Chapter 23

Output and Prices in the Short Run

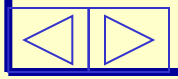
Introduction

Shocks and Prices changes:

1. **Exogenous** changes in price level - demand side changes

2. **Supply side** changes - factor prices

3. **Macro Equilibrium** - demand, supply and price level



The Demand Side of the Economy

Shifts in the AE Curve

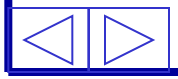
1. **Exogenous** change in price level, **P**

- Increase in **P** reduces the **real value of money**
  [in private sector]

- Fall in **P** raises the real value of money holdings

- Change in **P** affect wealth of bondholders and bond issuers

  [offset each other - no change in aggregate wealth]



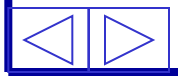
Changes in wealth affect **Consumption [C]**:

Increase in **P** reduces private-sector wealth

- Decreases desired **C**onsumption
- **AE** curve shifts down

Fall in **P** increases private-sector wealth

- Increases desired **C**onsumption
- **AE** curve shifts up



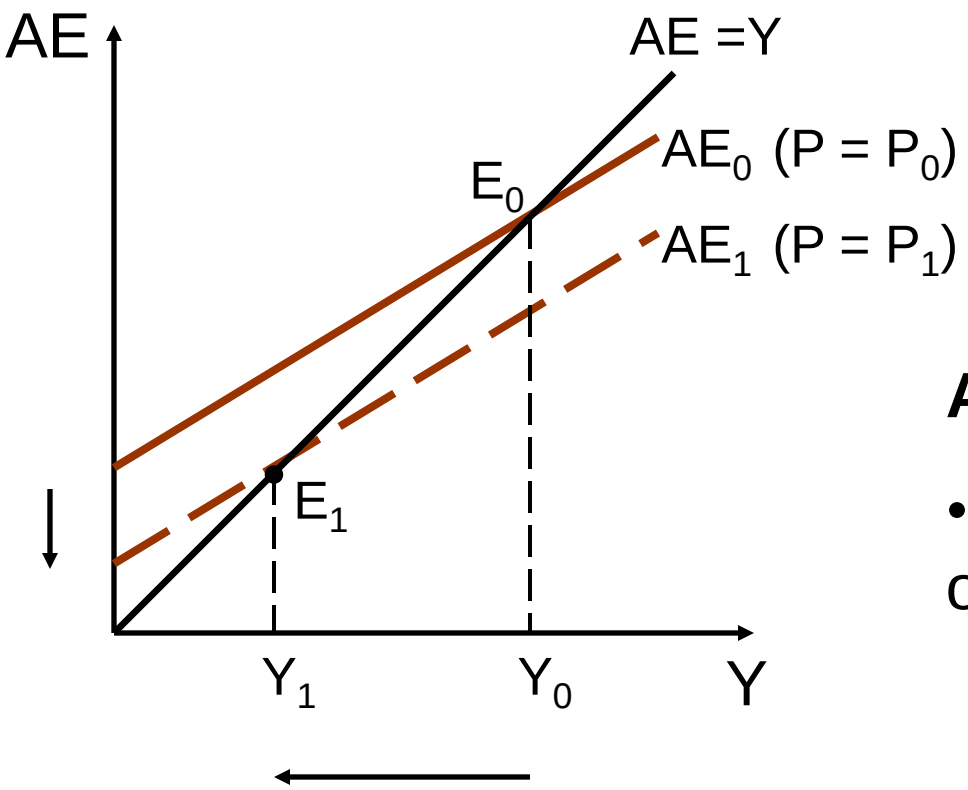
Price changes affect **Net Exports [NX]**:

Prices rise in Canada - foreign prices are constant:

Canada's **Exports** fall **Imports** rise

- Shifts the **NX** function leftward
- **AE** curve falls
- Conversely for a fall in Canada's **Prices**

Changes in Equilibrium GDP



An increase in **P** (P_0 to P_1)

- reduces private-sector wealth
- reduces desired AE

AE curve shifts down

- reduces equilibrium level of real GDP (Y)

The Aggregate Demand Curve

Aggregate Demand (**AD**) Curve

- relates equilibrium real GDP to the price level

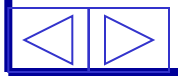
For any given price level

- **AD** curve shows level of real GDP where

desired aggregate expenditure equals actual GDP

Changes in price level

- cause shifts in **AE** curve
- cause **movements along AD** curve



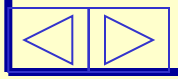
Decline in **P**
• increase quantity demanded

[When price is lower, buy more only applies to one good with substitutes
• apples cheaper, so buy more apple and fewer bananas]

