Fiscal Deficits

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Econ520

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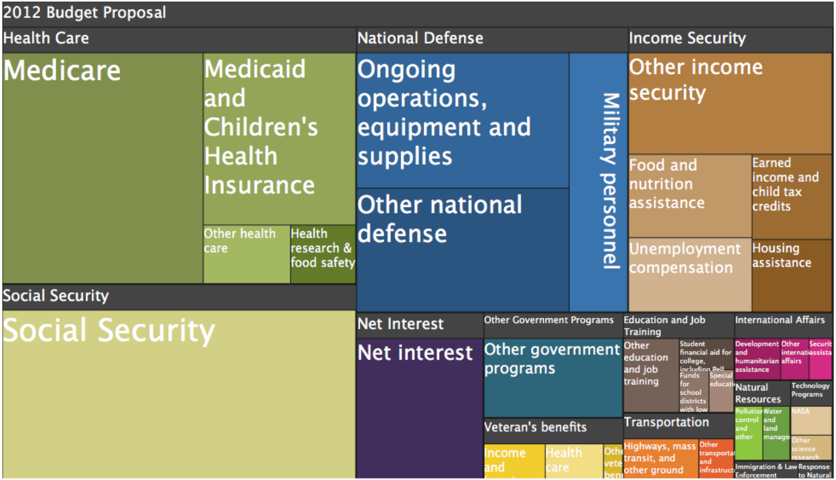
Topics

In this section you will learn:

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

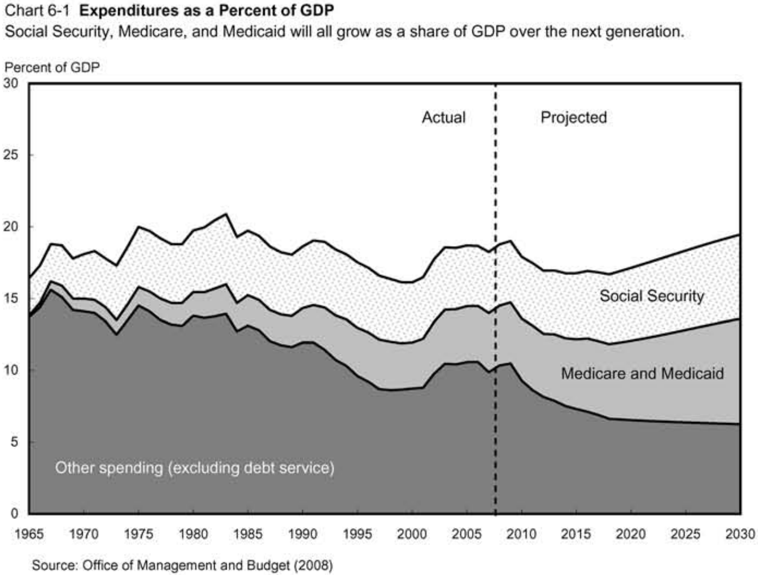
Facts: The Federal Budget



Source: Whitehouse.gov

Discretionary spending is a small part of the budget

Rising Entitlement Spending

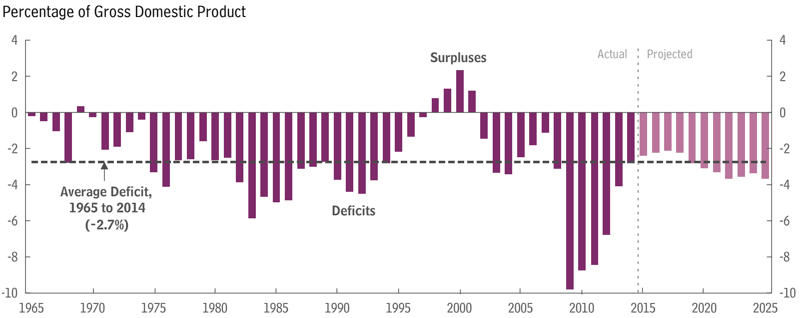


Source: Economic Report of the President

Federal Deficits

Total Deficits or Surpluses

Because outlays are projected to grow faster than revenues after 2018, projected deficits increase to almost 4 percent of gross domestic product from 2022 through 2025.

