

# ECO 202 Principles of Economics II

## *Lecture 10: Fiscal Policy*

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# What is Fiscal Policy

# The Relation between Government Spending and real GDP and Employment

Recall what we have in real GDP:

$$Y = C + I + G + NX$$

This makes it appear as though increases in government spending increase output and hence other relevant economic variables like employment.

However some economists argue that government spending simply **shifts** employment from one group to another-it does not **increase total employment**.

This debate was particularly important after the 2007-2009 recession: can the government use discretionary fiscal policy to increase employment?

## Definition

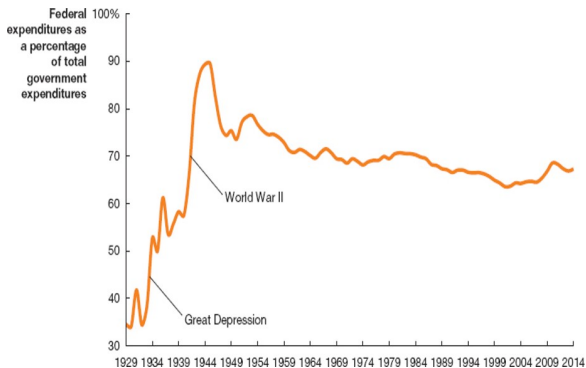
Fiscal policy refers to changes in federal taxes and purchases that are intended to achieve macroeconomic policy objectives.

(State taxes and spending are not generally aimed at affecting national level objectives.)

Some forms of government spending and taxes automatically increase or decrease along with the business cycle; these are **automatic stabilizers**. For example: unemployment insurance payments are larger during a recession.

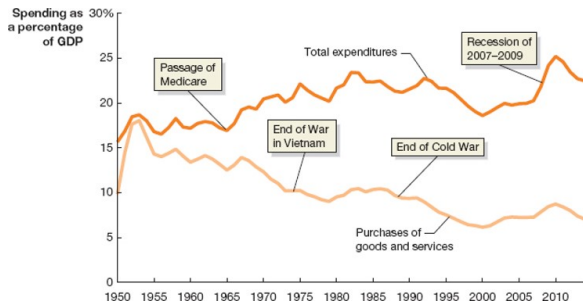
Discretionary fiscal policy, on the other hand, refers to intentional actions the government takes to change spending or taxes.

# The Federal Governments Share of Total Government Expenditures, 1929-2014



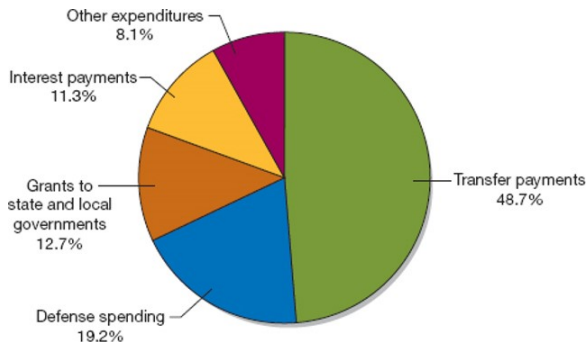
Before the Great Depression of the 1930s, most government spending was at the state or local level; now the federal governments share is two-thirds to three-quarters.

# Federal Purchases and Federal Expenditures as a Percentage of GDP, 1950-2014



As a percentage of GDP, federal expenditures are now higher than ever-almost 25 percent of GDP (a smaller proportion is now spent on government purchases of goods and services, mostly military spending).

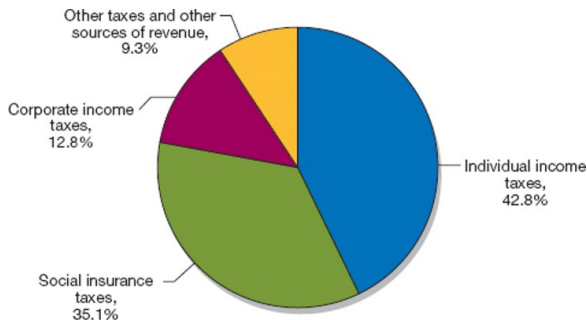
# Expenditures and Revenues



- Transfer payments, like social security, medicare, and unemployment insurance take a large share of expenditures.
- The rest is spent on grants to state and local governments to support their activities.

