EC566 – Macroeconomics for Business

Week 20 – Lecture 2

Aggregate Demand and Aggregate Supply in the short-run

L&C – Ch. 21

B&P – Ch. 13

Learning Outcomes

- You will be able to:
  - explain the basic ideas of aggregate demand and aggregate supply
  - draw the relevant diagrams
  - explain and illustrate the factors that lead to shifts in aggregate supply and aggregate demand
  - explain macroeconomic equilibrium, the joint determination of P, and Y, real GDP
  - The effect of a supply or demand shock on macroeconomic equilibrium

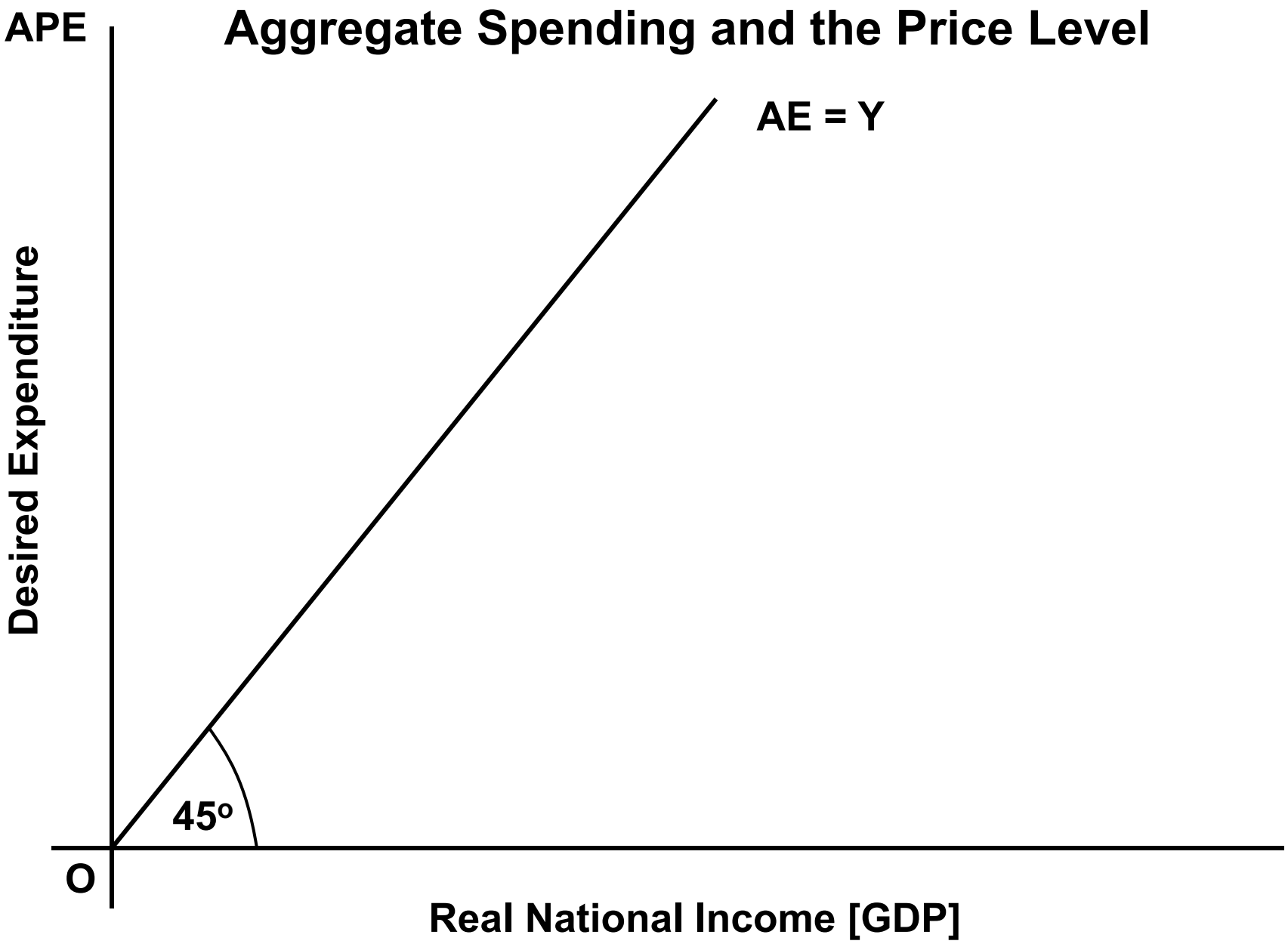
Aggregate Demand (AD)