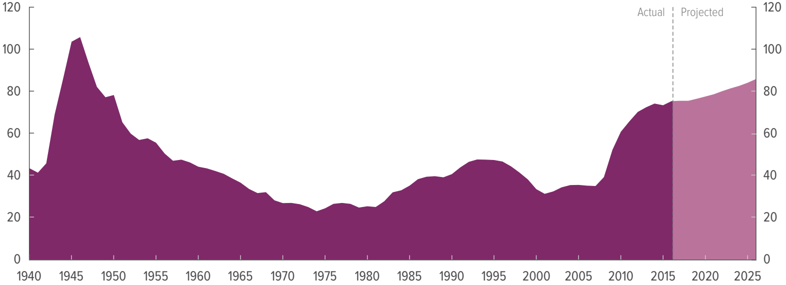


Source: Congressional Budget Office.

Public Debt

Federal Debt Held by the Public

Percentage of Gross Domestic Product



Source: Congressional Budget Office.

Long-term projections

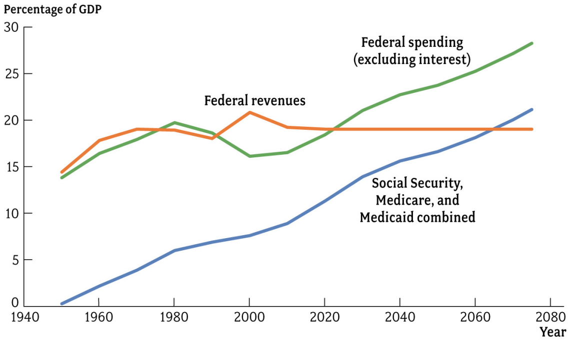


FIGURE 13.6 **U.S. Federal Spending and Revenues, 1950–2075**

Virtually the entire problem is rising entitlement spending

Long-term projections

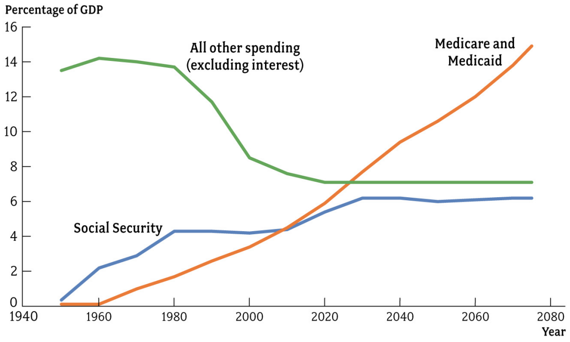
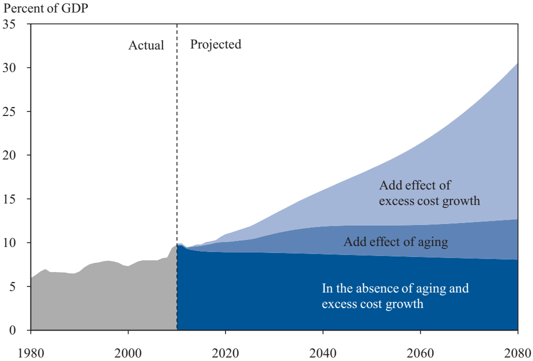


FIGURE 13.7 **Components of Federal Spending, 1950–2075**

The main problem: rising medical spending

Why does health care spending rise?

Figure 5-4
Causes of Rising Spending on Medicare, Medicaid, and Social Security



Source: ERP 2010

- The fraction of elderly people rises.
- The price of health services rises.

