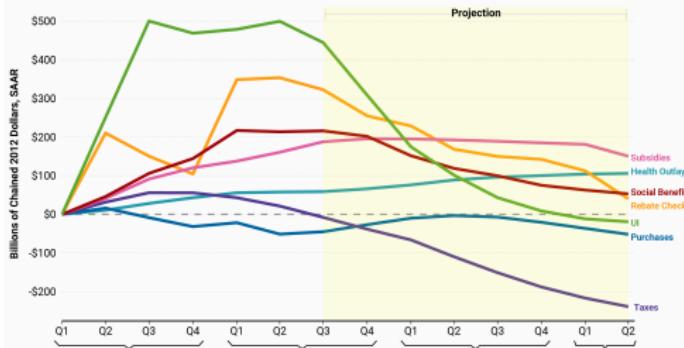


**Note:** Counterfactual GDP represents an estimate of what GDP would have been had government purchases, taxes, and transfers increased at the rate of potential GDP growth from 2020 Q1 on.

**Source:** Hutchins Center calculations using data from the Congressional Budget Office and the Bureau of Economic Analysis.

# How pandemic-era fiscal policy affects the level of GDP? (w)

**Effects of the Components of Fiscal Policy on the Level of GDP**

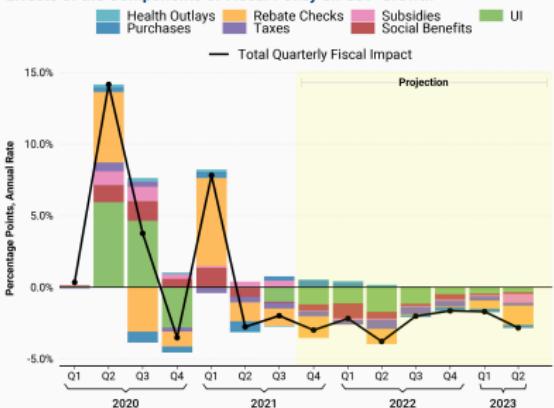


Note: Government purchases, taxes, and transfers are shown net of what they would have been had they increased at the rate of potential GDP growth from 2020 Q1 on.

Source: Hutchins Center calculations using data from the Congressional Budget Office and the Bureau of Economic Analysis.

H Hutchins Center  
on Fiscal & Monetary Policy  
at BROOKINGS

**Effects of the Components of Fiscal Policy on GDP Growth**



Source: Hutchins Center calculations using data from the Congressional Budget Office and the Bureau of Economic Analysis.

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on Fiscal & Monetary Policy  
at BROOKINGS

The chart shows the headline fiscal impact measure on GDP, broken down into the different components of fiscal policy. The largest boost to GDP growth in the early stages of the pandemic came from the large increases in spending on unemployment insurance and rebate checks. As the impetus from these programs lessens over time, these categories of spending become a negative for GDP growth.

## Fiscal Policy: Automatic Stabilizer

- This ability of fiscal policy to affect output by affecting aggregate demand makes it a potential tool for economic stabilization.
- In a recession, the government can run an expansionary fiscal policy, thus helping to restore output to its normal level and to put unemployed workers back to work. During a boom, when inflation is perceived to be a greater problem than unemployment, the government can run a budget surplus, helping to slow down the economy. Such a countercyclical policy would lead to a budget that was balanced on average.
- Automatic stabilizers—programs that automatically expand fiscal policy during recessions and contract it during booms—are one form of countercyclical fiscal policy. Unemployment insurance, on which government spends more during recessions, is an example.
- Similarly, because taxes are roughly proportional to wages and profit, the amount of taxes collected is higher during a boom than during a recession. Thus, the tax code also acts as an automatic stabilizer.

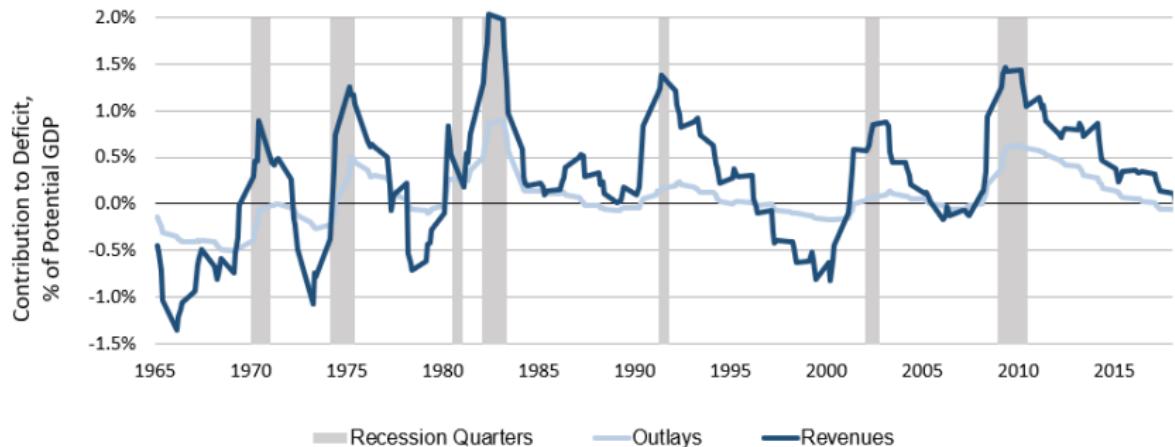
Source: David N. Weil: Fiscal Policy. Econlib Encyclopedia. (w)

## What are Automatic Stabilizers?

- Automatic stabilizers are mechanisms built into government budgets, without any vote from legislators, that increase spending or decrease taxes when the economy slows.
- During a recession, automatic stabilizers can ease households' financial stress by decreasing their tax bills or by boosting cash and in-kind benefits, all without changes in the tax code or any other new legislation.
- For example, when a household's income declines, it generally owes less in taxes, which helps cushion the blow. Additionally, with a decline in income, a household may become eligible for unemployment insurance (UI), food stamps (Supplemental Nutrition Assistance Program, or SNAP), or Medicaid.
- Both taxes and spending can have stabilizing effects on the economy. Most automatic stabilizers are federal; states and localities are generally required to balance their budgets, so they can't run big deficits during downturns.

