The Power of Macroeconomics

Lecture Eight:

Budget Deficits and the Public Debt

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The Purpose Of This Lesson

- Examine the economic consequences of chronic budget deficits.
- Analyze the potential dangers of an upward spiraling government debt.

The Budget Deficit Debate

- Classical economists argue budget deficits are bad and should be avoided except in wartime.
- Keynesians believe budget deficits are a necessary byproduct of an expansionary fiscal policy during recessions.

Areas of Agreement

- Classical and Keynesian economists agree chronic budget deficits are undesirable.

Key Question
How big a danger are these chronic deficits and a collateral soaring national debt?

In This Lesson

- Look at the dark side of using discretionary fiscal policy.
- This dark side is the budget deficits and public debt that can occur when the government uses Keynesian fiscal policy to boost aggregate demand.

A Fiscal Policy Refresher

- Keynesian Economics: Favors discretionary fiscal policy to fight recessions and inflation.
- Fiscal stimulus: Increased government spending or tax cuts to fight recession and unemployment.
- Fiscal restraint: Reduced spending or increased taxes to fight inflation.

The Deficit Financing Problem

- Fiscal stimulus typically involves deficit spending and can therefore lead to budget imbalances.
- Why? Because the government must borrow funds to pay for spending that exceeds tax revenues.

The Budget Deficit Defined

Budget Deficit = Government Spending − Tax Revenues

- Budget surplus: Occurs when all taxes and other revenues exceed government expenditures for the year.
- Balanced budget: Revenues and expenditures are equal.

The National or Public Debt Defined

- **Bonds:** The government sells them to finance a budget deficit.
- **National Debt:** The total dollar value of the bonds owned by the public.
- **Debt Calculated:** The accumulated budget deficits <u>minus</u> the accumulated surpluses.
- **Who holds It?** Banks, households, and businesses AND foreigners.

The Punchline

Key Point

Whatever the merits of Keynesian economics, it has produced few budget surpluses since the 1930s; and this has been especially true since the 1970s.

LECTURE EIGHT - PART TWO

#1: The Debt-to-GDP Ratio

- The Debt-to-GDP Ratio: A very good yardstick of comparison.
- Why?: A $5 trillion national debt is a very large number in the abstract.
- $5 trillion is relatively small for the U.S. versus a small country like Thailand.

A Very Key Point!

Using the Debt-to-GDP Ratio gives us a good measure of a nation's ability to produce and therefore its ability to pay off its debt.

#2: The Real Versus Nominal Deficit

- Distinguish clearly between the real and nominal budget deficits!
- This distinction allows us to measure how inflation reduces the effective burden of the debt.

The Terms Defined

- The real deficit is the actual or "nominal" deficit adjusted for inflation's effect on the debt.

Key Formula

Real Deficit = Nominal Deficit – (Inflation * Total Debt)

Pop Quiz

ASSUME

- Nominal deficit = $100 billion
- Inflation rate = 10%.
- Total debt = $5 trillion.

QUESTION

What's the <u>real</u> deficit?

Inflation Erodes the Real Value of the Debt!

Answer

Real Deficit = Nominal Deficit – (Inflation * Total Debt)

Real Deficit = $100 billion – (10%*$5 Trillion) = minus $400 billion

$500 billion

"Inflating The Debt"

- Key Point: Inflation can erode the total debt burden even if the nominal deficit increases in a given year!!
- Key Implication: The government can lower the debt burden by increasing inflation!!

An Important Caveat

If bond holders anticipate inflation, they will demand a higher interest rate and thereby drive up the nominal deficit through higher interest payments.

#3: Structural Versus Cyclical Deficits

- Structural Deficit: The part of the budget deficit that would exist even if the economy were at full employment.
- It is due to the existing structure of tax and spending programs.
- The structural part of the budget is active and determined by discretionary policies.

The Cyclical or Passive Deficit

- That part of the deficit attributable to recession.
- Partly due to “automatic stabilizers.”
- Definition: Increased income transfers in a recession for unemployment compensation, food stamps, & other welfare benefits.

Key Point
The cyclical deficit results primarily from the shortfall of tax revenues that arises when the economy’s resources are underutilized such as in the downward portions of the business cycle.

Automatic Stabilizers & Income Transfers

- Income Transfers: Payments to individuals by the government for which no current goods or services are exchanged.
- Examples: Social Security, welfare, and unemployment benefits.

