

Lecture 11

Multiplier Model (Part 2)

Unit 14

Sections 14.5-14.7

Outline

A. The Multiplier Model (Continued): Including the Government & International Trade

B. Government & Stabilising the Economy

C. Paradox of Thrift

D. Fiscal Policy

A. The Multiplier Model :
All sectors
(Including Government &
International Trade)

Including all Sectors in the Multiplier Model

$$AD = C + I + G + NX$$

1. **Investment**: depends on discount rate, the interest rate, after-tax rate of profit and expectations of demand as discussed.
 - Investment is included in the model simply as
$$I = I(r)$$
 - All variables that influence investment simply shift the AD line. This includes changes to the interest rate.

Including all Sectors in the Multiplier Model

$$AD = C + I + G + NX$$

2. Government spending: exogenous

$$G = G$$

3. Consumption:

- Now that government is in the model include the marginal tax rate (t) on income.
- Now household's MPC is explicitly out of disposable income

$$C = c_0 + c_1 (1-t)Y$$

Including all Sectors in the Multiplier Model

$$AD = C + I + G + NX$$

4. Net Exports = $NX = \text{exports} - \text{imports}$

- The amount of exports is taken as exogenous.

$$X = X$$

- The amount of imports depends on domestic income.
 - **Marginal propensity to import (m)** = The fraction of each additional unit of income that is spent on imports

$$NX = X - mY$$

The multiplier model:

$$AD = c_0 + c_1(1 - t)Y + I(r) + G + X - mY$$

Equilibrium

$$Y = AD$$

$$Y = \frac{1}{1 - c_1(1 - t) + m} (c_0 + I(r) + G + X)$$

The multiplier

$$\text{Multiplier} = \frac{1}{1 - c_1(1 - t) + m}$$

- Saving, taxation and imports are referred to as leakages from the circular flow of income.
 - They reduce the size of the multiplier.
 - Some household income goes directly to the government as taxes.
 - Some income is used to buy goods produced in other countries.

Smaller multiplier = flatter AD curve.

B. Government and Stabilising the Economy (A Beginning)

Government Stabilises GDP (at least in some countries)

A: End of
WWI: 1918

B: Start of Great
Depression: 1929

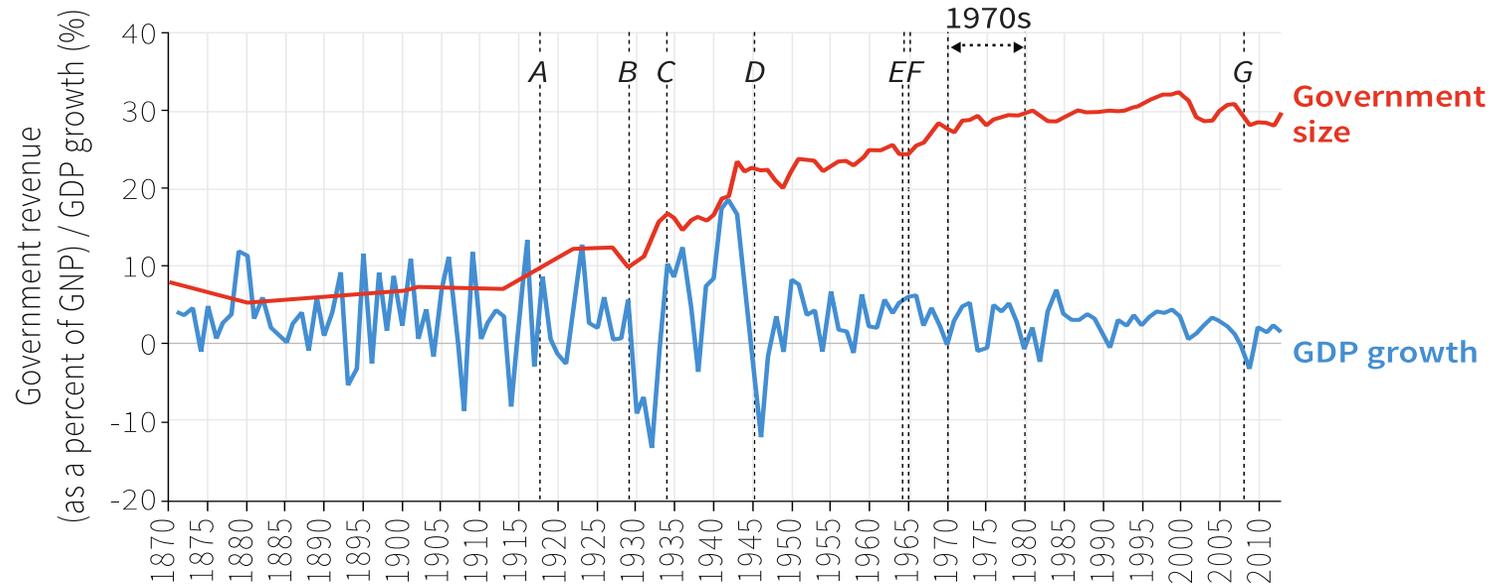
C: President Roosevelt's
New Deal: 1933-36