<https://www.brookings.edu/blog/up-front/2019/07/02/what-are-automatic-stabilizers/>

## The bulk of automatic stabilizer stimulus comes from taxes



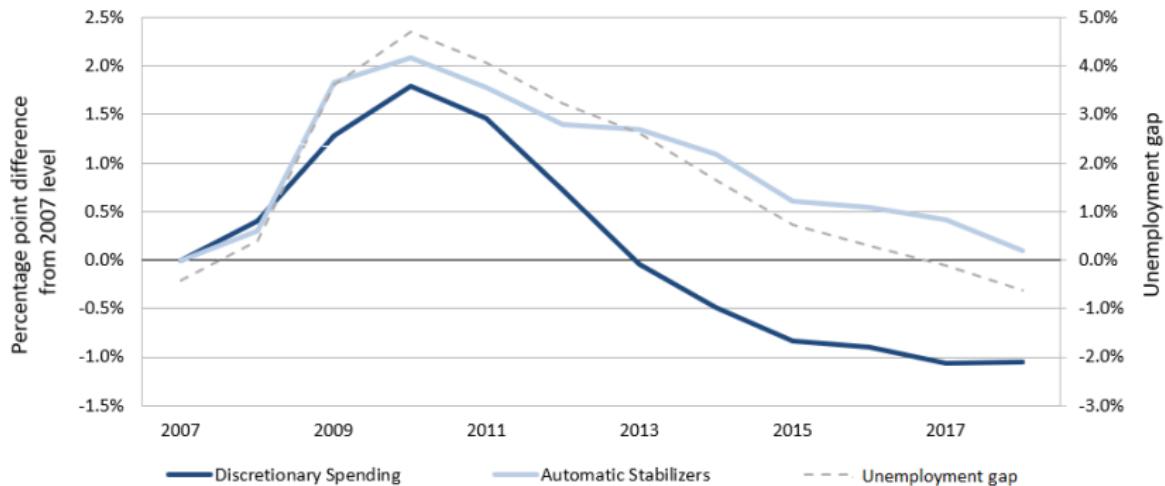
Source: CBO (Jan. 2019). Chart shows CBO's estimates of automatic stabilizers as a share of potential GDP.



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at BROOKINGS

As shown in the chart, the bulk of the value of automatic stabilizers comes from changes in tax revenues, rather than from spending on programs. According to the Congressional Budget Office, revenues have accounted for about three-quarters, on average, of the effect of automatic stabilizers on the budget over the past 50 years (CBO 2015). <https://www.brookings.edu/blog/up-front/2019/07/02/what-are-automatic-stabilizers/>

Automatic stabilizers continued to provide stimulus while unemployment was high



Source: CBO (Jan. 2019). Unemployment gap is the actual rate of unemployment minus the underlying long-term rate of unemployment.



Hutchins Center  
on Fiscal & Monetary Policy  
at BROOKINGS

From 2009 to 2012, automatic stabilizers lowered revenues by 1.2 percent of potential GDP, and increased spending by 0.6 percent—a combined effect of 1.8 percent of potential GDP. The increase in discretionary spending stemming from legislative action contributed on average about 1.3 percent of potential GDP in the period. As shown in the chart below, the stimulus from discretionary spending was cut off abruptly in 2013, even though the unemployment rate was still high. Automatic stabilizers provided stimulus for much longer.

## Methods to Assess Fiscal Policy Impacts

- ① Fiscal multipliers approach estimates the short-term impact of discretionary fiscal policy on output. They are usually defined as the ratio of a change in output to an exogenous change in the fiscal deficit with respect to their respective baselines.
- ② Full-fledged model. Macroeconomic models can be used to analyze the effects of fiscal and other policies on output. This approach requires a large amount of resources and data, rarely available in many countries.
- ③ Demand-side approach. The effect of fiscal policy on GDP can be estimated from the demand side, where GDP is obtained as the sum of government and private consumption, government and private investment and net exports. In this case, it is necessary to assess the effects of fiscal measures on all the GDP components. Overall this approach can provide a more detailed assessment of how fiscal shocks affect the economy than the multiplier approach, but it may lead to incorrect estimates, as second round effects are difficult to quantify.

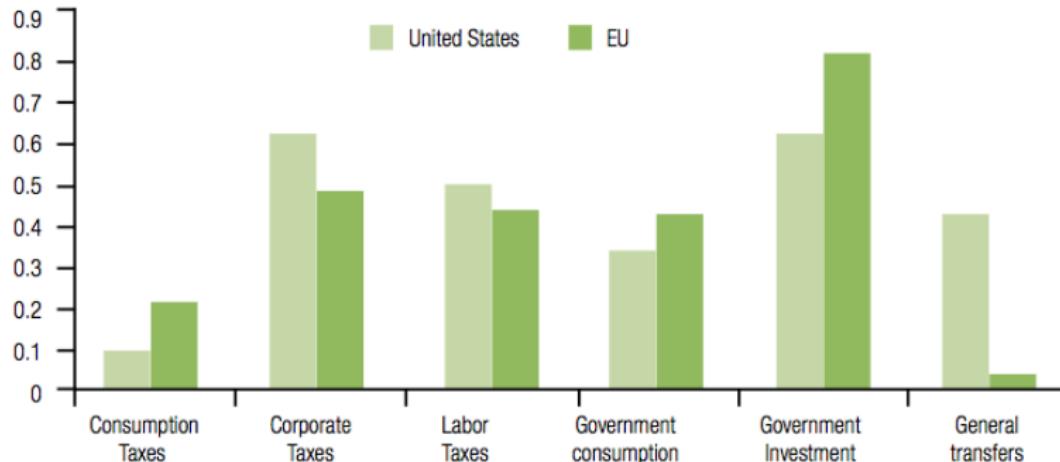
Source: Batini et al. (2014) *Fiscal Multipliers: Size, Determinations, and Use in Macroeconomic Projections*.

## Fiscal Policy Multipliers

- Fiscal multipliers can be measured in several ways. Generally, they are defined as the ratio of a change in output to a discretionary change in government spending or tax revenue. Thus, the fiscal multiplier measures the effect of a \$1 change in spending or a \$1 change in tax revenue on the level of GDP. Two multipliers are commonly used.
- The government expenditure multiplier shows what impact a change in autonomous spending will have on total spending and aggregate demand in the economy. It can also tell us how much more or less spending is needed to close an output gap.
- The tax multiplier tells just how big of a change will be seen in real GDP as a result of a change in taxes.
- It is essential to measure accurately the relationship between policy actions and output growth in order to plan and forecast the effect of policy actions. Multipliers are also important elements to take into consideration in policy advice and design.