Now dealing with **all goods and services – **no** substitutes

One case of substitutes :
If domestic prices fall
• Buy more domestic goods
• Buy fewer imports

Main reason:
• Real wealth increases when P falls [Real Balances]



AD increases [shifts]:

At a **given price level:**

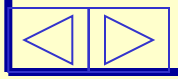
- Any **positive shock** [**increase** in Exports (**X**)]
- Increases equilibrium **GDP**
- Increases **AD -** shifts **AD rightward**

- Any **negative shock** [**fall** in Investment (**I**)]

- Decreases equilibrium **Y**

- Decreases **AD** - shifts the **AD leftward**

K x ΔA measures size of horizontal shift of **AD** curve



Summary

1) Price level changes:

a) AE line shifts up or down
(C changes (real balances effect)
and NX change)
b) move up or down AD curve

e.g. price level rises –

a) AE shifts down (C & NX fall),
b) move left and up AD curve.

2) Autonomous expenditure (I, G, X) changes:

a) AE line shifts up or down

b) AD curve shifts right or left

e.g. I increases –

a) AE shifts up,

b) AD shifts right.

More is demanded at the same price level.

The Supply Side of the Economy

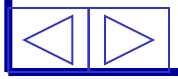
The Aggregate Supply Curve

Short-run aggregate supply (**AS**) **curve**

- relates price level to quantity of output
- firms would like to produce / sell

AS curve assumes:

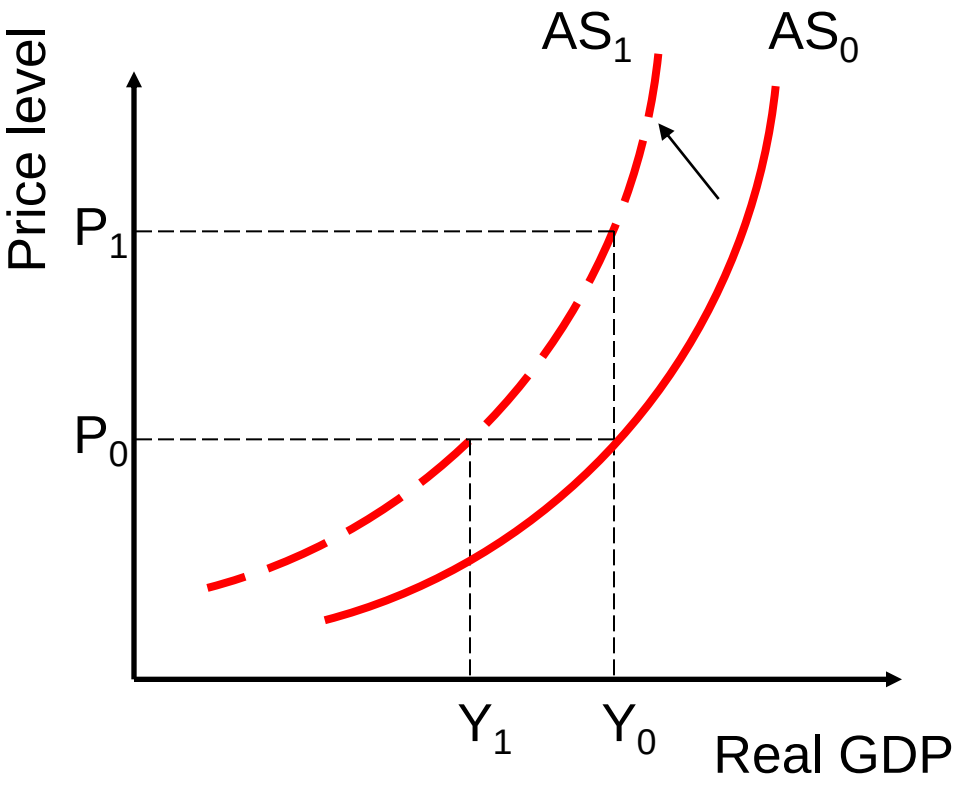
- **technology and factor prices remain constant**



Shape of AS curve

- Cost per unit of output (unit costs) rise as output increases
- Firms produce more output only if prices increase
- The **AS** curve is upward sloping.

