# Short-Run Demand and Supply

## ECON201 - Winter, '24

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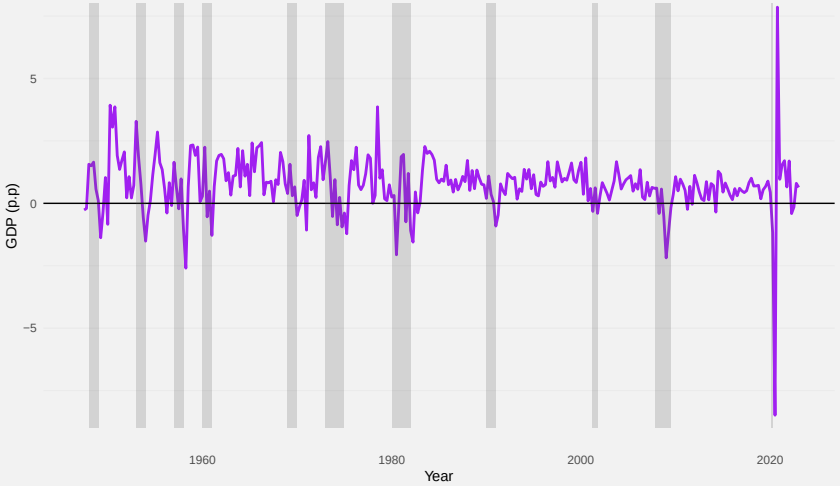
# This Lecture

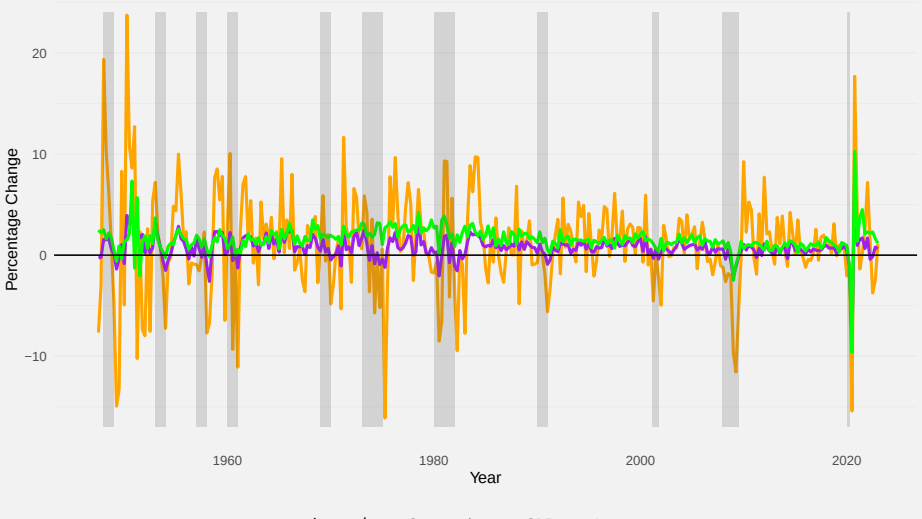
- We have mostly considered the long-run economic outcomes.
- In Lecture D, we saw that economic growth is essential to long-run prosperity.
- In Lecture C, we talked generally about why there is unemployment.
- However, both economic growth and unemployment fluctuate over time.
- In particular, all economies experience **recessions** with negative economic growth and high unemployment.
- We will build a simple *model of aggregate demand and supply* to explain these fluctuations.

# Outline

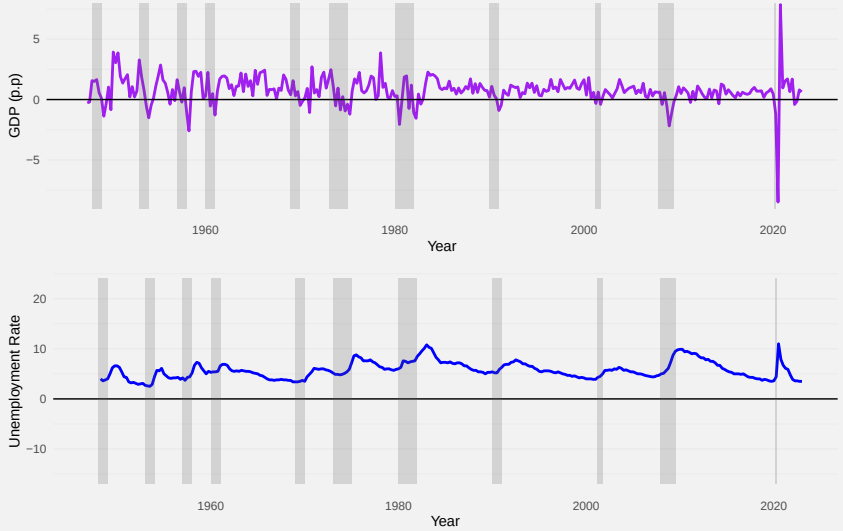
# U.S. Business Cycles



# Comovement


20
10
0
−10
Percentage Change
1960
1980
2000
2020
Year
Legend
Consumption
GDP
Investment