Source: Batini et al. (2014)

## Are Multipliers Different Across Fiscal Instruments?



Macroeconomic models imply a clear hierarchy of fiscal instruments. On the spending side, investment has the highest short-term multiplier, followed by government wages and government purchases, while untargeted transfers to households are associated with the lowest output impact among spending instruments. On the revenue side, the ranking of tax instruments reflects their perceived distortionary effects. Corporate income taxes and personal income taxes have the most negative effects on GDP. Consumption taxes do relatively better. Source: Batini et al. (2014).

## Fiscal Policy: Long-Run Effects

- Ironically, the long-run effects of fiscal policy tend to be the opposite of the short-run effects. Fiscal expansion will lead to higher output today, but will lower the natural rate of output below what it would have been in the future. Similarly, fiscal contraction, though dampening the output level in the short run, will lead to higher output in the future.
- A fiscal expansion affects the output level in the long run because it affects the country's saving rate. A fiscal expansion entails a decrease in government saving. Lower saving means, in turn, that the country will either invest less in new plants and equipment or increase the amount that it borrows from abroad, both of which lead to unpleasant consequences in the long term.
- Lower investment will lead to a lower capital stock and to a reduction in a country's ability to produce output in the future. Increased indebtedness to foreigners means that a higher fraction of a country's output will have to be sent abroad in the future rather than being consumed at home.

Source: David N. Weil: Fiscal Policy. Econlib Encyclopedia. (w)

## Fiscal Policy: Future Tax Burdens

- Fiscal policy also changes the burden of future taxes. When the government runs an expansionary fiscal policy, it adds to its stock of debt.
- Because the government will have to pay interest on this debt (or repay it) in future years, expansionary fiscal policy today imposes an additional burden on future taxpayers.
- Just as the government can use taxes to transfer income between different classes, it can run surpluses or deficits in order to transfer income between different generations.
- Some economists have argued that this effect of fiscal policy on future taxes will lead consumers to change their saving.
- Recognizing that a tax cut today means higher taxes in the future, the argument goes, people will simply save the value of the tax cut they receive now in order to pay those future taxes.

Source: David N. Weil: Fiscal Policy. Econlib Encyclopedia. (w)

## Fiscal Policy: Ricardian Equivalence

- Ricardian equivalence, holds that tax cuts will have no effect on national saving because changes in private saving will exactly offset changes in public saving. As the government is dis-saving, people are saving more in anticipation of the higher taxes to come. The decrease in public saving is offset by an equal increase in private saving. Total saving is therefore unaffected, and so is investment. The economy has the same capital stock today that it would have had if there had been no increase in debt.
- If fiscal policy on future taxes will lead consumers to change their saving, then budget deficits crowd out private investment would be wrong. But if consumers decide to spend some of the extra disposable income they receive from a tax cut (because they are myopic about future tax payments, for example), then Ricardian equivalence will not hold; a tax cut will lower national saving and raise aggregate demand.
- Most economists do not believe that Ricardian equivalence characterizes consumers' response to tax changes.

Source: David N. Weil: Fiscal Policy. Econlib Encyclopedia. (w)

# OUTLINE

- ① Federal Budget Basics
- ② Fiscal Policy & Multipliers
- ③ Government Deficit & Debt

## Government Deficit and Debt

- The amount by which government outlays exceed revenues in a fiscal year is the deficit. Because the government borrows to finance deficits, a deficit adds to federal debt. Alternatively, a surplus exists when revenues exceed outlays; a surplus reduces federal debt.
- Debt held by the public is the amount that the government has borrowed over time to finance the costs of programs and activities that revenues were insufficient to cover. Thus, it largely reflects the total cumulative deficit that the government has incurred.
- Gross debt is debt held by the public plus intragovernmental debt, which is the amount that the government owes to its own accounts, primarily the trust funds for Social Security, Medicare, military retirement, and civil service retirement. When those programs' collections exceed their spending, the Treasury uses the surplus cash flows to fund other federal activities, and the trust funds are credited with a corresponding amount of Treasury securities.

Source: CBO (2021) Common Budgetary Terms Explained.

## National Debt Measurements

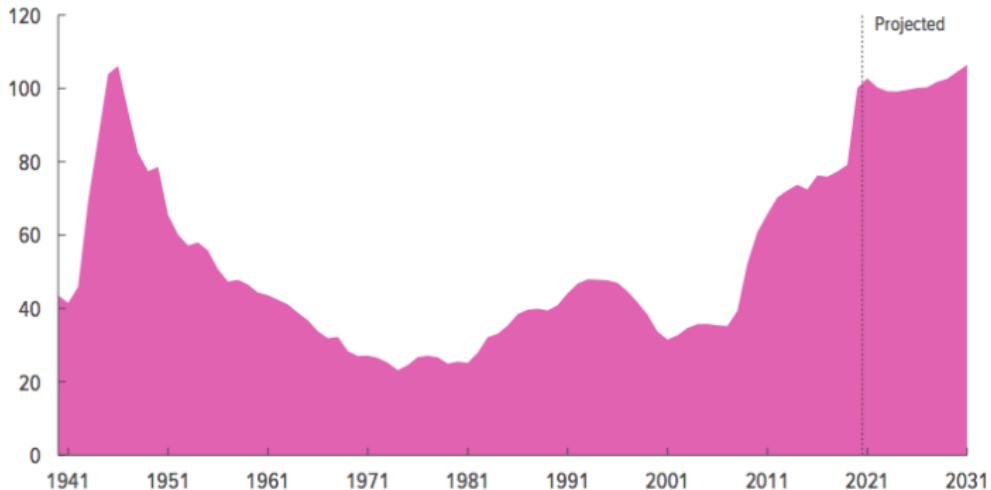
There are three widely used measures of federal debt.

- ① Debt held by the public is the amount that the U.S. Treasury has borrowed from outside lenders via financial markets to support government activities. That debt is held by individuals, businesses, pension and mutual funds, state and local governments, and foreign entities. It does not include intragovernmental debt, which is used to track the cash flows of trust funds and other government accounts.
- ② Gross federal debt equals debt held by the public plus debt held by federal trust funds and other government accounts. In very basic terms, it can be thought of as debt that the government owes to others plus debt that it owes to itself.
- ③ Debt subject to limit is almost an identical measure to gross federal debt. The main difference between the two measures is that debt subject to limit excludes debt issued by agencies other than the Treasury as well as debt issued by the Federal Financing Bank.