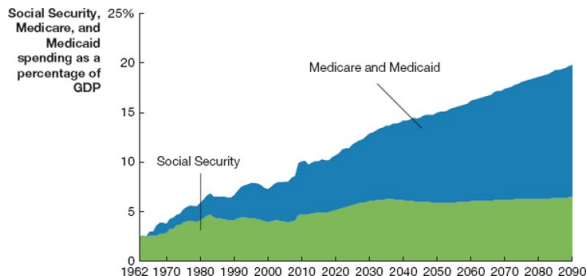


# Expenditures and Revenues



- The majority of federal revenues come from taxes on individual employment: individual income taxes and payroll taxes earmarked to fund social security and medicare.
- Taxes on corporate profits constitute about one-seventh of federal receipts.
- The remainder of federal revenue comes from excise taxes (on cigarettes, gasoline, etc.), tariffs on imports, and other fees from firms and individuals.

# Case Study: Social Security and Medicare: Fiscal Time Bombs?



Social Security and Medicare have helped to reduce poverty among the elderly, while Medicaid helps improve the health of poor people.

- But the aging population and rising health care costs are combining to put those programs in jeopardy.
- Through 2090, the budget shortfall for these programs is estimated to be enormous: almost \$50 trillion.

What's your solution?

## Solution?

- Increasing taxes
- Decreasing benefits
- Decreasing eligibility (SSI age already increasing from 65 to 67)

But perhaps the most important element will be finding a way to reduce medical costs.

## The Effects of Fiscal Policy on Real GDP and the Price Level

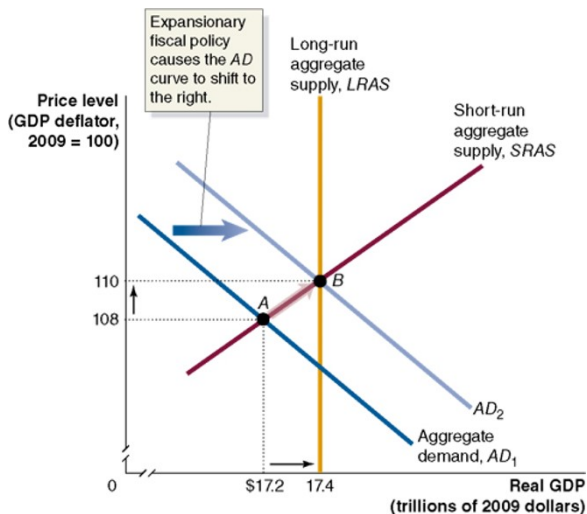
Fiscal policy affects aggregate demand and the government can use fiscal policy to stabilize the economy. The previous section tells us there are two aspects of fiscal policy:

- Changes in government purchases
- Changes in taxes

A change in government purchases **directly** affects aggregate demand.

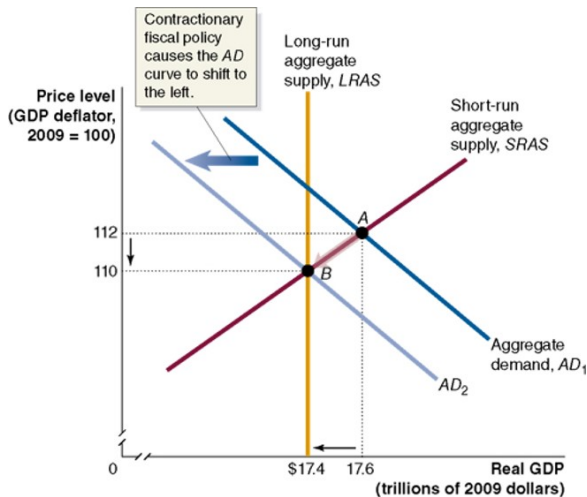
A change in taxes changes income; this in turn affects consumption, and so it has an **indirect** effect on aggregate demand.

# Fiscal Policy: Expansionary



If the government believes real GDP will be below potential GDP, it can enact expansionary fiscal policy (increase spending, decrease taxes) in an attempt to restore long-run equilibrium-decreasing unemployment.

