Aggregate Supply and Aggregate Demand

The relationship between real GDP and the price level is examined in the aggregate supply-aggregate demand model. (AS-AD model).

At any given time[2], the quantity of real GDP supplied depends on the quantity of labour employed, the quantity of physical and human capital, and the state of technology.

we study the

1. Short-run aggregate supply.

2. Long-run aggregate supply.

Short-run versus Long-run in macro-economics

In the short-run resources may not be fully employed and output may be above or below potential output

In the long-run all available resources are employed to their potential.

Real GDP is equal to potential GDP.

There is full employment

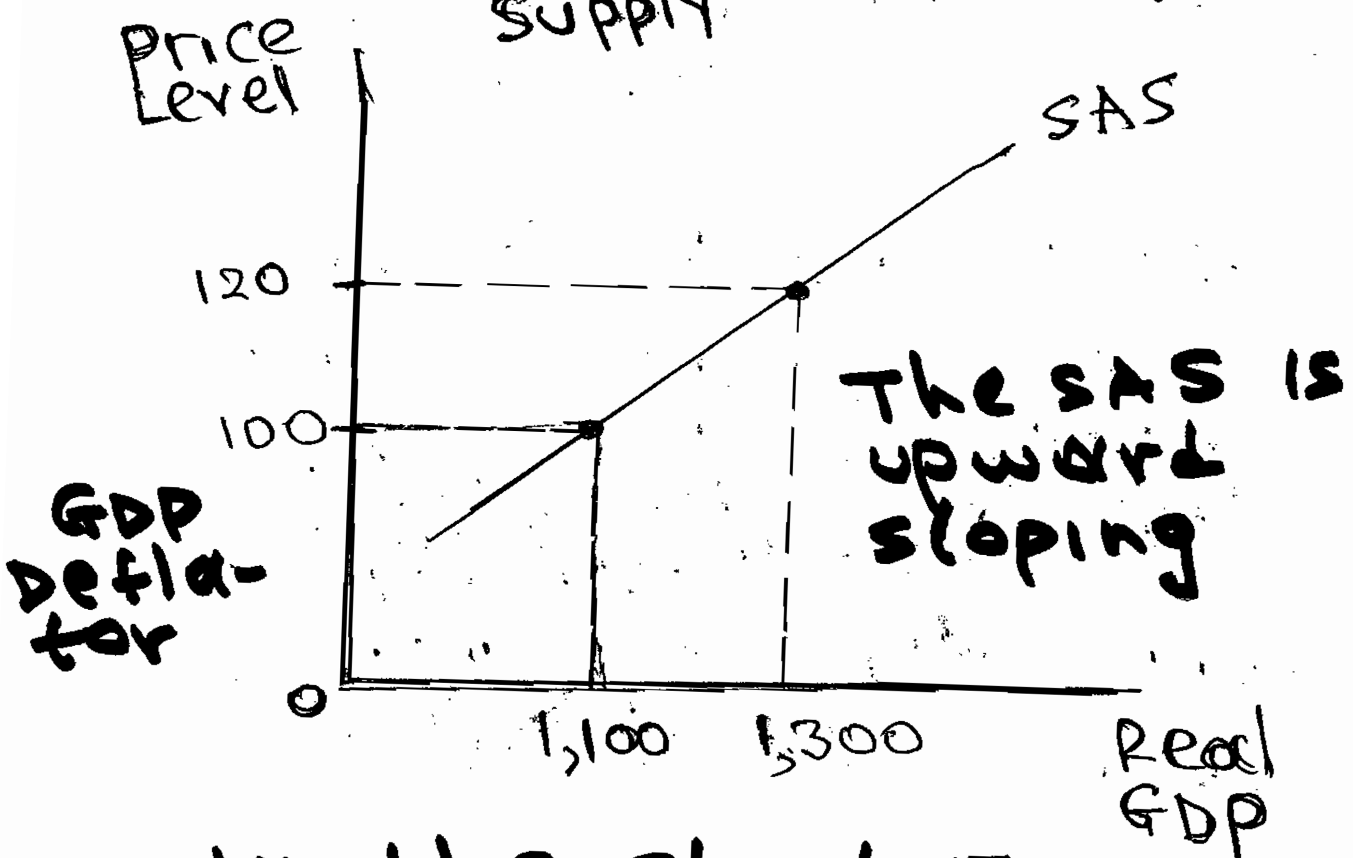
Potential real GDP is the quantity of real GDP at full employment.

Short-run Aggregate supply

The short-run aggregate supply (SAS) shows the various quantities of real GDP supplied at different price levels

when the money wage rate, the prices of other resources, and potential GDP are held constant

Short-Run Aggregate Supply



In the short-run, the economy moves along the short-run aggregate supply (SAS)

A rise in the price level leads to a rise in the quantity of real GDP supplied.

The short-run aggregate supply slopes upward why?

when output prices rise, the price level rises.

If the price level rises and the money wage rate and other factor prices remain constant, all firms increase production and the quantity of real GDP supplied increases.