Some Income Transfers Are Automatic Stabilizers

- Some income transfers, particularly welfare and unemployment, are part of the government's automatic stabilizer system.

Key Definition

Automatic stabilizers are defined as Federal revenues or expenditures that automatically respond to changes in the GDP in a countercyclical way.

A. ***Changes in Unemployment***

When the unemployment rate increases by 1 percentage point:

1. Government spending (*G*) automatically increases for:
   - Unemployment insurance benefits
   - Food stamps
   - Welfare benefits
   - Social Security benefits
   - Medicaid

   Total increase in outlays: +$4 billion
2. Government tax revenues (*T*) automatically decline for:
   - Individual income taxes
   - Corporate income taxes
   - Social Security payroll taxes

   Total decline in revenues: −$35 billion
3. The deficit widens by $39 billion

B. ***Changes in Inflation***

When the inflation rate increases by 1 percentage point:

1. Government spending (*G*) automatically increases for:
   - Indexed retirement and Social Security benefits
   - Higher interest payments

   Total increase in outlays: +$8 billion
2. Government tax revenues (*T*) automatically increase for:
   - Corporate income taxes
   - Social Security payroll taxes

   Total increase in revenues: +$7 billion
3. The deficit widens by $1 billion

Source: Congressional Budget Office.

Government spending thereby acts "counter-cyclically" to offset the recession.

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Inflation can widen a budget deficit because of the inflation "indexing" of benefits like Social Security.

The Broader Points

- Neither the President nor the Congress has complete control over the Federal deficit.
- That's why the distinction between the structural and cyclical deficits is so important.

LECTURE EIGHT - PART THREE

Calculating the Structural and Cyclical Parts of the Budget Deficit

Assumptions

- GDP = \$10 trillion
- Budget deficit = \$100 billion
- Unemployment rate = 7% (1% above full employment rate)
- Marginal tax rate = 30%

Question

How can we calculate which portion of the \$100 billion deficit is structural and which portion is cyclical?

We Can Use Okun's Law!

- Okun's Law: A 1% fall in the unemployment rate will lead to a 2% increase in GDP.

Exercise
Try first using Okun's law to calculate the increase in GDP that would result if the unemployment rate were to fall from 7% to the full employment rate of 6%.

Step One: Calculate The Change In The GDP

- If the unemployment rate falls by 1%, by Okun's Law, real GDP must increase by 2%.
- If GDP = $10 trillion as we have assumed, GDP will increase by $200 billion.

Step Two: Calculate the Change in Tax Revenues

Question
If GDP increases by $200 billion from the drop in the unemployment rate, what is the increase in tax revenues at a 30% marginal tax rate?

The Calculation

- At a 30% marginal tax rate, $200 billion of new GDP income generates $60 billion in new tax revenues.
- Calculation: (0.3 * $200B) = $60B

Question
So what part of the total $100 billion deficit is structural and what part is cyclical?

Step Three: Calculate Components of the Deficit

Answer

- The structural deficit clearly is $40 billion because that's how much of the total deficit remains at full employment.
- Therefore, the cyclical portion of the budget deficit was $60 billion.

Why The Structural Versus Cyclical Deficit Is So Important

- Identifies long term structural budget deficit increases from discretionary policies versus short run cyclical increases caused by recession.

Policy Guidelines

- Keynesian stimulus can be used to decrease a cyclical budget deficit by returning the economy to full employment.
- Keynesian stimulus in the presence of a structural budget deficit will only increase that deficit.

Historical Example: Use Keynesian Stimulus in 1958?

- Eisenhower Administration running a $10 billion cyclical deficit.
- V.P. Nixon wants an expansionary tax cut to stimulate the economy.
- Eisenhower rejects the tax cut for fear it will balloon the deficit.

Key Point
Pres. Eisenhower didn't understand the difference between a structural and cyclical deficit!

When Bad Economics is Bad Politics!

Key Point
If Eisenhower had simply listened to Nixon and cut taxes, the result would have been strong economic growth, a budget surplus of about $5 billion, and likely the election of Nixon and not JFK!!!


The Valley Independent

KENNEDY BEATS NIXON IN REAL PHOTO-FINISH

California Puts Senator Over Top; Popular Vote Is Closest Since 1888

Democrats Come Up With Another FDR

Who Gets The Credit? Clinton or Bush?

- Clinton Claim: His policies reduced the budget deficit by more than half!

FACT
or
FICTION?