# Fiscal Policy: Contractionary



If the government believes real GDP will be above potential GDP, it can enact contractionary fiscal policy in an attempt to restore long-run equilibrium decreasing inflation.

<b>Problem</b>	<b>Type of Policy Required</b>	<b>Actions by Congress and the President</b>	<b>Result</b>
Recession	Expansionary	Increase government purchases or cut taxes	Real GDP and the price level rise.
Rising inflation	Contractionary	Decrease government purchases or raise taxes	Real GDP and the price level fall.

The federal government's actions described on the previous slides constitute a countercyclical fiscal policy.

Notice,

- The effects described assume *ceteris paribus*: everything else is staying the same, including monetary policy.
- Contractionary fiscal policy is not really causing prices to fall; it's causing inflation to be lower than it otherwise would have been.

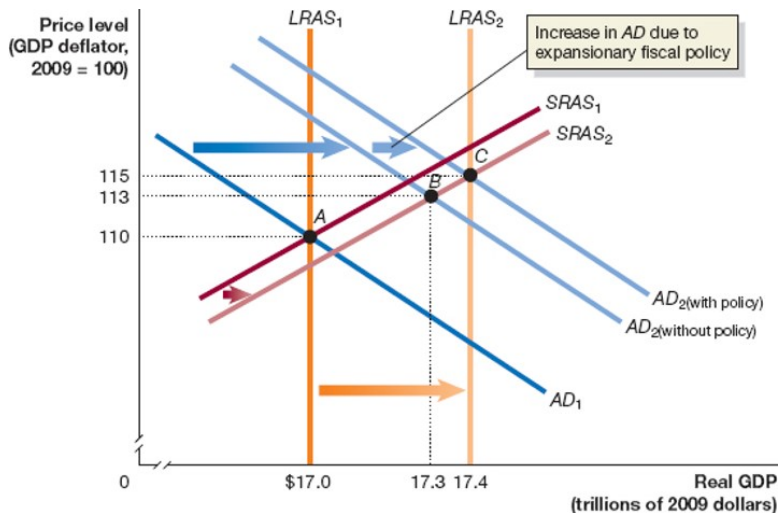


# Fiscal Policy in the Dynamic Aggregate Demand and Aggregate Supply Model

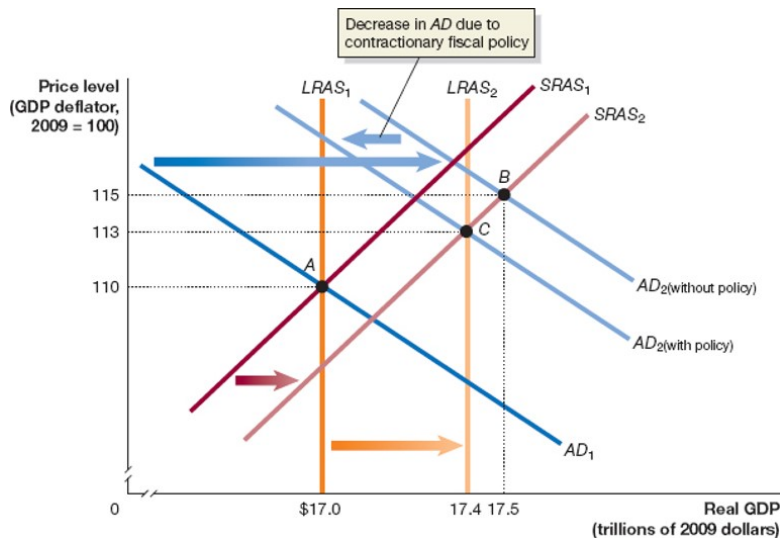
Our model of fiscal policy so far is static: it assumes long-run potential GDP does not change, and that the price level is constant.

While the lessons from this model are still appropriate-Congress and the President can use fiscal policy to affect real GDP and the price level-our understanding of fiscal policy can be improved by seeing it in the dynamic aggregate demand and aggregate supply model.

