



## Lecture 6

### Expectations, Output, and Policy

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# Introduction

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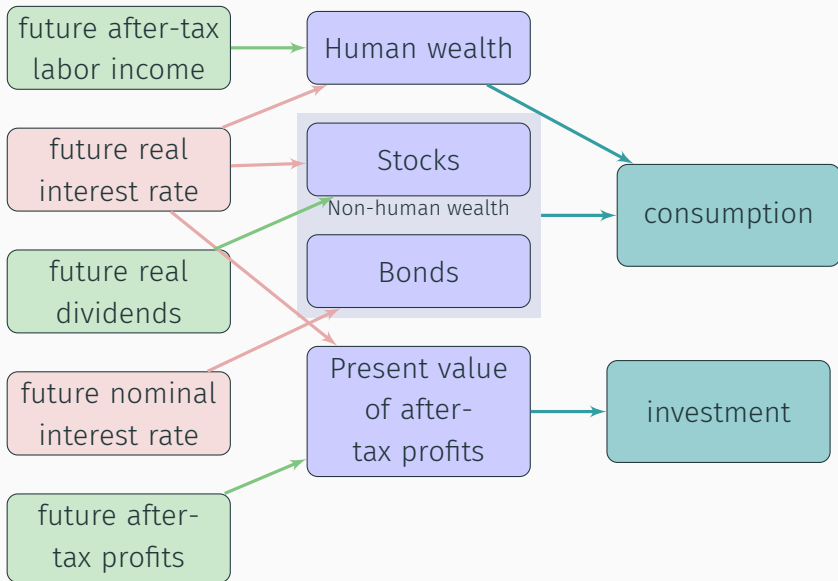
# Expectations, Output, and Policy

- In lecture 4, we saw how expectations affected asset prices, from bonds to stocks to houses.
- In lecture 5, we saw how expectations affected consumption and investment decisions.
- In this lecture, we put those pieces together and take another look at the effects of monetary and fiscal policy.

## Expectations and Decisions: Taking Stock

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# Expectations and Spending: The Channels



# Aggregate private spending

- The original IS relation:

$$Y = C(Y - T) + I(Y, r + \theta) + G$$

- Define **aggregate private spending** (private spending,  $A$ ) as the sum of consumption and investment spending:

$$A(Y, T, r, \theta) \equiv C(Y - T) + I(Y, r + \theta)$$

- so the IS relation becomes:

$$Y = A \left( \begin{matrix} Y, T, r, \theta \\ +, -, -, - \end{matrix} \right) + G$$

## A modified IS curve

Let primes denote future values and the superscript  $e$  denote an expectation, so

$$Y = A \left( Y_{+}, T_{-}, r_{-}, \theta, Y_{+}^{\prime e}, T_{-}^{\prime e}, r_{-}^{\prime e} \right) + G$$

which means that

$Y$  or  $Y^{\prime e}$  increase  $\Rightarrow A$  increases

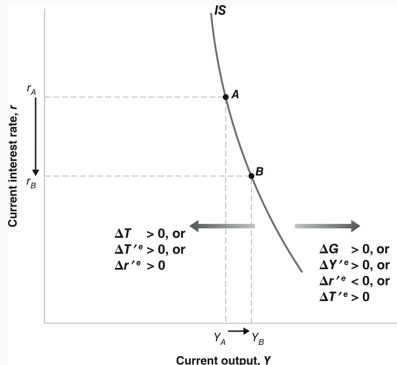
$T$  or  $T^{\prime e}$  increase  $\Rightarrow A$  decreases

$r$  or  $r^{\prime e}$  increase  $\Rightarrow A$  decreases



# The New IS Curve

- Given expectations, a decrease in the real policy rate leads to a small increase in output.
- Increases in government spending, or in expected future output, shift the IS curve to the right.
- Increases in taxes, in expected future taxes, or in the expected future real policy rate shift the IS curve to the left.