Source: Peter G. Peterson Foundation (w)

## Federal Debt Held by the Public, 1940 to 2031

Percentage of GDP



By 2031, federal debt held by the public is projected to exceed 106 percent of GDP—about equal to debt in 1946, when it was the highest it has ever been.

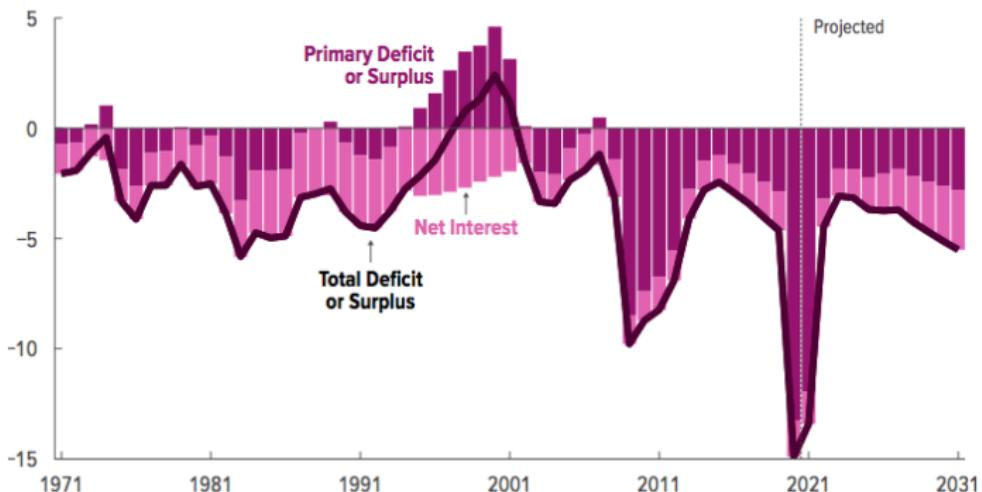
Data source: Congressional Budget Office. See [www.cbo.gov/publication/57263#data](http://www.cbo.gov/publication/57263#data).

GDP = gross domestic product.

Source: CBO (2020) Federal Debt: A Primer.

## Total Deficits, Primary Deficits, and Net Interest

Percentage of GDP



In CBO's projections, total deficits and primary deficits shrink as a percentage of GDP for the next few years. Over the latter part of the projection period, growing primary deficits (which reflect underlying trends related to the aging of the population and the rising costs of health care) and rising net interest costs increase total deficits.

Data source: Congressional Budget Office. See [www.cbo.gov/publication/57263#data](http://www.cbo.gov/publication/57263#data).

Primary deficits exclude net outlays for interest.

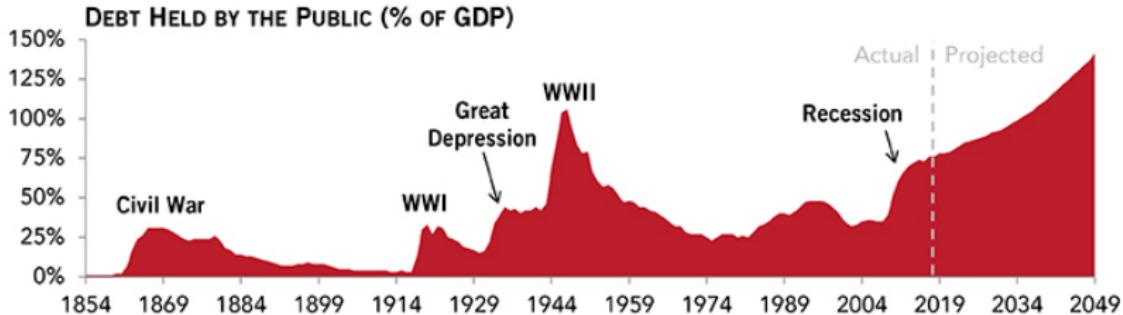
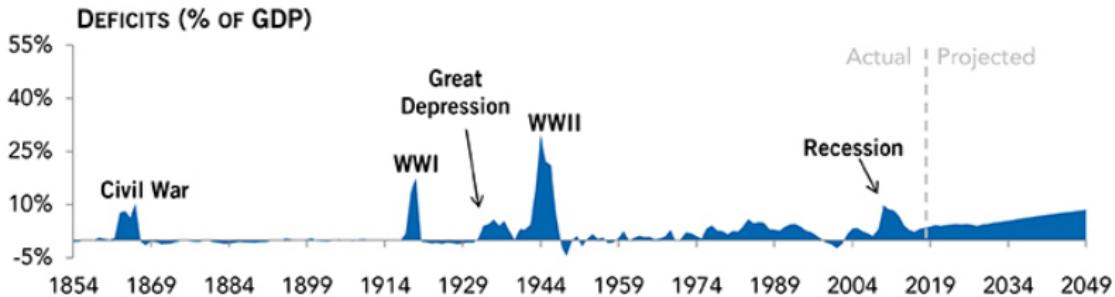
When October 1 (the first day of the fiscal year) falls on a weekend, certain payments that would have ordinarily been made on that day are instead made at the end of September and thus are shifted into the previous fiscal year. All projections presented here have been adjusted to exclude the effects of those timing shifts. Historical amounts have been adjusted as far back as the available data will allow.

GDP = gross domestic product.

Source: CBO (2020) Federal Debt: A Primer.



## Debt is the accumulation of deficits and both will rise in coming decades



SOURCES: Congressional Budget Office, The 2019 Long-Term Budget Outlook, June 2019; and Office of Management and Budget, Budget of the United States Government: Fiscal Year 2020, March 2019.

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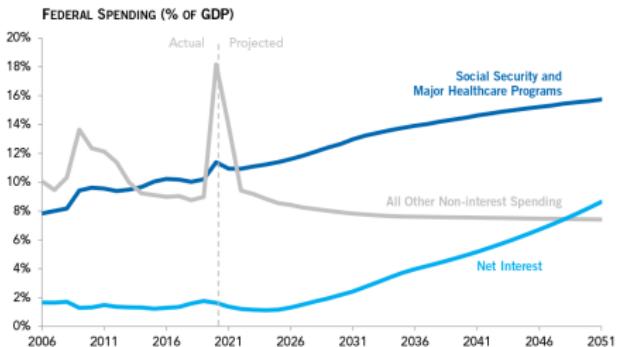
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<https://www.pgpf.org/blog/2016/10/debt-vs-deficits-whats-the-difference>

# Drivers of Public Spending and National Debt



**Spending for mandatory programs and interest is projected to outpace all other non-interest spending**



SOURCE: Congressional Budget Office, The 2021 Long-Term Budget Outlook, March 2021.

