Short-Run Aggregate Supply (SRAS)

RIDLEY COLLEGE
SINCE 1889

Assessment Objectives

Specific Expectations	
2.C	Define (using graphs as appropriate) the short-run aggregate supply (SRAS) curve.
2.C	Explain (using graphs as appropriate) the slope of the SRAS curve and its determinants.
2.D	Explain (using graphs as appropriate) how movement along the SRAS curve implies a relationship between the price level (and inflation) and unemployment.

Macroeconomics: Short-run versus Long-run

- The short-run and long-run in macroeconomics differ from the corresponding distinction in microeconomics.
  - **Short-run in macroeconomics:** is the period of time when prices of resources are roughly constant or inflexible, in spite of changes in the price level.
    - They do not change together with changes in the price level
    - This applies to wages or the price of labour
    - Wages are of special interest because they account for the largest part of firms' costs of production, and therefore strongly affect the quantity of output supplied by firms.
  - **Long-run in macroeconomics:** is the period of time when the prices of all resources, including the price of labour (wages), are flexible and change along with changes in the price level.

Short-run: Wage Inflexibility

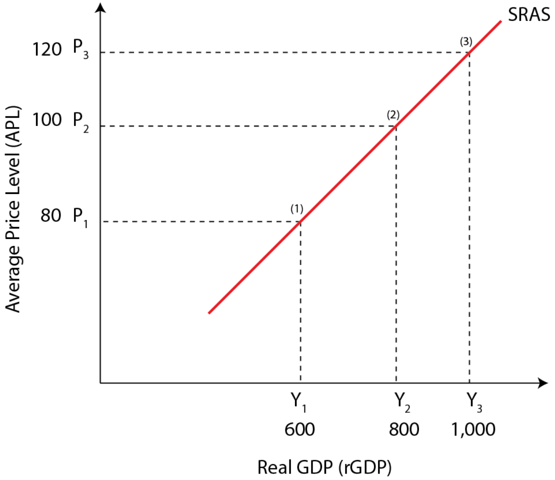
- Wages do not change very much over relatively short periods of time.
  - The price of labor (wages) is often rigid (unchanging) because:
    1. **Labour contracts:** fix wage rates for certain periods of time, perhaps a year or two or more.
    2. **Minimum wage:** legislation fixes the lowest legally permissible wage
    3. **Unions:** workers and labour unions resist wage cuts
    4. **Morale:** wage cuts have negative effects on worker morale, causing firms to avoid them.
  - The SRAS curve is upward-sloping because of inflexible (sticky) wages and prices. The "short-run" is a time after a macroeconomic shock, during which firms cannot raise or lower wages quickly in response to the shock.
    - Workers are more likely to be hired or fired in the period following such a shock, rather than their wages simply adjusting to the level of demand in the economy.

Short-run Aggregate Supply (SRAS)

- **Aggregate supply**: is the total quantity of goods and services produced in an economy (real GDP) over a particular time period at different price levels.

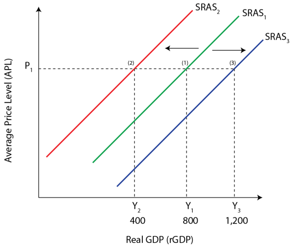
- **Short-run aggregate supply (SRAS) curve**: shows the relationship between the price level and the quantity of real output (real GDP) produced by firms when resource prices (especially wages) do not change.
  - The positive relationship between price level and real output (real GDP) relates to firm profitability.
    - When the there is an increase in the price level, this means that output prices have increased; but with unchanging resource prices, firms' profits increase.
    - As production becomes more profitable, firms increase the quantity of output produced, resulting in a positive relationship between the price level and the quantity of real GDP supplied.

Short-run Aggregate Supply (SRAS)



Short-run Aggregate Supply (SRAS): Shifts

- A shift in SRAS results in a larger or smaller amount of output being produced at every price level.
    - A rightward shift from $SRAS_1$ to $SRAS_3$ means that short-run aggregate supply increases: for any particular price level, firms produce a larger quantity of real GDP.
    - A leftward shift from $SRAS_1$ to $SRAS_2$ means that short-run aggregate supply decreases: for any particular price level, firms produce a smaller quantity of real GDP.



Short-run Aggregate Supply (SRAS): Shifts

- Over short periods of time, the short-run aggregate supply (SRAS) curve shifts to the left or to the right mainly as a result of factors that influence firms' costs of production, as well as supply shocks.
  - When any of the following factors change, SRAS will either decrease and shift inward or increase and shift outward.

    1. **Changes in wage rates:** higher wages causes SRAS to decrease; lower wages causes SRAS to increase.
    2. **Changes in non-labour resource prices:** when rent for land, interest rates, or raw materials increase, SRAS will decrease. Lower resource costs cause SRAS to increase.
    3. **Changes in indirect taxes:** taxes are a monetary cost imposed on firms by the government; so higher taxes will cause SRAS to decrease.
    4. **Changes in subsidies offered to businesses:** A tax cut or increased subsidies to produces reduce firms' costs and cause SRAS to increase.

Short-run Aggregate Supply (SRAS): Shifts

5. **Energy and Transportation costs:** higher oil and energy prices will cause SRAS to decrease. Cheaper energy and transportation cause SRAS to increase.

6. **Government regulation:** regulations impose costs on firms that cause SRAS to decrease. Reduced regulation makes it cheaper to produce output, increasing SRAS.