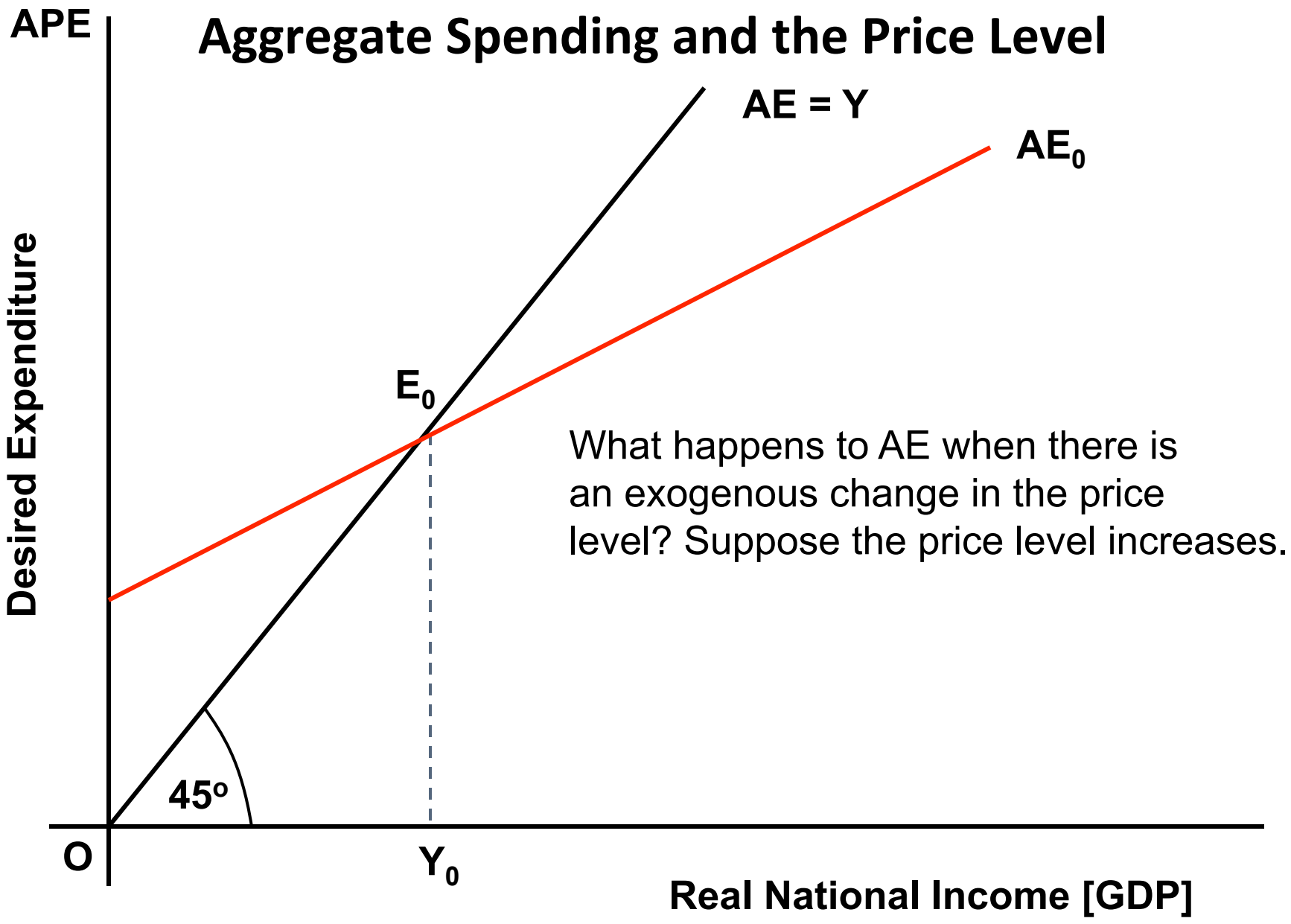
- **Aggregate Demand** is the total amount that all consumers, business firms, government agencies and foreigners spend on final goods and services:

