Lecture 6:
Economic Fluctuations

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Short-Run Economic Fluctuations

- Economic activity fluctuates from year to year. In some years, the production of goods and services rises. In other years normal growth does not occur, leading to recession.

- This is called the “Business Cycle”.

- A recession is a situation of declining real GDP for two consecutive quarters.
Three Key Facts About Economic Fluctuations

① Economic Fluctuations are Irregular and Unpredictable in occurrence and duration.
② Most Macroeconomic Variables Fluctuate Together
③ As Output Falls, Unemployment Rises
  ♦ Changes in real GDP and the unemployment rate are inversely related.
The Basic Model of Economic Fluctuations

- Two variables are used in developing a model to analyze the short-run fluctuations:
  1. The economy’s output of goods and services, measured by real GDP
  2. The overall price level, measured by the CPI or GDP deflator.

The Model: Aggregate Demand and Aggregate Supply
The Aggregate Demand and Aggregate Supply Model

Aggregate Supply (AS)

Aggregate Demand (AD)

Quantity of Output

Price Level

$P^E$

$Q^E$
Aggregate Demand and Aggregate Supply

- The *Aggregate Demand Curve* shows the quantity of real GDP all households, firms and government are willing to buy at different price levels in the economy.

- The *Aggregate Supply Curve* shows the amount of real GDP created by all firms at different price levels in the economy.

Together they determine GDP and the price level.
The Aggregate Demand Curve

The aggregate demand (total expenditure) for goods and services may be referred to as:

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

Why is the aggregate demand curve downward sloping?

1. Pigou’s Wealth Effect
2. Keynes’ Interest Rate Effect
3. Mundell-Fleming’s Exchange Rate Effect
Three Reasons for the Downward Slope of the Aggregate Demand

- **Pigou’s Wealth Effect**: A decrease in the price level makes consumers feel wealthier, which stimulates the demand for consumption goods.”
  - The increase in consumer spending means a larger quantity of goods and services (total real GDP) demanded.
Three Reasons for the Downward Slope of the Aggregate Demand

- Keynes’ Interest-Rate Effect: “The lower the price level, the less money households need to hold to buy the goods and services they want.”
  - A lower price level reduces the interest rate, encourages greater spending on investment goods, and thereby increases the quantity of goods and services demanded.
Three Reasons for the Downward Slope of the Aggregate Demand

- Mundell-Fleming’s Exchange-Rate Effect: “When the U.S. dollar becomes more costly (appreciates), foreign currency price of U.S. goods goes up and foreigners buy fewer of our goods, while Americans purchase more of their goods.”
  - Overall net exports (NX) falls.
  - Example: The Asian crisis has reduced fears of overheating in the US economy recently, for this reason.
Factors that might shift the Aggregate Demand Curve

- Shifts in the aggregate demand curve may arise because of:
  1. Expectations changes causing changes in spending plans by consumers or firms.
  2. Changes in fiscal or monetary policy.

“Anything that causes buyers to want to purchase more or less than before will cause the aggregate demand schedule to shift.”
Factors that might shift the Aggregate Demand Curve

\[ AD = C + I + G + NX \]

- Fiscal Policy changes:
  - if Government expenditure \((G)\) increases, \(AD\) goes up at all price levels (outward shift).
  - If taxes are lowered disposable income increases and consumption \((C)\) causes \(AD\) to rise at all price levels (outward shift).
Factors that might shift the Aggregate Demand Curve

\[ AD = C + I + G + NX \]

- **Monetary Policy changes:**
- Recall the Quantity Theory:
  \[ MV = PY \]
  - an increase in money supply (M) increases the nominal GDP level (PY) since V is fixed.
  - This results in an outward shift of the AD curve (for any given P-level, Y is higher).
Outward shifts caused by higher expectations, government spending, lower taxes or increased money supply.
The Long-Run Aggregate Supply Curve

- In the long-run, GDP level depends on the production function and factors of production available (L, K, R).
  \[ Y = F(K, L, R) \]
- The price level does not affect these variables in the long-run.
- The **Long-Run Aggregate Supply Curve** is vertical at full-employment GDP (real GDP level where natural rate of unemployment occurs) with respect to the price level.
The Long-Run Aggregate Supply Curve

Long-run Aggregate Supply (LRAS)

- Output at Full Employment or when economy is at the “Natural Unemployment” level.
- (“Potential GDP” given L, K, R and technology available)
Shifts in the Long-Run Aggregate Supply Curve

- Over time, any change in the factors that determine the long-run aggregate supply will cause the curve to shift (changes in L, K, R or technology).
  - An event that reduces potential output shifts the schedule to the left.
  - Any change that increases the economy’s potential output will shift the curve to the right.
The Short-Run Aggregate Supply Curve

- In the very short run, prices are "sticky", that is, they do not have time adjust to changes in output.
- Wages or prices may be "sticky" in the short run (recall menu costs and contracts from Chapter 7)
- If all prices did not adjust the price level would remain constant at all levels of output
- this creates a horizontal "very" short run supply curve
The Short-Run Aggregate Supply Curve