# Expansionary Fiscal Policy in the Dynamic Model



# Contractionary Fiscal Policy in the Dynamic Model



- Fiscal policy definition
- Two aspects of fiscal policy and its impact on output and price level
- Dynamic model

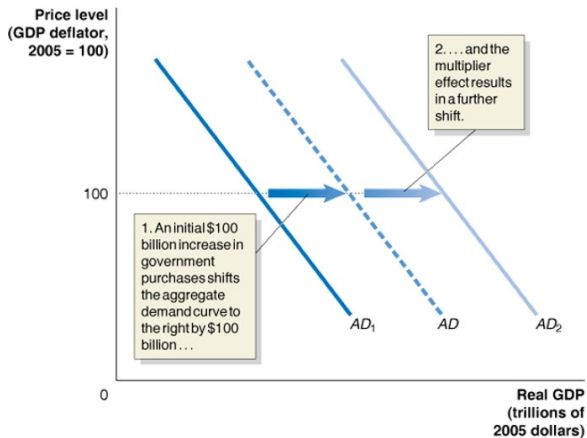
## The Government Purchases and Tax Multipliers

If the government increases its spending on goods and services, then aggregate demand increases immediately. This is the **autonomous** increase in aggregate demand.

But then people receive this increased spending as increased income, and increase their consumption spending accordingly. This is the **induced** increase in aggregate demand.

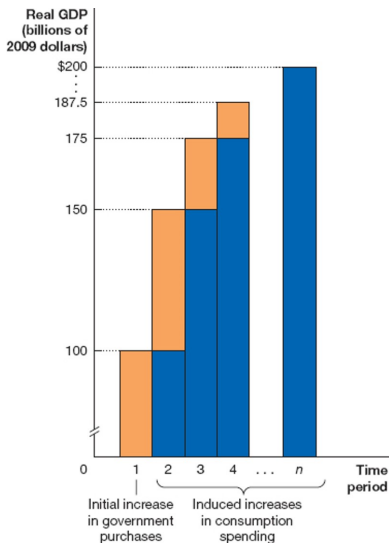
The series of induced increases in consumption spending that results from the initial increase in autonomous expenditures is known as the **multiplier effect**.

# The Multiplier Effect and Aggregate Demand





# The Multiplier Effect of an Increase in Government Purchases



Period	Additional Spending This Period	Cumulative Increase in Spending and Real GDP
1	\$100 billion in government purchases	\$100 billion
2	\$50 billion in consumption spending	\$150 billion
3	\$25 billion in consumption spending	\$175 billion
4	\$12.5 billion in consumption spending	\$187.5 billion
⋮	⋮	⋮
⋮	⋮	⋮
n	0	\$200 billion

Suppose each increase in spending induces half again as much consumption spending.

Over time, a \$100 billion increase in government purchases will result in an additional \$100 billion in induced consumption spending.

We can describe the total effect of a change (increase **or** decrease) in government purchases or taxes by measuring the change in equilibrium real GDP.

$$\text{Government purchases multiplier} = \frac{\text{Change in equilibrium real GDP}}{\text{Change in government purchases}}$$

$$\text{Tax multiplier} = \frac{\text{Change in equilibrium real GDP}}{\text{Change in taxes}}$$

The tax multiplier will be a negative number: an increase in taxes will **decrease** equilibrium real GDP and vice versa.

We expect the tax multiplier to be smaller (in absolute value) than the government purchases multiplier because

- A \$100 billion increase in purchases initially increases spending by \$100 billion; but a \$100 billion tax cut is partially spent and partially saved.

# The Effect of Changes in Tax Rates

The tax multiplier applies to changes in the **amount** of taxes, without changes in **tax rates**.

## Example

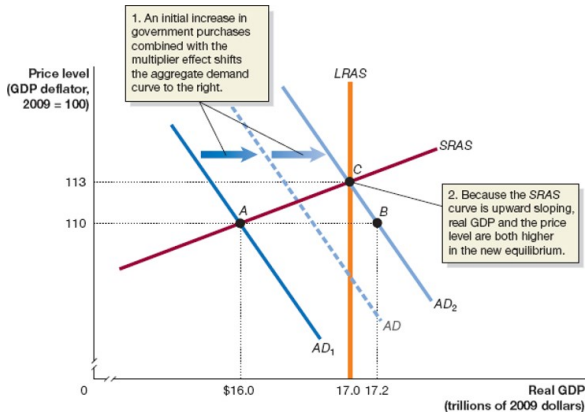
In 2009 and 2010, the federal government enacted the Making Work Pay Tax Credit: a \$400 reduction in taxes for working individuals (\$800 for households).