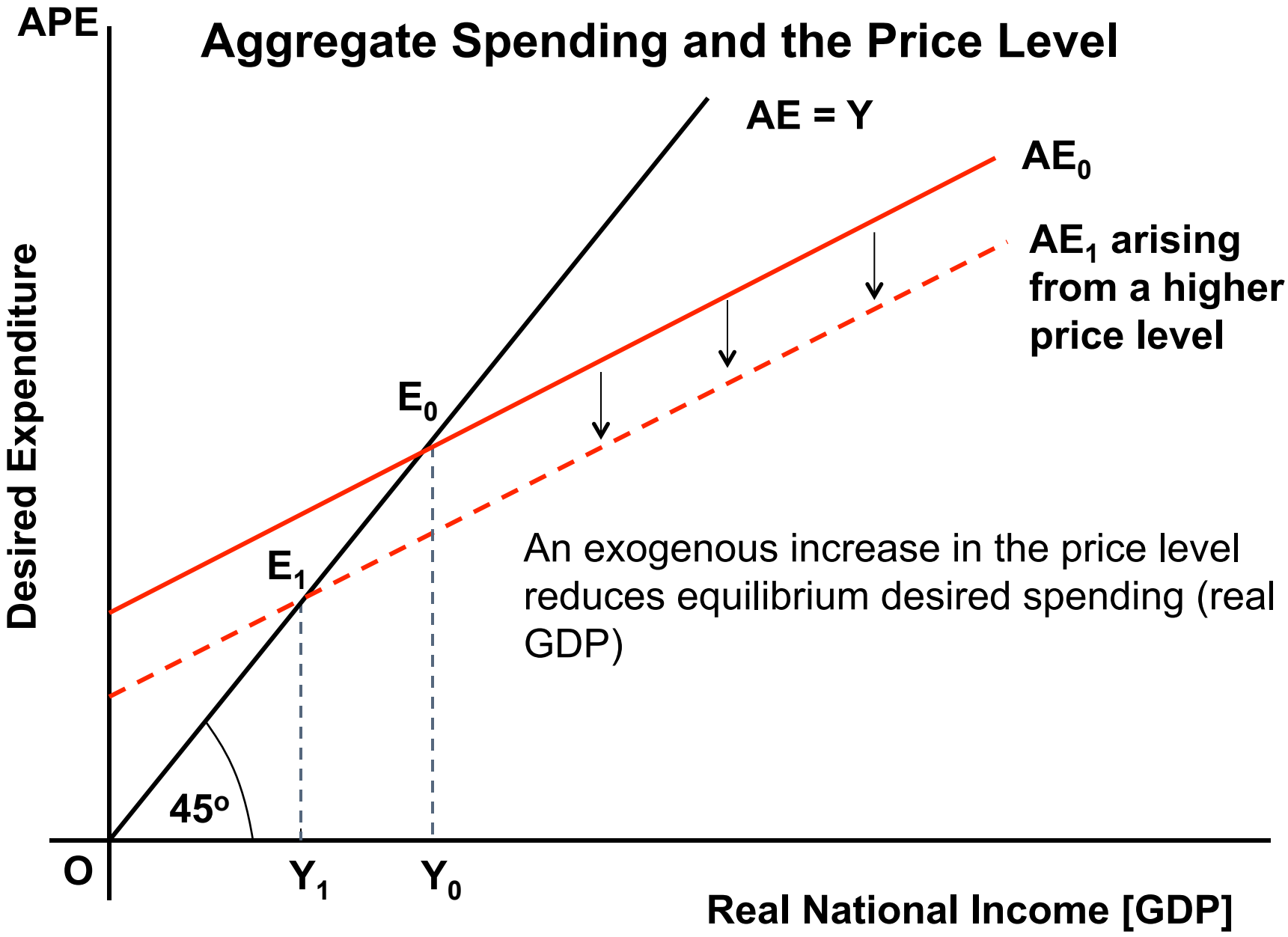
  AD is sum of C + I + G + X

- In other words, **Aggregate Demand** is the relationship between the quantity of real GDP demanded, Y (desired level of spending) and the price level
- AD - quantity of domestic product that is demanded at each possible value of the price level.
- It is a schedule , not a fixed number

- AD slopes down due to **wealth effects , real money effect** and **balance of payment effect**


APE
Aggregate Spending and the Price Level
AE = Y
Desired Expenditure
45o
O
Real National Income [GDP]


APE
Aggregate Spending and the Price Level
AE = Y
AE0
E0
Desired Expenditure
What happens to AE when there is an exogenous change in the price level? Suppose the price level increases.
45o
O
Y0
Real National Income [GDP]


APE
Aggregate Spending and the Price Level
AE = Y
AE0
AE1 arising from a higher price level
Desired Expenditure
E0
E1
An exogenous increase in the price level reduces equilibrium desired spending (real GDP)
45o
O
Y1
Y0
Real National Income [GDP]