Shifts in the short-run aggregate supply (SAS) curve

The SAS curve shifts if there are changes in

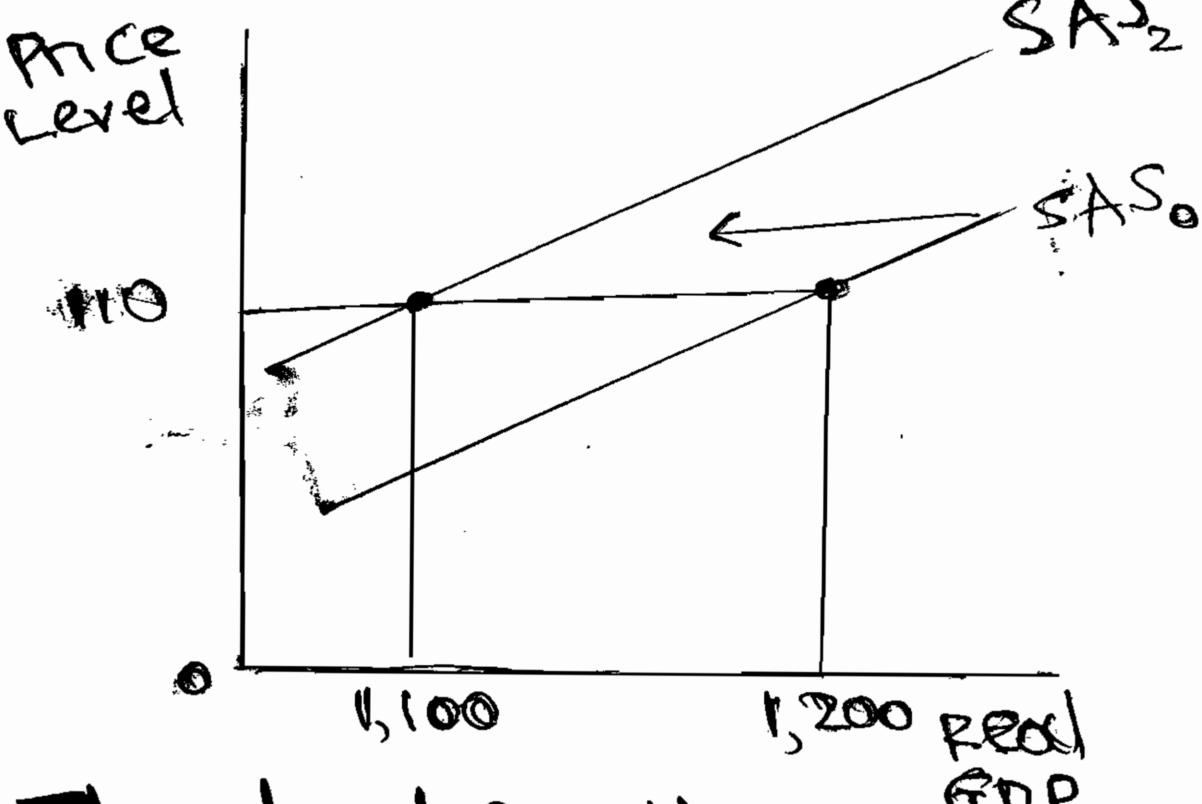
1. raw material prices (input prices such as oil)
2. the wage rate
3. potential GDP.

The effect of an <u>increase</u> in the money wage rate

The money wage rate rises when expected inflation rises.

A rise in the money wage rate <u>decreases</u> short-run aggregate supply
It shifts the short-run aggregate supply curve leftward.

11



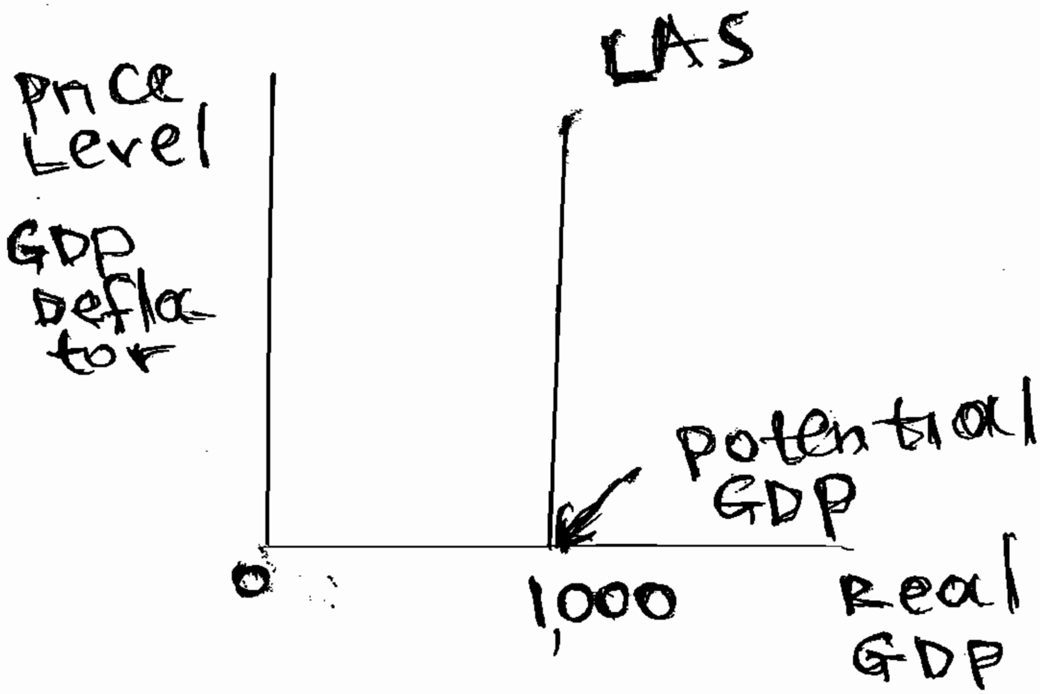
The higher the money wage rate, the higher are firm's costs and the smaller is the quantity that firms are willing to supply at each price level.

Long-run Aggregate supply

The relationship between the quantity of real GDP supplied and the price level when the nominal wage rate changes in step with the price level to achieve full employment

The long-run aggregate supply (LAS) curve is a vertical line at the potential output level.

In the long run, real GDP supplied is constant at potential GDP.



