Principles of Macroeconomics Module 3.1

Aggregate Demand

AD-AS Model

Snapshot of the aggregate economy

- Why and how an economy experiences growth in long run and fluctuations in the short run

- Why and how the price level changes

- How output changes as a result of short run shocks

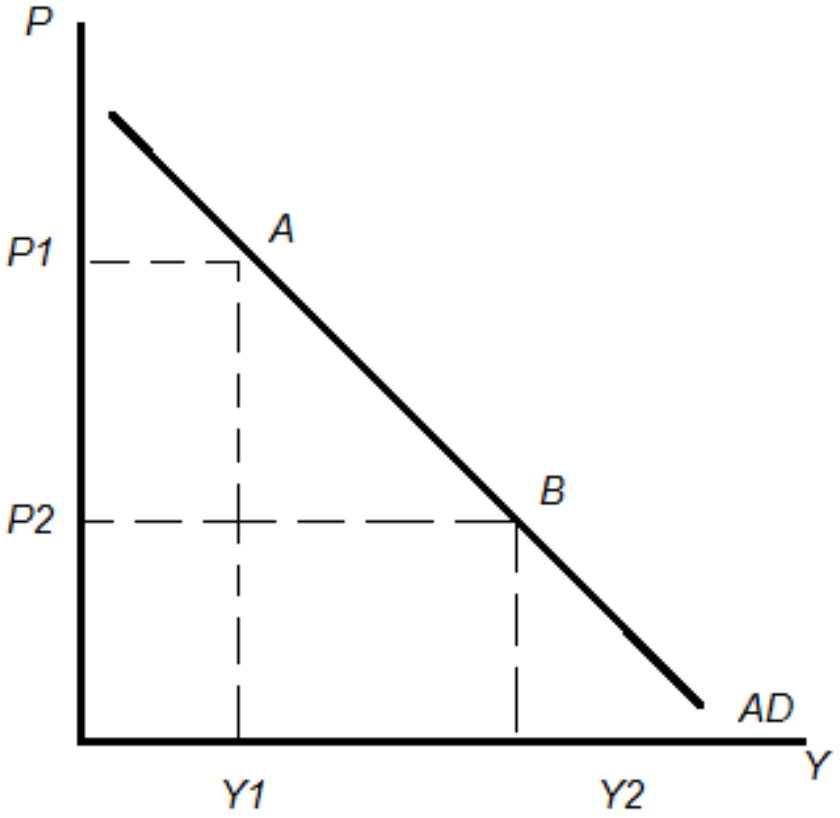
AD-AS Model

- ***Aggregate demand (AD):*** all goods and services all households, firms, and government wants to buy at each price point

- ***Long Run Aggregate Supply (SRAS):*** all goods and services supplied by firms at each price point in the long run

- ***Short Run Aggregate Supply (SRAS):*** all goods and services supplied by firms at each price point in the short run

Aggregate Demand



Y = C + I + G + NX

The relationship between Price and AD is driven by the influence of Price on C, I, G, and NX

Lower P = Higher C, I, NX

Higher P = Lower C, I, NX

Determining Aggregate Demand

Wealth Effect: (C)

- At lower price level – value of money is higher
- Consumers can buy more with each $ and therefore are compelled to spend more
- ***At lower price levels – higher level of Consumption spending***

Determining Aggregate Demand

Interest Rate Effect: (I)

- At lower price level – households reduce money holdings by lending some out, leading to a fall in interest rates
- Interest rates fall and firms are encouraged to borrow and invest
- ***At lower price levels – higher level of Investment spending***

Determining Aggregate Demand

Exchange Rate Effect: (NX)

- Based on the interest rate effect: lower price levels correspond to lower interest rates (domestically)
- With lower interest rates, domestic and foreign investors will seek higher returns abroad
- Net capital outflow: ↑demand for FX ↓demand for USD
- USD depreciates -- US exports become cheaper, imports are more expensive
- ***At lower price levels – higher level of Net Exports***

Shifts in Aggregate Demand

AD Curve will shift if any of the components of AD change

- **Change in C:** Families across the economy are increasing spending on goods and services

- **Change in I:** Firms, overall, are buying new capital goods and machines, expanding their business facilities, ect.

- **Change in G:** Government is spending more, building new infrastructure, improving the education system, buying new weapons

- **Change in NX:** Exports from the US to other countries increase

Key Takeaways

- AD-AS model explain short run fluctuations in the economy as well as long run trends
- There are many factors that can influence the economy as a whole and this model will help explain how and why
- Aggregate Demand: summarizes all of the spending behavior on goods and service by all households (C), firms (I), government (G) and foreign transactions (NX) in the economy
- Changes in AD: driven by C, I, G, or NX

Principles of Macroeconomics Module 3.2

Aggregate Supply

AD-AS Model

Snapshot of the aggregate economy

- Why/how experience economic growth in long run and fluctuations in the short run

- Why/how price level changes

- How monetary and fiscal policy impact the economy as a whole

AD-AS Model

- ***Aggregate demand (AD):*** all goods and services all households, firms, and government wants to buy at each price point

- ***Long Run Aggregate Supply (SRAS):*** all goods and services supplied by firms at each price point in the long run

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Long Run vs. Short Run

- In the long run → nominal variables and real variables are separate
  - Changes in nominal variables will have no impact on real variables
  - Classical Dichotomy
  - Changes in Price Level, Inflation, Money Supply will not impact Real GDP

- In the short run → nominal and real and more closely linked
  - Classical dichotomy breaks down
  - Nominal factors such as changing price levels, inflation, and money supply will have some impact on real variables in the short run

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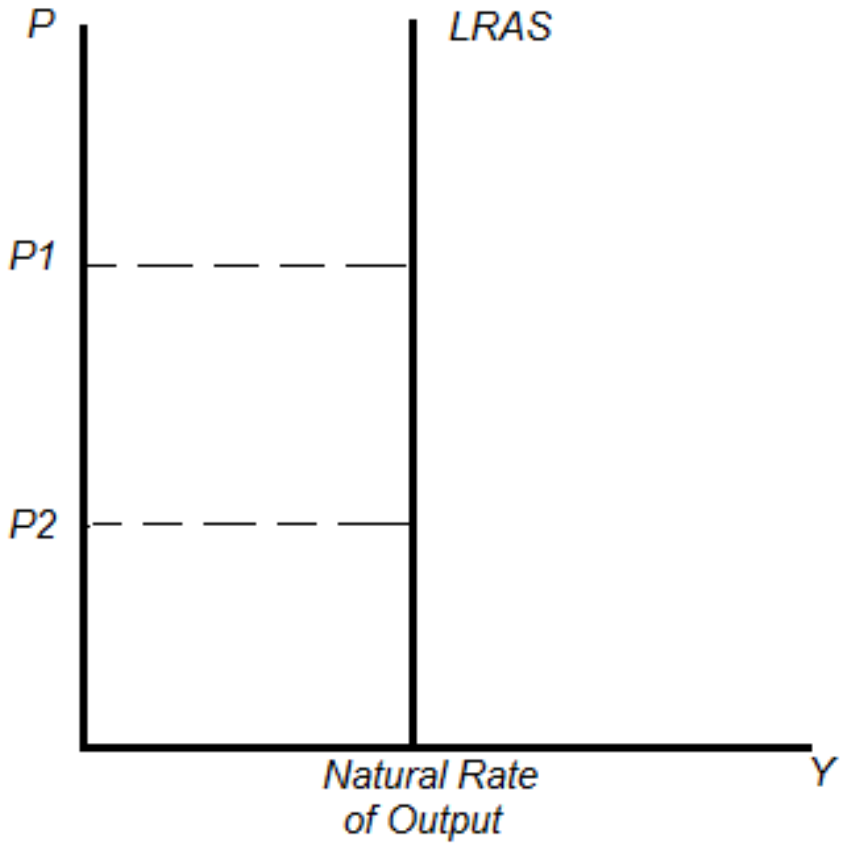
Aggregate Supply in Long Run



