

**Problem 1.** When we say that economic fluctuations are “irregular and unpredictable,” we mean that

- (a) the relationship between output and unemployment is erratic and difficult to characterize.
- (b) when one macroeconomic variable that measures income or spending is falling, other macroeconomic variables that measure income or spending are likely to be rising.
- (c) recessions do not occur at regular intervals.
- (d) All of the above are correct

**Answer 1: (c).** Options (a) and (b) are both false, those are important facts as well.

**Problem 2.** Most economists use the aggregate demand and aggregate supply model primarily to analyze

- (a) short-run fluctuations in the economy.
- (b) the effects of macroeconomic policy on the prices of individual goods.
- (c) the long-run effects of international trade policies.
- (d) productivity and economic growth.

**Answer 2: (a).** AD/AS was developed in order to analyze short run fluctuations in the economy, e.g. business cycles, recessions, depressions. Long-run effects are kind of boring in the AD/AS framework because the LRAS is just vertical.

**Problem 3.** Investment is a

- (a) small part of real GDP, so it accounts for a small share of the fluctuation in real GDP.
- (b) small part of real GDP, yet it accounts for a large share of the fluctuation in real GDP.
- (c) large part of real GDP, so it accounts for a large share of the fluctuation in real GDP.
- (d) large part of real GDP, yet it accounts for a small share of the fluctuation in real GDP.

**Answer 3: (b).** Even though investment averages about one-seventh of GDP, declines in investment account for about two-thirds of the declines in GDP during recessions.

**Problem 4.** The saying “Money is a veil.” means that

- (a) while nominal variables are the first thing we may observe about an economy, what's important are the real variables and the forces that determine them.
- (b) money is the principal medium of exchange in most economies.
- (c) the primary determinant of short-run economic fluctuations is not real variables, but rather changes in the money supply.
- (d) in the long run money is of no importance to the determination of either real or nominal variables

**Answer 4: (a).** According to classical theory, to understand these real variables, we need to look behind the veil.

**Problem 5.** In order to understand how the economy works in the short run, we need to

- (a) study the classical model.
- (b) study a model in which real and nominal variables interact.
- (c) understand that money is a veil.
- (d) understand that money is neutral in the short run

**Answer 5: (b).** In the short run we reject money neutrality and the classical dichotomy– changes in prices can affect real variables in the short run, in particular, on real GDP.

**Problem 6.** Which of the following effects helps to explain the downward slope of the aggregate-demand curve?

- (a) the exchange-rate effect
- (b) the wealth effect
- (c) the interest-rate effect
- (d) All of the above are correct

# Aggregate Demand

Answer 6: (d).

- $Y = C + I + G + NX$ . Each term on the RHS contributes to aggregate demand.
- **The Wealth Effect.** A decrease in the price level raises the real value of money and makes consumers wealthier, which in turn encourages them to spend more. *Decrease in price level means higher quantity demanded.*
- **The Interest Rate Effect.** A lower price level reduces the interest rate, encourages greater spending on investment goods, and thereby increases the quantity of goods and services demanded. *Decrease in price level means higher quantity demanded.*
- **The Exchange Rate Effect.** When a fall in the U.S. price level causes U.S. interest rates to fall, the real value of the dollar declines in foreign exchange markets. This depreciation stimulates U.S. net exports and thereby increases the quantity of goods and services demanded. *Decrease in price level means quantity demanded.*

**Problem 7.** Suppose a stock market boom makes people feel wealthier. The increase in wealth would cause people to desire

- (a) increased consumption, which shifts the aggregate-demand curve right.
- (b) increased consumption, which shifts the aggregate-demand curve left.
- (c) decreased consumption, which shifts the aggregate-demand curve right.
- (d) decreased consumption, which shifts the aggregate-demand curve left



# Shifting Aggregate Demand

**Answer 7: (a).**

- (a) If it's not a change in the price level or the quantity demanded, then it's going to shift AD.
- (b) Look for changes in  $C + I + G + NX$  that are unrelated to price changes.
- (c) If people choose to consume less *even at the same price level*, then AD shifts to the left, i.e. lowers AD.
- (d) If companies are feeling pessimistic and decide to invest less *even at the same interest rate*, then AD shifts to the left.
- (e) If the government decides to spend less *even at the same price level*, then AD shifts to the left.
- (f) If the US exports less or imports more *even at the same price level*, then AD shifts to the left.

