

macro

Topic 14:
Government Debt
 (chapter 15)

macroeconomics
 fifth edition

N. Gregory Mankiw

PowerPoint® Slides
 by Ron Cronovich

© 2002 Worth Publishers, all rights reserved

In this chapter you will learn about

- the size of the U.S. government's debt, and how it compares to that of other countries
- problems measuring the budget deficit
- the traditional and Ricardian views of the government debt
- other perspectives on the debt

CHAPTER 15 Government Debt slide 1

The U.S. experience in recent decades

Early 1980s through early 1990s

- Debt-GDP ratio: 25.5% in 1980, 48.9% in 1993
- Due to Reagan tax cuts, increases in defense spending & entitlements

Early 1990s through 2000

- \$290b deficit in 1992, \$236b surplus in 2000
- debt-GDP ratio fell to 32.5% in 2000
- Due to rapid growth, stock market boom, tax hikes

Since 2001

- The return of deficits, due to Bush tax cut and economic slowdown

CHAPTER 15 Government Debt slide 2

The Fiscal Future

- The number of people receiving Social Security, Medicare is growing faster than the number working, paying taxes
- Congressional Budget Office projections:

year	debt-GDP ratio
2030	40%
2040	93%
2050	206%



Measurement problem 1:

- To see why inflation is a problem, suppose the real debt is constant, which implies a zero real deficit.
- In this case, the nominal debt D grows at the rate of inflation:
$$\frac{D \Delta D}{D} = p \quad \text{or} \quad \Delta D = p D$$
- The reported deficit (nominal) is ____.
- Hence, _____.

Measurement problem 1: Inflation

- Correcting the deficit for inflation can make a huge difference, especially when inflation is high.
- Example: In 1979,
nominal deficit = \$28 billion
inflation = 8.6%
debt = \$495 billion
 $p D = 0.086 \times \$495b = \$43b$
real deficit = \$28b - \$43b = \$15b surplus

Measurement problem 2:

- Currently:
deficit = _____
- Better: **Capital budgeting**
deficit = _____
- EX: Suppose govt sells an office building and uses the proceeds to pay down the debt.
 - Under current system, deficit would fall
 - Under capital budgeting, deficit unchanged, because fall in debt is offset by a fall in assets
- Problem w/ cap budgeting: determining which govt expenditures count as capital expenditures.

Measurement problem 3:

Current measure of deficit omits important liabilities of the government:

- future pension payments owed to current govt workers
- future Social Security payments
- contingent liabilities (though hard to attach a dollar value when the outcome is uncertain)

Measurement problem 4:

- The deficit varies over the business cycle due to automatic stabilizers (unemployment insurance, the income tax system).
- These are not measurement errors, but do make it harder to judge fiscal policy stance.
EX: Is an observed increase in deficit due to a downturn or expansionary shift in fiscal policy?
- Solution: _____
(aka "full-employment deficit") - based on estimates of what govt spending & revenues would be if economy were at the natural rates of output & unemployment.

The bottom line

We must exercise care when interpreting the reported deficit figures.

Is the govt debt really a problem?

- Two viewpoints:
1. Traditional view
 2. Ricardian view

The traditional view of a tax cut & corresponding increase in govt debt

- Short run: _____
- Long run:
 - Y and u back at their natural rates
 - _____
- Very long run:
 - _____ until economy reaches new steady state with lower income per capita

The Ricardian View

- Due to David Ricardo (1820), more recently advanced by Robert Barro
- According to _____, a debt-financed tax cut _____ on consumption, national saving, the real interest rate, investment, net exports, or real GDP, even in the short run.

CHAPTER 15 Government Debt

slide 12

Analyze debt using Fisher model

Two period world again, periods 1 and 2

Recall notation from Fisher model:

Y_1 is income in period 1

Y_2 is income in period 2

C_1 is consumption in period 1

C_2 is consumption in period 2

CHAPTER 15 Government Debt

slide 13

New notation for the government

T_1 is tax in period 1 (a lump sum amount)

T_2 is tax in period 2

G_1 is government spending in period 1

G_2 is government spending in period 2

$D = G_1 - T_1$ is government deficit in period 1

$D > 0$ means running a deficit,

$D < 0$ means running a surplus

CHAPTER 15 Government Debt

slide 14

Government budget constraints

- Period 2 budget constraint (repay debt with interest and finance current expenditure):

$$T_2 = (1+r)D + G_2$$

=

- Rearrange to put **T** terms on one side and **G** terms on the other:

$$(1+r)T_1 + T_2 = G_2 + (1+r)G_1$$

- Finally, divide through by $(1+r)$:

Government budget constraint

present value of total tax revenue

present value of total government expenditure

So if cut T_1 by amount ΔT , then must raise T_2 by amount _____.