Decreases in tax **rates** have a slightly different effect:

- Increasing the disposable income of households, leading them to increase their consumption spending
- Increasing the size of the multiplier effect, since more of any increase in income becomes disposable income.

# The Multiplier Effect and Aggregate Supply

Increase demand → real GDP and price level increase → demand respond to higher price → less effect



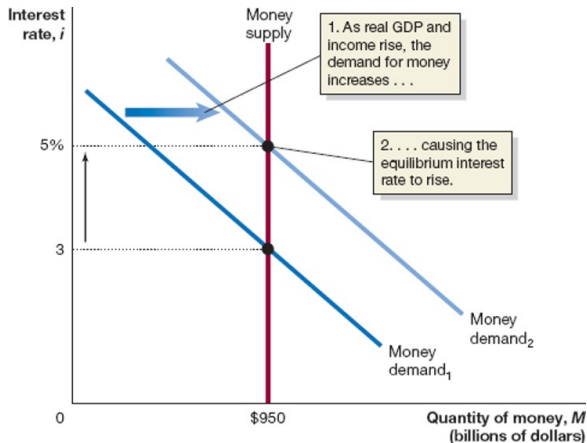
## The Limits of Using Fiscal Policy to Stabilize the Economy

# What Problems Will Fiscal Policy Cause?

For several reasons, fiscal policy may be even less effective than monetary policy at countercyclical stabilization:

- **Timing** (Legislative delay and implementation delay).
- **Crowing out** (private spending).

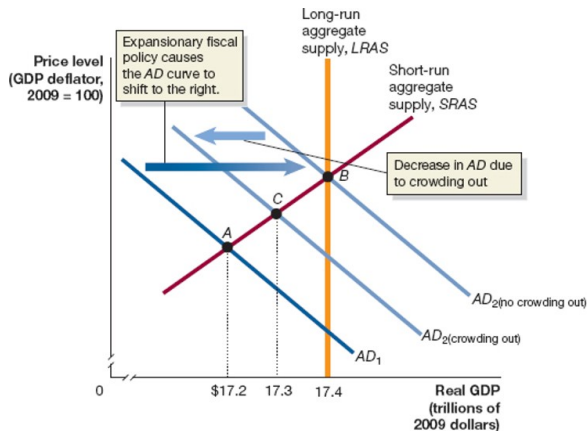
# An Expansionary Fiscal Policy Raises Interest Rates



Increase government spending  $\rightarrow$  demand for money  $\uparrow$   $\rightarrow$  interest rate  $\uparrow$ .

But high interest rate discourage investment and consumption and net exports.

# The Effect of Crowding Out in the Short-Run



So the initial increase in spending is partially offset by the crowding out.



# The Effect of Crowding Out in the Long-Run

In a simple word: No effect.

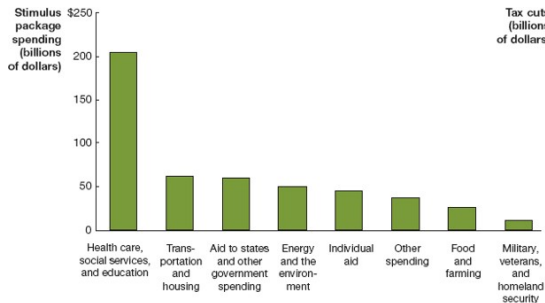
Why? Because in the long run, the economy returns to potential GDP. The long run effect is simply to increase the size of the government sector within the economy.

Bear in mind that the long run may be many years away, however, so the intermediate increase in real GDP may be worth the cost.

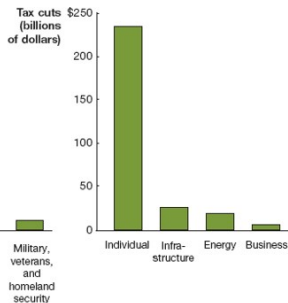
In early 2008, believing a recession was imminent, Congress authorized a tax cut: a one-time rebate of taxes already paid, totaling \$95 billion.

- Consumption “smoothing”, smaller increases in spending. (Permanent versus temporary).
- Economists estimate that consumers spent about 33-40 percent of the rebates they received, so the tax cut resulted in about \$35 billion in increased spending.