# Unemployment Fluctuations



# Outline

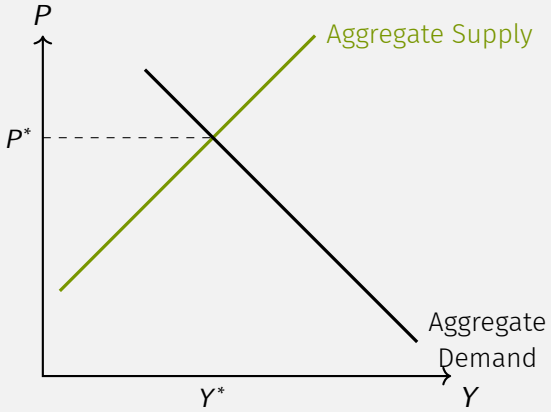
# Classical Economics

- Classical dichotomy and monetary neutrality imply that nominal variables do not really matter.
- Monetary neutrality may hold in long run, but not in the short run.
- Empirically, nominal and real variables are closely entangled.
- **Reminder:** Hume's thought experiment.

$\Longrightarrow$ Abandon monetary neutrality when considering short-term fluctuations.

# Model of Aggregate Demand and Supply

1. Our model looks very similar to our previous market.
2. Non-vertical slopes reflect violation of money neutrality
3. **NOT** about individual buyers and sellers.
4. Different interpretations and shifters.



# Outline

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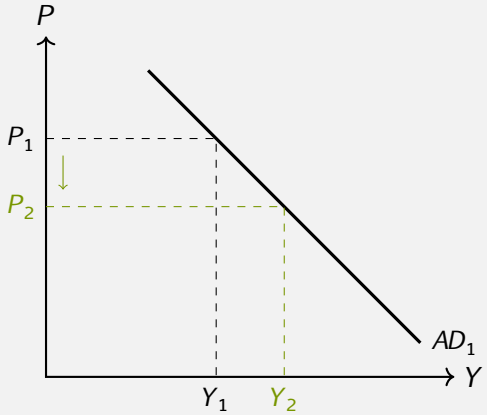
# Aggregate-Demand Curve

As the general price level falls,

i. real wealth rises,
ii. interest rates fall, and
iii. the exchange rate depreciates.

All of the above increases the quantity of goods and services demanded.

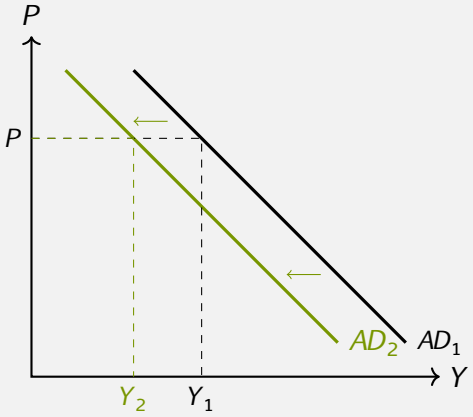



$P$ = Price Level, $Y$ = GDP

# Outline

# Shifts of Aggregate Demand

- Any change which affects $C$, $I$, $G$ or $NX$ at any price.
- **Consumption** $C$
  e.g. wealth/stocks, tax cuts, uncertainty about future,....
- **Investment** $I$
  e.g. better tech., business pessimism, investment tax credits, interest rates,....
- **Government Purchases** $G$
  e.g. infrastructure investment, government wages,....
- **Net Exports** $NX$
  e.g. recession in trade partner's economy, exchange rate movements,....