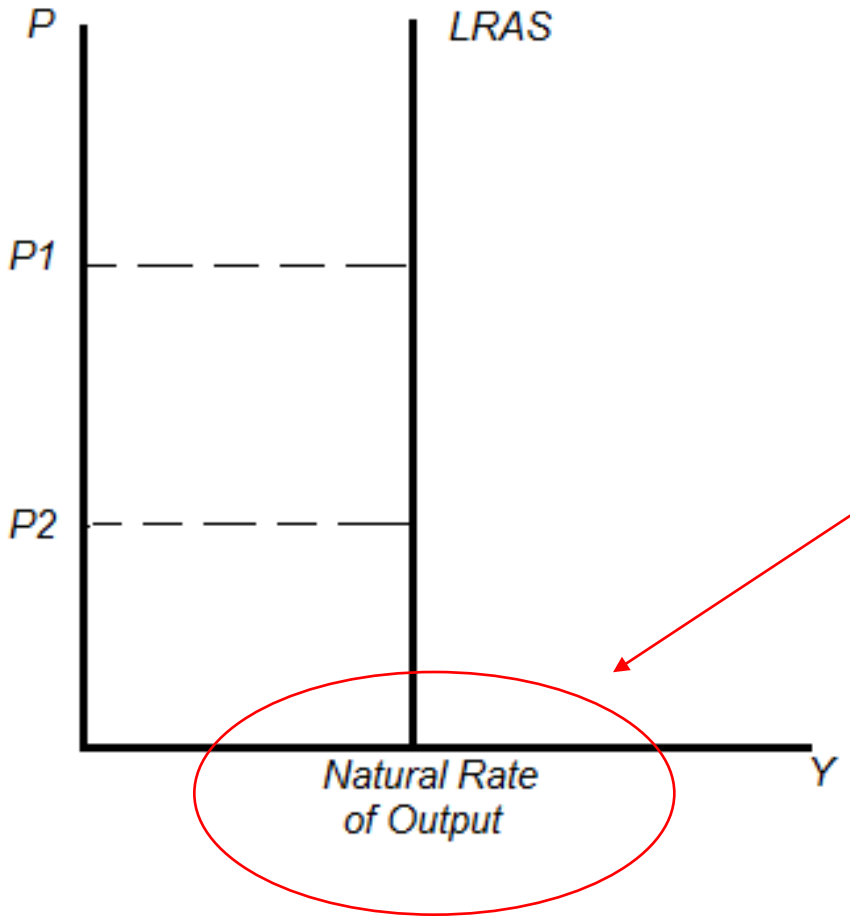
In Long Run: nominal variables have no impact on real variable

Supply is determined by available resources and technology

Natural Rate of Output:

Rate of output achieved when producing where unemployment is at the natural rate

Aggregate Supply in Long Run



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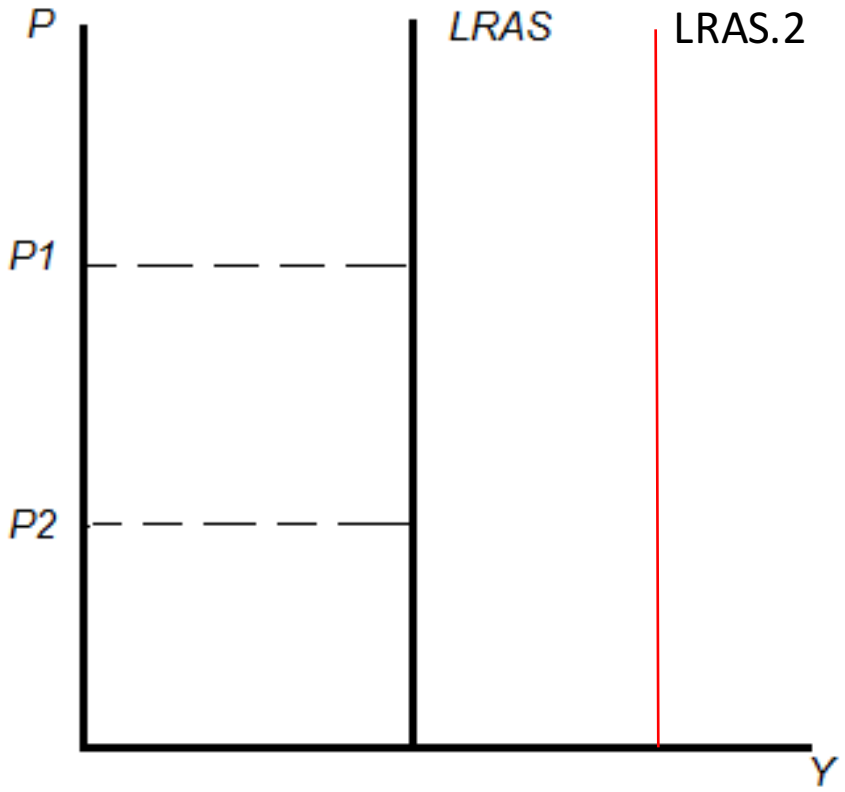
Shifts in LRAS

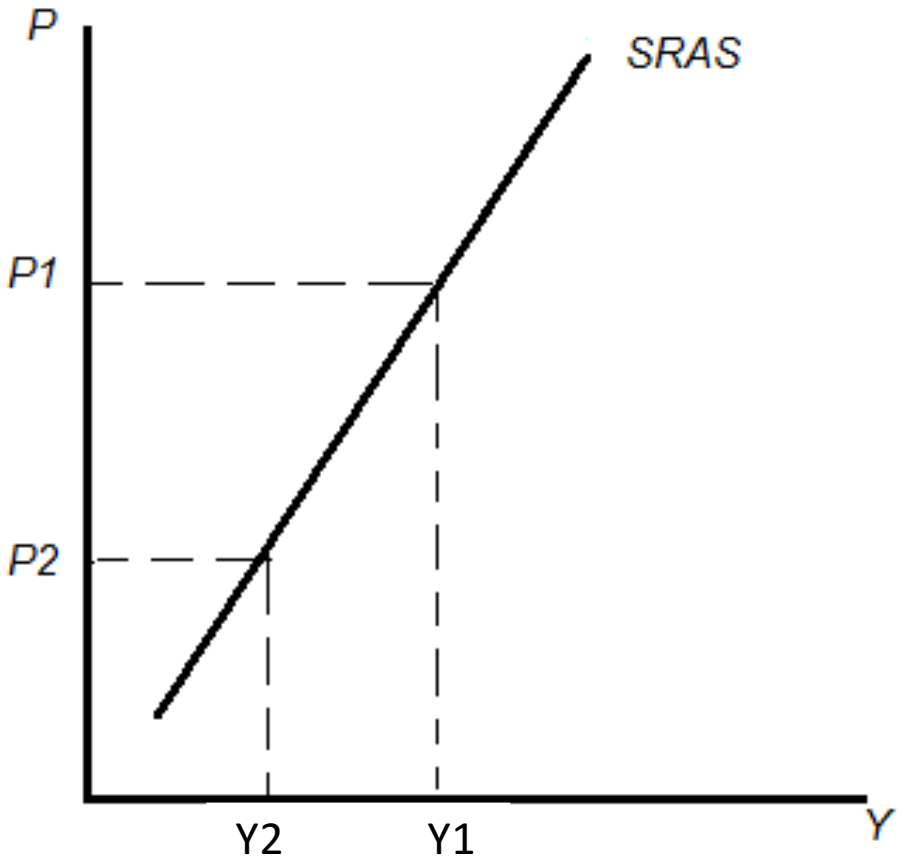


INCREASE IN LRAS

Shifts in LRAS will come ONLY from <u>permanent</u> <u>changes</u> in

- **available resources**
- **available production technology**

Aggregate Supply in the Short Run



SRAS upward sloping because of:

- **Sticky wages**
- **Sticky prices**

It is the reason why we have short run economic fluctuations

Upward Sloping SRAS

Sticky Wages:

- Firms have wage agreements with employees
- If prices are unexpectedly lower – cannot decrease wage to match
- Instead: produce less in the short run (hire less workers) and make labor adjustments in the long run

Sticky Prices:

- Not all firms can immediately change their prices in response to economic conditions
- If prices are unexpectedly lower – relative prices are higher (if cannot change prices)
- Higher relative prices – lose sales and cut production until they can change prices

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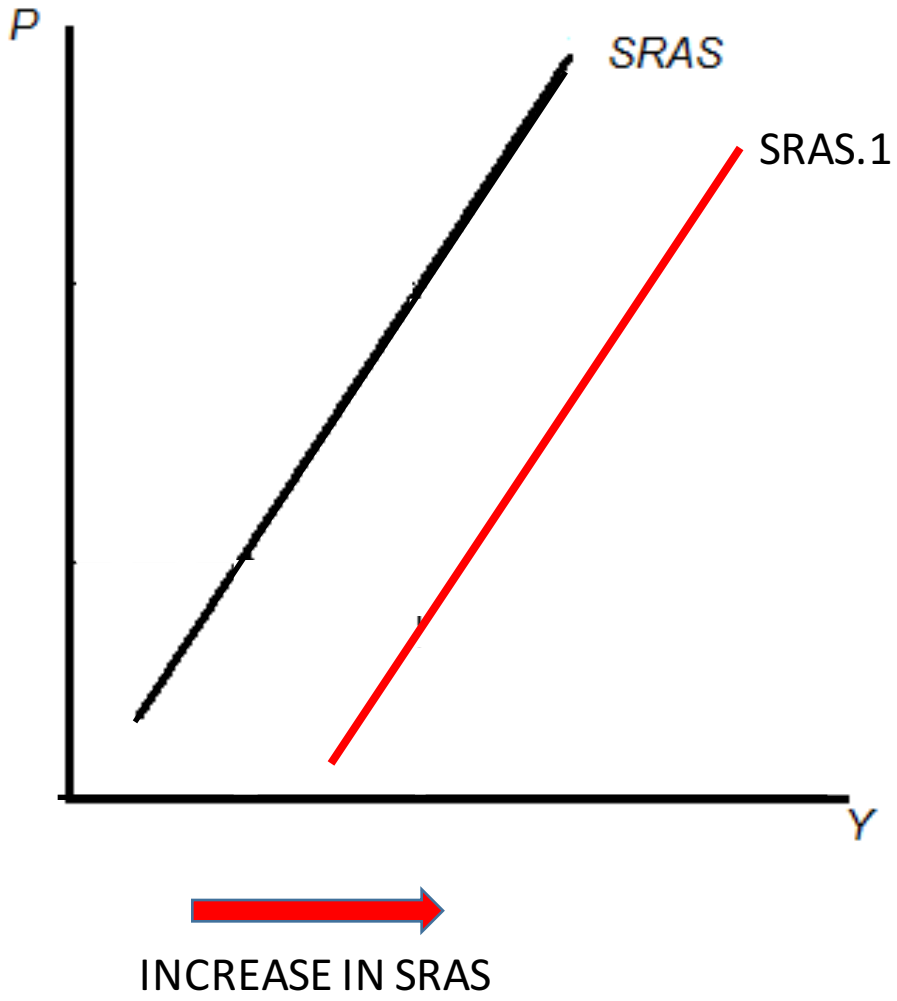
Aggregate Supply in the Short Run