- Changes in factor prices or productivity
- Change costs
- Shift **AS** curve



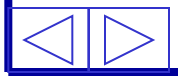
- Increases in factor prices
- Or, decreases in productivity
- Shift **AS** curve leftward

At **AS_1:**
- Firms will supply Y_0 only if price rises to P_1
  at P_0 firms supply Y_1

AS gets steeper as output rises

When output is low:

- Firms have excess capacity
- Output increases without causing large increases in unit costs
- Only a small increase in price is needed to induce firms to expand production



As output gets closer to capacity:

- Increases in output cause larger increases in unit costs

- Larger price increases needed to induce firms to expand output

Shifts in AS:

Input prices change - wages **rise**:
- Firms produce less at same price level
- Or, firms supply same amount only if prices are higher
  - **AS** shifts **leftward - decreases**

Opposite if factor costs **fall**:
- Firms produce more at same price level
  - **AS** shifts **rightward - increases**

Productivity changes - output per worker **rises**:
- Firms produce more at same price level
  - **AS** shifts **rightward - increases**

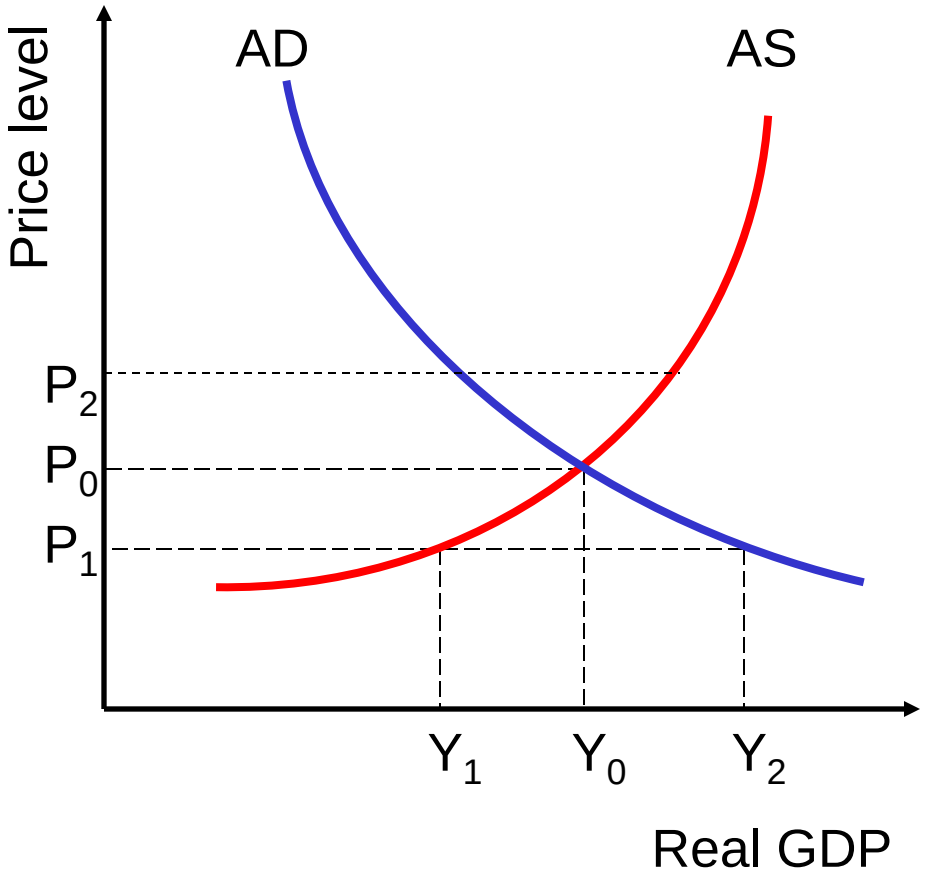
Macroeconomic Equilibrium

Only at intersection of **AS** and **AD**

• Demand & supply behaviour is consistent

At $\mathbf{P_1}$:
• Output demanded ($\mathbf{Y_2}$) **>** than production ($\mathbf{Y_1}$)

At $\mathbf{P_2}$:
• Output supplied **>** output demanded



Only at $\mathbf{P_0}$: Output demanded **=** Output supplied

Changes in the Macro Equilibrium

Demand and supply shocks:
- cause changes in equilibrium
- shocks shift demand or supply curves

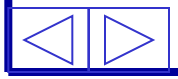
Demand shock either **expansionary** or **contractionary:**

Expansionary :