Aggregate Spending and the Price Level

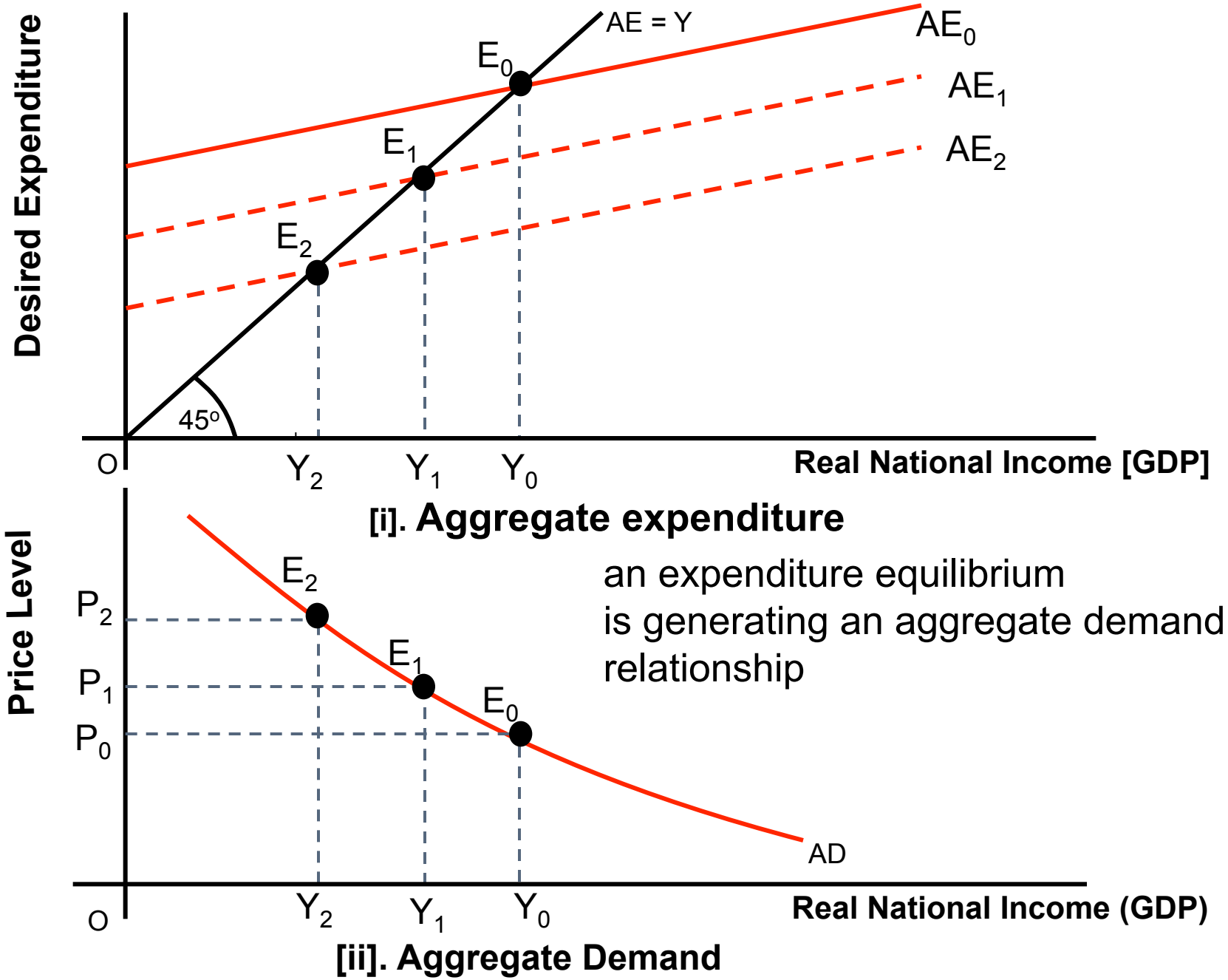
- Price level and AE negatively related
- Changes in the price level cause the AE to shift and equilibrium GDP to change
- An increase in the price level reduces desired expenditure (negative wealth and net export effects) and thus causes the AE curve to shift down to AE_1

- As a result real GDP falls to Y_1
- The reverse happens for a fall in the price level