## A steeper IS

- The new IS curve is much steeper than the IS curve in previous lectures, so a decrease in the current policy rate is likely to have only a small effect on equilibrium output.
- A decrease in the current real policy rate, given unchanged expectations of the future real policy rate, does not have much effect on private spending.
- The multiplier is likely to be small because a change in current income, given unchanged expectations of future income, is unlikely to have a large effect on spending.

# Monetary Policy, Expectations, and Output

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## Traditional derivation of the LM Curve

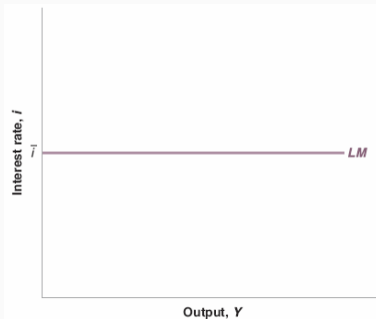
- The equilibrium condition in financial markets requires that the real money supply be equal to the real money demand, which depends on real income,  $Y$ , and the interest rate,  $i$ .

$$\frac{M}{P} = L(Y, i)$$

- In deriving the LM curve, we have to decide **how we characterize monetary policy**:
  - as the choice of  $M$ , the money stock,
  - or as the choice of  $i$ , the interest rate.
- If we think of monetary policy as choosing  $M$ , and by implication choosing  $M/P$  (because  $P$  is fixed in the short run), for a given money supply, an increase in  $Y$  automatically leads to an increase in  $r$ .

# Modern derivation of the LM Curve

- The assumption that the central bank chooses  $M$  and then just lets  $i$  adjust is at odds however with reality today.
- Although, in the past, central banks thought of  $M$  as the monetary policy variable, they now focus directly on  $i$ .
- They choose an interest rate, call it  $\bar{i}$ , and adjust  $M$  so as to achieve it.
- From now on, we assume the central bank sets  $\bar{i}$ .



## The effects of monetary policy

- The Fed affects directly the current real interest rate ( $r$ ), so the LM curve is a horizontal line at  $\bar{r}$ :

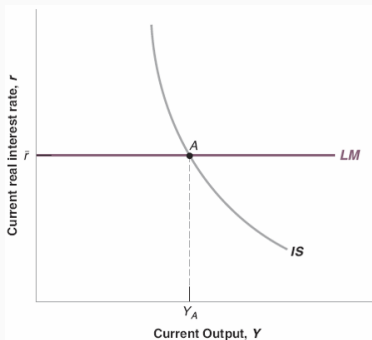
$$Y = A(Y, T, r, \theta, Y'^e, T'^e, r'^e) + G \quad \text{IS}$$

$$r = \bar{r} \quad \text{LM}$$

- The effects of monetary policy depends on its effects on expectations:
  - If a monetary expansion leads to changes in expectations of future interest rates and output, then the policy effect on output may be large.
  - But if expectations remain unchanged, the policy effects on output will be limited.

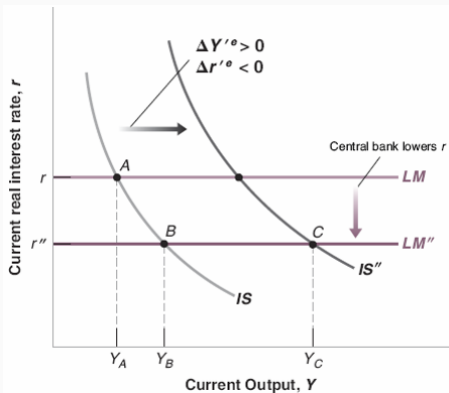
# The IS-LM model with expectations

- The IS curve is steeply downward sloping.
- Other things being equal, a change in the current interest rate has a small effect on output.
- Given the current real interest rate set by the central bank,  $\bar{r}$ , the equilibrium is at point A.



# The effects of an expansionary monetary policy

The effects of monetary policy on output depend very much on whether and how monetary policy affects expectations.