Summary: Facts

1. There are manageable short-term problems.
   1.1 largely a consequence of crisis spending
2. There are hard to solve long-term problems
   2.1 mainly the rising cost of health care
3. Your taxes will rise and your entitlements will be cut
   3.1 the only question is how soon

The government budget constraint

The government budget constraint

$$G_t + Tr_t + iB_t = T_t + \Delta B_t + \Delta M_t \tag{1}$$

Sources of funds:

- Tax revenues: T
- New bond issues: $\Delta B_t = B_{t+1} - B_t$
- Seignorage: $\Delta M = M_{t+1} - M_t$

Uses of funds:

- Government spending on goods and services: G
- Transfer payments: Tr
- Interest payments on bonds: iB_t

Intertemporal budget constraint

- The budget constraint is accounting.
- It says nothing about how much spending / debt is sustainable.
- To see how much debt is sustainable, we need to look at the **intertemporal** budget constraint.

Two period example

- The world lasts for $t = 1, 2$.
- The economy starts with debt B_1.
- There is no money (or M is constant)
- In the last period, the government has to repay all its debt: $B_3 = 0$.
- Budget constraint for $t = 1$:

$$G_1 + Tr_1 + iB_1 = T_1 + B_2 - B_1 \tag{2}$$

- Budget constraint for $t = 2$:

$$G_2 + Tr_2 + iB_2 = T_2 + 0 - B_2 \tag{3}$$

Two period example

- Combine the 2 budget constraints (substitute out B_2):

$$G_1 + Tr_1 + \frac{G_2 + Tr_2}{1+i} + (1+i)B_1 = T_1 + \frac{T_2}{1+i} \qquad (4)$$

- The present value of tax revenues equals the present value of all outlays on
  - goods, services, transfers
  - repayment of the initial debt, including interest
- This is very general (not limited to examples with a few periods)

[Present value of tax revenues] = [present value of spending] + [initial debt]

Two period example

- An alternative way of writing this

$$(T_1 - G_1 - Tr_1) - (1+i)B_1 + \frac{T_2 - G_2 - Tr_2}{1+i} = 0 \qquad (5)$$

- Consider the case of $B_1 = 0$.
  - The government must save either in period 1 or in period 2.
  - Any deficit must be offset by savings of equal present value.
- With initial debt, just add repayment of the debt to $t = 1$ spending.

Popular, but wrong conclusions from the example

1. The government cannot run deficits forever.
2. The government must eventually repay its debt.
3. Debt cannot grow forever.

All of these are **wrong**.

Why?

A Company Analogy

- Clearly, nobody expects IBM to ever repay all of its debt.
- Quite likely, IBM will continue to issue more and more debt ... until the company is acquired or goes under.
- Individuals cannot do that.
- What is the difference?

Correct Implications

1. If the government borrows today, taxes will be higher in the future (or spending must be cut)
2. The longer the government waits before stabilizing the debt, the higher taxes must rise
   2.1 because the debt grows due to accumulated interest
   2.2 but the present value of the tax collection does not depend on when the debt gets repaid

The Effects of Deficits

What Do Deficits Do?

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

Crowding out

- Start from the NIPA identity

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

- Rewrite as

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

- Everything else equal, higher government deficits reduce investment.
- But everything else is not equal...

Crowding out

- There are reasons to believe that private saving rises when government deficits rise.
- Which ones?

Ricardian Equivalence

- The government budget constraint implies
  - a current tax cut + borrowing does not change the present value of taxes collected
- The household budget constraint implies
  - present value of consumption = [present value of income] - [present value of taxes]
- Households "should" not change consumption in response to deficits + tax cuts
  - what should they do?
  - what is then the effect of a deficit?