Household budget constraint

- Period 1 saving, accounting for taxes:

$$S = (Y_1 - T_1) - C_1$$

- Period 2 household budget constraint:

$$C_2 = (Y_2 - T_2) + (1+r)S$$

$$= (Y_2 - T_2) + (1+r)(Y_1 - T_1 - C_1)$$

- Rearrange:

$$(1+r)C_1 + C_2 = (1+r)(Y_1 - T_1) + (Y_2 - T_2)$$

$$C_1 + \frac{C_2}{1+r} = \text{_____}$$

Effect of a change in taxes

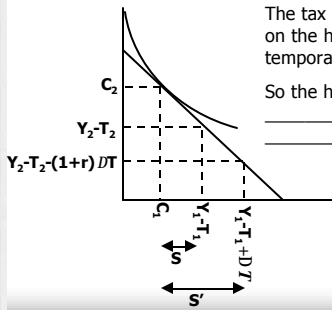
Recall, if the government cuts T_1 by amount ΔT , then it must raise T_2 by amount $(1+r)\Delta T$.

$$C_1 + \frac{C_2}{1+r} = (Y_1 - T_1 + \Delta T) + \frac{Y_2 - T_2 - (1+r)\Delta T}{1+r}$$

$$= (Y_1 - T_1) + \Delta T + \frac{Y_2 - T_2}{1+r} - \Delta T$$

The change in taxes cancels out, and the consumer's intertemporal budget constraint is _____.

Household Intertemporal Budget Constraint



The tax cut has no effect on the household intertemporal budget constraint.

So the household _____.

Effect on saving

Old private saving =

New private saving =

Change in private saving =

Change in government saving =

Change in national saving

= change in private saving

+ change in government saving

= _____

The logic of Ricardian Equivalence

- Consumers are forward-looking, know that a debt-financed tax cut today implies an increase in future taxes that is equal---in present value---to the tax cut.
- Thus, the tax cut does not make consumers better off, so they do not raise consumption.
- They save the full tax cut _____.
- Result: Private saving rises by the amount public saving falls, leaving national saving unchanged.

CHAPTER 15 Government Debt

slide 21

Limitations on Ricardian Equivalence

- _____:
Not all consumers think that far ahead, so they see the tax cut as a windfall.
- _____:
Some consumers are not able to borrow enough to achieve their optimal consumption, and would therefore spend a tax cut.
- _____:
If consumers expect that the burden of repaying a tax cut will fall on future generations, then a tax cut now makes them feel better off, so they increase spending.

CHAPTER 15 Government Debt

slide 22

Evidence against Ricardian Equivalence?

- Early 1980s:
Huge Reagan tax cuts caused deficit to rise. National saving fell, the real interest rate rose, the exchange rate appreciated, and **NX** fell.
- 1992:
President George H.W. Bush reduced income tax withholding to stimulate economy. This merely delayed taxes but didn't make consumers better off.
Yet, almost half of consumers used part of this extra take-home pay for consumption.

CHAPTER 15 Government Debt

slide 23

Evidence against Ricardian Equivalence?

- Proponents of R.E. argue that the Reagan tax cuts did not provide a fair test of R.E.
 - Consumers may have expected the debt to be repaid with future spending cuts instead of future tax hikes.
 - Private saving may have fallen for reasons other than the tax cut, such as optimism about the economy.
- Because the data is subject to different interpretations, both views of govt debt survive.

Other perspectives on govt debt

1. _____

Some politicians have proposed amending the U.S. Constitution to require balanced federal govt budget every year.

Many economists reject this proposal, arguing that deficit should be used to

- stabilize output & employment
- smooth taxes in the face of fluctuating income
- redistribute income across generations when appropriate

Other perspectives on govt debt

2. _____

- govt deficits may be financed by printing money
- a high govt debt may be an incentive for policymakers to create inflation (to reduce real value of debt at expense of bond holders)

Fortunately:

- little evidence that the link between fiscal and monetary policy is important
- most governments know the folly of creating inflation
- most central banks have (at least some) political independence from fiscal policymakers

Other perspectives on govt debt

3.

"Fiscal policy is not made by angels..."
- Greg Mankiw, p.424

Some do not trust policymakers with deficit spending. They argue that

- policymakers do not worry about the true costs of their spending, since the burden falls on future taxpayers
- future taxpayers cannot participate in the decision process, and their interests may not be taken into account

This is another reason for the proposals for a balanced budget amendment, discussed above.

CHAPTER 15 Government Debt

slide 27

Chapter summary

1. Standard figures on the deficit are imperfect measures of fiscal policy because they do not account for inflation, business cycles, changes in government assets or liabilities
2. In the traditional view, a debt-financed tax cut reduces national saving and raises national interest rates, which lowers investment.
3. The Ricardian view holds that debt-financed tax cuts do not affect national saving, and therefore do not affect interest rates, investment.

CHAPTER 15 Government Debt

slide 28

Chapter summary

3. Most economists oppose a strict balanced budget rule, as it would hinder the use of fiscal policy to stabilize output, smooth taxes, or redistribute the tax burden across generations.

CHAPTER 15 Government Debt

slide 29