**Problem 8.** The long-run aggregate supply curve shifts right if

- (a) immigration from abroad increases.
- (b) the capital stock increases.
- (c) technology advances.
- (d) All of the above are correct

# Long-Run Aggregate Supply

Answer 8: (d).

- In the long run, real GDP depends on labor, capital, natural resources, and the technology used to turn these factors into goods and services.
- Because the price level does not affect the long-run determinants of real GDP, the long-run aggregate-supply (LRAS) curve is *vertical*—it is a graphical representative of the classical dichotomy and money neutrality.
- The long-run level of production is called the **natural level of output**.
- More labor (e.g. immigration) means more workers and therefore a higher natural level of output—LRAS shifts to the right.
- More capital stock increases productivity and, thereby, the quantity of goods and services supplied—LRAS shifts to the right.
- More resources shifts the long-run aggregate-supply curve to the right.
- Better technology shifts the long-run aggregate-supply curve to the right.

## Short-Run Aggregate Supply

**Problem 9.** According to the sticky-wage theory of the short-run aggregate supply curve, if workers and firms expected prices to rise by 4 percent, but instead they rise by 2 percent, then

- (a) employment and production rise.
- (b) employment rises and production falls.
- (c) employment falls and production rises.
- (d) employment and production fall.

**Answer 9: (d).** Then workers are getting paid 2% more than expected, so firms won't produce as much and might have to fire some people because they're paying higher than expected input costs.

**Problem 10.** Wages tend to be sticky

- (a) because of contracts, social norms, and notions of fairness.
- (b) because of contracts, but not social norms or notions of fairness.
- (c) because of social norms and notions of fairness, but not contracts.
- (d) None of the above are correct

**Answer 10: (a).** Wage contracts can be for as long as three years. Social norms or fairness might make reducing someone's wage on the spot a faux pas.

**Problem 11.** The misperceptions theory of the short-run aggregate supply curve says that if the price level is higher than people expected, then some firms believe that the relative price of what they produce has

- (a) decreased, so they increase production.
- (b) decreased, so they decrease production.
- (c) increased, so they increase production.
- (d) increased, so they decrease production.

**Answer 11: (c).** This is another reason why the SRAS could slope upwards. You should also read the *Sticky-Price Theory* in the ebook.

## Shifting SRAS

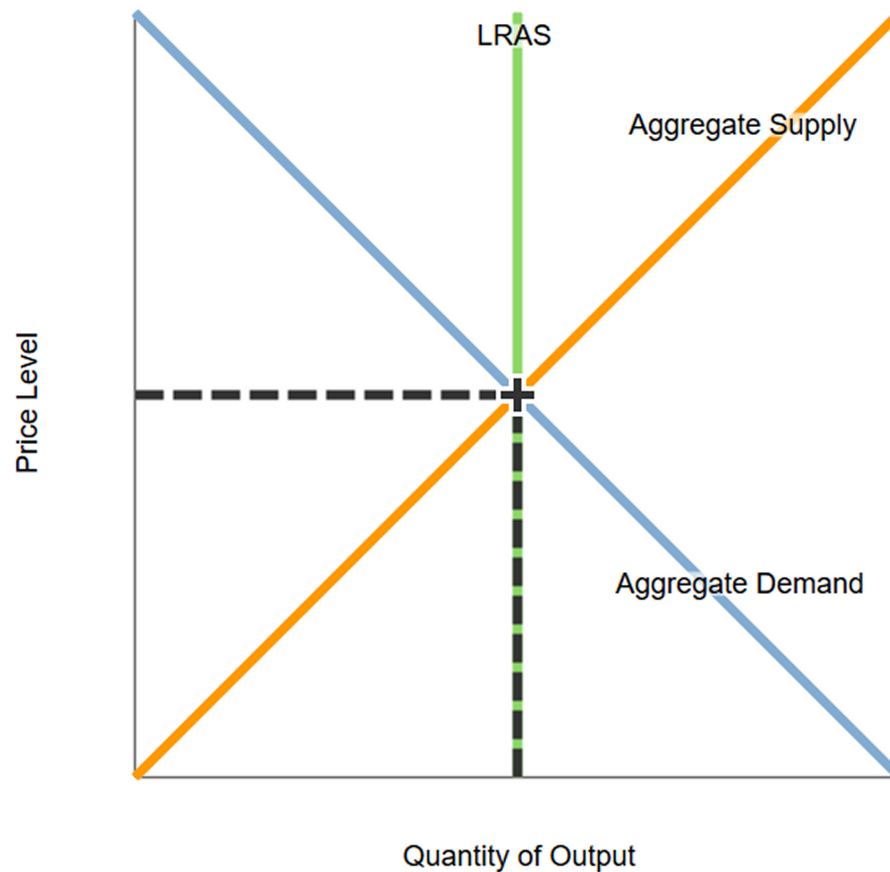
- Shifts in the long-run aggregate-supply curve normally arise from changes in labor, capital, natural resources, or technological knowledge. These same variables shift the short-run aggregate-supply curve.
- An increase in the expected price level reduces the quantity of goods and services supplied and shifts the short-run aggregate-supply curve to the left. (And vice versa.)
- So if OPEC decides to restrict the supply of oil—this is likely to be a *temporary* increase in the price of oil. The SRAS will shift to the left, but LRAS will not shift.