Shifts in SRAS:

- Permanent Changes in Resources or Technology
- Temporary Changes in Resources or Technology
- Adjustment in expectations of inflation

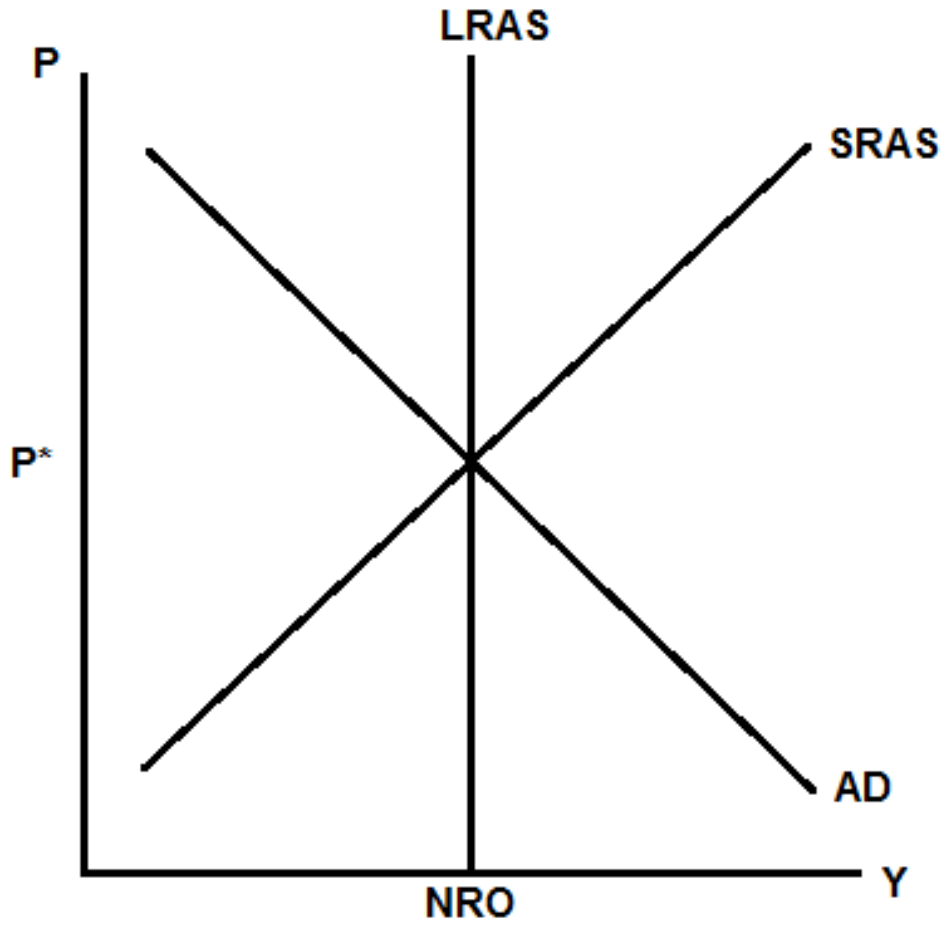
Key Takeaways

- Aggregate supply differs in the long run and short run
- In the long run – real and nominal variables are separate
- In the short run – real and nominal variables are intertwined
- Shifts in LRAS are determined only by permanent changes in available resources and production technology
- Shifts in SRAS are determined by temporary or permanent changes in available resources and production technology AND in adjustments between expected and actual price levels

Principles of Macroeconomics Module 3.3

Macroeconomic Equilibrium

Macroeconomic Equilibrium



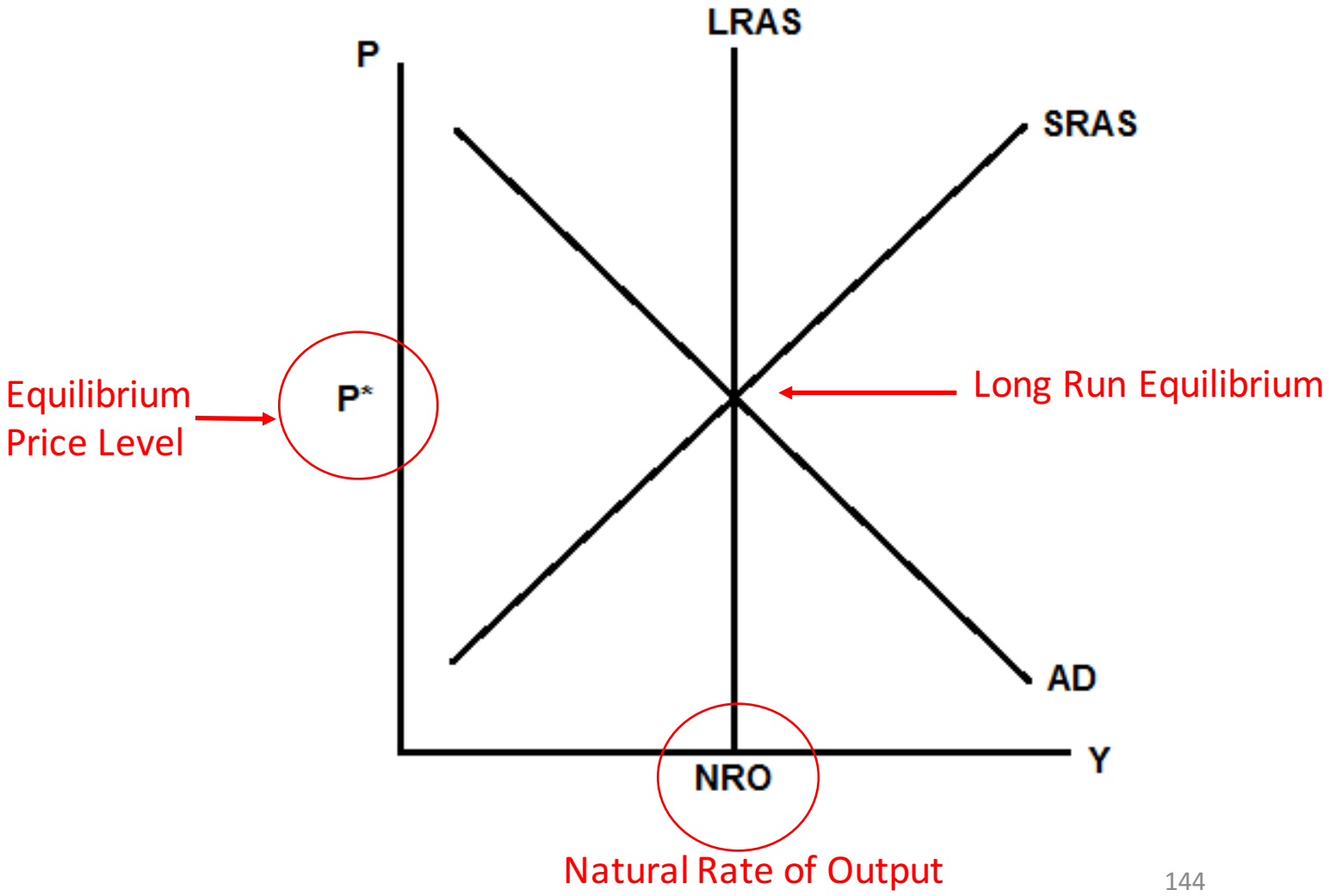
Macroeconomic Equilibrium

In Long Run Equilibrium:

