Principles of Macroeconomics

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Here is a puzzle. A country with a relatively small positive aggregate demand shock (a shift outward in the AD curve) may have a substantial economic boom, but sometimes countries that have massive increases in the AD curve (hyperinflation countries like Germany before World War II, e.g.) don't seem to have massive economic booms. Why does a small AD increase sometimes raise GDP much more than a giant AD increase?

Some companies raise their workers' pay by giving raises, but others prefer to give one-time bonuses instead. Think about two steel mills facing a big two-year drop in steel demand: In one steel mill, workers have received pay raises every year for five years. In the second mill, most of the pay increases have occurred through big bonuses at the end of each year. Which steel mill will probably keep more jobs during the two-year downturn? Why?

Some economists have recommended that all banks be required by law to keep 100% of their deposits in the bank vault, at the Central Bank, or invested in ultrasafe investments such as short-term Government bonds.

a If this happened, what would be money multiplier be equal to?

b If this happened, would the interest rate on bank deposits probably go up or down?

c If this happened, would people be more likely or less likely to invest their savings in bank alternatives, such as bonds, mutual funds, or their cousin's lawn-mowing business?

Economist Bennett McCallum says that in order to push interest rates down in the long run, the central bank needs to raise interest rates in the short run. How can this be true?

A monetary policy is said to be credible if the central bank will have an incentive to do tomorrow what it says today that it will do tomorrow. Other policies may be credible or noncredible. Which of the following policies are credible?

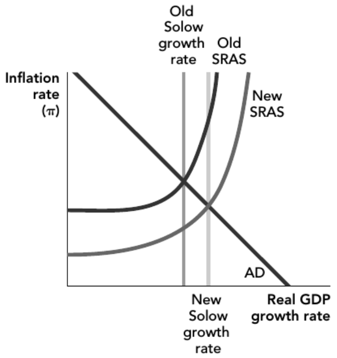
a A student promises to study for the final after going to the party.

b A long-established store offers "Guaranteed satisfaction or your money back."

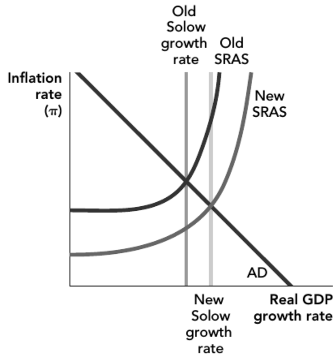
c A government promises never to bail out banks that take on too much risk and go bankrupt.

Let's look at the Federal Reserve's dilemma when there's a positive shock to the Solow growth rate.

a In the figure, illustrate the effect of this positive Solow growth shock, ignoring the possible effect of sticky wages and prices.



b If the central bank kept AD fixed, would inflation be higher or lower after this positive real shock? Would real growth be higher or lower after this positive real shock?



c If the central bank wants to return inflation to its old level, should it raise money growth or lower it?

d If the central bank wants to return real growth to its old level, should it raise money growth or lower it?

e Economists say that central bankers face a "cruel trade-off" between inflation and real growth when a Solow growth shock hits. Do your answer to parts c and d fit in with this theory?

The Negative Real Shock Dilemma

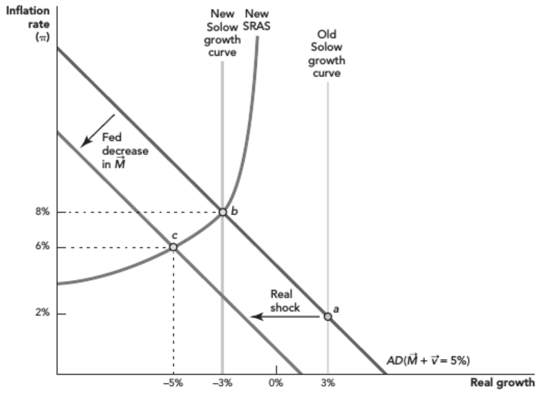
Monetary policy is less effective at dealing with a real shock than an AD shock.

Example The shock: a sudden and large increase in the price of oil.

- This negative shock shifts the Solow growth curve to the left.
- Sticky wages and prices amplify the shock by shifting SRAS even more to the left.
- Lower growth and higher inflation.