- If some prices change and others don’t, we get an intermediate case, or an AS curve with an upward slope.
- If a firm’s price for its good increases, they produce more output.
- An increase in some prices increases the overall level of prices in the economy tends to raise the quantity of goods and services supplied (real GDP).
Short-Run vs. Long-Run Aggregate Supply Curves

As time goes on, more and more prices can change and the aggregate supply curve gets steeper until it is vertical in the long run.
Causes of Short Run Aggregate Supply Curve Shifts:

- Three factors may lead to a shift in the short-run aggregate supply curve.
  - Changes in Factor (input) Prices or firm costs increase leading to increased prices at all output levels
  - productivity increases
    - productivity increases reduce costs at all output levels
  - Legal-Institutional Environment
    - taxes on firms
Shifts in the Aggregate Supply Curve

Shifts outward caused by lower input costs, higher productivity or lower business taxes.
Equilibrium in the Long-Run

- Equilibrium output, employment and price level are determined by the intersection of the aggregate demand curve and the long-run aggregate supply curve.
- Output is at its natural rate and the short-run aggregate supply curve passes through the point of intersection.
In the long run, the economy tends toward the natural rate of employment at potential output level of GDP.
Recession in the Short Run

- Two sources from which a recession in the economy may occur:
  - A decrease (leftward shift) in aggregate demand
  - A decrease (leftward shift) in aggregate supply
- Shifts in the aggregate demand or the aggregate supply curves result in fluctuations in the economy’s output of goods and services.
Source of Recession: A Decrease in Aggregate Demand

For a given price level, a decrease in one or more components of the total spending function (C, I, G or NX) will cause the aggregate demand schedule to shift leftward.

- Output falls below the full employment output (“cyclical unemployment”)
- Unemployment rises
- Price levels fall or inflation is reduced
A Decrease in Aggregate Demand

Price Level

Aggregate Supply

Aggregate Demand

Q^E

Quantity of Output

P^E
A Decrease in Aggregate Demand

Price Level

Aggregate Supply

Aggregate Demand

Q^E

P^E

Quantity of Output
Reduced GDP causes “cyclical” or short run unemployment.
A Reduction in Aggregate Demand

1. A fall in aggregate demand...

2. ...lowers output in the short run...

3. ...but in the long run affects only the price level.
An Increase in Aggregate Demand

1. A rise in aggregate demand...

2. ...raises output in the short run...

3. ...but in the long run affects only the price level.
Source of Recession: A Decrease in Aggregate Supply

- A decrease in short-run aggregate supply (possibly caused by higher input prices) will result in a new equilibrium along the aggregate demand curve at a level of GDP below full employment.
  - A fall in total output below full output
  - An increase in unemployment
  - An increase in prices or inflation
A Decrease in Aggregate Supply

Price Level

Aggregate Supply

Aggregate Demand

$P^E$

$Q^E$

Quantity of Output
A Decrease in Aggregate Supply

Price Level

Aggregate Supply

Aggregate Demand

Quantity of Output

Q^E

P^E
A Decrease in Aggregate Supply

Reduced GDP causes "cyclical" unemployment
A Decrease in Aggregate Supply

- When the aggregate supply curve shifts left, the price level rises and output decreases. This is called *Stagflation*.

*Stagflation* refers to a simultaneous decrease in real GDP and an increase in prices or inflation.
Actions by Policymakers During Periods of Recession

- Policymakers, when faced by decreasing aggregate demand or supply could:
  - Do nothing, waiting for all prices to adjust in the long run.
  - Take action to increase aggregate demand using expansionary fiscal policy (e.g. increase government spending or decrease taxes).
  - Implement expansionary monetary policy.
Doing Nothing in a Recession

- In a recession, prices are low. This should eventually increase consumption, resulting in higher output and more labour being hired.
- In order for more labour to be hired, or consumption to increase, expectations must improve.
- Improved expectations could take time to form, causing recessions to be long-lasting.
Doing Nothing in a Recession

Improved expectations and low prices, including wages may increase AD, ending the recession. This could take time.
Expansionary monetary or fiscal policy

- Notice by increasing the money supply or government spending, or reducing taxes, the AD curve shifts outward.
- Such “expansionary” policies could decrease unemployment but also cause inflation.
- This is called the “unemployment-inflation tradeoff”.
Using Aggregate Demand to end a Recession

Expansionary fiscal or monetary policy shifts the AD curve to the right, increasing employment and output.
Expansionary Policy

- Since expansionary policy can shift AD to the left and increase prices causing inflation, it is used sparingly.
- **A warning:** Continuous deficits caused by higher and higher spending are therefore inflationary as well as bad for growth if government spending does not increase the economy’s capital.
**Summary:**

- Economic fluctuations can be analyzed using aggregate demand and aggregate supply.
- Slope of the AS function depends on the time-frame.
- In the long run, output and unemployment tend to their potential levels, making the AS vertical. In the short run, AS is flatter.
- AS is shifted by changes in input prices, productivity, or business taxes. AD is shifted by expectations or government action (expansionary fiscal or monetary policy).
- Rightward shifts in AD or AS can cause a recession (reduced output and cyclical unemployment).
- In the case of a recession, the government could do nothing, in which case recessions may be long-lasting, or use expansionary fiscal or monetary policy to shift AD outward.
- Expansionary fiscal and monetary policies face the unemployment-inflation tradeoff.