Economy is operating at the Natural Rate of Unemployment

Producing at the Natural Rate of Output

Equilibrium Price Level



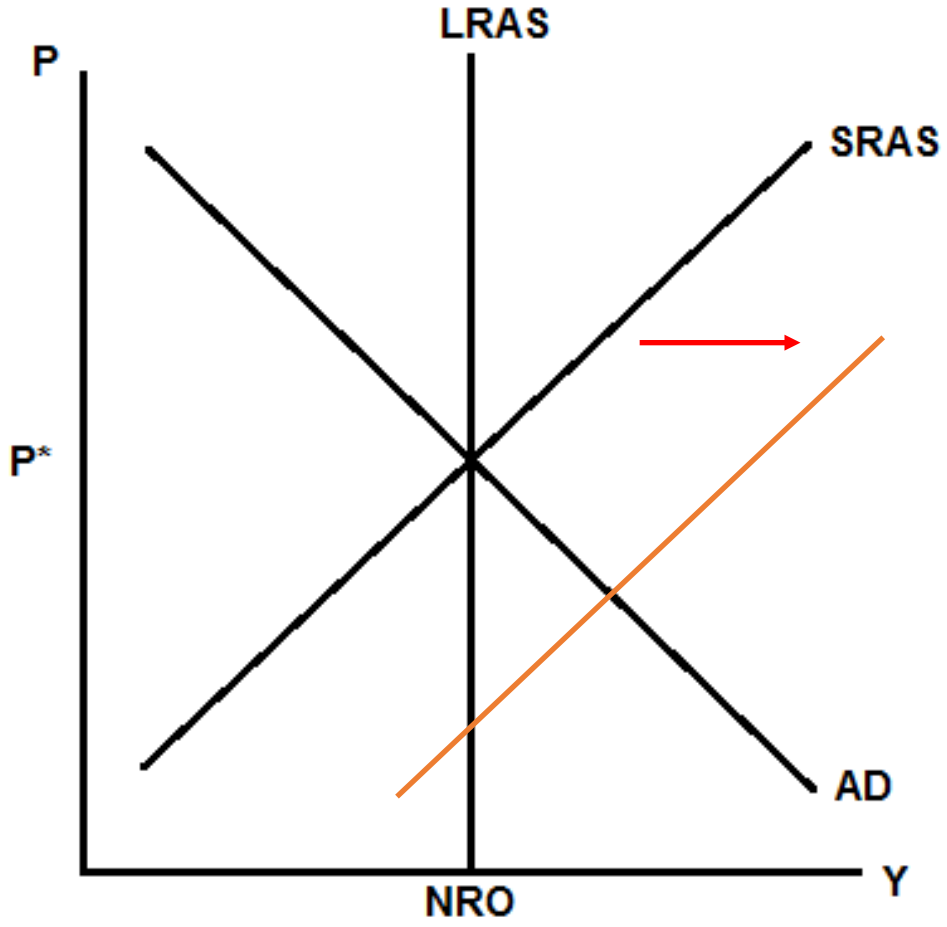
Macroeconomic Equilibrium

Deviations from the long run equilibrium represent short run economic fluctuations

Short Run Economic Fluctuations :

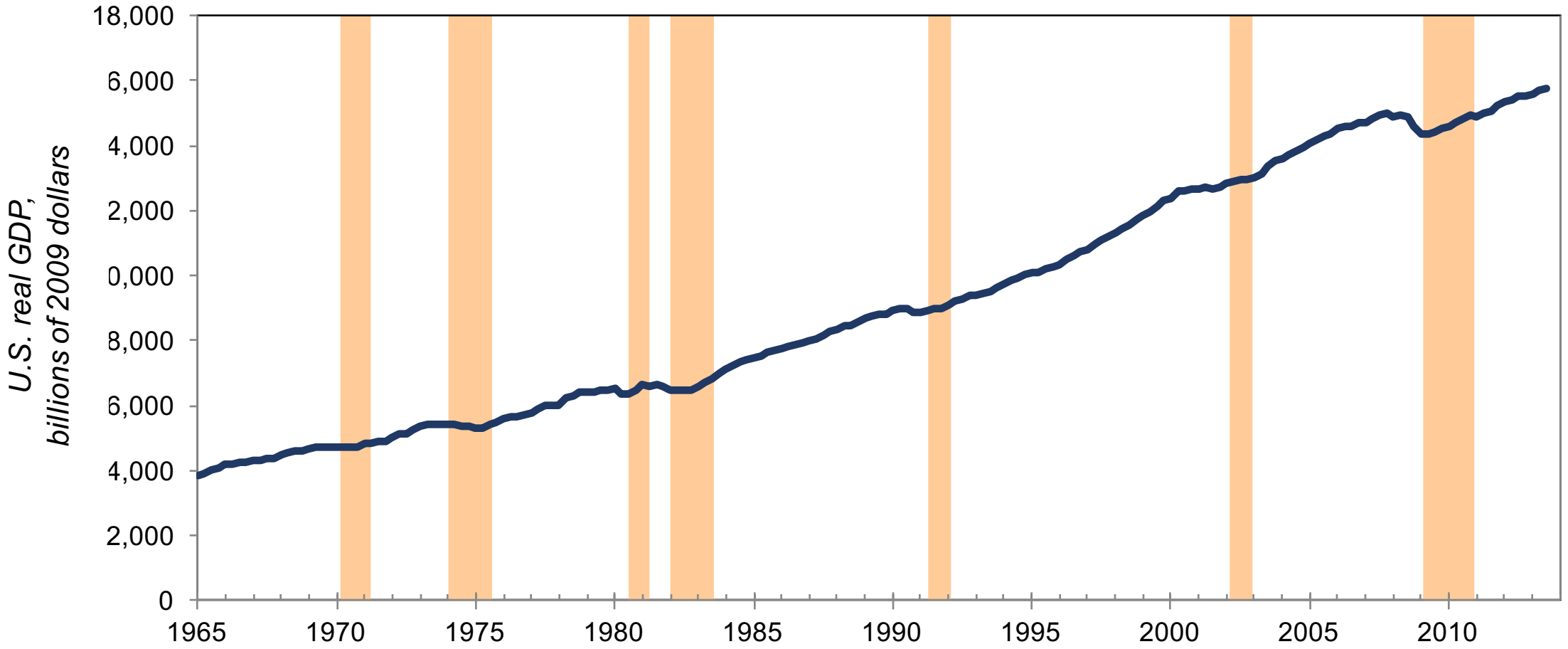
Occur when there are shifts in AD or SRAS

- Determine price level changes → Inflation in short run
- Determine short run fluctuations in production
- Explain business cycles – recessions and boom periods in our economy