Contracting the money supply to deal with the higher inflation rate

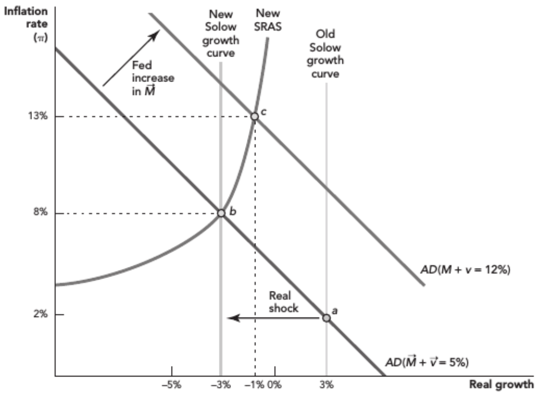
The Negative Real Shock Dilemma



Real growth will slow even more, and unemployment will rise.

Expanding the money supply to deal with the decrease in the real growth rate

The Negative Real Shock Dilemma



Inflation will rise even higher.

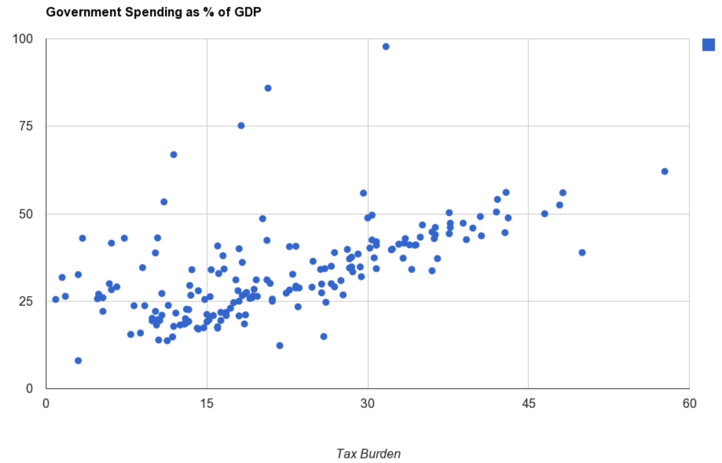
...Monetary Policy is difficult

Expansionary	Contractionary
Advantages 1. Interest rates may fall. 2. Economy may grow. 3. Decreases unemployment.	**Advantages** 1. Helps fight inflation. 2. Trade deficit may decrease. 3. Capital inflow.
Disadvantages 1. Inflation may worsen. 2. Capital outflow. 3. Trade deficit may increase.	**Disadvantages** 1. Risks recession. 2. Increases unemployment. 3. Slows growth. 4. May help cause short-run political problems. 5. Interest rates may rise.

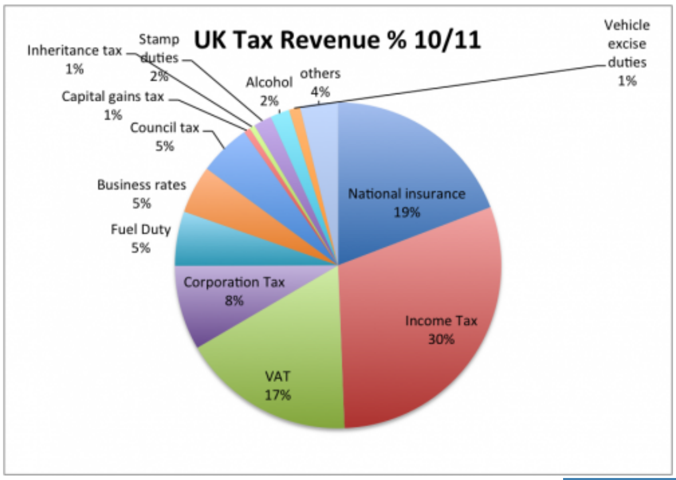
- Central Bank actions to increase the monetary base are not guaranteed to work.
  - We don't know exactly how much M1 and M2 will change.
  - We don't know exactly by how much lower interest rates will stimulate investment spending.
- The Central Bank has most influence over short-term rates while investment is most affected by long-term rates.
- Monetary policy takes time to work and the response lags vary.
- Analysis of the economy is difficult.

Fiscal Policy: Taxes and Government Spending

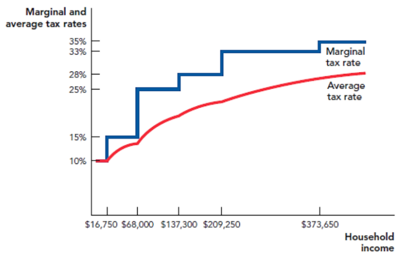
Government's expenditures are a substantial share of GDP



Sources of Government Revenue – UK 2011



The Individual Income Tax



- Marginal tax rate: the tax rate paid on an extra dollar of income.
  - If the marginal tax rate is 10%, tax owed on an additional $100 will be (.10) x $100 = $10.
  - important as it affects incentives.
- Average tax rate: total tax payment divided by total income.