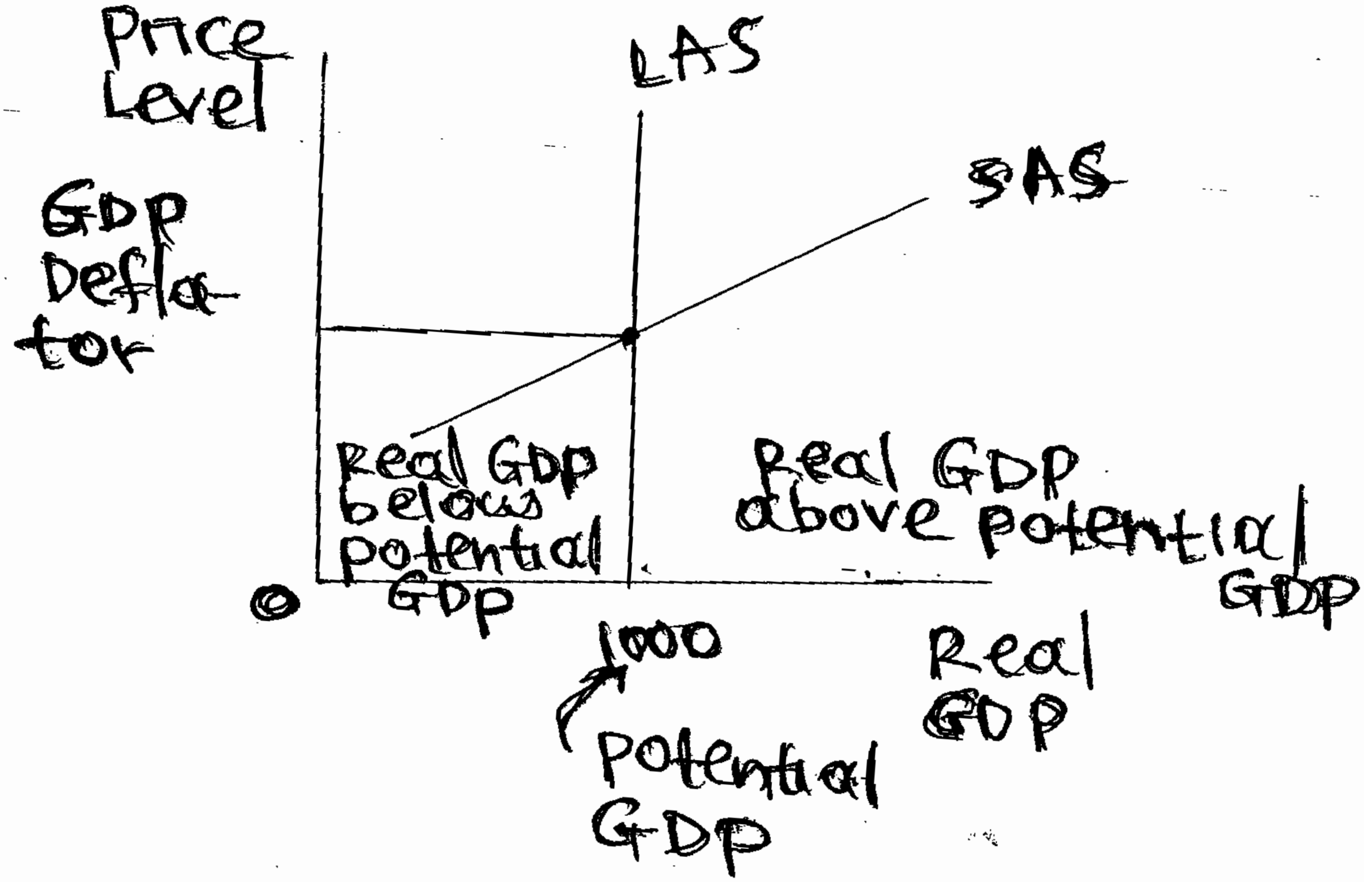
In the long run, a rise in the price level does not affect potential GDP and the long-run aggregate supply

In the long run, a rise in the price level is associated with equal percentage increases in the money wage rate and other resource prices

Relative prices and the real wage rate remain constant

In the long run, firms do not have a cost advantage

This keep real GDP supplied con-stant at potential GDP.



In the short-run, the economy can be below or above potential GDP.

Fluctuations in employment over the business cycle cause fluctuations in real GDP around potential GDP.

Changes in Aggregate Supply

changes in the long-run aggregate supply correspond to changes in potential GDP

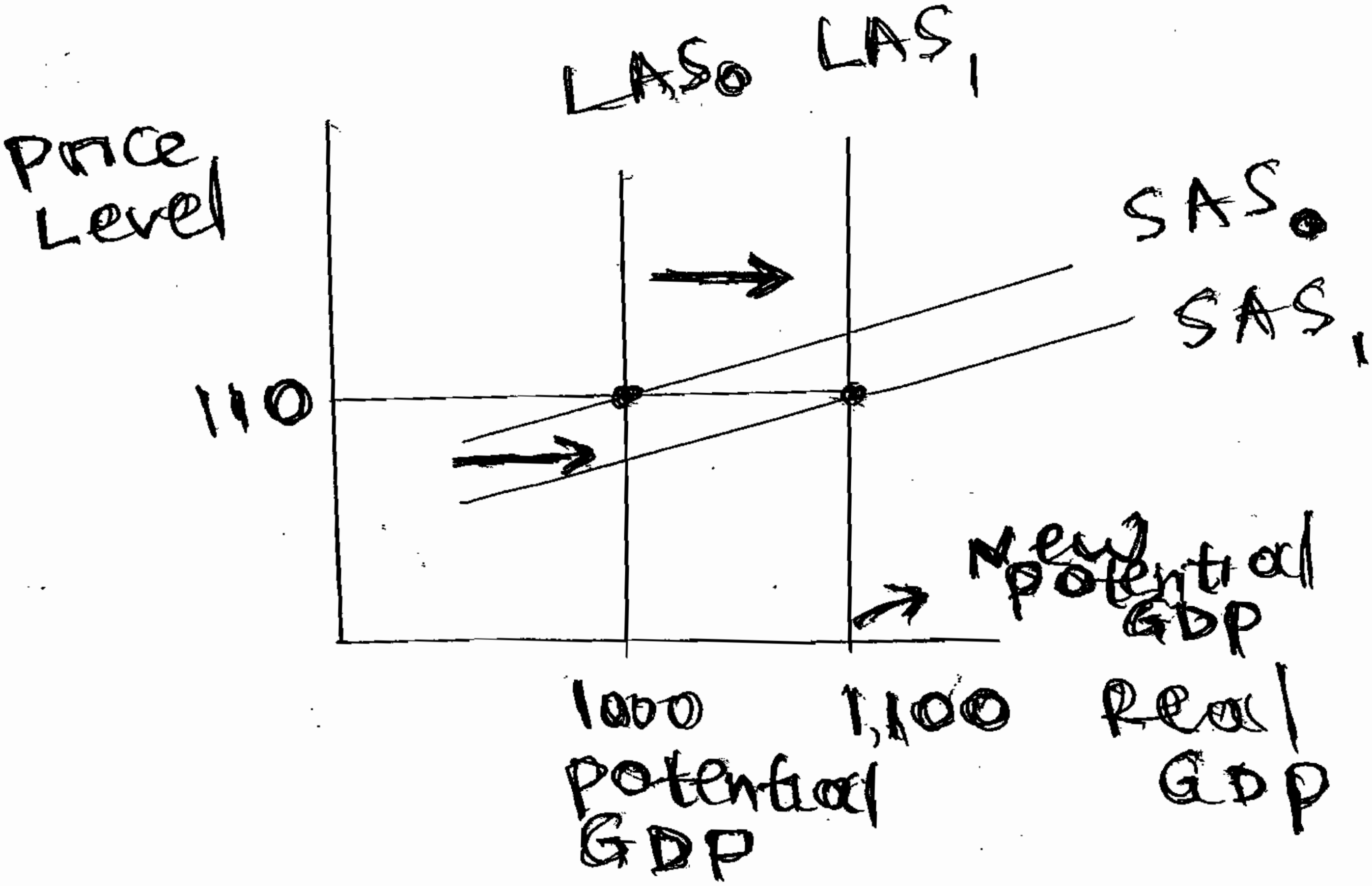
or

shifts in the long-run aggregate supply

Potential GDP changes (or long-run aggregate supply changes if there is

1. a change in the quantity of capital stock
2. A technological improvement
3. A change in the full employment quantity of labour