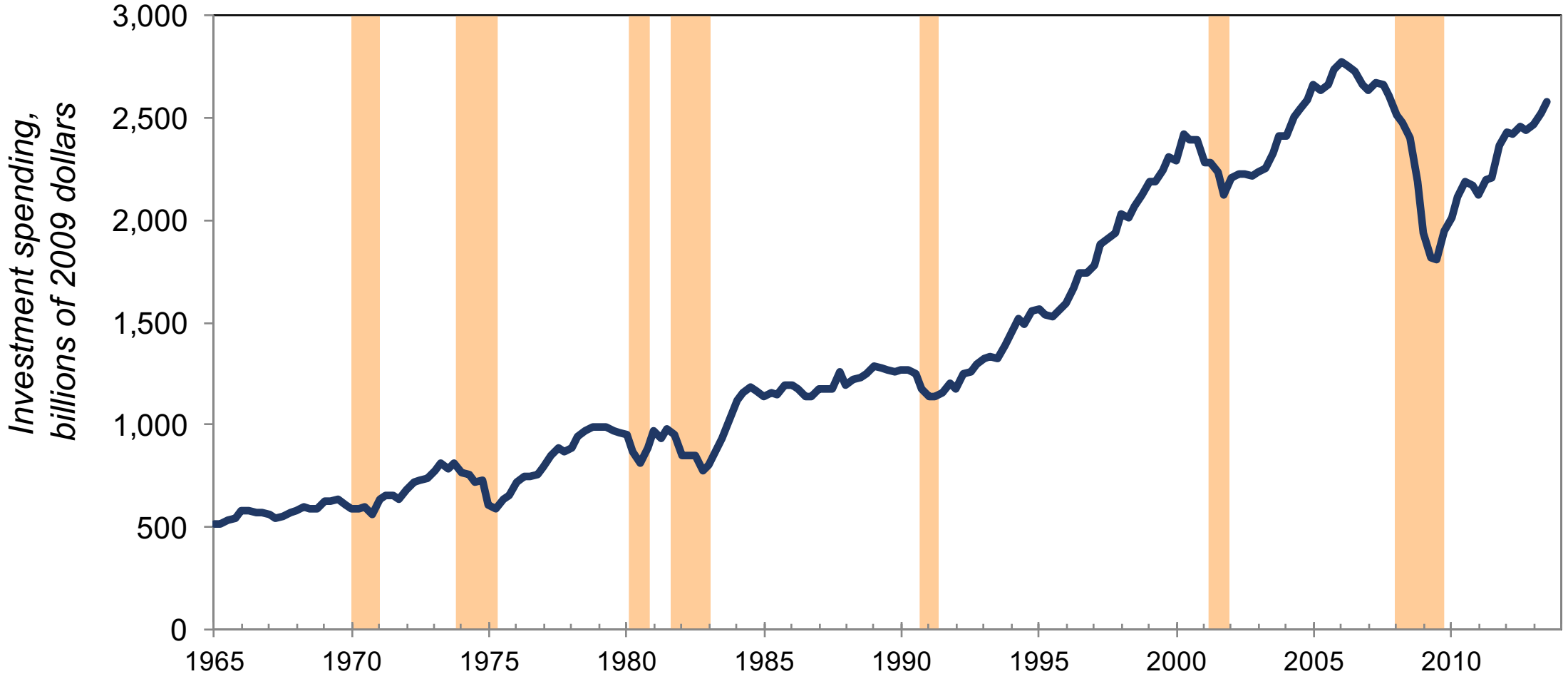
Facts about Economic Fluctuations

Economic fluctuations are irregular and unpredictable



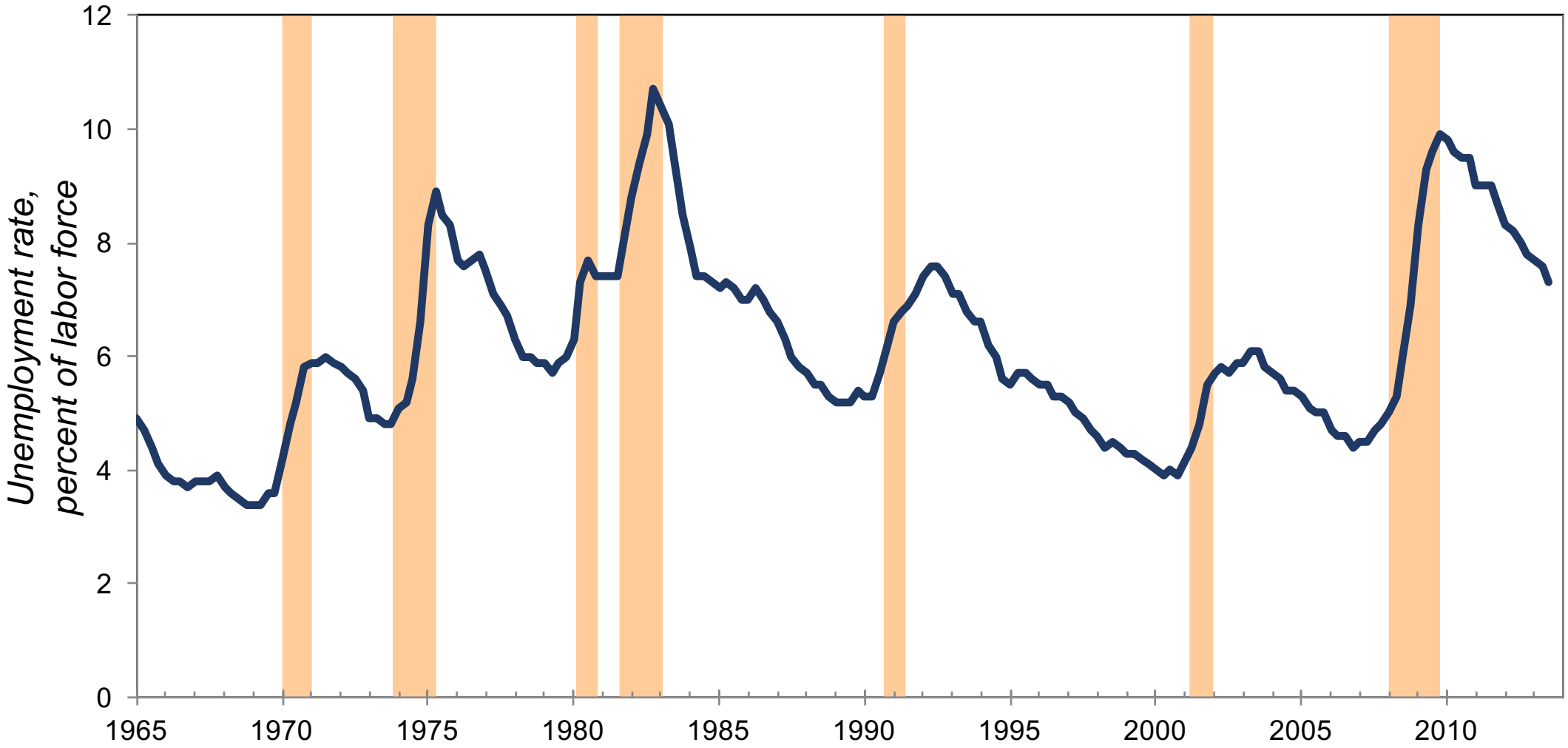
Facts about Economic Fluctuations

Most economic variables fluctuate together



Facts about Economic Fluctuations

As output falls, unemployment rises

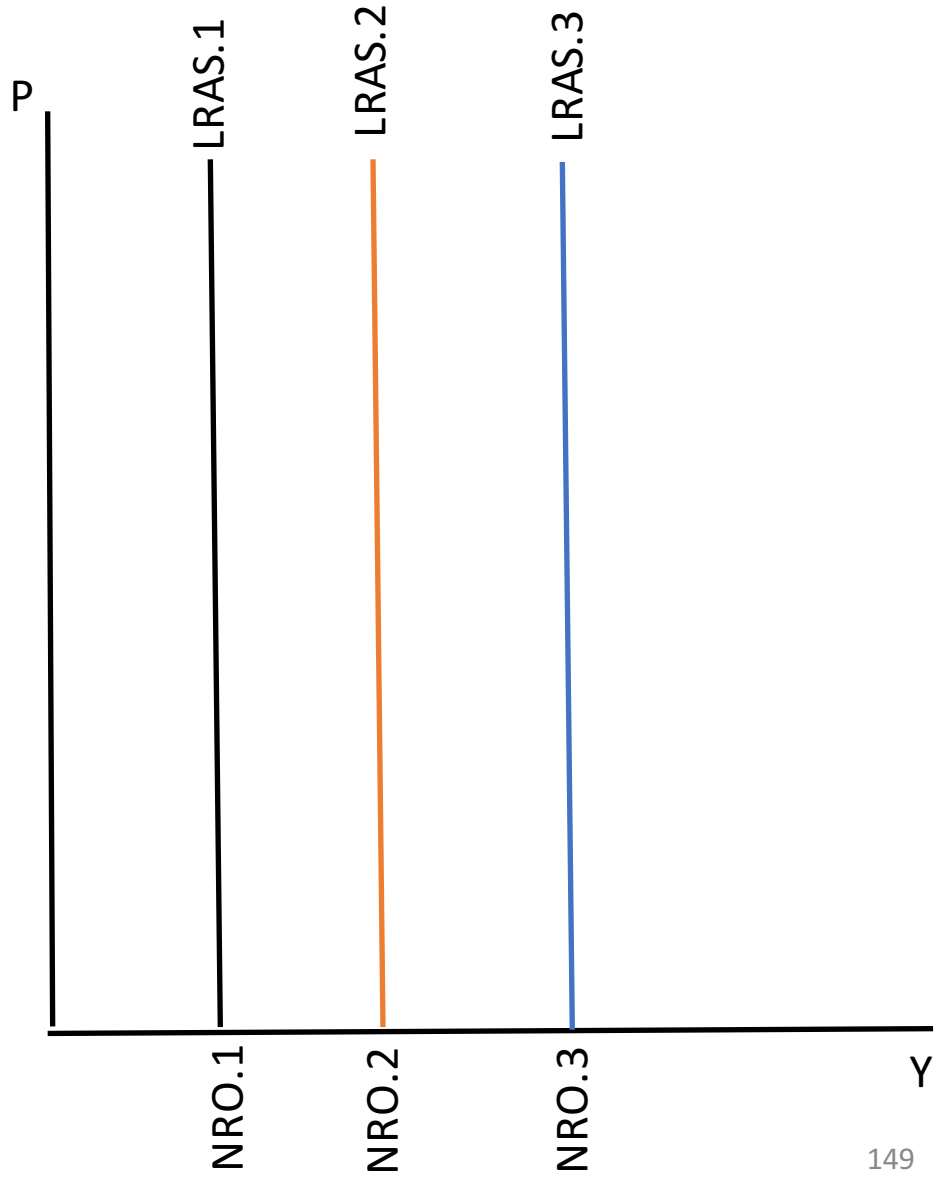


Long Run Economic Growth

Two facts have been observed about the economy in the long run:

(1) Technological advancement is consistent and continuous throughout time → **LRAS Continually INCREASES**