The Clinton Deficit Reduction Plan

- Republican Claim #1: Economic recovery reduced what was a cyclical deficit!
- Republican Claim #2: George Bush deserved most of the credit since the economic recovery began well before Clinton ever took office!

Who's Right?

- Between 1992 and 1996, the federal deficit fell from $290 billion to $144 billion—a more than a 50% reduction.
- How much of this deficit reduction was really structural and brought about by Clinton's Deficit Reduction Act of 1993 and other policies?

Congressional Budget Office Estimates

Key Findings of CBO

- Structural deficit fell by $70 billion.
- So of the $146 billion in deficit reduction, about half of that was due to Clinton Administration policies.
- The other half was due to improved economic conditions!!!!!!

The Calculation of the Structural Deficit is Sensitive to the Natural Rate of Unemployment

Key Point

The structural deficit will be lower if we assume the economy can sustain a 4% rate of unemployment without increasing inflation as opposed to, say, a 6% rate!

Sensitivity of the Structural Deficit to the Natural Rate

- Using Okun's Law and assuming a $10 trillion GDP:
  - We can calculate the difference in the structural deficit under two different unemployment rate scenarios to be $120 billion.

The Fiscal Policy Problem

- The natural rate of unemployment is 4%, the real unemployment rate is 6%, and the budget deficit is $120 billion for a $10 trillion GDP.
- When GDP increases by 4%, this leads to a $400 billion GDP increase and $120 billion increase in tax revenues. Therefore, the entire deficit must have been cyclical!

Two Questions

- What change in fiscal policy would a Keynesian economist recommend facing such a large cyclical deficit?
- More importantly, what would happen if the natural rate of unemployment actually turned out to really be 6%?

The Keynesian Conundrum

- A Keynesian would use a stimulus package to close the recessionary gap AND eliminate the perceived purely cyclical deficit.
- However, if the natural rate of unemployment was actually 6%, the Keynesian stimulus would not eliminate the cyclical deficit – which was actually structural.
- The result would be an even bigger deficit AND a bad case of demand-pull inflation!!!!!!!!

LECTURE EIGHT - PART FOUR

How Budget Deficits Cause Problems

- The problems budget deficits and a growing public debt cause depend on how the budget deficit is actually financed.

Key Concept
Three major ways to finance a budget deficit:

1. Raise taxes
2. Borrow money
3. Print money

Financing the Deficit Through Taxes

GDP=C + I + G

$25 Billion

Assume

- Budget initially in balance
- Government undertakes expansionary fiscal policy to close a recessionary gap.

#1: The Raise Taxes Option

- How can the economy expand if taxes & expenditures go up by the same amount?
- The answer lies in the dynamics of the marginal propensity to consume (MPC).

An Example of a Tax-financed Stimulus

IF:
A $25 billion tax hike to finance the $25 billion stimulus AND the MPC = .8

THEN:
Consumption only falls by $20 billion.

MATH: (0.8 * 25 billion)

We Discover the Balanced Budget Multiplier!!

- The "net" stimulus is therefore $5 billion after the tax hike!!!!!!!
- From a previous lesson, we know if MPC = .8, then the Keynesian multiplier is 5.
- If you multiply the net $5 billion increase in aggregate expenditures by this multiplier, total economic expansion will be $25 billion.
- This is exactly equal to the original outlay of government expenditures!!!!!!!

A Really Cool Phenomenon!

- Macroeconomists refer to this phenomenon as the "balanced budget multiplier."