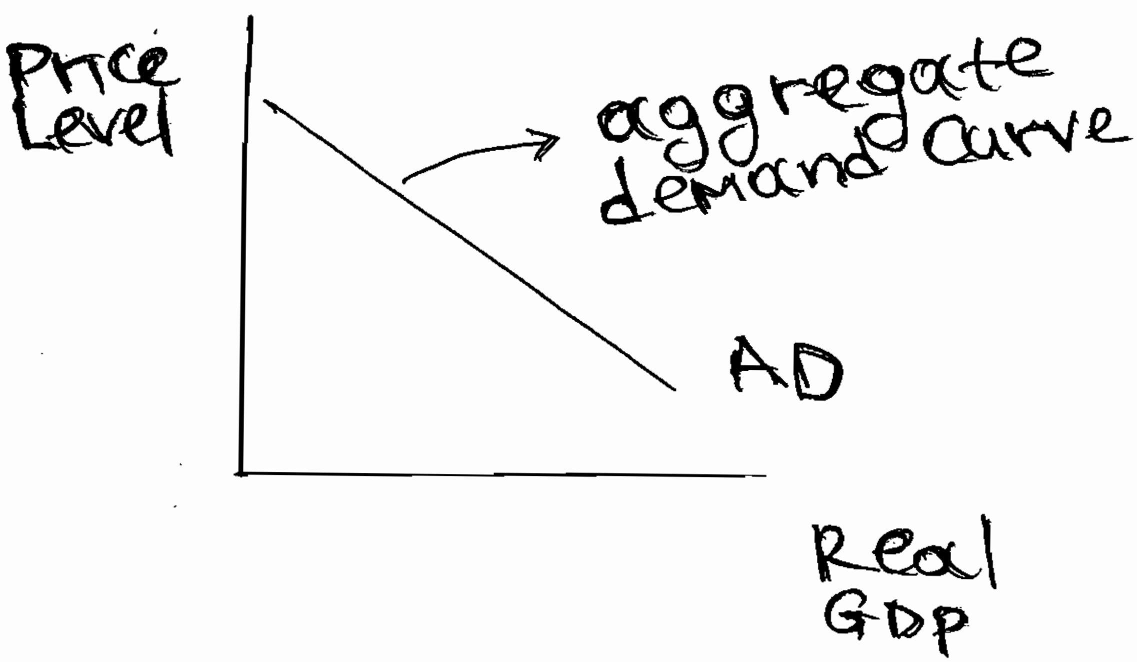
A change in potential GDP



Both the LAS and the SAS curves shift to the right

Aggregate Demand

A relationship between the quantity of real GDP demanded and the price level.



The quantity of real GDP demanded changes when the price level changes.

Movements along the AD curve.

The quantity of real GDP demanded varies inversely with the price level.

Reasons for the negative slope of the aggregate demand curve

1. The wealth effect

when the price level rises, real wealth decreases.
people will decrease consumption and therefore aggregate demand decreases.

Money is part of your wealth. If you are holding \$1,000 in money balances and the price level rises by 10 percent, then your wealth is worth 10 percent less than before.

2. The substitution effect

when the price level rises (inflation increases) interest rates rise.

people postpone expenditures on investment and consumption

spending decreases and therefore aggregate demand decreases

The substitution effects also works through international prices.

when the Canadian price level rises relative to the foreign price level, Canadians buy more imports. Foreigners buy fewer Canadian-made goods.

Canadian GDP decreases.

To draw the AD curve we keep constant

1. Expectations
2. Fiscal and monetary policy
3. The world economy

Shifts in AD curve

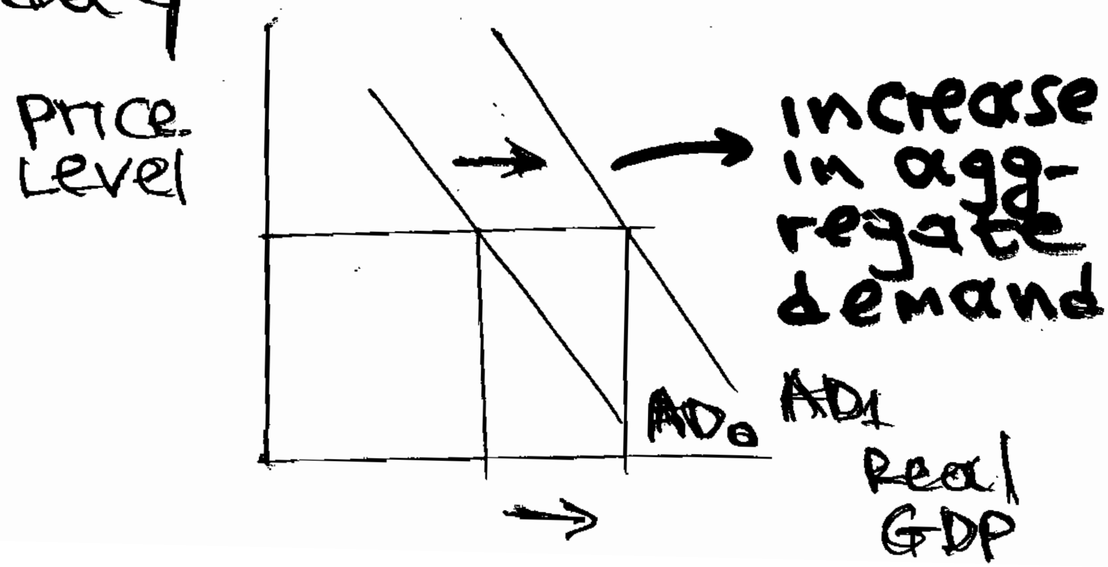
when one of these variables changes, the AD curve shifts.

- would cause increases or decreases in AD demand

1. Expectations

@ If people expect future disposable income to increase, consumption spending increases today.