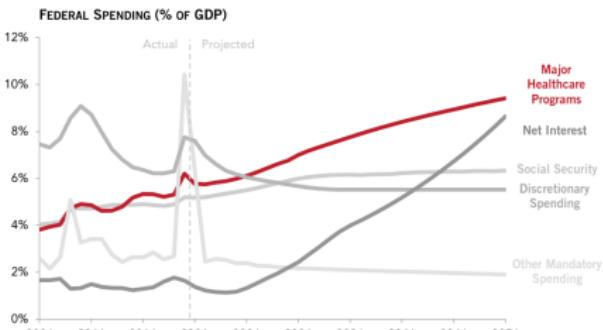
NOTE: The major healthcare programs include Medicare (net), Medicaid, the Children's Health Insurance Program, and spending to subsidize health insurance purchased through the marketplaces established under the Affordable Care Act and related spending.

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**Spending for the major healthcare programs will continue to climb rapidly over the long term**



SOURCE: Congressional Budget Office, The 2021 Long-Term Budget Outlook, March 2021.

NOTE: The major healthcare programs include Medicare (net), Medicaid, the Children's Health Insurance Program, and spending to subsidize health insurance purchased through the marketplaces established under the Affordable Care Act and related spending.

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Three major drivers of growing national debt: 1) aging demographics with longer life expectancy; 2) rising healthcare costs; 3) inadequate revenues.

<https://www.pgpf.org/national-debt-clock>

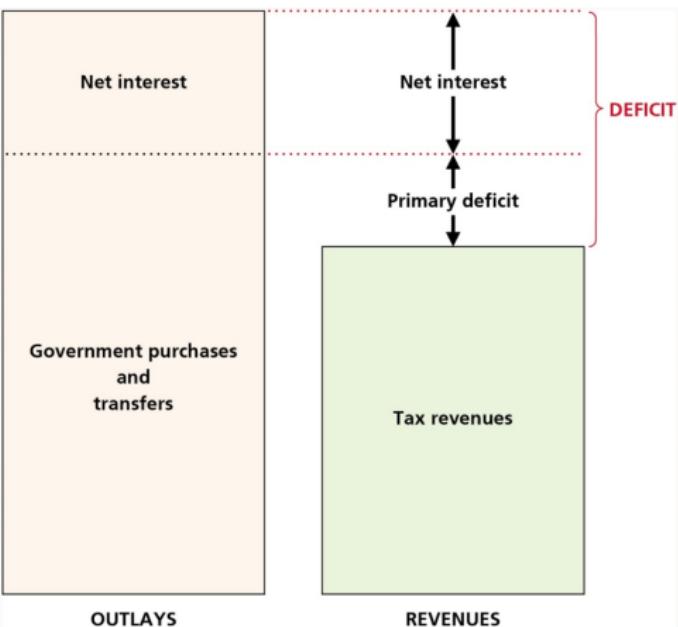
<https://www.pgpf.org/the-fiscal-and-economic-challenge>

[https://www.pgpf.org/chart-archive/0174\\_SS\\_major\\_health\\_climb](https://www.pgpf.org/chart-archive/0174_SS_major_health_climb)

[https://www.pgpf.org/chart-archive/0281\\_major\\_health\\_spending\\_to\\_climb\\_rapidly](https://www.pgpf.org/chart-archive/0281_major_health_spending_to_climb_rapidly)

# Budget Deficit and Primary Deficit

- ① Revenue = Taxation Revenue
- ② Outlay = Government Purchases + Transfers + Net Interest
- ③ Budget Deficit = Outlays – Revenue
- ④ Budget Surplus = Revenue – Outlays
- ⑤ Primary Deficit = Budget Deficit – Interest Payment
- ⑥ Primary Surplus = Budget Surplus – Interest Payment

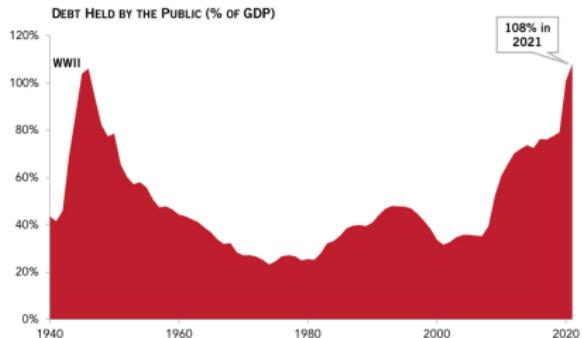


Source: Abel, Bernanke, and Croushore (2020) CH15, Macroeconomics, 10e, Pearson.

# National Debt Size and Ownership



Federal debt is projected to rise next year to the largest amount ever recorded



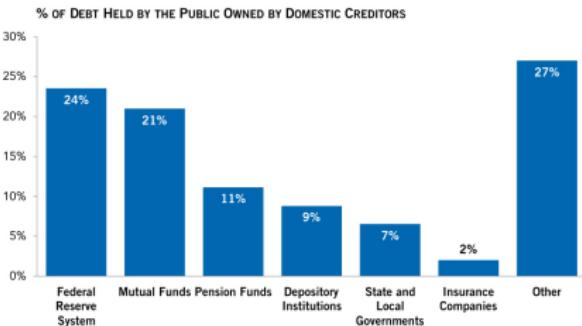
SOURCES: Congressional Budget Office, Current Projections of Output, Employment, and Interest Rates and a Preliminary Look at Federal Deficits for 2020 and 2021, April 2020 and The Budget and Economic Outlook: 2020 to 2030, January 2020.

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The Federal Reserve owned nearly one-quarter of domestically held debt at the end of September 2019



SOURCE: U.S. Department of the Treasury, Treasury Bulletin, September 2019.

NOTES: The Other category is made up of U.S. Savings Bonds and Other Investors. Percentages may not sum due to rounding.