- Shifts the **AD** curve rightward
- Increasing both **P** and **Y**

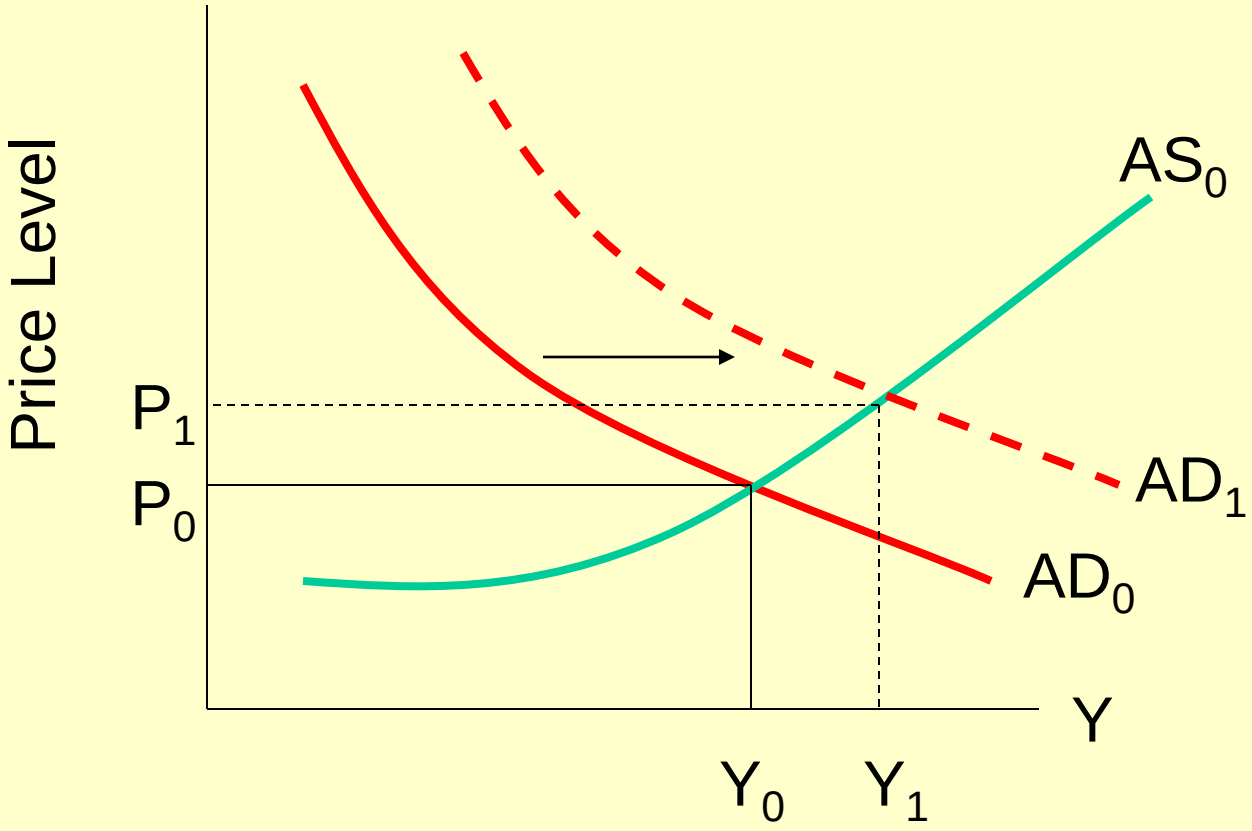
Contractionary :

- Shifts **AD** leftward
- Decreases both **P** and **Y**



Aggregate Demand Shocks

Expansionary demand shock:



- Both P and Y have increased

Steeper **AS** curve :

- greater the price effect
- smaller the output effect

Extreme case :

- vertical **AS** curve
- no change in real GDP

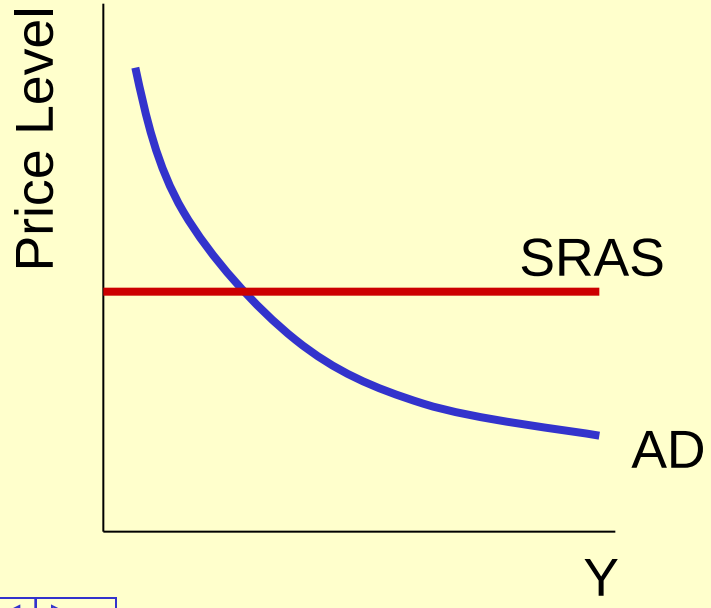
Multiplier is made smaller by rising AS curve : ***