(2) Money Supply increases overtime → **AD Continually INCREASES**



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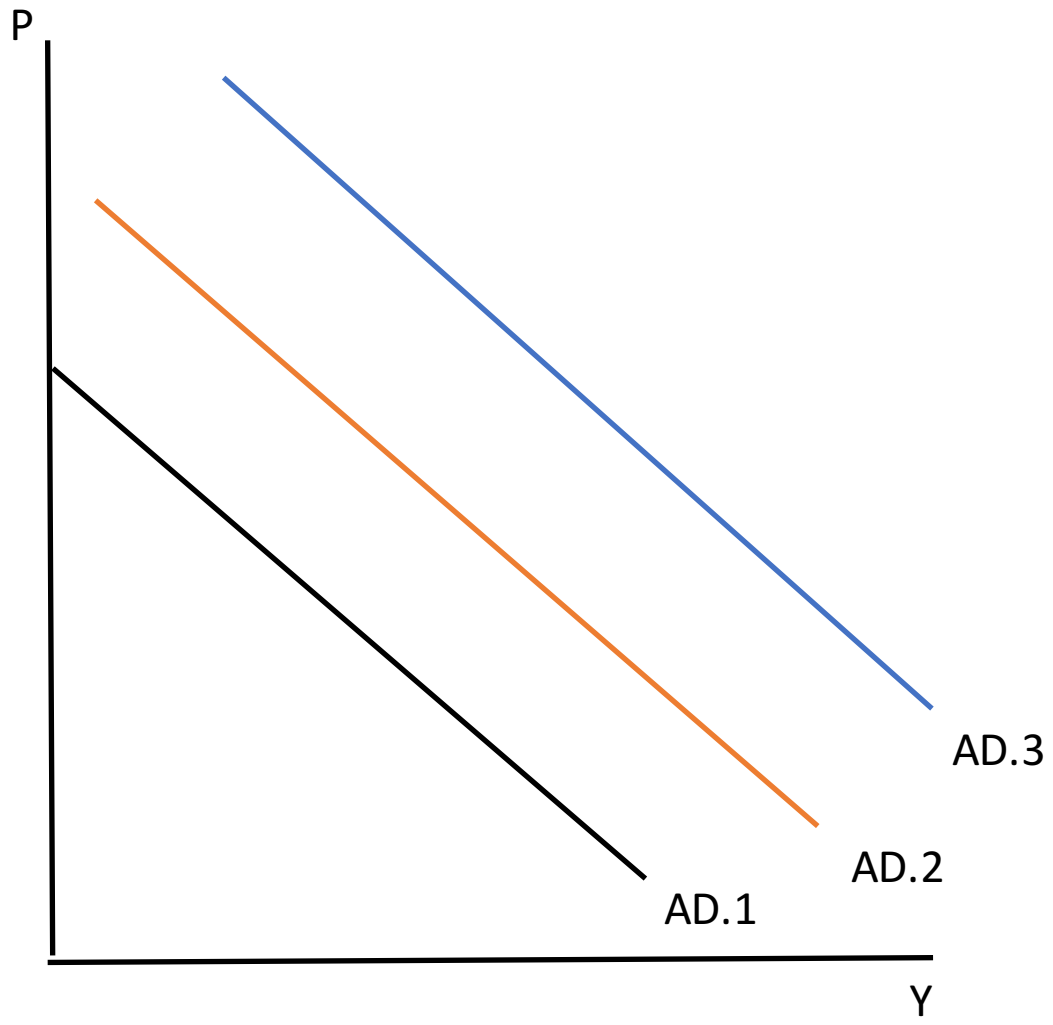

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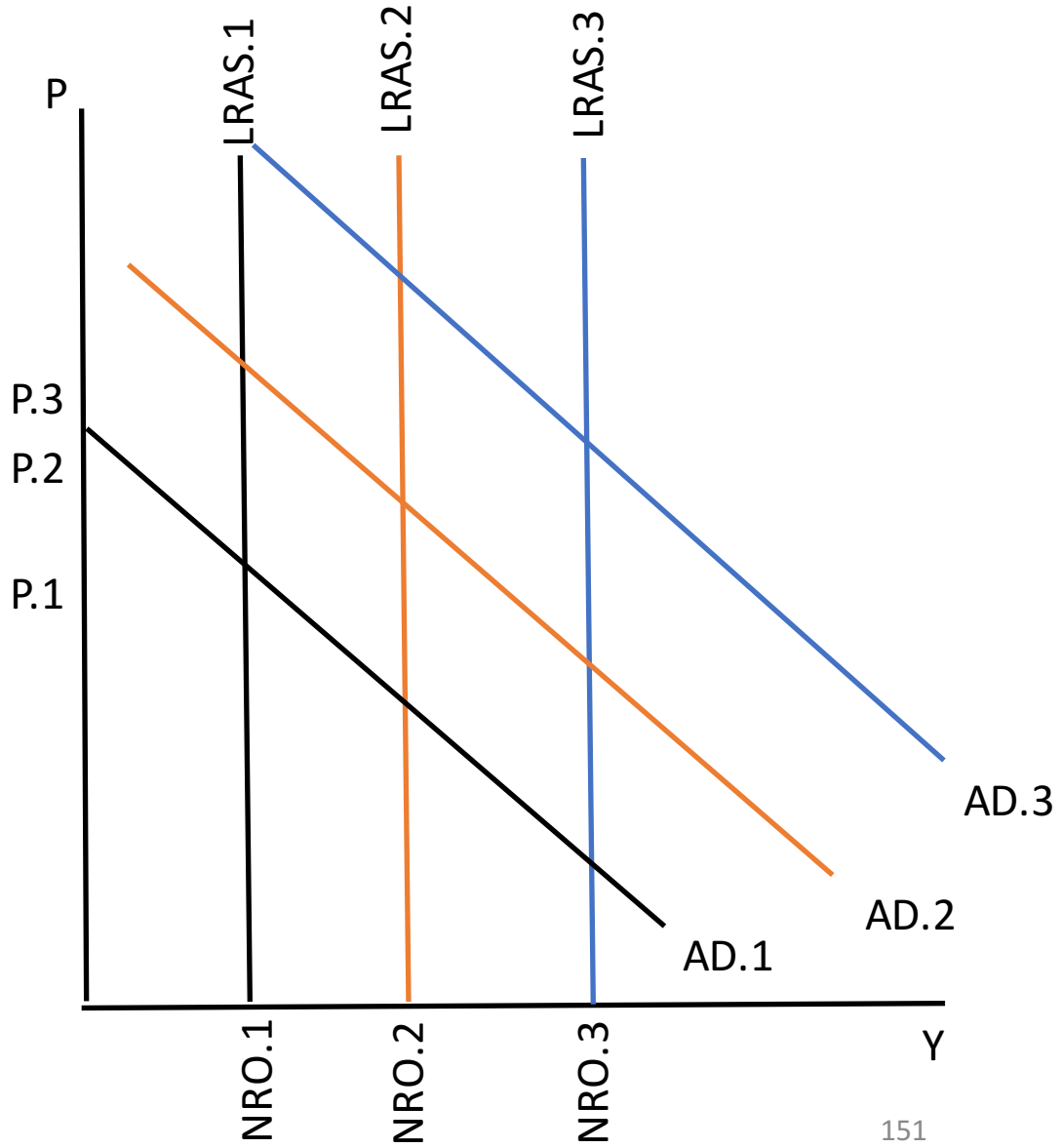
RESULT:

- GROWTH IN REAL GDP
- INFLATION

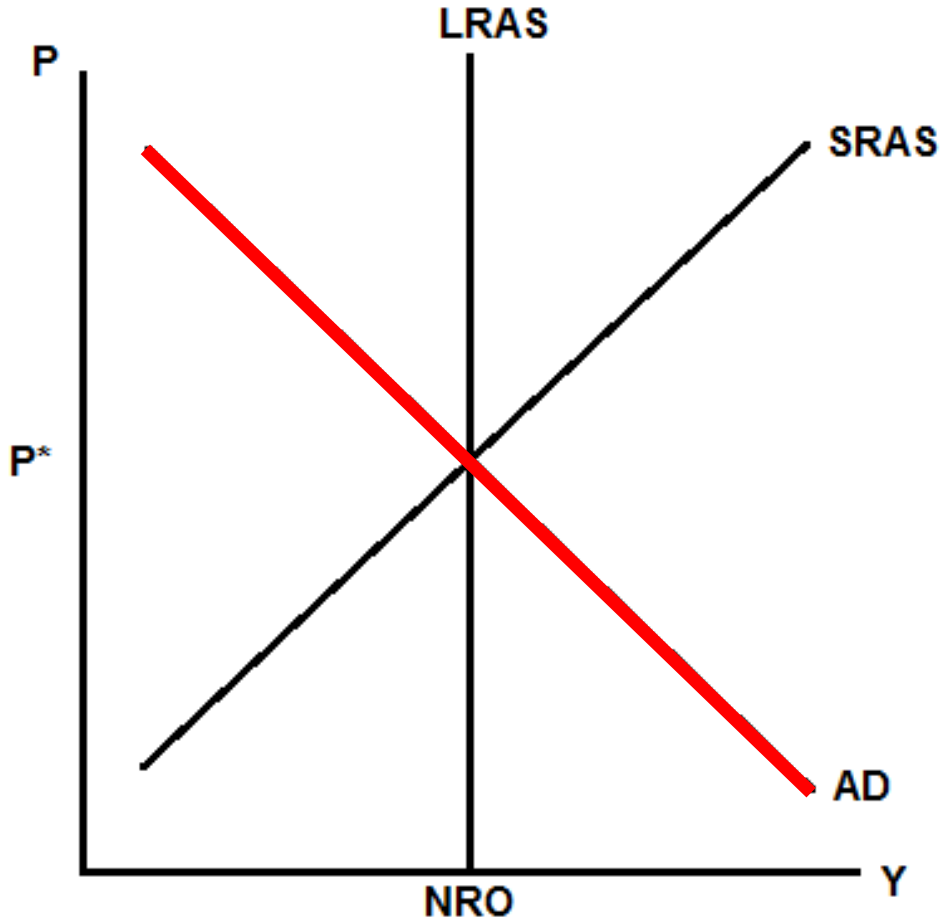


Test Your Understanding - 1

People become more concerned about saving for retirement as companies eliminate pension plans and other firm-sponsored retirement support

- Draw out an AD-AS graph
- Explain how this will affect AD or AS
- Illustrate the change on the AD-AS graph
- What happens in the short-run? What happens in the long-run?