7. **Exchange rates:** If producers use imported raw materials, a weaker currency will cause these to become more expensive, reducing SRAS. A stronger currency makes imported raw materials cheaper and increases SRAS.

8. **Supply shocks:** events that have a sudden and strong impact on short-run aggregate supply. Negative supply shocks shift the SRAS curve leftward and positive supply shocks shift the SRAS curve rightward.

Test your understanding

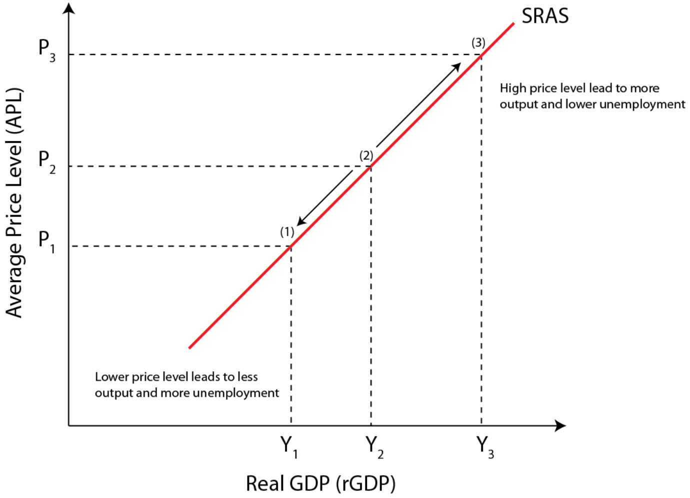
Question: Using diagrams, show the impact of the following on the SRAS curve; explain what happens to SRAS in each case.

1. The price of oil (an important input in production) increases
2. Below-zero temperatures destroy agricultural output.
3. The government lowers taxes in firms' profits
4. The government eliminates subsidies on agricultural products
5. There is an increase in minimum wage

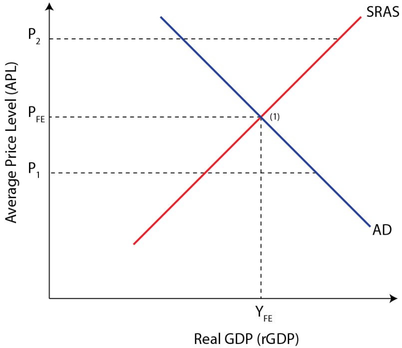
Inflation and Unemployment

- Due to the inflexibility of wages and other input costs in the short-run, there is a short-run trade-off between inflation and unemployment.
  - The positive relationship between the price level and real output (real GDP) relates to firm profitability.
  - When the aggregate price level increases, output increases in the short-run.
    - At higher levels of output, firms employ more workers.
    - Unemployment decreases as the price level increases
  - When the aggregate price level decreases, output decreases in the short-run
    - At lower levels of output, firms employ fewer workers.
    - Unemployment increases as the price level decreases

Inflation and Unemployment

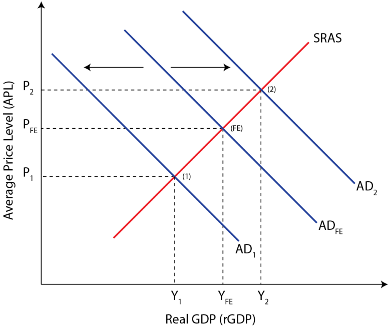


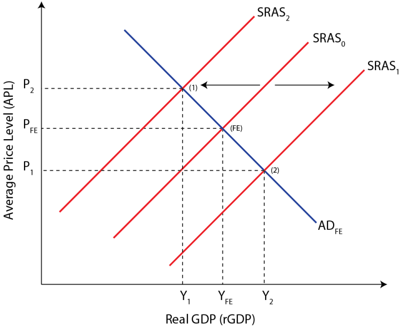
- In the AS/AD Model the **equilibrium level of output** occurs where aggregate demand intersects aggregate supply.
  - **Short-run equilibrium** is given by the point of intersection of the AD and SRAS curves, and determines the price level, the level of real GDP and the level of employment.



Short-run Equilibrium Changes: AS-AD Model

- The short-run equilibrium of an economy changes whenever there is a change in aggregate demand or short-run aggregate supply.





Test your understanding

Question: Using diagrams, show the effects of each of the following on short-run equilibrium, explaining what happens to the equilibrium price level, output and unemployment.

1. The price oil (an important input in production) increases.
2. Firms are pessimistic about the future of the economy.
3. Below-zero temperatures destroy agricultural output.
4. The government lowers taxes on firms' profits.
5. There is a large rise in stock market prices.
6. The government eliminates subsidies on agricultural products.
7. A war destroys a portion of an economy's physical capital.
8. Consumer confidence improves.

Summary

- **Enduring Understanding**
  - Economists use the aggregate demand–aggregate supply model to represent the relationship between the price level and aggregate output in an economy and to illustrate how output, employment, and the price level respond to macroeconomic shocks.

- **Essential Knowledge**
  - The short-run aggregate supply (SRAS) curve describes the relationship between the price level and the quantity of goods and services supplied in an economy.
  - The SRAS curve is upward-sloping because of sticky wages and prices.
  - Any factor that causes production costs to change, such as a change in inflationary expectations, will cause the SRAS curve to shift.

Summary (Continued)

- Moving along the SRAS curve, an increase in the price level is associated with an increase in output, which means employment must correspondingly rise. With the labor force held constant, unemployment will fall. So, there is a short-run trade-off between inflation and unemployment.
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