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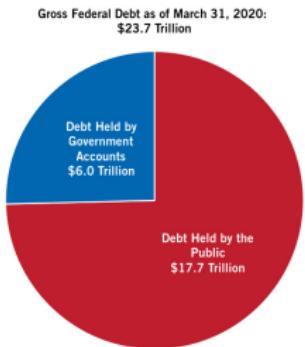
Debt held by the public is the amount that the U.S. Treasury has borrowed from outside lenders via financial markets to support government activities. That debt is held by individuals, businesses, pension and mutual funds, state and local governments, and foreign entities. It does not include intragovernmental debt, which is used to track the cash flows of trust funds and other government accounts. The Federal Reserve typically accounts for a significant proportion of debt held by the public owned by domestic investors.

<https://www.pgpf.org/blog/2020/06/how-much-is-the-national-debt-what-are-the-different-measures-used>

# National Debt Component and Ownership



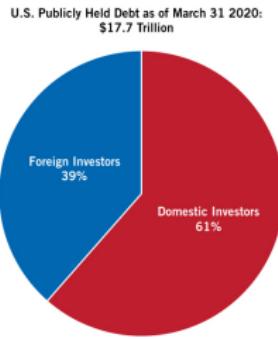
## What makes up gross federal debt?



SOURCE: U.S. Department of the Treasury, Public Debt Report, March 2020.  
© 2020 Peter G. Peterson Foundation



## Foreign investors own 39 percent of all U.S. public debt



SOURCES: U.S. Department of the Treasury, Public Debt Report, March 2020.  
NOTE: Data are for March 2020.  
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Gross federal debt equals debt held by the public (explained above) plus debt held by federal trust funds and other government accounts. In very basic terms, it can be thought of as debt that the government owes to others plus debt that it owes to itself. Gross federal debt stood at \$23.7 trillion at the end of March 2020—\$6.0 trillion of which represented securities held by government accounts. \$2.8 trillion of that total is held by Social Security's Old-Age and Survivors Insurance trust fund. Securities held by such accounts represent internal transactions of the government and thus have no direct effect on credit markets.

<https://www.pgpf.org/blog/2020/06/how-much-is-the-national-debt-what-are-the-different-measures-used>

## Debt Financing: Treasury Securities

- ① Treasury Bills (T-bills) have a maturity of one year or less. Such short-term securities are issued at a discount and the face value is paid upon maturity.
- ② Treasury Notes (T-notes) have maturities ranging from 2 to 10 years. Notes are coupon securities paying semiannual interest (set at the time of issuance) and purchasers collect the principal at maturity.
- ③ Treasury Bonds (T-bonds) have maturities of more than 10 years. Bonds are also coupon securities.
- ④ Treasury Inflation-Protected Securities (TIPS) have maturities of 5, 10, and 30 years. The principal amount are adjusted semiannually to account for inflation; interest is paid every six months on the adjusted principal.
- ⑤ Floating-Rate Notes (FRNs), introduced in 2014, have a maturity of 2 years and a rate of interest that is adjusted each quarter; the rate is based on the prevailing interest rate for 13-week Treasury bills.

<https://www.pgpf.org/blog/2021/01/how-does-the-treasury-issue-debt>

## Components of Debt Held by the Public at the End of Fiscal Year 2019

Billions of Dollars

Treasury Notes <b>9,756</b>	TIPS <b>1,455</b>	Savings Bonds <b>152</b>	32 Other
		TSP <b>248</b>	54 SLGS Securities
		FRNs <b>424</b>	
	Treasury Bonds <b>2,312</b>		
	Treasury Bills <b>2,376</b>		
			486 Nonmarketable Securities
			16,323 Marketable Securities
			<b>16,809 Total</b>

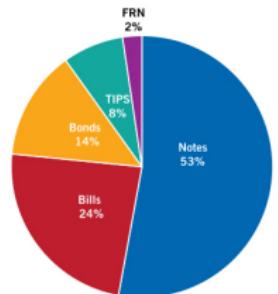
Source: Congressional Budget Office, using data from the Department of the Treasury.

FRNs = floating-rate notes; SLGS = State and Local Government Series; TIPS = Treasury inflation-protected securities; TSP = Thrift Savings Plan.

Source: CBO (2020) Federal Debt: A Primer.



Treasury notes represented the majority of outstanding marketable debt at the end of 2020



SOURCE: U.S. Department of the Treasury, Monthly Statement of the Public Debt, issue for December 2020.

NOTE: Totals may not sum due to rounding.

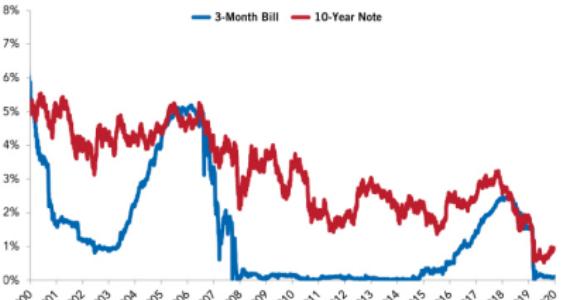
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Interest rates for 3-month Treasury bills and 10-year Treasury notes remained low throughout the pandemic

DAILY TREASURY YIELD CURVE RATE (%)



SOURCE: U.S. Department of the Treasury, Daily Treasury Yield Curve Rates, January 2021.

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The average interest rate on U.S. Treasury securities has fallen noticeably over the past 20 years



SOURCE: U.S. Department of the Treasury, Average Interest Rates on U.S. Treasury Securities, January 2021.

NOTE: Average interest rate for total marketable, nonmarketable, and interest-bearing U.S. debt, which does not include the Treasury inflation-indexed securities and floating rate notes.

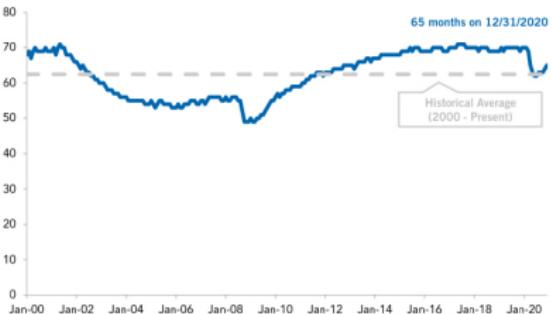
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The average maturity of U.S. Treasury debt dropped at the onset of the COVID-19 pandemic

WEIGHTED AVERAGE MATURITY (MONTHS)



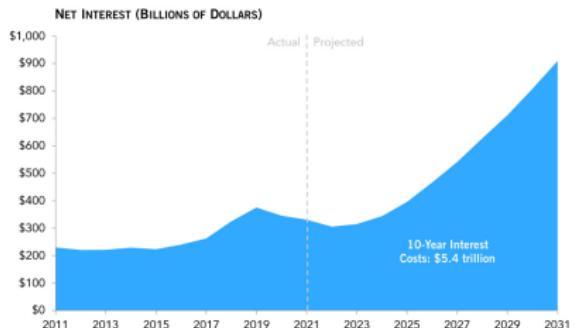
SOURCE: U.S. Department of the Treasury, Quarterly Refunding Data, 2021 – 1st Quarter, January 2021.