# Outline

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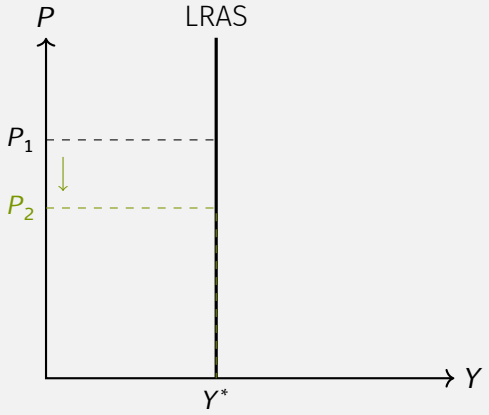
# Vertical Long-Run Aggregate Supply

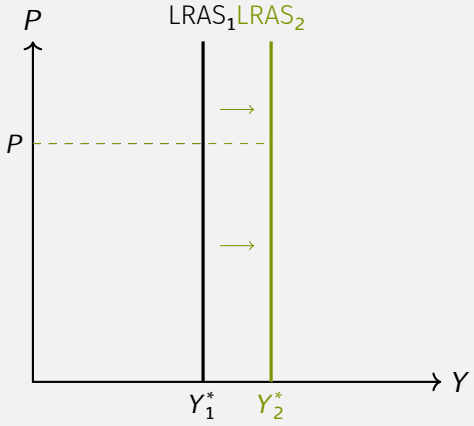
- Long-run aggregate supply is **always** vertical, i.e. quantity does not depend on prices.
- Long-run aggregate supply depends on:
  i. Supply of labor,
  ii. capital,
  iii. natural resources, and
  iv. available technology.



# Shifts in Long-Run Aggregate Supply

Examples of shifts in the Long-Run Aggregate Supply curve:

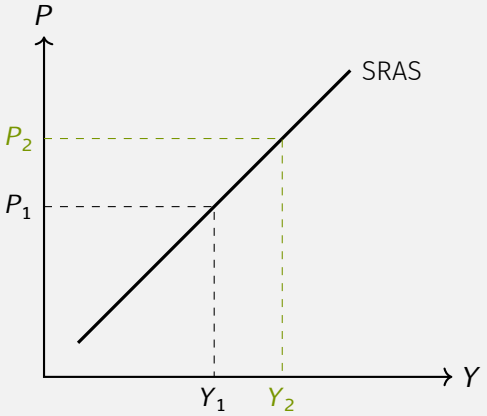
i. Immigration,
ii. labor policy,
iii. education,
iv. oil discovery, and
v. technological innovation.



# Outline

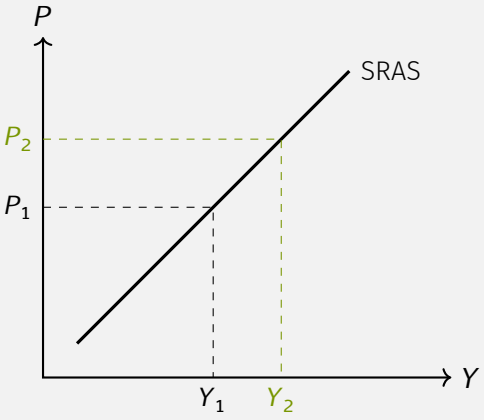
# Sticky Wages

- The short-run aggregate supply curve is upward-sloping.
- **Potential Reason I:**
  i. Wages are sticky.
  ii. If prices rise, wages do not immediately rise.
  iii. Production is more profitable.
  iv. More quantity supplied



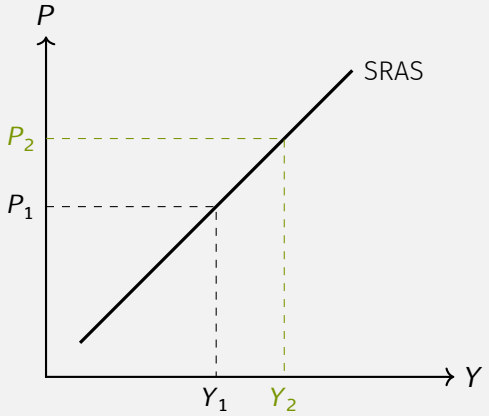
# Sticky Prices

- The short-run aggregate supply curve is upward-sloping.
- **Potential Reason II:**
  i. Prices are sticky due to *menu costs*.
  ii. If prices should rise but not all firms do, some prices are lower than optimal.
  iii. This will mean these firms will more as they outcompete the firms who adjusted their price.
  iv. More quantity supplied.