## FOCUS: Rational Expectations

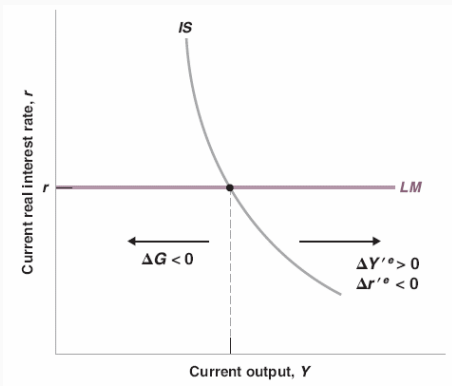
- Rational expectations: Expectations formed in a forward-looking manner.
- The last 40 years in macroeconomic research are often called the “rational expectations revolution.”
- Expectations was referred to as animal spirits by Keynes in the General Theory.
- Economists have also assumed that people form static expectations (people expect the future to be like the present), and adaptive expectations (people “adapt” by revising their expectations over time).
- In the early 1970s, Robert Lucas and Thomas Sargent argued that people have rational expectations as they look into the future and do the best job they can in predicting it.

# Deficit Reduction, Expectations, and Output

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# The Effects of a Deficit Reduction on Current Output

When account is taken of its effect on expectations, the decrease in government spending need not lead to a decrease in output.



# The net effects of the three shifts in the IS curve:

## 1. Timing

- Credibly backloading the deficit reduction program toward the future, with small cuts today and larger cuts in the future, is more likely to lead to an increase in output.
- The program's credibility (the perceived probability that the government will do what it has promised when the time comes to it) decreases when the government announces the need for painful cuts in spending, and then leaving them to the future.

## 2. Composition

- If some government spending programs are perceived as “wasteful,” cutting these programs today will allow the government to cut taxes in the future.
- Expectations of lower future taxes and lower distortions could induce firms to invest today, thus raising output in the short run.

# The net effects of the three shifts in the IS curve (2)

## 3. Initial Situation

- If government debt is increasing fast, then a credible deficit reduction program is more likely to increase output in the short run, as the program announcement may well reassure the people that the government has regained control of its budget.

## 4. Monetary Policy

- Even if monetary policy cannot fully offset the effect of an adverse shift in the IS curve, a decrease in the policy rate can help reduce the adverse effects of the shift on output.

## Side note: FOCUS: Can a Budget Deficit Reduction Lead to an Output Expansion? Ireland in the 1980s

- In 1982, Ireland started a deficit reduction program that focused on tax increases but did not change what people saw as too large a role of government in the economy, resulting in high deficits and low GDP growth.
- In 1987, Ireland's deficit reduction program with a focus on cuts in spending and tax reform that had a positive impact on expectations, resulted in higher output growth.

### Fiscal and Other Macroeconomic Indicators, Ireland

	1981	1982	1983	1984	1986	1987	1988	1989
1 <b>Budget deficit (% of GDP)</b>	-13.0	-13.4	-11.4	-9.5	-10.7	-8.6	-4.5	-1.8
2 <b>Output growth rate (%)</b>	3.3	2.3	-0.2	4.4	-0.4	4.7	5.2	5.8
3 <b>Unemployment rate (%)</b>	9.5	11.0	13.5	15.0	17.1	16.9	16.3	15.1
4 <b>Household saving rate (% of disposable income)</b>	17.9	19.6	18.1	18.4	15.7	12.9	11.0	12.6

Source: OECD Economic Outlook, June 1998

# The size of the fiscal multipliers

Views about the fiscal multipliers (the net effects of fiscal consolidation once direct and expectation effects are taken into account):

**Those in favor** of strong fiscal consolidation argue that fiscal multipliers are likely to be **negative**, and thus smaller deficits would lead to an **increase in output**.

**Those against** strong fiscal consolidation argue that fiscal multipliers are likely to be **positive and possibly large**, thus smaller deficits would lead to a **decrease in output**.

This presentation is mostly based on Blanchard, Amighini, and Giavazzi ([2012](#), chapter 17).

## References

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Blanchard, Olivier, Alessia Amighini, and Francesco Giavazzi (2012). *Macroeconomía*.