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## Net interest costs are projected to rise sharply



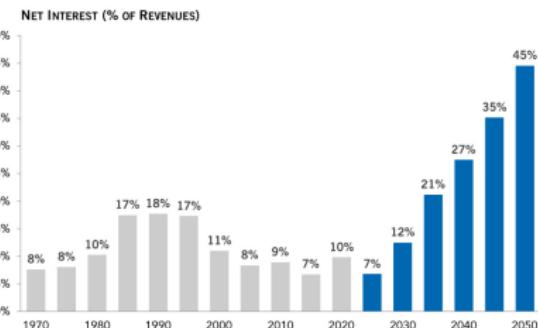
SOURCES: Congressional Budget Office, An Update to the Budget and Economic Outlook: 2021 to 2031, July 2021; and Office of Management and Budget, Historical Tables, Budget of the United States Government: Fiscal Year 2022 May 2021.

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## Net interest costs are projected to consume a growing share of federal revenues



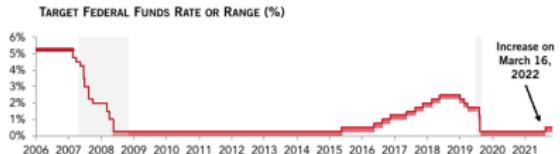
SOURCES: Office of Management and Budget, Historical Tables, Budget of the United States Government: Fiscal Year 2022, May 2021; and the Congressional Budget Office, The 2021 Long-Term Budget Outlook, March 2021.

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## Changes in the federal funds rate affect the interest rates on Treasury securities



SOURCES: Congressional Budget Office, An Update to the Budget and Economic Outlook: 2021 to 2031, July 2021 and Federal Reserve Bank of New York, Federal Funds Data Historical Search, March 2022.

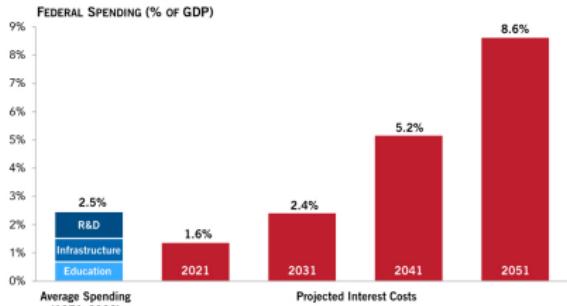
NOTE: Data are shown on a quarterly basis. In December 2008, the Federal Open Market Committee began to target a range, rather than a specific rate, for the federal funds rate.

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## By 2051, interest costs are projected to be more than three times what the federal government has historically spent on R&amp;D, infrastructure, and education combined



SOURCES: Office of Management and Budget, Historical Tables, Budget of the United States Government: Fiscal Year 2022, May 2021; and Congressional Budget Office, The 2021 Long-Term Budget Outlook, March 2021.

NOTE: Infrastructure excludes defense.

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# Why National Debt Matters? (w)

Addressing our national debt is an essential part of securing America's economic future. These key fiscal and economic issues should be at the forefront of the policy conversation. Our leaders should seize the opportunity to put our long-term fiscal trajectory on a sustainable path.

- ① The return of trillion dollar deficits.
- ② Interest costs are growing rapidly.
- ③ Key investments in our future are at a risk.
- ④ Rising debt means lower incomes, fewer economic opportunities.
- ⑤ Less flexibility to respond to crises.
- ⑥ Protecting the essential safety net.
- ⑦ A solid fiscal foundation leads to economic growth.
- ⑧ The national debt is a bipartisan priority for Americans.
- ⑨ Many solutions exist! The sooner we act, the easier the path.

## Why does National Debt Matter? (w)

The COVID crisis has exposed critical vulnerabilities and inequities within our economy. Addressing fiscal challenges and putting national debt on a sustainable path would allow our government to better plan, prepare and create a more secure and inclusive economic future (Source: Peter G. Peterson Foundation).

- ① High and rising federal debt matters because it reduces our flexibility to plan for and respond to urgent crises.
- ② Growing interest costs make it harder for us to invest in our future—to build and sustain infrastructure, enhance education and support an economy that creates job growth and rising wages.
- ③ It threatens the safety net—critical programs like Social Security, Medicaid, Medicare, SNAP and Unemployment Compensation are essential lifelines for our most vulnerable populations.
- ④ America faces emerging and ongoing challenges that will require resources to keep our country safe and strong—challenges like climate change, affordable health care, international conflicts and an increasingly complex and competitive global economy.

## Fiscal Sustainability: Government Defaults

- When countries' governments go bankrupt, they stop paying what they owe. They may default explicitly by reneging on principal and interest payments on their debt. Or they may fail to pay promised benefits and meet other spending commitments; some people regard this as default.
- A popular way of implicitly defaulting on spending obligations and on debt is to use inflation to do the dirty work. The government simply prints the money it needs to "meet" its spending obligations. The increase in the money supply generates inflation, which waters down the real value of the government's spending and reduces the real value of its debt.
- Argentina's government defaulted in 2001, and Russia's government defaulted in 1998. Before Russia, Bulgaria and other countries in Eastern Europe did likewise. In the 1970s, Israel and Bolivia took their turn at printing money to pay their bills. Going back further in time, there were the notable hyperinflations of Germany, Austria, and Hungary. Indeed, governments have engaged in official and unofficial default since at least the time of Rome's Emperor Diocletian.