This corresponds to increases in AD today



(b) An increase in expe-
cted future profits
increases investment
by firms today
and increases aggre
gate demand

A shift in AD curve
out and to the right.

2. Changes in fiscal policy

Expansionary or contractionary fiscal policy

(a) Changes in taxes
(b) Changes in transfer payments
(c) Changes in government spending

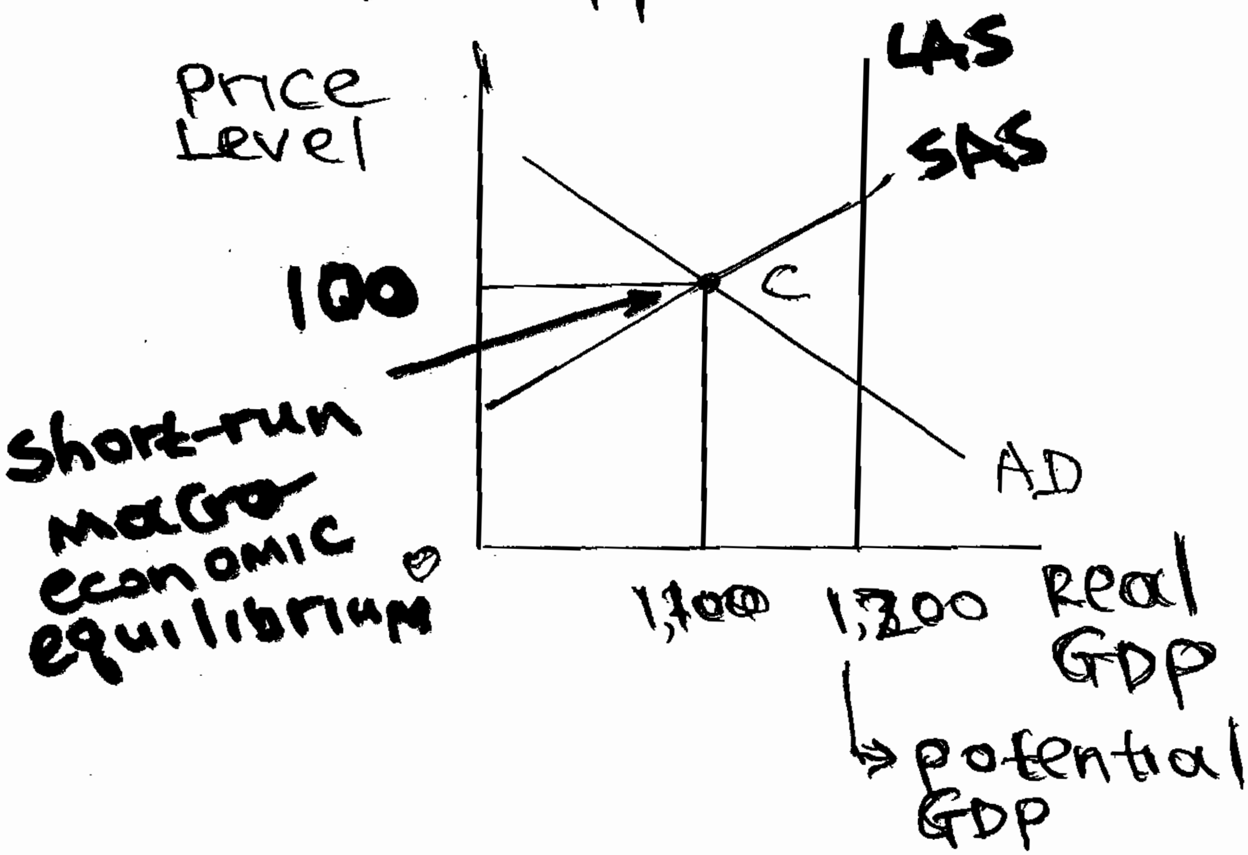
would cause a shift in AD curve

3. Monetary policy
changes in interest rates or changes in the quantity of money supplied

4. The world Economy
changes in the exchange rate and foreign income
An appreciation of the Canadian dollar decreases AD.

Short-run macroeconomic equilibrium

It occurs when the quantity of real GDP demanded equals the quantity of real GDP supplied



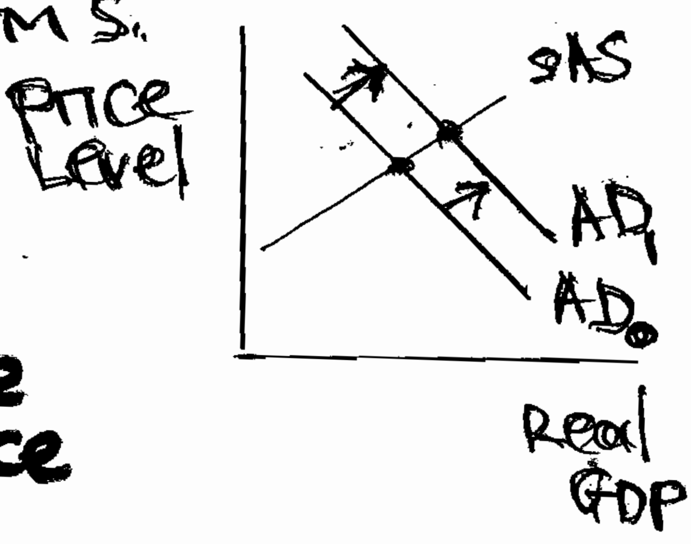
In the shortrun equilibrium, Real GDP can be greater than or less than potential

Short-run equilibrium is the normal state of the economy as actual real GDP fluctuates around potential GDP.

In the short run, nominal wages and other input prices are kept fixed.