- Marginal tax rates are set by government (the average tax rate is calculated after tax owed is known).
- Not all income is taxed; there may be Exemptions and Deductions.

Payroll tax

Suppose the government enacts a new payroll tax of 10% of worker wages, "paid" fully by employers.

- What will happen to the typical firm's demand for labor?
- Will that tax increase or decrease the employer's willingness to hire workers?

Tax Revenues

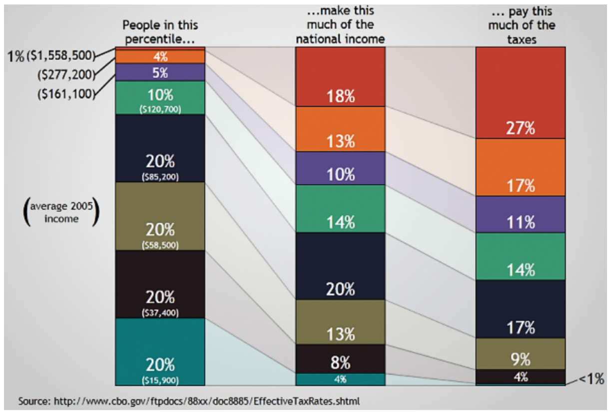
- Taxes on Capital Gains, Interest, and Dividends
- Social Security and National Insurance taxes
  - Chile (1981): privatization of social security – employers no longer had to pay payroll taxes for their employees. Result? Wages rose.
- Corporate Income Tax
  paid by...
  - Shareholders and bondholders
  - Workers (in the form of lower wages)
  - Consumers (in the form of higher prices)
- Conservatives favor lower tax rates

In 1989, US Senator Bob Packwood asked Congress's Joint Committee on Taxation how much extra revenue the government would raise if it just started taxing 100% of all income over $200,000 per year.
The Joint Committee crunched some numbers and reported an answer: $204 billion per year.

What is wrong with this answer?

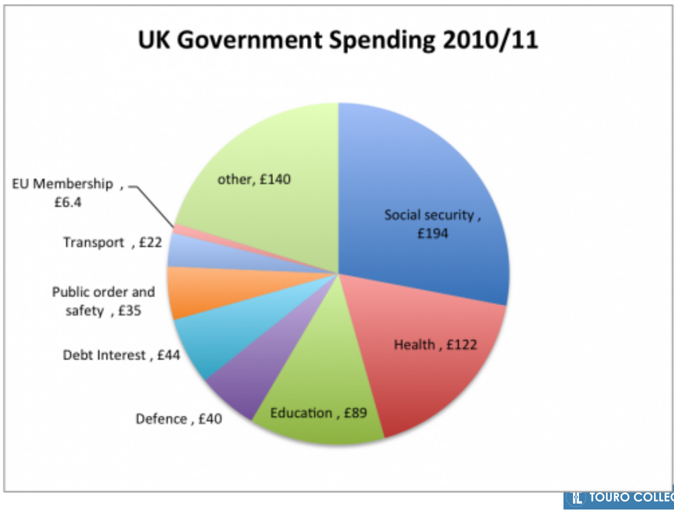
Tax Burden: Who Pays What?

USA



Tax rates are higher on people with higher incomes: the tax code is progressive.

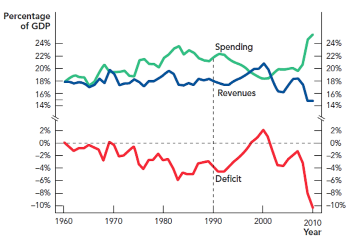
Where does the tax money go?



Where does the tax money go?

- Social Security, Pensions
  - Often run on a "pay as you go" basis:
    Current contributions pay for benefits of current retirees.
  - Some people advocate raising the full retirement age.
    - Net benefits are declining over time.
    - Higher taxes on today's workers funds larger benefits for yesterday's workers.
- Defense
  - The U.S. spends more on its military than any other country.
- Unemployment Insurance and Welfare
- Everything else

Defining Deficits and Surpluses



- A **deficit** is a shortfall of revenues under payments
- A **surplus** is an excess of revenues over payments
- In the short run, if the economy is below potential, deficits are good because deficits increase expenditures moving output closer to potential
- Long-run surpluses are good because they provide saving for investment