# The 2009 Stimulus Package



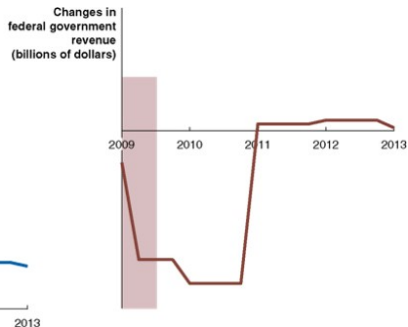
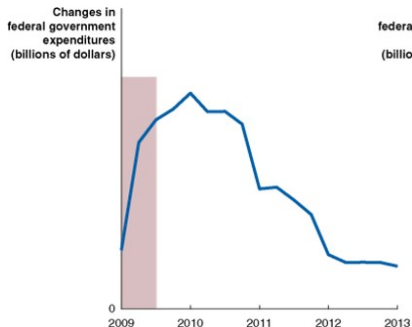
(a) Spending increases in the 2009 stimulus package



(b) Tax cuts in the 2009 stimulus package

\$840 billion stimulus package was by far the largest fiscal policy action in U.S. history.

# The Effect of the Stimulus Package on Federal Expenditures and Revenue



The effect of the stimulus package on federal expenditures and revenue was not immediate, but it mostly occurred over the following two years.

# How Effective Was the Stimulus Package?

When the stimulus was passed, Obama administration economists believed that by the end of 2010, it would:

- Increase real GDP by 3.5 percent
- Increase employment by 3.5 million

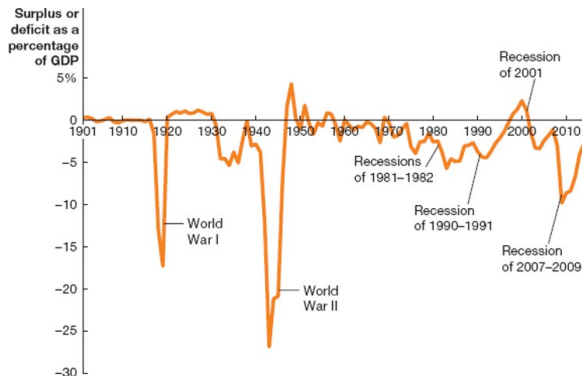
By the end of 2010, real GDP actually rose by 4.4 percent but employment fell by 3.3 million. Did the stimulus fail? Views differ.

## Deficits, Surpluses, and Federal Government Debt

- A budget deficit occurs when the governments expenditures are greater than its tax revenue.
- A budget surplus occurs when the governments expenditures are less than its tax revenue.

Do you know whether the federal government is running a budget deficit or a budget surplus currently?

# The Federal Budget Deficit, 1901-2015



Budget deficits occur especially in wartime and in recessions, as tax receipts fall, and automatic stabilizers like increases in transfer payments (unemployment insurance, food stamps, etc.) take effect.



## How Large Is the Deficit in the U.S.?

The federal government runs a budget deficit, around 2.7 percent of GDP in 2015.

But how much of this deficit is due to GDP being below potential, and how much is due to government spending and tax policies?

Use **cyclically adjusted budget deficit or surplus**: the deficit or surplus in the federal government's budget if the economy were at potential GDP.

- The CBO estimated that the budget deficit would be 1.6 percent of real GDP in 2014 if real GDP were at its potential.
- So this is the amount that spending needs to be cut, or taxes raised, in order to bring the federal budget into balance in the long run. The rest (1.1 percent) is due to automatic stabilizers.

# Did Fiscal Policy Fail During the Great Depression?

Year	Federal Government Expenditures (billions of dollars)	Actual Federal Budget Deficit or Surplus (billions of dollars)	Cyclically Adjusted Budget Deficit or Surplus (billions of dollars)	Cyclically Adjusted Budget Deficit or Surplus as a Percentage of GDP
1929	\$2.6	\$1.0	\$1.24	1.20%
1930	2.7	0.2	0.81	0.89
1931	4.0	-2.1	-0.41	-0.54
1932	3.0	-1.3	0.50	0.85
1933	3.4	-0.9	1.06	1.88
1934	5.5	-2.2	0.09	0.14
1935	5.6	-1.9	0.54	0.74
1936	7.8	-3.2	0.47	0.56
1937	6.4	0.2	2.55	2.77
1938	7.3	-1.3	2.47	2.87
1939	8.4	-2.1	2.00	2.17

E. Cary Brown: “Fiscal policy . . . seems to have been . . . unsuccessful . . . not because it did not work, but because it was not tried.”