Source: Econlib (w)

## Fiscal Sustainability: Measures and Meanings

- One can assess whether fiscal policy is sustainable by examining the size of long-term fiscal imbalances. The main indicator is its annual official deficit—the difference between annual expenditures (government purchases and transfer payments) and tax and nontax receipts.
- But the deficit and its associated cumulate—the debt—are, economically speaking, meaningless because nothing in economic theory tells us whether any particular government receipt should be called (labeled) a "tax" or "borrowing." Nor is there anything in economic theory that can tell us whether a government payment to any entity should be labeled a "transfer payment" or "debt repayment."
- Fiscal relativity is the perception of a government's fiscal position depends on the beholder's reference point. The stock of government debt and its changes over time are not well-defined economic measures.
- Moreover, any allocation of official debts and assets to particular programs is entirely arbitrary.

<https://www.econlib.org/library/Enc/FiscalSustainability.html>

## Fiscal Sustainability: Generational Accounting

What is the net tax burden facing future generations assuming current generations pay no more in net taxes than current policy suggests?

"Net tax" refers to the actuarial present value of all future taxes minus all future transfer payments.  $A = C + D - B$

- A is the present value of net tax payments of future generations
- B is the present value of net tax payments of current generations
- C is the present value of government purchases
- D is official net liabilities

Given any labeling convention,  $C + D$  can be viewed as the government's bills and  $B$  can be viewed as the amount of those bills to be paid by current generations. The value of the difference  $D - B$  is invariant to labeling conventions, but the absolute sizes of  $D$  and  $B$  are not. Since  $C$  is a well-defined measure and  $D - B$ , which represents the sum of explicit plus implicit debt, is also well defined, their sum,  $A$ , is itself well defined.

<https://www.econlib.org/library/Enc/FiscalSustainability.html>

## Fiscal Sustainability: Generational Accounting $A=C+D-B$

- Generational accounting makes full use of "official" government statistics in determining the size of A. Once you calculate A, you can (1) determine the lifetime net tax burden facing individual future generations assuming each pays the same lifetime net taxes on a growth-adjusted basis, and (2) compare the growth-adjusted lifetime net tax burden of future generations with that of current newborns.
- This comparison is label free because the lifetime net tax burden of newborns is the same, regardless of the choice of labels. "Growth adjusted" refers to having net taxes rise for each successive future generation at the rate of labor productivity growth.
- If the growth-adjusted lifetime net tax burden facing future generations is larger than that facing newborns, generational policy is referred to as "imbalanced." If the burden facing future generations is larger than those generations are willing to put up with politically, fiscal policy is deemed to be both generationally imbalanced and economically unsustainable.

<https://www.econlib.org/library/Enc/FiscalSustainability.html>

## Fiscal Sustainability: Fiscal Gap

The "fiscal gap" is a closely related measure of long-term fiscal imbalances. The equation used to determine the fiscal gap is  $G = C + D - B - A^*$

- $A^*$  is the net tax burden that would face future generations if there were no generational imbalance, that is, if future generations were to face the same lifetime net tax bill as current newborns after adjusting for growth.
- Like the imbalance in generational policy, the fiscal gap is a label-free and well-defined measure of a nation's long-term fiscal problem.
- One way to put the U.S. fiscal gap in perspective is to ask how much of a tax hike would be required to make the present value of the new taxes equal the gap. The answer is that U.S. federal personal and corporate income taxes would have to be doubled, immediately and permanently.
- Alternatively, the gap could be closed by immediately and permanently cutting by two-thirds the elderly's Medicare health benefits as well as their Social Security pension benefits.

<https://www.econlib.org/library/Enc/FiscalSustainability.html>

## Federal Budget Deficit: Historical Inquiry <sup>(w)</sup>

- The existence of chronic budget deficits during the postwar years stands in stark contrast to the pattern of federal finances during previous periods in America's history. For most of our history prior to 1940, the federal budget was balanced, except in years of war or economic recession.
- Many observers believe that the cause of the deficit lies in unique policy mistakes during the eighties, such as the simultaneous reduction in taxes and increase in defense spending. But this explanation ignores the persistence of budget deficits for the three decades prior to eighties.
- It also ignores the fact that since 1981, expenditures on nondefense programs grew almost as rapidly as those on defense, and that the federal tax claim on the country's GNP is currently higher than it has averaged during any preceding decade.
- Other observers claim that deficits persist because the American public demands more in government benefits than it is willing to pay for in taxes. Although this explanation has intuitive appeal, it fails to explain why the American public's preferences have changed.

<https://www.econlib.org/library/enc/federalbudget.html>

# Federal Budget Deficit: A Historical Sketch (w)

- An historical look at government spending and the budget process reveals the powerful role the institution has played in producing budget deficits.
- When the budget process has been highly centralized, spending has been held in check and the budget has been balanced. When the process has been decentralized, the growth in spending has outpaced the growth in revenues, and chronic budget deficits have resulted.
- During the first ninety years of U.S. history, spending authority was concentrated in a single committee in each house of Congress, and budgets were balanced except during recessions and wars. But in 1885 the House stripped the Appropriations Committee of much of its spending authority and gave it to numerous authorizing committees. This period of decentralized budgeting lasted until just after World War I.
- Immediately after Congress splintered the budget process, federal spending grew at an unprecedented rate. By the mid-1890s federal spending (excluding interest payments) was 50 percent larger than it had been in 1886, and by 1916 it had risen an additional 45 percent.

<https://www.econlib.org/library/enc/federalbudget.html>

# Federal Budget Deficit: A Historical Sketch (w)

- From 1921 until the onset of the Great Depression (1930), expenditures relative to GNP were held constant and the budget was balanced. Unfortunately, decentralization returned during the depression.
- The process moved slowly at first, but accelerated significantly in the sixties and seventies as Congress placed spending jurisdiction for new programs in an ever increasing number of committees.
- Deposit insurance legislation, enacted in 1934, provided a federal government guarantee for certain deposits in banks and savings and loan institutions. Social Security legislation, enacted a year later, provided pensions to persons age sixty-five and older and guaranteed matching payments to state governments for the cost of welfare programs.
- In 1956 the Social Security disability program was created to provide federal cash assistance to disabled persons. In the sixties the food stamp program (1964), Medicare (1965), Medicaid (1965), and the Guaranteed Student Loan program (1965) were created. In 1974 the General Revenue Sharing and the Child Support Enforcement programs began.

<https://www.econlib.org/library/enc/federalbudget.html>

# OUTLINE

- ① Federal Budget Basics
- ② Fiscal Policy & Multipliers
- ③ Government Deficit & Debt

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