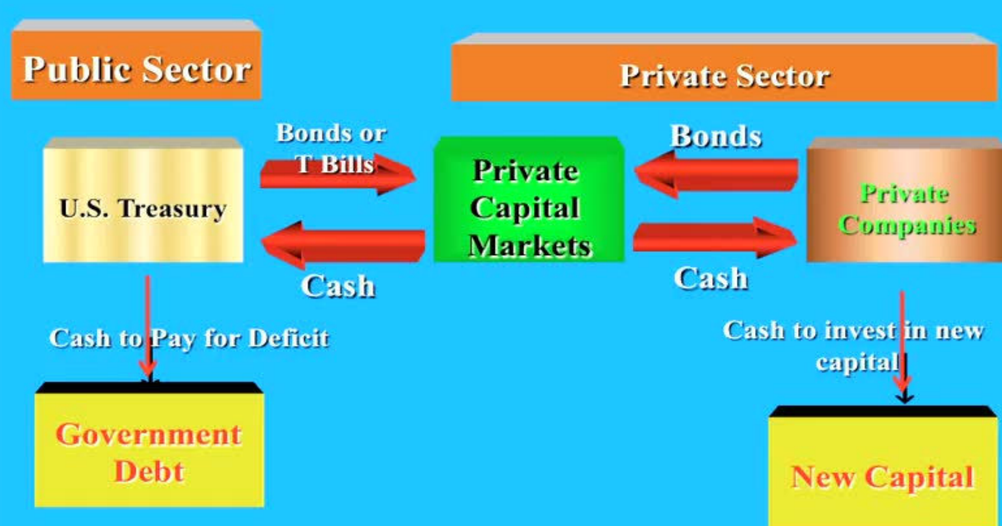
The Balanced Budget Multiplier

When you simultaneously increase government expenditures and increase taxes by the same amount, you get an economic expansion exactly equal to the increase in government expenditures.

The Political Problem With The Raising Taxes Option

- Raising taxes is rarely used to finance a Keynesian stimulus.
- Why? Because tax hikes are politically unpopular.
- The remaining options: Borrow money or print money.

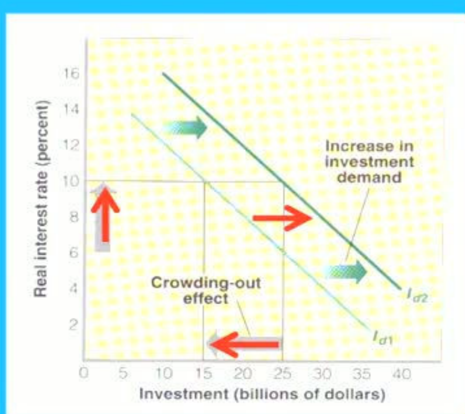
#2: The Borrow Money Option

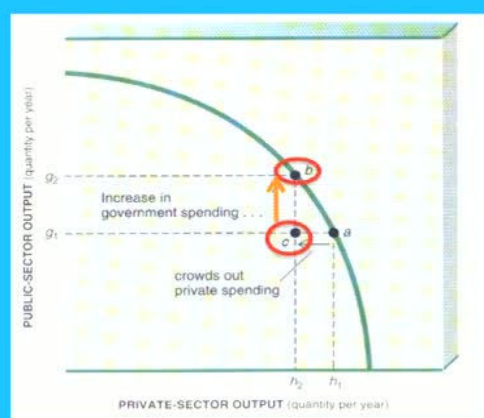


Key Concept: Crowding Out

- To compete for scarce investment dollars, the Treasury raises its interest rate.
- Zero Sum Game: Funds to finance the deficit would otherwise be spent on private sector investment!
- In this case, deficit spending is said to "crowd out" private investment.

Crowding Out Revisited





The Broader Point

- Crowding out applies only to structural deficits.
- If the cyclical deficit rises because of a recession, the logic of crowding out simply does not apply!

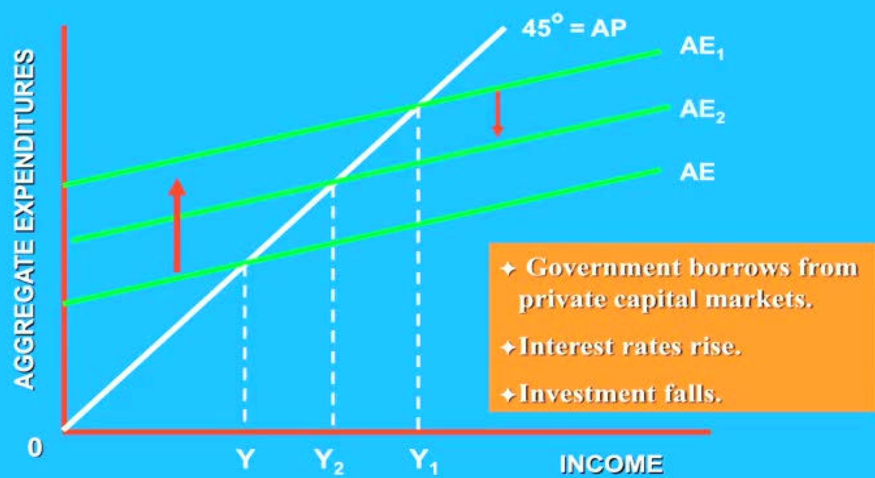
The Link Between Deficits & Investment

- Recession causes a decline in money demand and leads to lower interest rates.
- The Fed also tends to loosen monetary policy.
- Implication: There is no automatic link between deficits and investment.