# Should the Federal Budget Be Balanced?

- Although many economists believe the federal budget should be balanced when the economy is at potential GDP, few believe it should be balanced during a recession. (But will make the recession worse.)
- Some economists argue that the federal budget should normally be in deficit. (Especially since the government can borrow so cheaply.)

# The Federal Government Debt, 1901-2015

When the federal government runs a budget deficit, it finances its activities by selling Treasury securities. The total value of those securities outstanding is known as the federal government debt or the national debt.



For now, the federal government is at no serious risk of defaulting on its obligations, because:

- The interest rate it can borrow money at is very low
- The size of the interest payments on the debt is low relative to the size of the federal budget-around 11 percent

In the long run, a debt that increases in size relative to GDP can pose a problem-potentially crowding out investment, which is a key component of long term growth.

- This problem is reduced if the government debt was incurred to finance infrastructure, education, or research and development; these serve as a long-term investment for the economy.

## The Long Run Effects of Fiscal Policy

The fiscal policy we have concentrated on so far was intended to address short-run goals of stabilizing the economy (demand side).

- But other fiscal policy actions are intended to have long-run impacts on potential GDP-i.e. on **aggregate supply**.
- Hence these actions are often referred to as **supply-side economics**.

Most such policies are based on changing taxes in order to increase incentives to work, save, invest, and start a business.

Most taxes are assessed as a percentage of some economic activity, like individual income, corporate income, or capital gains.

- When an individual decides how much to work, he bases the decision on how much an hour of work will increase his ability to consume goods and services: the post-tax wage.
- When a firm decides how many people to employ, it considers how much it has to pay in total for each worker: the pre-tax wage.

The difference between these is an example of a tax wedge: the difference between the pre-tax and post-tax return to an economic activity.

A large tax wedge distorts the incentives of individuals and firms to take part in economic activities, generally resulting in lower levels of economic activity-lowering real GDP.



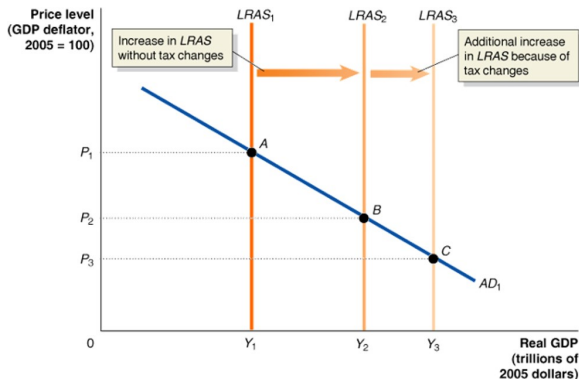
Marginal tax rates matter because the larger they are, the larger will be the **behavioral response** to the tax:

- Individual income tax
    - Affects labor supply decisions and the returns to entrepreneurship
  - Corporate income tax
    - Affects the incentives of firms to engage in investment
  - Tax on dividends and capital gains
    - Affects the supply of loanable funds from households to firms and hence the real interest rate
    - Also affects the way firms disburse profits
- 2003 reduction in dividend tax led some firms like Microsoft to pay dividends for the first time

Simpler taxes would also lead to economic gains for society.

- The current tax code is extremely complicated-over 3,000 pages long.
- The IRS estimates that taxpayers spend more than 6.4 billion hours each year filling out their tax returns-45 hours per tax return.
- A simplified tax code would increase economic efficiency by reducing the number of decisions households and firms make solely to reduce their tax payments.

# The Supply-Side Effects of a Tax Change



Tax reform has the potential to significantly increase real GDP in the long run beyond the increases that would otherwise occur.

- The magnitude of the effect is uncertain, however.
- For example, while people might like to work more if tax rates are lowered, they might be constrained by employers expecting a particular work week (like 40 hours).