# Four Steps for Analyzing Macro Fluctuations

1. Decide whether the event shifts the aggregate-demand curve or the aggregate-supply curve (or perhaps both).
2. Decide the direction in which the curve shifts.
3. Use the diagram of aggregate demand and aggregate supply to determine the impact on output and the price level in the short run.
4. Use the diagram of aggregate demand and aggregate supply to analyze how the economy moves from its new short-run equilibrium to its long-run equilibrium

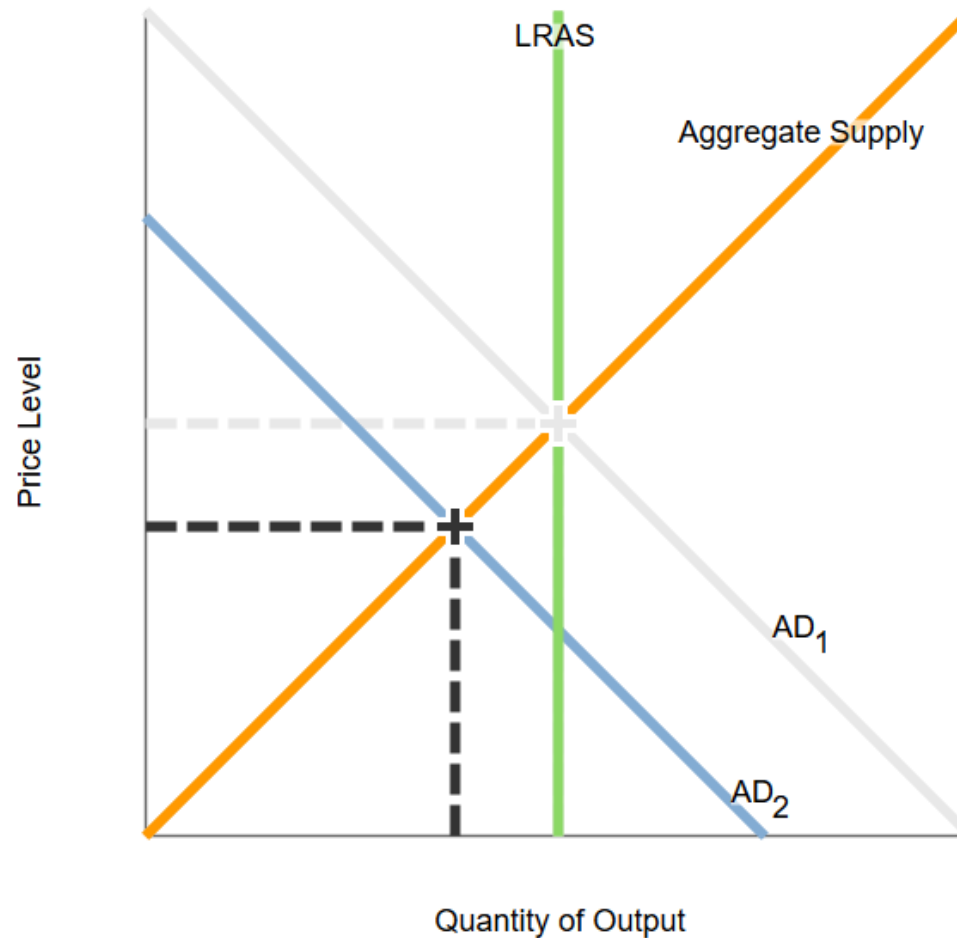


**Problem 12.** Suppose the economy is in a long-run equilibrium, as shown in the following graph.



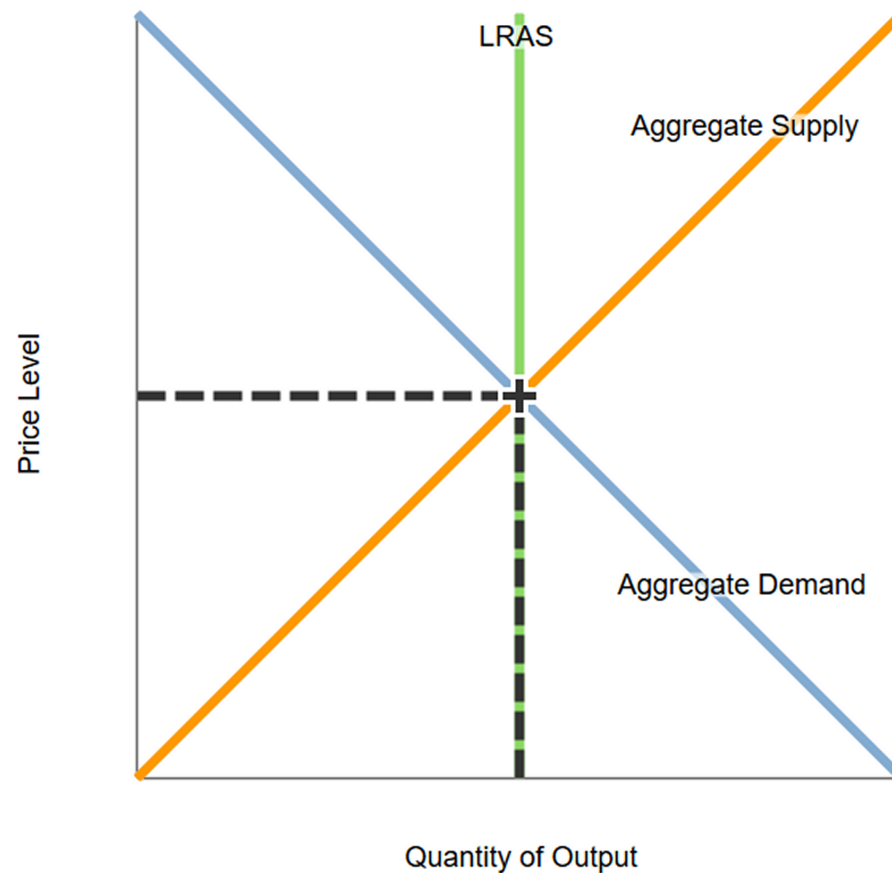
Now suppose that a stock market crash causes aggregate demand to fall. Graph the effects in the short run. What happens to the unemployment rate?