An increase in AD will result in an

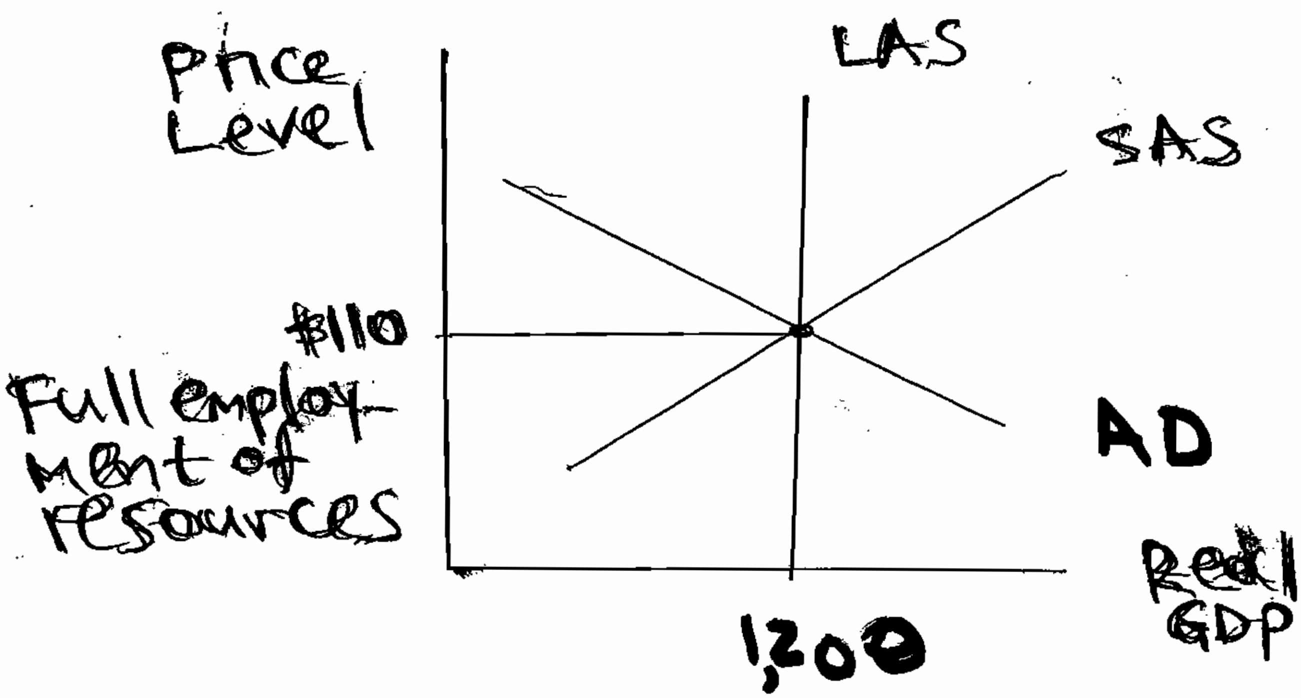
- improvement in the profit margins of the firms.
- An increase in real GDP
- An increase in the Price level



Long-Run Macroeconomic Equilibrium

In long-run macroeconomic equilibrium, real GDP equals potential GDP.

If real GDP equals potential GDP the economy is at full employment equilibrium



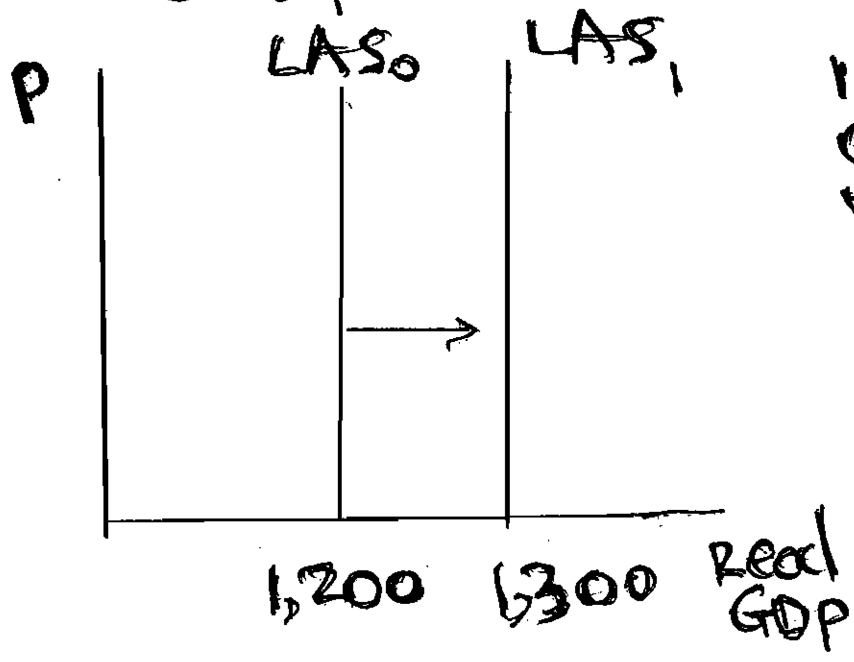
The economy is operating along its long-run aggregate supply curve (LAS)

The actual rate of unemployment is equal to the natural rate of unemployment

The money wage rate adjusts in the long run, so the SAS curve intersects the LAS curve at the long-run equilibrium price level.

Economic growth and the long-run aggregate supply

Economic growth is the persistent increase in potential GDP.