- reduces the increase in GDP (Y)
- When **AS** is **vertical**, **multiplier** is **0**

Horizontal or Keynesian SRAS

- other extreme
- output increased
- no increases in costs of production

- during depression, Keynes wrote
- unemployment very high
- output below potential
- AS horizontal



Output is **demand determined**

Aggregate Supply Shocks

• either **expansionary** or **contractionary**

Expansionary :

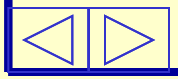
• shifts **AS** rightward

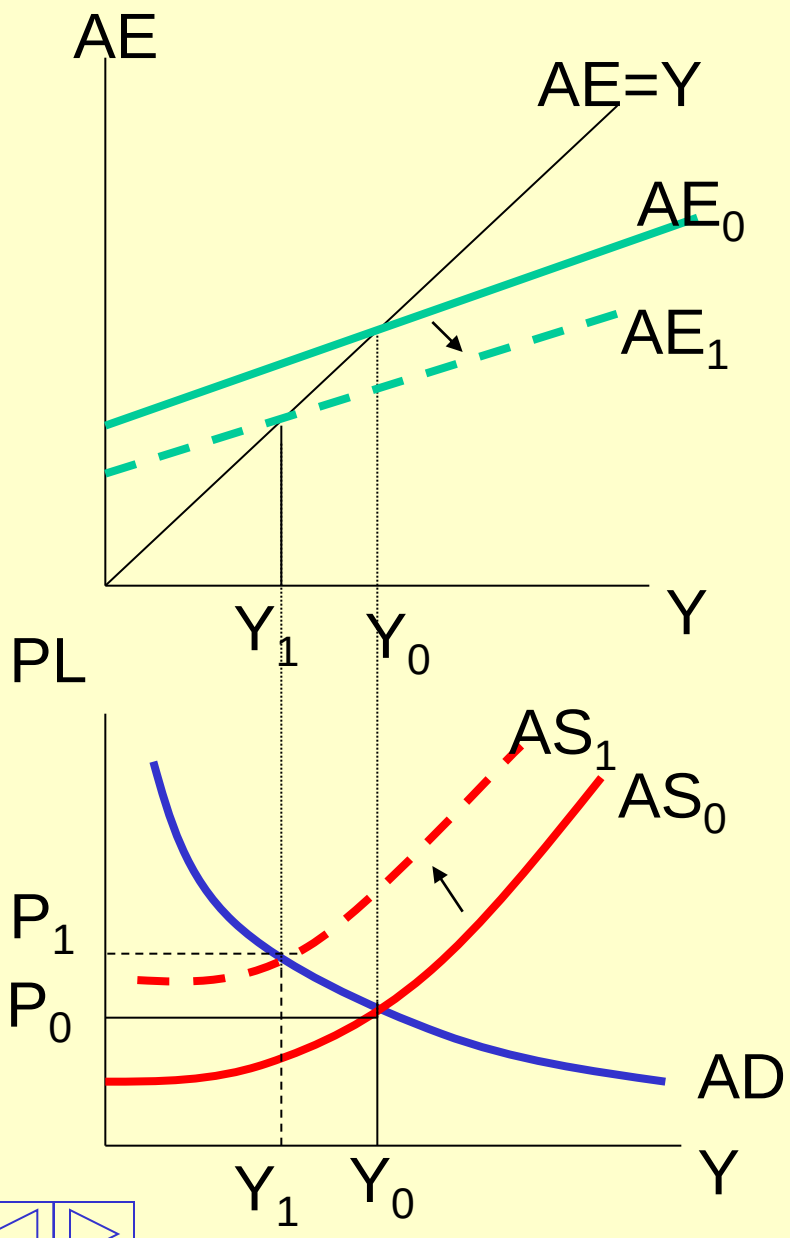
• increases **Y**

• decreases **P**

Contractionary :

• shifts **AS** leftward
• decreases **Y**
• increases **P**





Aggregate Supply Shocks

Aggregate supply shocks

- cause **P** and **Y** to change in **opposite directions**

Negative supply shock
- e.g. OPEC oil price increase in early and late 1970s

Stagflation :
- output falls
- prices rise

Complications:

Many economic events

- especially changes in world prices of raw materials
- cause **both** aggregate demand and aggregate supply shocks

e.g. oil price increases in Canada:
- imports oil
- produces oil
- exports oil
- Effect depends which curve – supply or demand – shifts more
- overall effect on economy depends on relative importance of two separate effects