Test Your Understanding - 1



1. Which curve shifts and why?
   - Shift AD – consumption spending drops today as people save more for retirement
2. Which direction does it shift?
3. Illustrate and analyze

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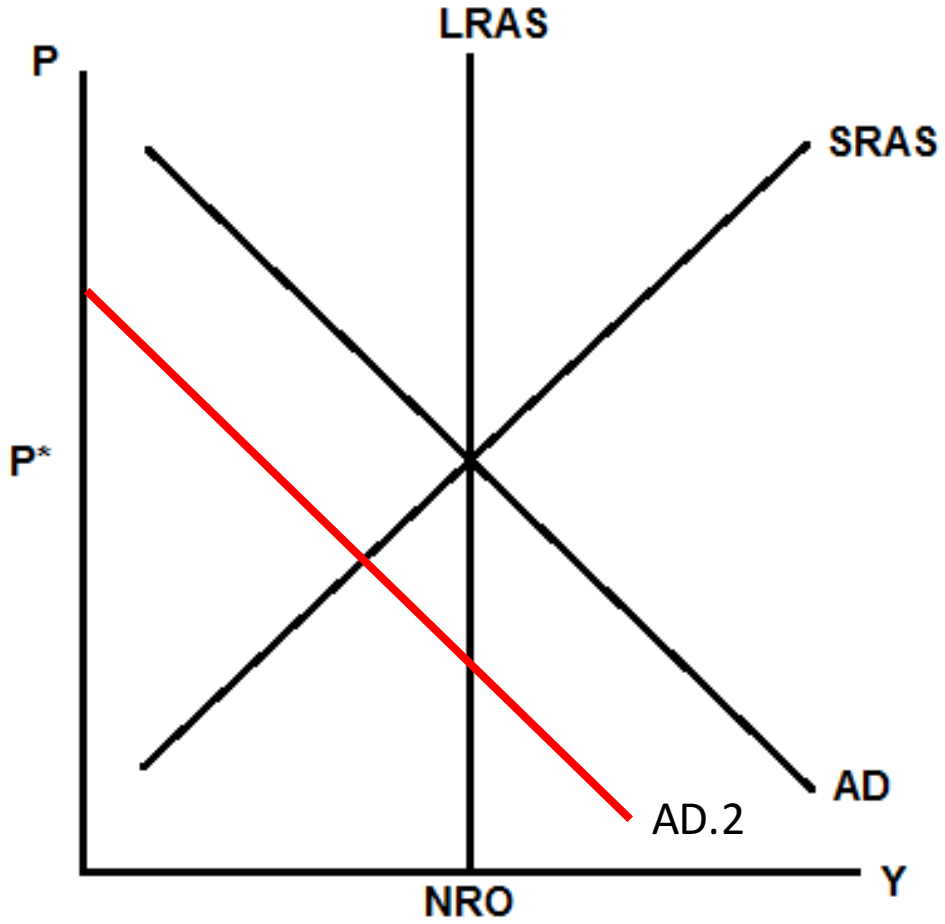

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   - Shift AD – consumption spending drops today as people save more for retirement

2. Which direction does it shift?
   - Shifts in or to the left
   - Decline in C → Decline in AD

3. Illustrate and analyze

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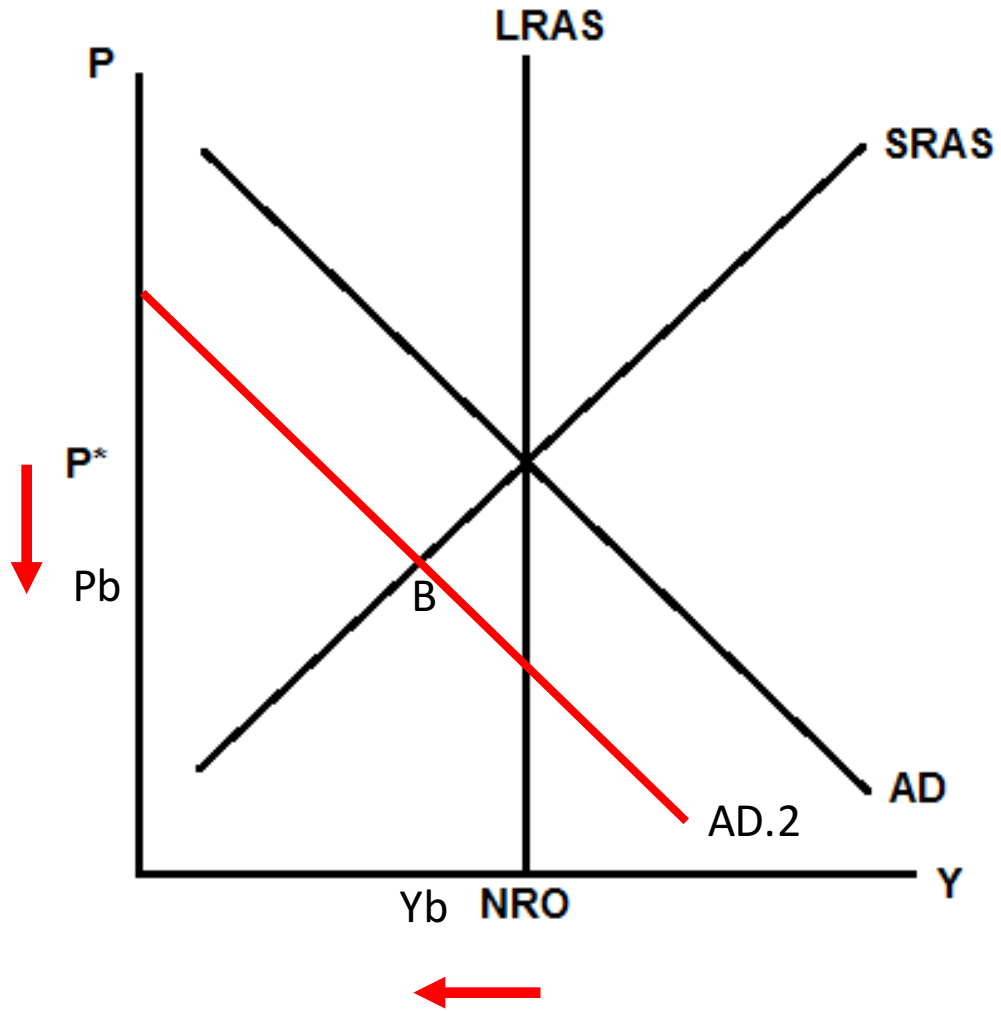

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2. Which direction does it shift?
   - Shifts in or to the left
   - Decline in C → Decline in AD

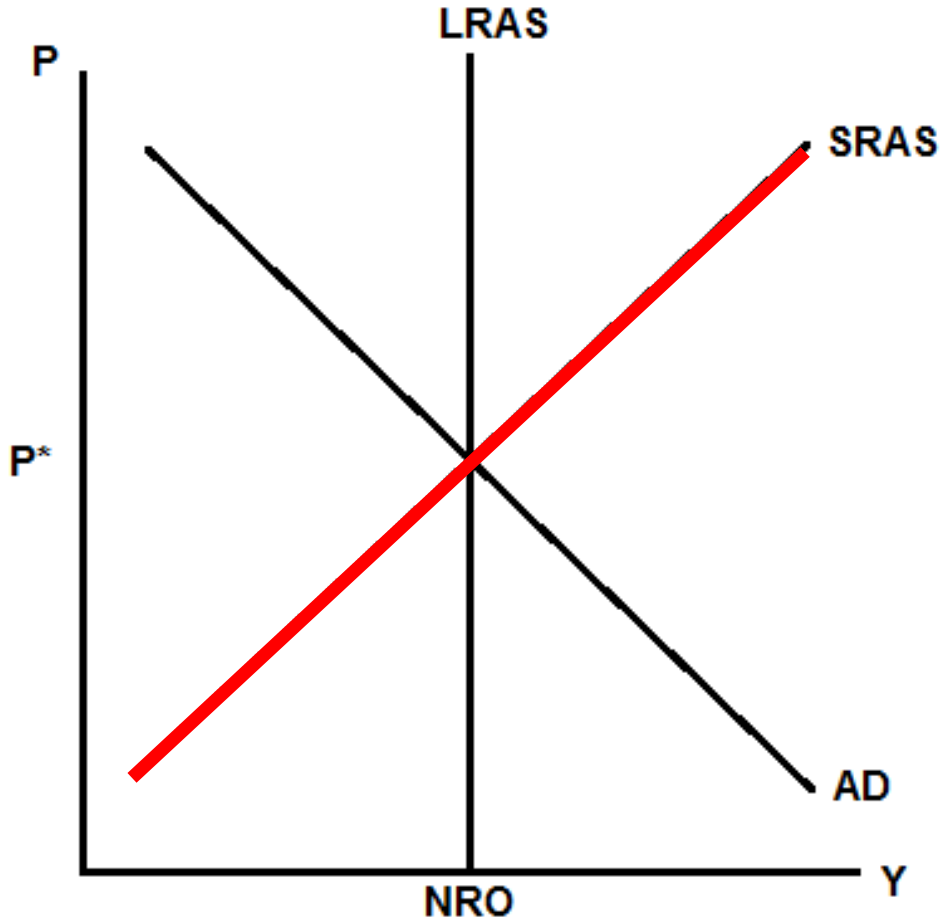
3. Illustrate and analyze
   - New Equilibrium in Short Run: B
   - Price Level is lower
   - Output is lower
   - **NEW SHORT RUN EQUILIBRIUM**

Test Your Understanding - 2

Consider the recent drop in oil prices from over $100/barrel in 2014 to around $40 by the end of 2015. What impact does this have on the aggregate economy?