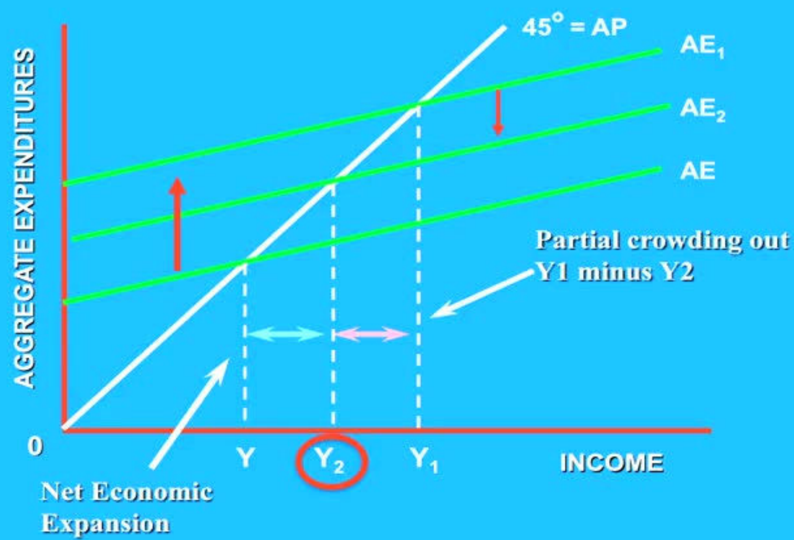
EXERCISE

Can you use the Keynesian model to more fully illustrate how the "crowding out" effect might reduce the actual effectiveness of fiscal policy?

The Crowding Out Effect



The Crowding Out Effect



How Complete Is Crowding Out?

- Critics of discretionary Keynesian fiscal policy argue crowding out makes it a weak policy tool.
- Monetarists: Crowding out is almost complete so that fiscal policy is totally ineffective.
- Keynesians: Crowding out is minimal so stimulus is warranted.

#3: The Print Money Option

- To avoid crowding out, the Fed "accommodates" the Treasury's expansionary fiscal policy.
- The Fed buys the Treasury securities by printing new money.
- This increase in M can cause inflation!

Key Point
If inflation drives interest rates up and private investment down, crowding out can happen indirectly!!!!!!

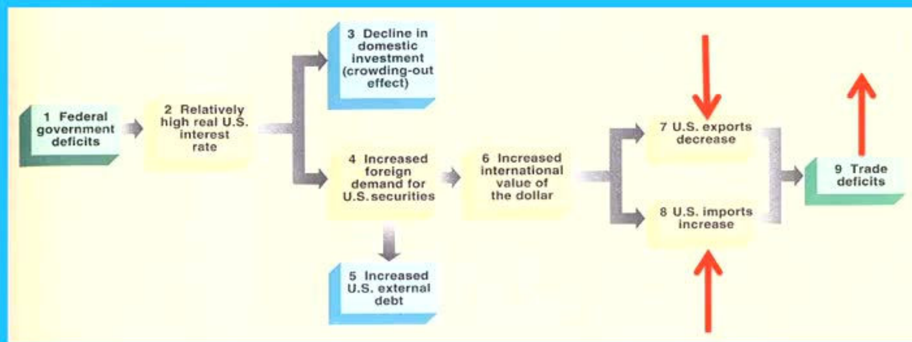
LECTURE EIGHT - PART FIVE

Budget Deficit Pros and Cons

- Deficit Hawks: Budget deficits and a rising national debt are a serious threat.
- Deficit Doves: Budget deficits and public debt are relatively harmless.

The Trade Deficit Argument: Hawks

1. Chronic budget deficits have been responsible for crowding out private investment AND
2. Chronic budget deficits have also led to America's huge trade deficits over the last several decades.



Hence the term: "The Twin Deficits"

Other Policy Implications

- A trade deficit means a nation is not exporting enough to pay for its imports.
- The difference can be paid for either by borrowing from abroad or by selling U.S. assets.

Mortgaging America

- To finance its trade deficit, America sells off factories, shopping centers, hotels, golf courses, and farms to foreign investors.
- Over time, this "mortgaging" of America will reduce both economic growth and real income.