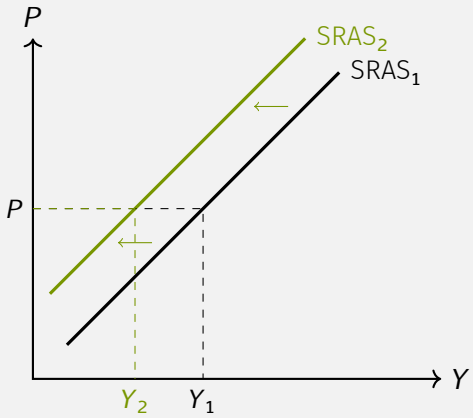
# Misperceptions

- The short-run aggregate supply curve is upward-sloping.
- **Potential Reason III:**
  i. Firms misperceive general price increase as relative price increase.
  ii. If firms think their good is worth more (in real terms), they may increase supply.
  iii. More quantity supplied.



# Expected Prices and Wages

- Short-run AS is shifted by the same factors as long-run AS.
- In addition, *expected prices* or *expected wages* shift short-run AS.
- **Example:**
  i. If workers expect prices to increase, they will negotiate higher wages today.
  ii. Firm's costs today are higher.
  iii. Production is less profitable.
  iv. Less quantity supplied.



# Outline

# Four Steps of Analysis

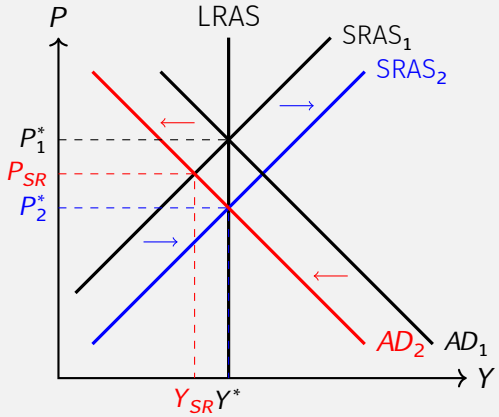
**Analysis of Short-Run Fluctuations:**

1. Does AD or AS curve shift?
2. In which direction does the curve shift?
3. What is the new short-run equilibrium?
4. How does the economy move to its new long-run equilibrium?

# Outline

# Contraction of Aggregate Demand

1. Demand shifts.
2. It shifts to the left.
3. Prices decrease and output decreases.
4. In long-run, price expectations adjusts, shifting SARS until LARS is reached.
5. **Results:**
   i. *Short run:*
   Recession and deflation.
   ii. *Long run:*
   Same output but lower prices.



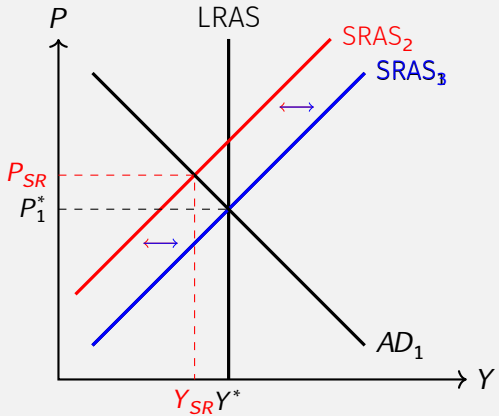

short run change in red & long run change in blue

# Outline

# Without Policy Intervention

For example, oil price shock or a natural catastrophe.

1. Supply shifts.
2. It shifts to the left.
3. Prices increase and output decreases.
4. This is called *stagflation*.
5. In long-run, price expectations will adjust and we return to original equilibrium.

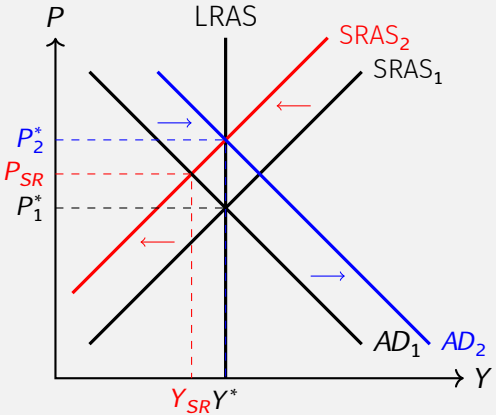



short-run change in red & long-run change in blue

# Accommodating Policy

For example, fiscal stimulus or monetary easing.

1. Supply shifts.
2. It shifts to the left.
3. Prices increase and output decreases.
4. But now policy intervenes by increasing aggregate demand.
5. More inflation but return to original output faster.




short-run change in red & long-run/policy change in blue

# Conclusion

- Economic activity fluctuates irregularly but strongly.
- In the short-run, monetary neutrality does not hold.
- Aggregate demand and aggregate supply do not represent individuals.
- Aggregate supply shocks can lead to stagflation which can be worsened by policy.
- **Next:** Monetary policy, the Phillips Curve, and applying what we learned to policy debates.