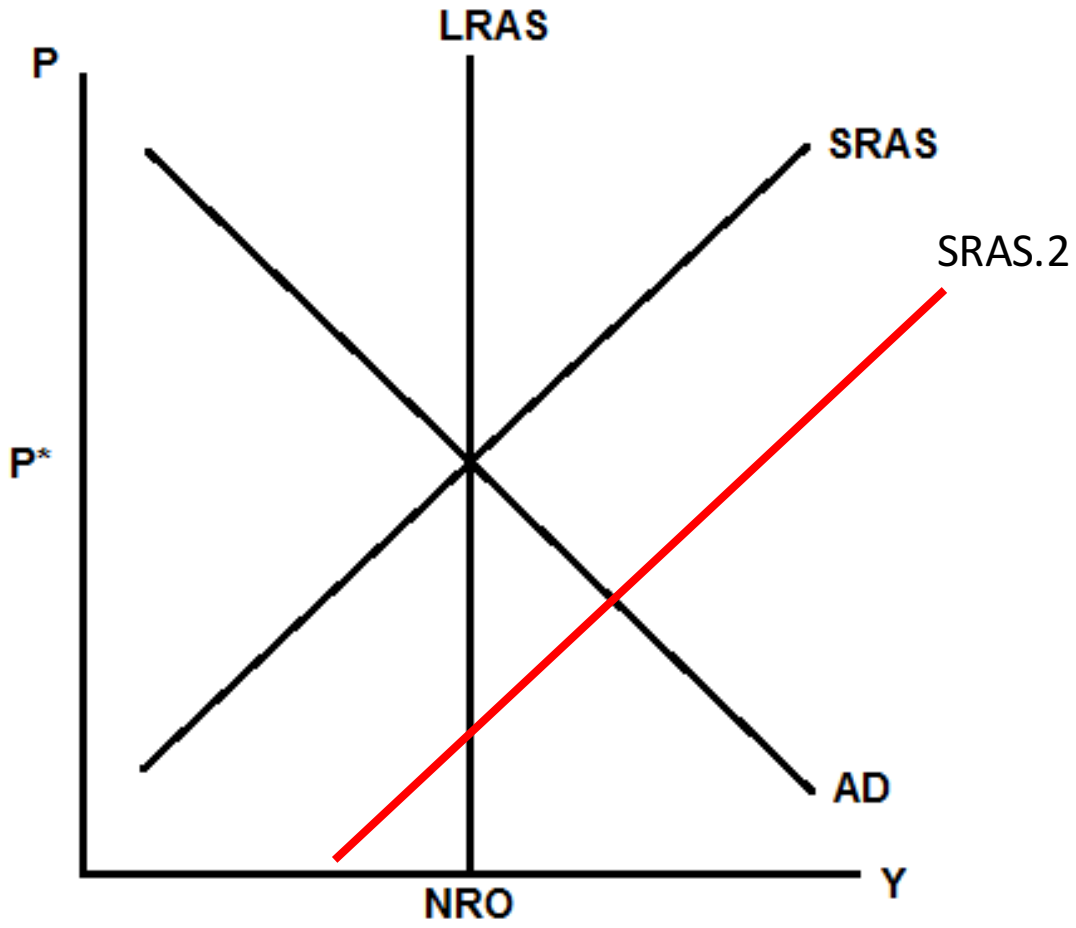
- Draw out an AD-AS graph
- Explain how this will affect AD or AS
- Illustrate the change on the AD-AS graph
- What happens in the short-run? Can this be a permanent outcome?

Test Your Understanding - 2



1. Which curve shifts and why?
   - Shift SRAS – price of an input (oil) is lower
   - Cost of production is lower overall
2. Which direction does it shift?
3. Illustrate and analyze

Test Your Understanding - 2

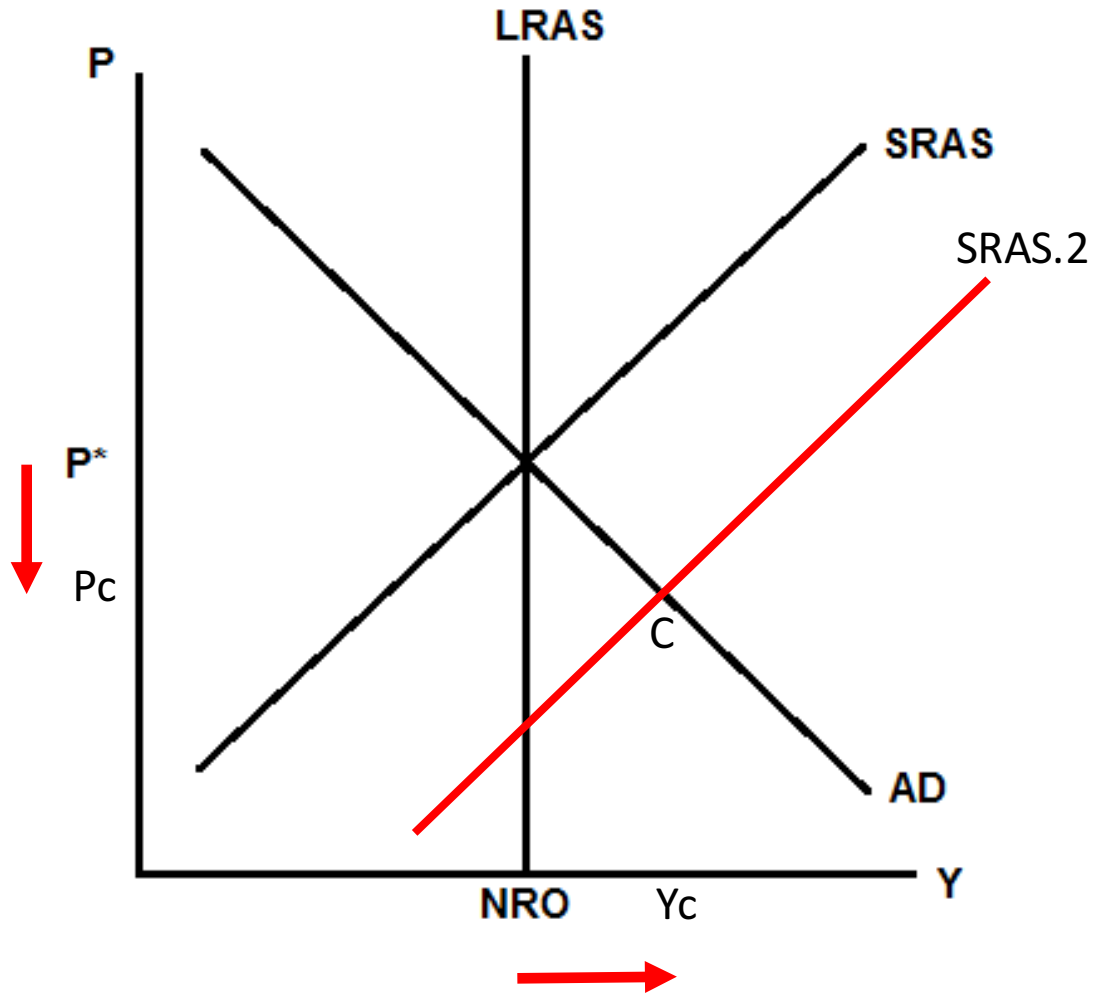


1. Which curve shifts and why?
   - Shift SRAS – price of an input (oil) is lower
   - Cost of production is lower overall

2. Which direction does it shift?
   - Shifts out or to the right
   - Increase in SRAS

3. Illustrate and analyze

Test Your Understanding - 2



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   - Shift AD – consumption spending drops today as people save more for retirement

2. Which direction does it shift?
   - Shifts out or to the right
   - Increase in SRAS

3. Illustrate and analyze
   - New Equilibrium in Short Run: C
   - Price Level is lower
   - Output is higher
   - **NEW SHORT RUN EQUILIBRIUM**

Key Takeaways

- AD-AS model helps explain what is happening in the aggregate economy

- It explains how an economy experiences long run economic growth and inflation

- It explains how we experience business cycles and economic fluctuations in the short run