D: End of
WWII: 1945

E: US War on Poverty
begins: 1964

F: US deploys ground
troops in Vietnam: 1965

G: Start of global
financial crisis: 2008



Stabilising the economy

The government stabilises economic fluctuations in several ways:

1. Government spending is large and exogenous. It fluctuates much less than consumption and investment.
2. Higher tax rate lowers the multiplier so fluctuations in GDP are smaller

$$\frac{1}{1 - c_1(1 - t) + m}$$

Stabilising the economy

The government stabilises economic fluctuations in several ways:

3. Unemployment benefit schemes help households smooth consumption - Failure of private market to ensure against risk of unemployment.

Unemployment benefit schemes and proportional tax rate are **automatic stabilizers** = they automatically offset an expansion or contraction of the economy.

Stabilising the economy

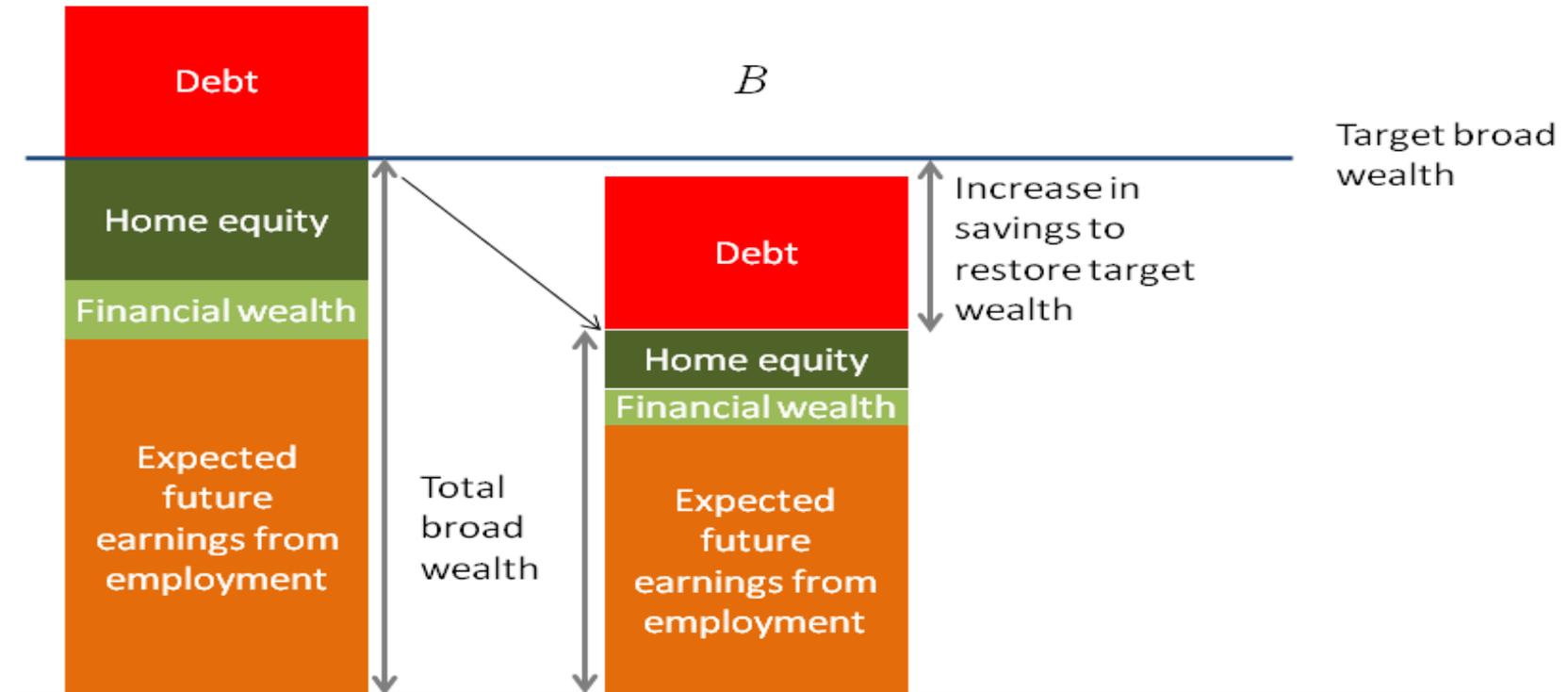
4. Deliberate intervention via fiscal policy – expansionary fiscal policy (decreasing taxes and/or increasing spending), contractionary fiscal policy (decreasing G and/or increasing taxes)

- this doesn't happen automatically.
- Requires political action & decision making which can be cumbersome.
- Monetary policy is much easier to change (the interest rate)

C. Paradox of Thrift

Savings & The paradox of thrift

In a recession a family worried about their falling wealth cuts spending and saves more (Week 10).