It is shown as a rightward movement in the LAS curve

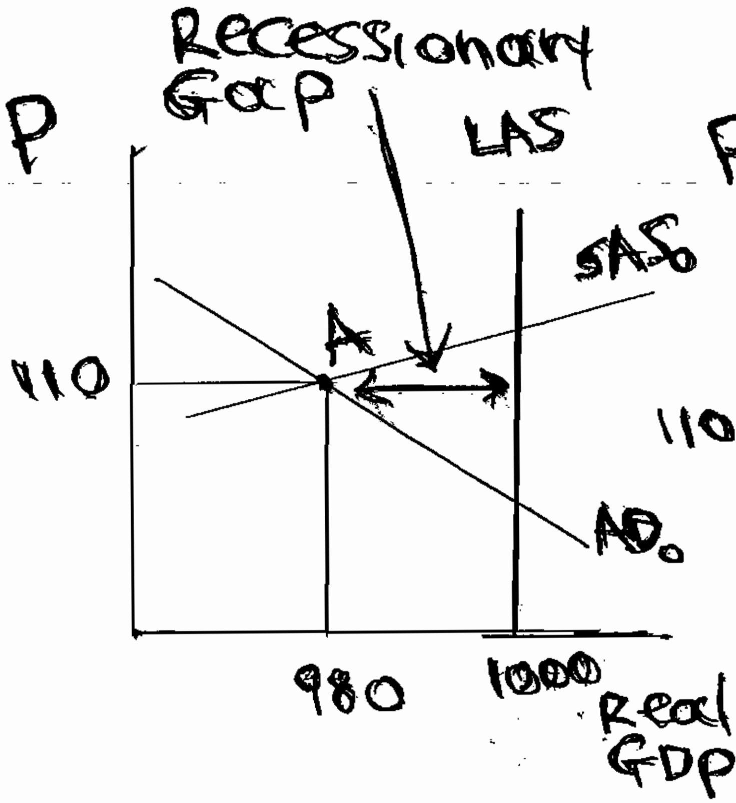
Aggregate Demand and Inflation

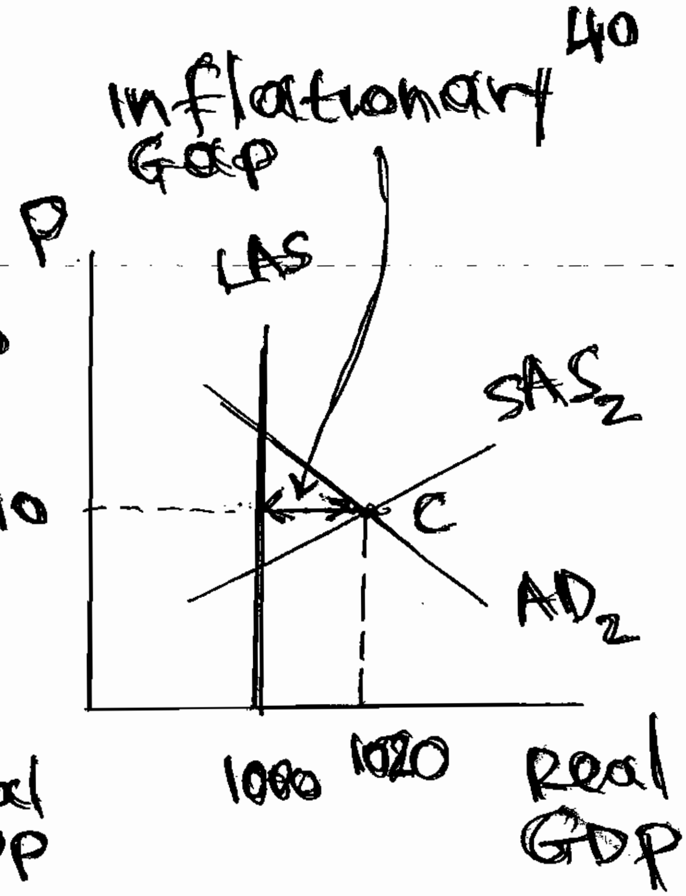
Inflation is the persistent rise in the price level

Inflation occurs when aggregate demand increases by more than the increase in long-run aggregate supply.

The Business Cycle in the AS-AD Model

The business cycle occurs because aggregate demand and short-run aggregate supply fluctuate but the money wage rate does not adjust quickly enough to keep real GDP at potential GDP.





Below Full-employment Equilibrium

Above Full-employment Equilibrium

potential GDP exceeds real GDP

Real GDP exceeds potential GDP

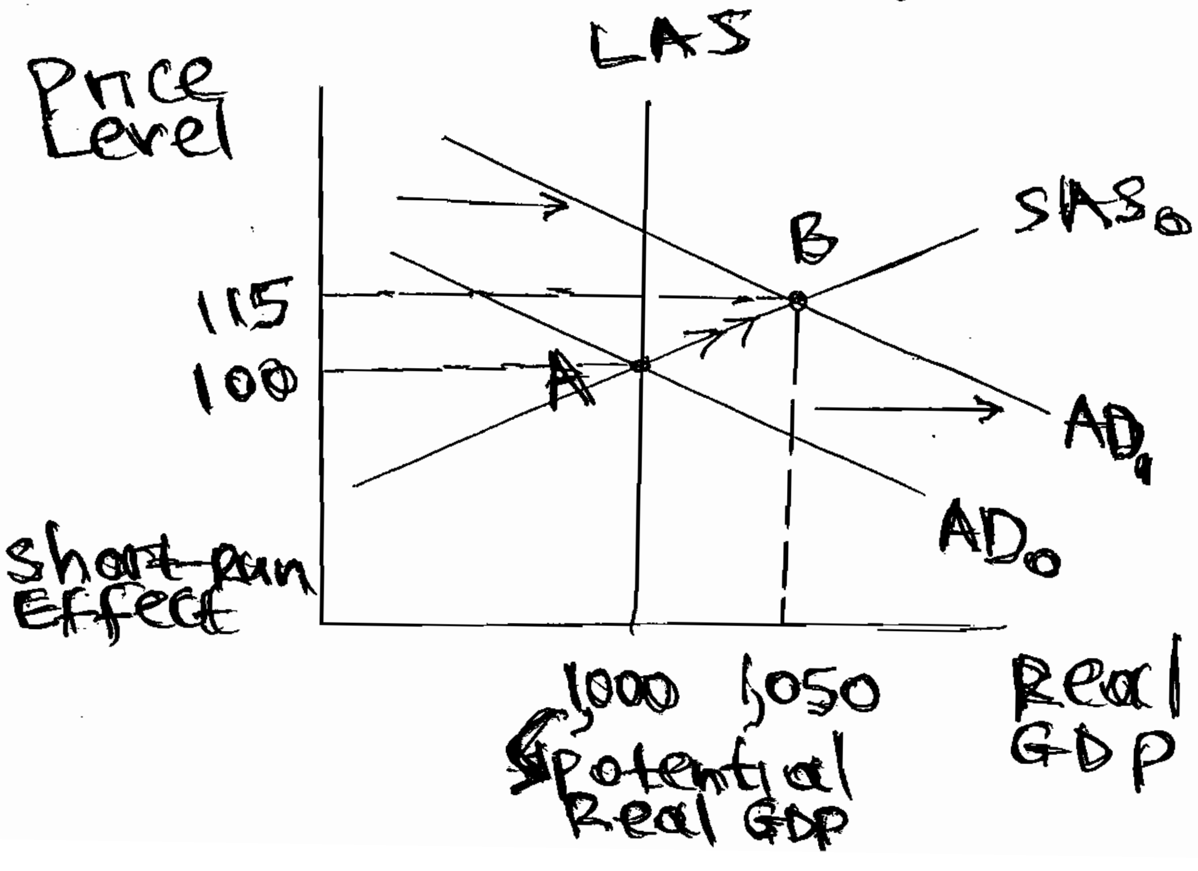
Recession and slow growth

Inflationary pressures

Fluctuations in Aggregate demand

An increase in Canadian exports increases aggregate demand.