## Answer 12.

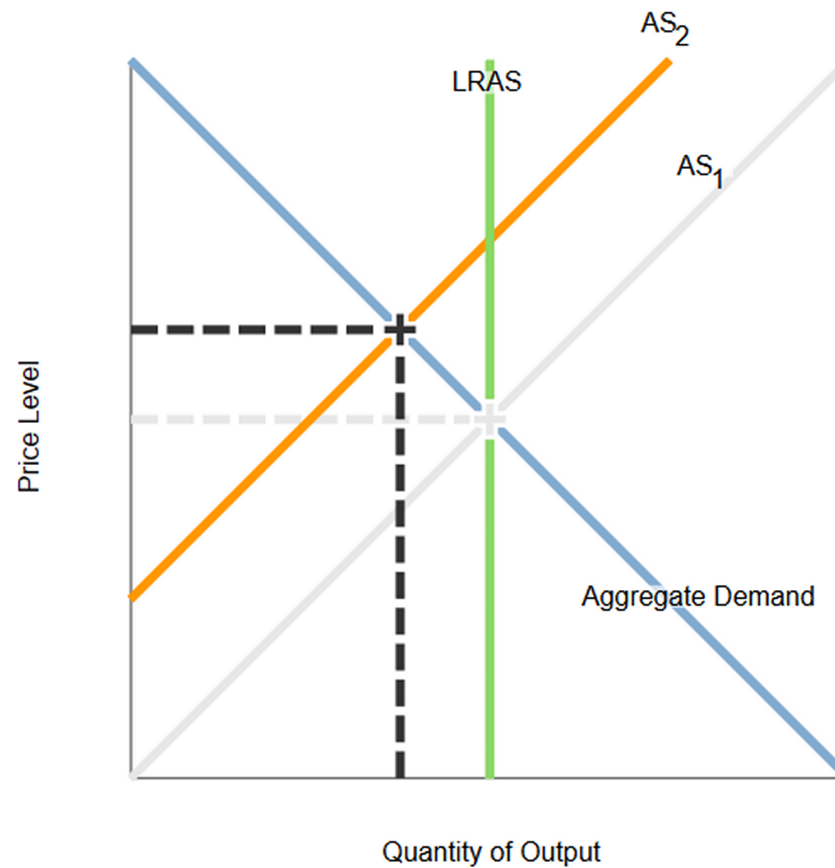


In the long-run, SRAS will slowly shift to the right until LRAS, SRAS, and AD all intersect in the same place, now at a lower price level.

**Problem 13.** Suppose the economy is in a long-run equilibrium, as shown in the following graph.



Florida orange groves suffer a prolonged period of below-freezing temperatures, from which they will eventually recover. What happens?



**Answer 13.** The orange harvest will be reduced. This decline in output is represented in the graph by a shift to the left of the short-run aggregate-supply curve. In the long run, the economy will go back to the original equilibrium (once the oranges groves have recovered).

**Problem 14.** Stagflation exists when prices

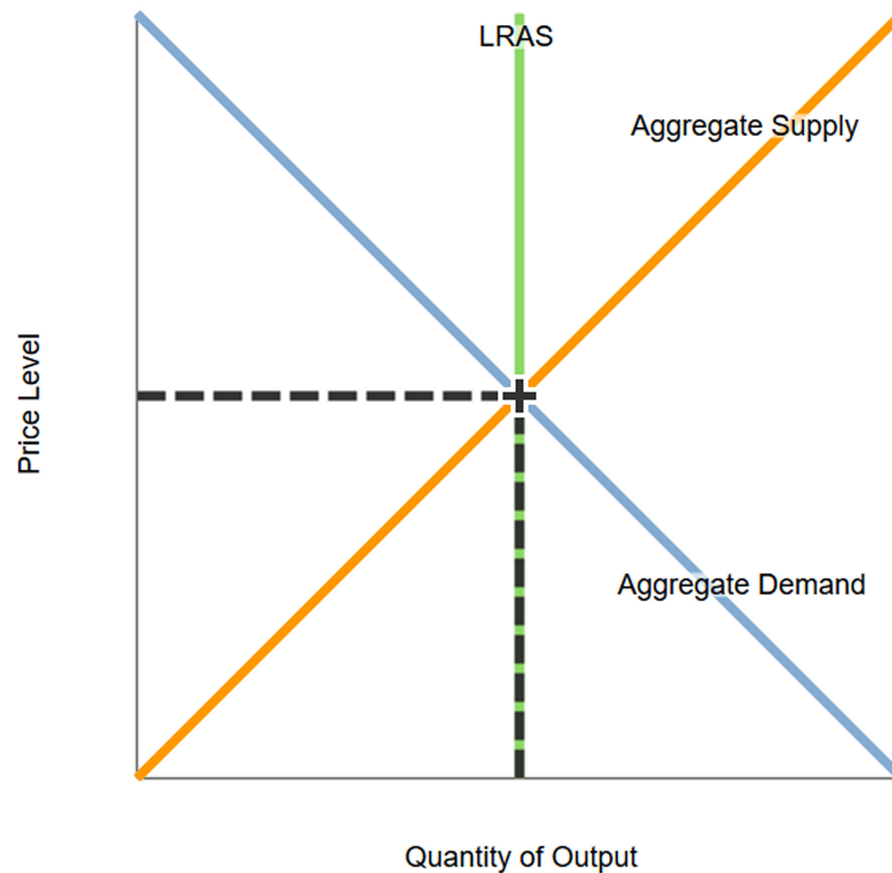
- (a) and output rise.
- (b) rise and output falls.
- (c) fall and output rises.
- (d) and output fall

**Answer 14: (b).** Stagflation occurs when SRAS shifts to the left, giving higher  $P$  and lower  $Y$ . This can be seen in the previous example.