The paradox of thrift

Fallacy of composition: what is true for one part of the economy (a single household or firm) is not true of the whole economy.

In a recession, faced with a household budget deficit, a family worried about their falling wealth cuts spending and saves more.

But in the economy as a whole, spending and earning go together.

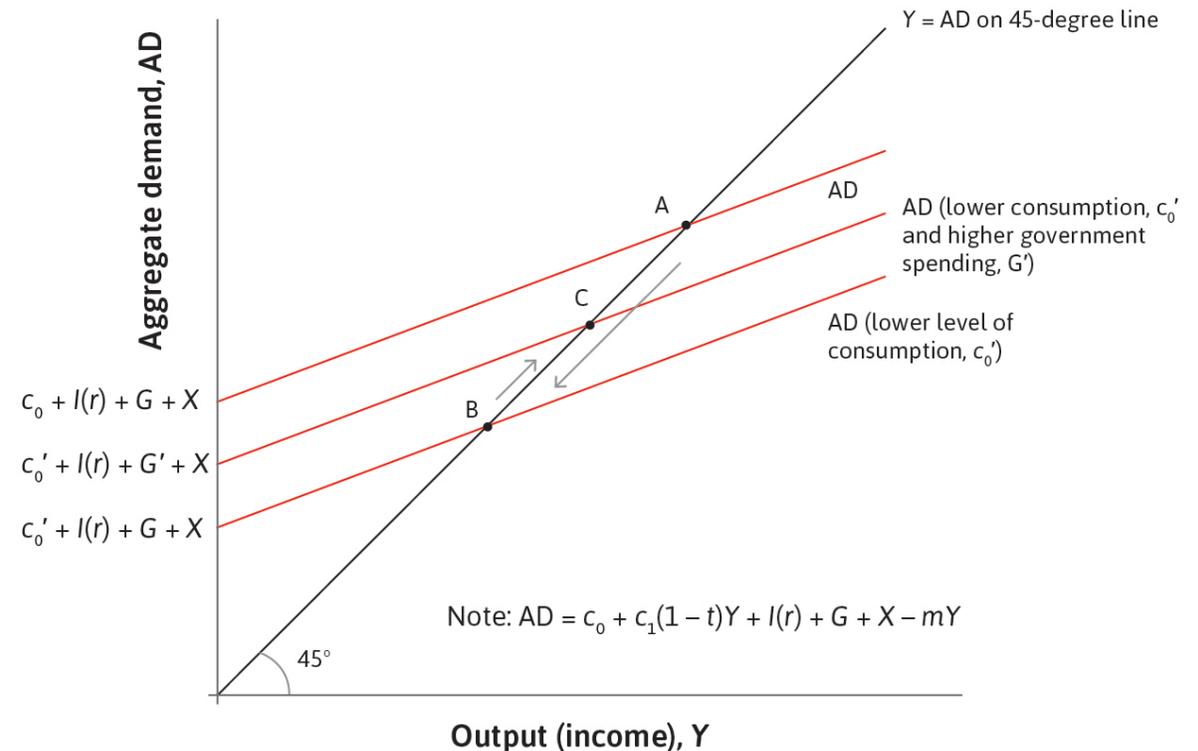
The paradox of thrift = the aggregate attempt to increase savings leads to a fall in aggregate income.

D. Fiscal Policy

Fiscal stimulus

Government can counteract the fall in AD from the private sector via **fiscal stimulus**.