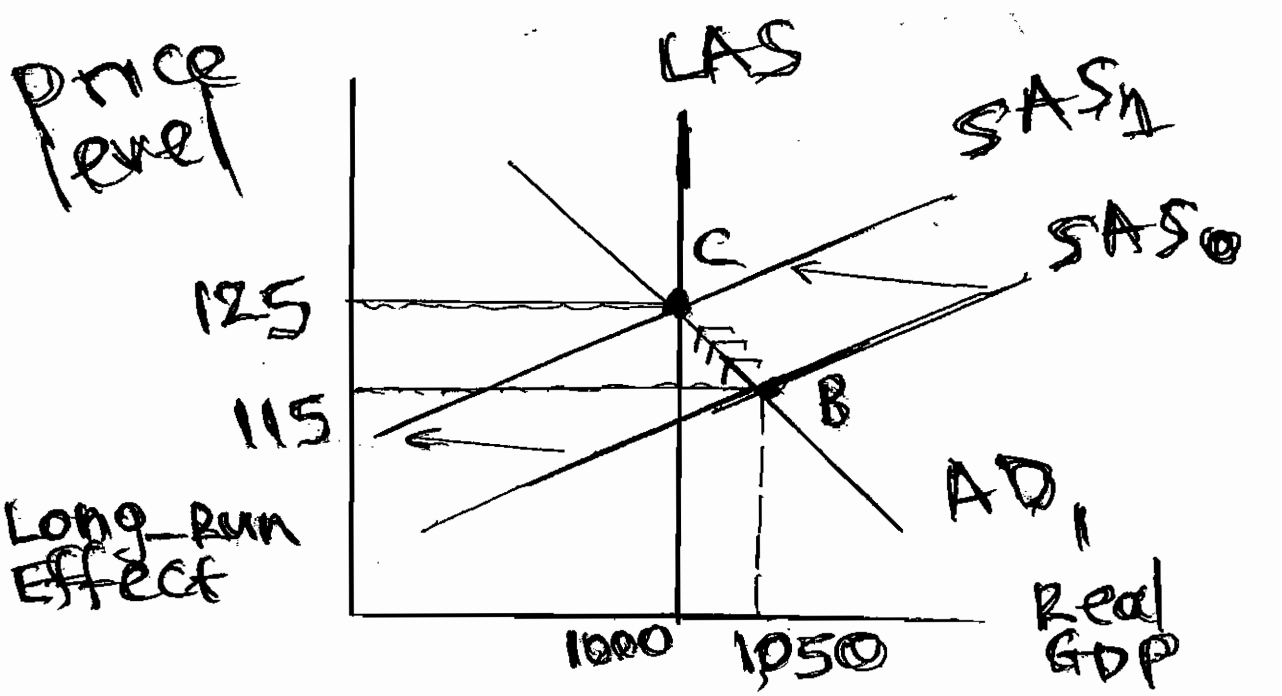
The AD shifts out and to the right



Real GDP exceeds potential GDP

As the money wage rate rises, the short-run AS curve begins to shift leftward

$SAS_0 \longrightarrow SAS_1 \rightarrow$ point C



Eventually, the money wage rate rises by the same percentage as the price level

The price level has risen to 125, and real GDP is at potential GDP

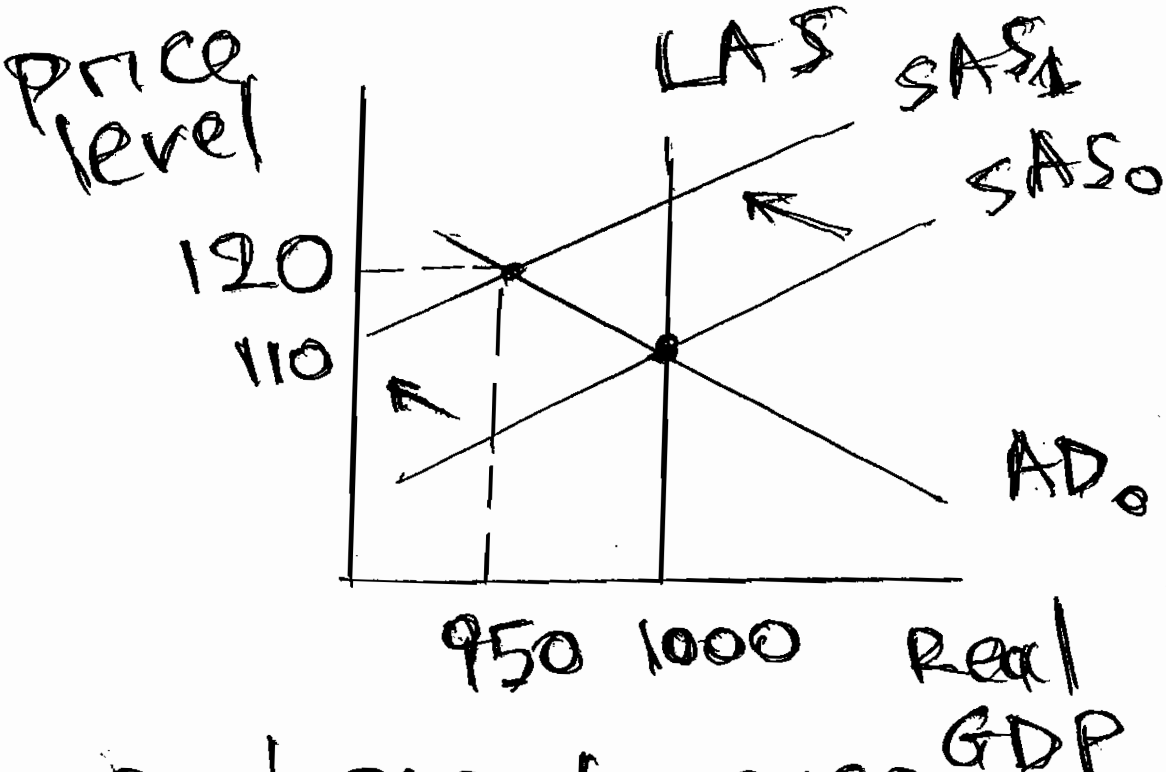
Fluctuations in Aggregate Supply

Suppose the price of oil (energy) rises.

The cost of production increases and firms decrease production

The short-run aggre-gate supply decreases

$SAS_0 \longrightarrow SAS_1$



- Real GDP decreases
- The price level increases

The economy experiences both recession and inflation

A situation known as <u>stagflation</u>