The phenomenon of higher prices leading to higher wages, in turn leading to even higher prices, is sometimes called a **wage-price spiral**—expectations of higher prices shift SRAS to the left, which leads to even higher price expectations, which shifts SRAS even more to the left, etc and so on and so forth.

Usually the Federal Reserve will try to shift AD so that output is unchanged—policymakers are said to **accommodate** the shift in aggregate supply.

**Problem 15.** Suppose the economy is in a long-run equilibrium, as shown in the following graph.



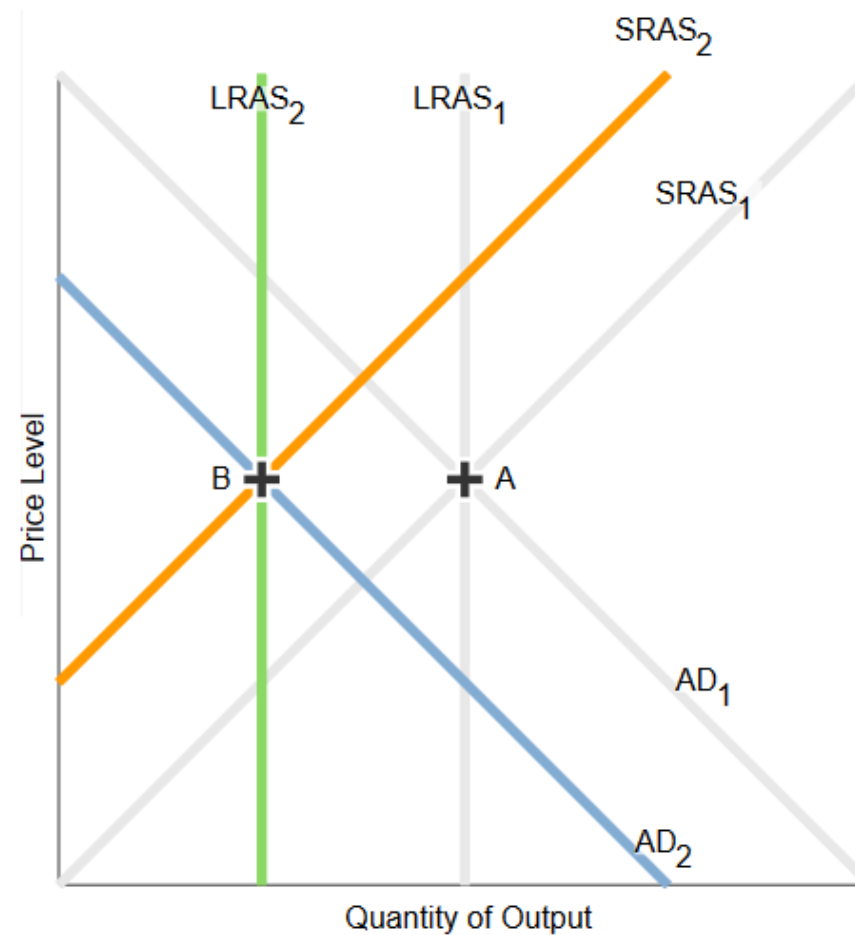
Increased job opportunities overseas cause many people to leave the country permanently. What happens?

**Answer 15.** People leave the country, so SRAS will shift left because there are fewer people producing output. AD will shift left because there are fewer people consuming. They leave permanently, so LRAS shifts left. Output will unambiguously fall.

But the price level could either increase or decrease. There are three cases.

## Case 1: AD and AS shift by same amount.

In this case, price will not change.





## **Case 2: AD shifts more than AS.**

In this case, the price level will decrease in the long run. I'll draw it in discussion because it's hard to draw on here.

## **Case 3: AD shifts less than AS.**

In this case, the price level will increase in the long run. I'll draw it in discussion because it's hard to draw on here.