Financing the Deficit

- The government finances its deficits by selling bonds to private individuals and the Fed
- Bonds are promises to pay back the money in the future
- The Central Bank can print an unlimited amount of money to buy bonds, but printing too much money can cause inflation

Arbitrariness in Defining Surpluses and Deficits

- Whether a nation has a deficit or surplus depends on what is included as revenues and expenditures
- There are many ways to measure expenditures and receipts, so there are many ways to measure deficits and surpluses
- Deficit and surplus figures are summary measures of the financial health of the economy
- To understand the summary, you must understand the methods that were used to calculate it

Structural and Passive Deficits

- Many government revenues and expenditures depend on the level of income in the economy
- **Structural deficit** is the part of the budget deficit that would exist even if the economy were at its potential income
- **Passive deficit** is the part of the deficit that exists because the economy is operating below its potential level of output
- There is disagreement about what percentage of a deficit is structural and what percentage is passive
- Actual deficit = structural deficit + passive deficit
- Passive deficit = tax rate x (potential – actual output)
- Structural deficit = actual deficit – passive deficit

Nominal and Real Surpluses and Deficits

- A **nominal deficit** is the difference between expenditures and receipts
- A **real deficit** is the nominal deficit adjusted for inflation
- Inflation reduces the value of the debt
- Real deficit = Nominal deficit – (Inflation x Total debt)
- Lowering the real deficit by inflation can be costly
  - Persistent inflation becomes built into expectations and causes higher interest rates

The Definition of Debt and Assets

- Debt is accumulated deficits minus accumulated surpluses
  - Debt is a stock, defined at a point in time
- Deficits and surpluses are flow concepts, defined for a period of time
- If a country has more surpluses than deficits, the accumulated surpluses minus accumulated deficits are a part of its assets
- Governments must sell new bonds to pay for a deficit and refinance previously issued bonds as they come due

Debt Management

- Debt, as a summary measure of a nation's financial situation, needs to be judged in relation to a nation's assets
- When the government runs a deficit, it might be spending on projects that increase its assets
- If the assets are valued at more than their costs, then the deficit is making society better off

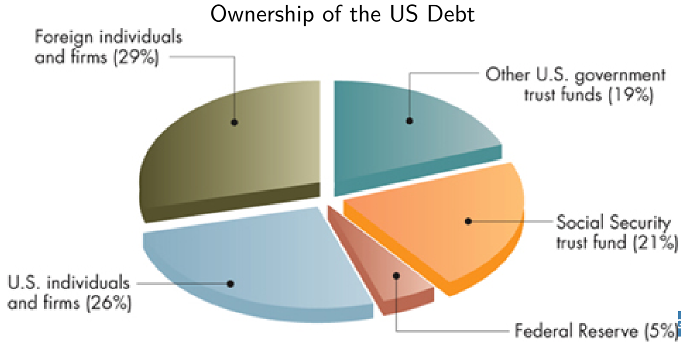
Between Individual and Government Debt

1. The government lives forever; people don't
2. The government can print money to pay its debt; people can't
3. Government owes much of its debt to itself (to its own citizens)

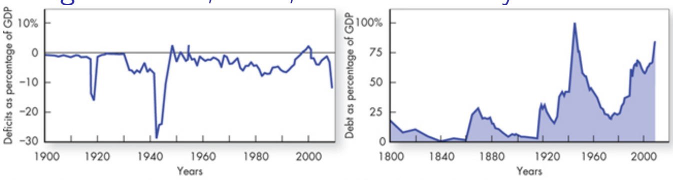
Ownership of the US Debt

- **Internal debt** is government debt owed to other governmental agencies or to its own citizens
- **External debt** is government debt owed to individuals in foreign countries

Ownership of the US Debt

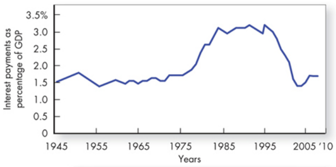


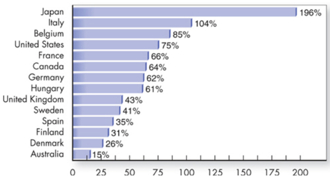
US Budget Deficits, Debt, and Interest Payments



(a) Budget Deficits as Percentage of GDP

(b) Debt as Percentage of GDP





Demographic Challenge for Public Finance

- Life expectancy increases and birth rates decline
- The share of the working population shrinks
- If technological and productivity progress is slower than the change in the dependency ratio GDP/capita will decline
- Challenge not only for publicly financed pensions and social security

  Private pensions, health insurance, etc. are also affected