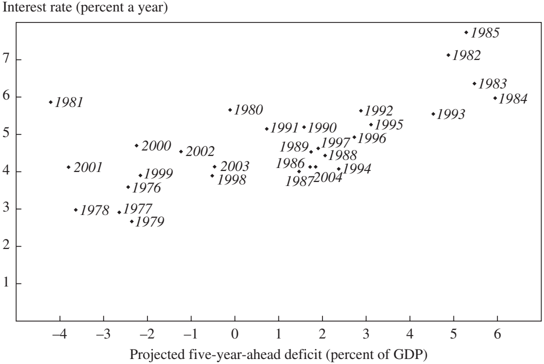
Deficits and Private Saving

- The evidence suggests: a \$100 increase in the deficit leads to
- a \$25 increase in private saving
- a \$25 capital inflow from abroad
- a \$50 reducting in U.S. investment (Sinai et al. 2004).

$$\underbrace{Y - T - C}_{+\$25} + \underbrace{T - G}_{-\$100} + \underbrace{IM - EX}_{+\$25} = \underbrace{I}_{-\$50}$$

Deficits and Interest Rates

Figure 8. Forward Ten-Year Real Treasury Rates and Projected Deficits, 1976–2004[a]



Source: Gale and Orszag (2004)

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Best estimates suggest: increase in government deficit by 1% of GDP raises interest rates by 0.3 to 0.6%.

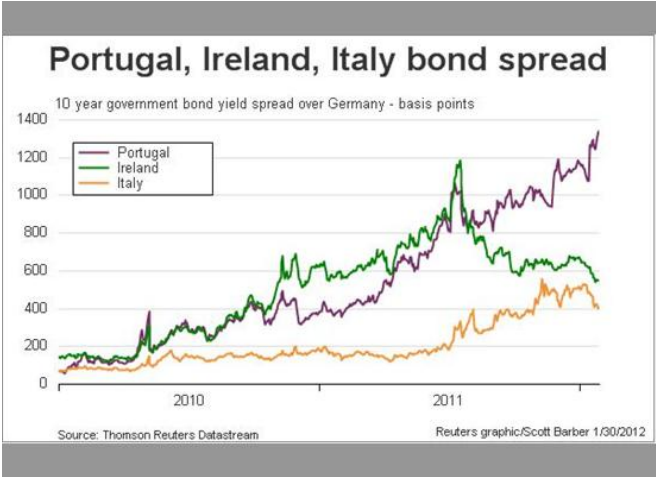
Debt Raises Borrowing Rates

- Investors worry about runaway dynamics (Greece and Italy)
- Holding debt stable requires a primary surplus that pays the interest on the debt:

$$B_{t+1} - B_t = rB_t - (\underbrace{T_t - G_t - Tr_t}_{\text{primary surplus}}) \tag{6}$$

- If investors start to doubt the government's ability to roll over the debt, r rises (risk premium)
- That makes it harder to stabilize debt
- A possible self-fulfilling prophecy

Debt Raises Borrowing Rates



Other Effects of Deficits

1. Higher inflation - why?
2. Currency depreciation - why?

Sudden Stops

- Low income countries often experience sudden stops in foreign lending.
  - The Asian crisis of 1987.
- Serious disruption of credit markets and investment.
- Currency depreciation.
- Resulting from loss of investor confidence.
- This may be the most serious drawback of running large deficits.