Government Debt, Economic Growth & Living Standards

1. Distinguish between external and internal debt.
2. Discuss the inefficiencies of levying taxes to pay interest on the debt.
3. Examine the impact of the debt on productivity & capital accumulation.

Deficit Doves Say "Don't Worry!"

- Internal Debt: Owed by a nation to its citizens.
- External Debt: Owed to foreigners!

The Dove's Main Point
Since we owe most of the debt to ourselves, we shouldn't worry!

Deficit Hawks Warn of Great Danger

- As far back as the 1960s, the percentage of U.S. debt held by foreigners has steadily risen.

The Hawk's Main Point
The more U.S. debt foreigners hold, the more foreign nations can use that debt for political and economic leverage!

A Tax On U.S. Citizens

- Paying interest on the external debt acts like a tax on U.S. citizens by foreigners.
- This "debtor's tax" reduces the economy's short and long term growth rates.
- Foreign debt exposes American public policy to undue political pressures.

Other Arguments of Deficit Hawks

Key Deficit Hawk Point
A large internal debt is unacceptable for four reasons.

#1: Internal Debt Leads to Higher Taxes

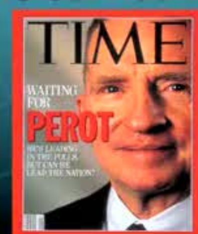
- Internal debt requires payments of interest to bondholders and that means higher taxes.
- Higher taxes distort the allocation of national resources and lead to an efficiency loss.

#2: Internal Debt Redistributes Income From Poor To Rich

- This happens because government bondholders tend to be wealthier than taxpayers.

#3: Servicing The Debt Cuts Government Services

- Interest payments could otherwise be spent on more education, health care, & other services.
- The ratio of interest payments to total tax revenues is steadily rising.
- We may eventually wind up using all available tax revenues just to service the debt.



#4: A Burden on Future Generations

- A large debt places an unreasonable burden on future generations which must pay this debt off.

The Dove's Benefits Of Debt

- Any debt incurred now as a result of public investment will provide benefits--not just a burden--to future generations.
- This leads us to our next area of debate:

What are the impacts of budget deficits and debt on investment and productivity?

LECTURE EIGHT - PART SIX

The Doves: Productivity Rises

- Private sector productivity benefits from public investment in roads, bridges, education, etc.
- Such investment increases the productivity of the private sector and thereby boosts both economic growth and real national income.

The Hawks: Productivity Falls

- Far too many government expenditures are made on “wasting assets” rather than productive capital.
- Roads, bridges, and education may boost productivity.
- However, wasting assets such as fighter planes and welfare programs don’t boost productivity.

The Hawks: Long Term Growth Falls

- Studies show public sector investment is <u>less productive</u>.
- When deficits crowd out private sector investment, long term growth falls.
- Why? Deficit spending substitutes less productive government expenditures for more productive private investment!!!

The Hawks: Deficits Constrain Fiscal Policy When It Is Most Needed

- Historical Example: The Fed cut interest rates to stimulate the sluggish economy but fiscal policy wasn't used because of the big budget deficit.
- Expansionary monetary policy alone was slow to expand output and reduce unemployment.

Hindsight Is A Soaring Budget Deficit

- In the absence of a soaring budget deficit, it would have been politically easier to use fiscal policy by reducing taxes or increasing spending.
- The growing debt problem helped rule this stimulus out on political grounds.

The Deficit Hawks Summary

- Chronic budget deficits increase the trade deficit, crowd out private investment, and reduce economic growth.
- A growing public debt unfairly burdens future generations and exposes America to dangerous political pressures from foreign governments.
- Servicing the debt redistributes income from the poor to the rich.

The Deficit Doves Summary

- The deficit is a stimulus to economic growth, and Doves reject both the crowding out and trade deficit arguments.
- The national debt represents productive investment in public goods and infrastructure.
- The debt is manageable relative to GDP.
- Since we "owe it largely to ourselves," it is not a problem.

A Balanced Budget Amendment

- Would compel Congress to annually balance its budget.

Question
What impact do you think a Balanced Budget Amendment would have on the use of discretionary fiscal policy?

The Perverse Effect of A Balanced Budget Amendment

- The Amendment would force the government to balance the budget during a recession by increasing taxes and/or cut spending.
- From a Keynesian perspective, this contractionary fiscal policy perversely would plunge the economy deeper into recession!

THE POWER OF MACROECONOMICS

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END OF LESSON EIGHT