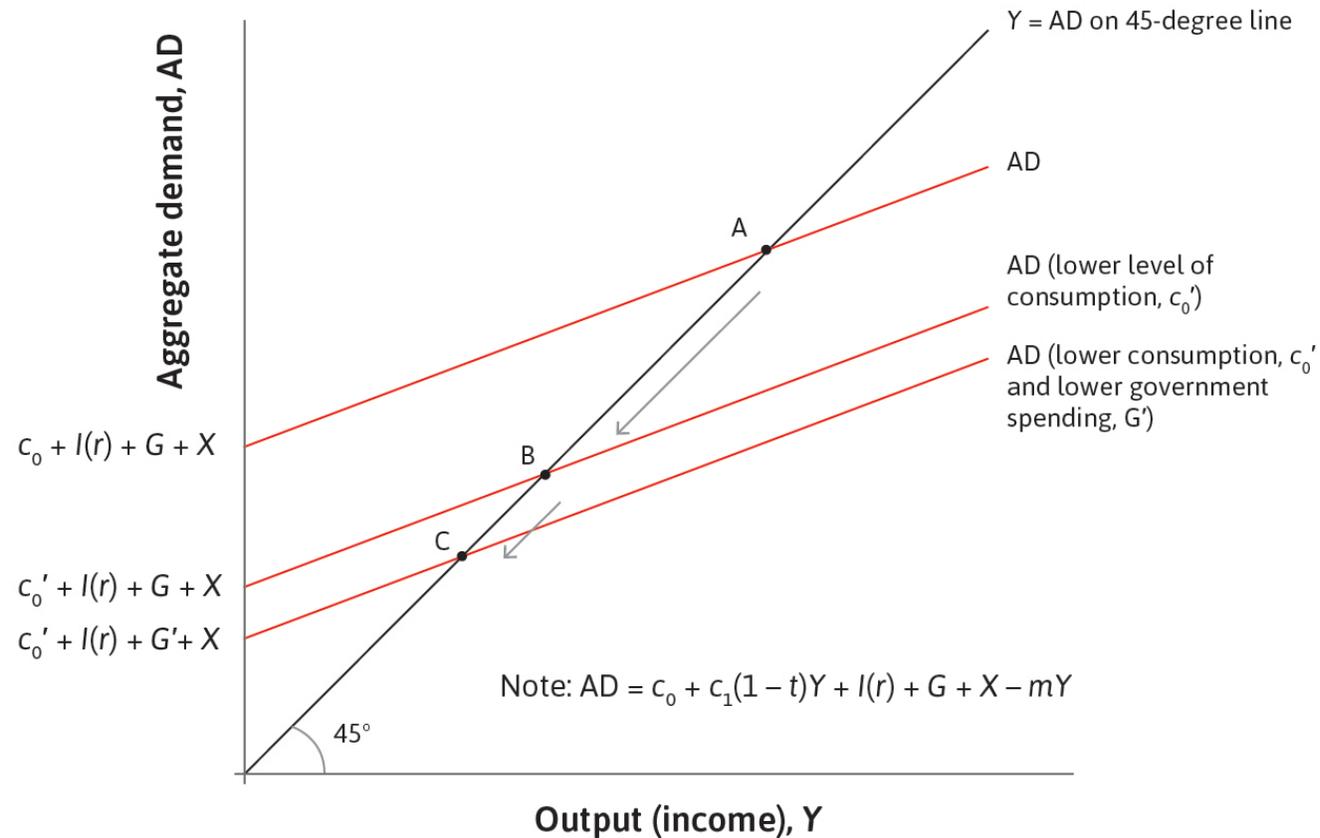
- cut taxes to encourage the private sector to spend more
- increase spending (G), which directly increases AD



The rise in G operates via the multiplier, so the increase in Y will typically be greater than the increase in G .

Austerity policy

Austerity policy can reinforce a recession by further reducing aggregate demand.



Positive/Negative Feedback Mechanisms

	DAMPENING MECHANISMS OFFSET SHOCKS (STABILISING)	AMPLIFYING MECHANISMS REINFORCE SHOCKS (MAY BE DESTABILISING)
PRIVATE SECTOR DECISIONS	Consumption smoothing	<p>Credit constraints limit consumption smoothing</p> <p>Rising value of collateral (house prices) can increase wealth above the target level and raise consumption</p> <p>Rising capacity utilisation in a boom encourages investment spending, adding to the boom</p>
GOVERNMENT AND CENTRAL BANK DECISIONS	<p>Automatic stabilisers (e.g. unemployment benefit)</p> <p>Stabilisation policy (fiscal or monetary)</p>	Policy mistakes, such as limiting the scope of automatic stabilisers in a recession or running deficits during low demand periods, while not running surpluses during booms

The multiplier in practice

In our model of aggregate demand, the multiplier depended only on the marginal propensity to consume, the marginal propensity to import and the tax rate.

In reality, it also depends on:

- rate of capacity utilisation (the phase of the business cycle): with fully employed resources, an increase in government spending would **crowd out** private spending
- expectations of the private sector

Summary

1. The aggregate demand function and its components:

$$\mathbf{AD = C + I + G + NX}$$

2. Shocks to aggregate demand are amplified by the **multiplier**.

3. Government can stabilise economic fluctuations

- **Automatic stabilisers**
- **Fiscal stimulus** – offset decline in aggregate demand from the private sector
- **Austerity** policies amplify the negative demand shock

Next week:

The Government's Finances