Reducing Debt

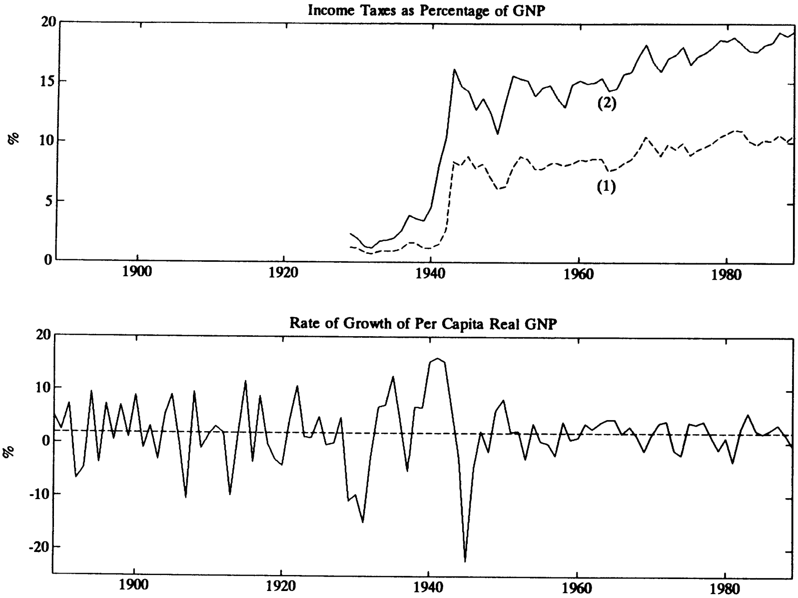
Options For Reducing Debt

1. Raise taxes
    1.1 does it cost jobs?
2. Cut spending
3. Print money

Taxing the Rich

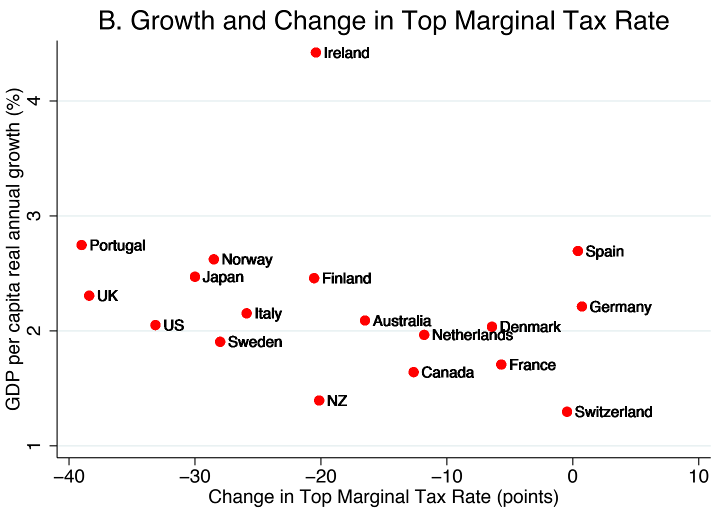
- Does taxing the rich cost jobs?
- Channels:
  -
  -

Evidence: Taxes and growth



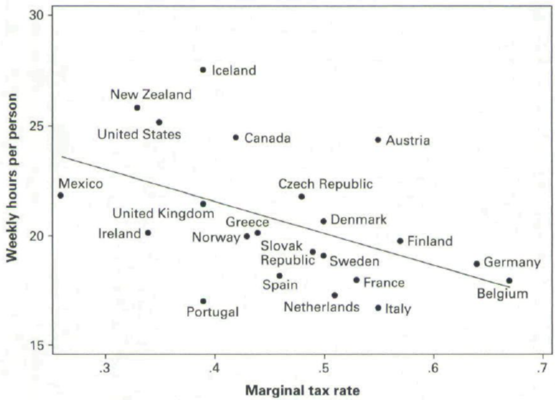
Source: Stokey and Rebelo (1995)

How Costly is Redistribution?



Source: ?

Hours Worked



Source: Alesina et al.

Lower hours worked is perhaps the main cost of higher taxes.

What is the mechanism?

Summary

- High marginal tax rates distort choices: work effort, entrepreneurship, saving, ...
- Little evidence that high taxes reduce economic growth
- Good evidence that high taxes reduce hours worked
- What is the optimal top marginal tax rate?

Printing Money

- Printing money generates revenue (seignorage)
- It also raises P and reduces the real value of debt
- This looks "costless" but isn't
  - it "taxes" the holders of nominal assets (including government debt)
  - variable inflation adds noise to price signals
  - high inflation increases transaction costs

Reading

Blanchard and Johnson (2013), ch. 23

Also useful:

- Jones (2013), ch 13.

Advanced Reading

- Ball and Mankiw (1995): informal. Ideas
- Gale and Orszag (2004): summarizes the evidence of the effects of deficits on interest rates
- Rubin et al. (2004) http://www.brookings.edu/papers/2004/0105budgetdeficit_orszag.as
  - nice summary of possible consequences of budget deficits.

References I

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