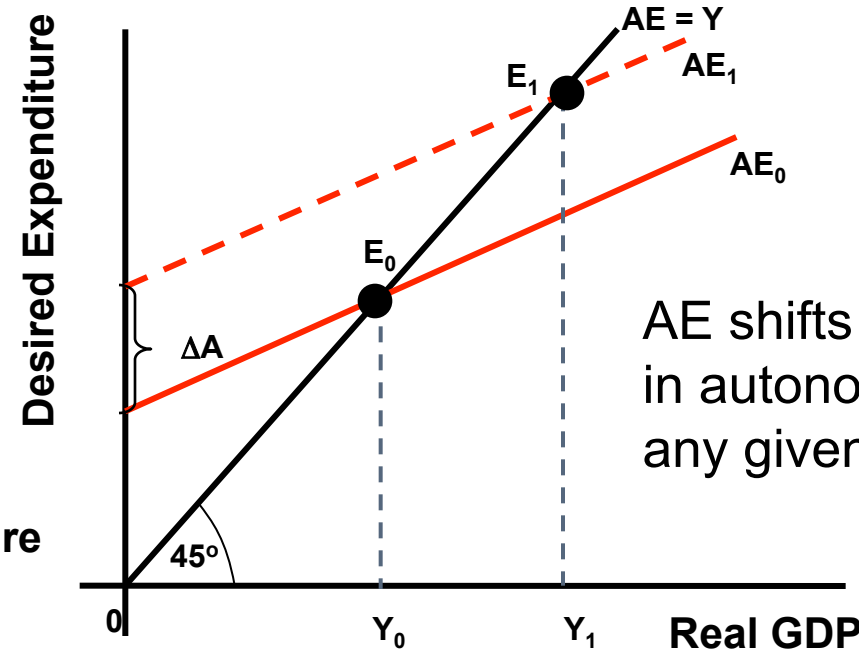
Aggregate Demand curve

Why is AD curve downward sloping:

- Aggregate spending constraint
- Real balance effect
- Wealth effect
- International trade effect
- Used goods effect

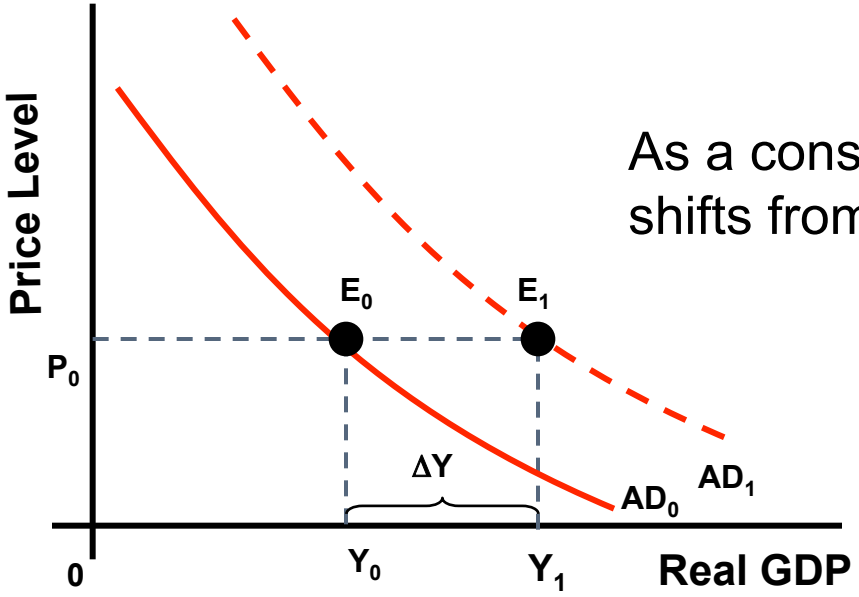

Desired Expenditure
AE = Y
AE_0
AE_1
AE_2
E_0
E_1
E_2
45°
O
Y_2
Y_1
Y_0
Real National Income [GDP]
[i]. Aggregate expenditure
Price Level
P_2
P_1
P_0
E_2
E_1
E_0
AD
O
Y_2
Y_1
Y_0
Real National Income (GDP)
[ii]. Aggregate Demand
an expenditure equilibrium
is generating an aggregate demand
relationship

[i]. Aggregate Expenditure



AE shifts due to a change in autonomous spending at any given price level

[i]. Aggregate Demand



As a consequence AD shifts from AD_0 to AD_1

Shifts in the AD curve

- A change in autonomous expenditure changes equilibrium real GDP for any given price level, and the "simple" multiplier measures the resulting horizontal shift in the aggregate demand curve

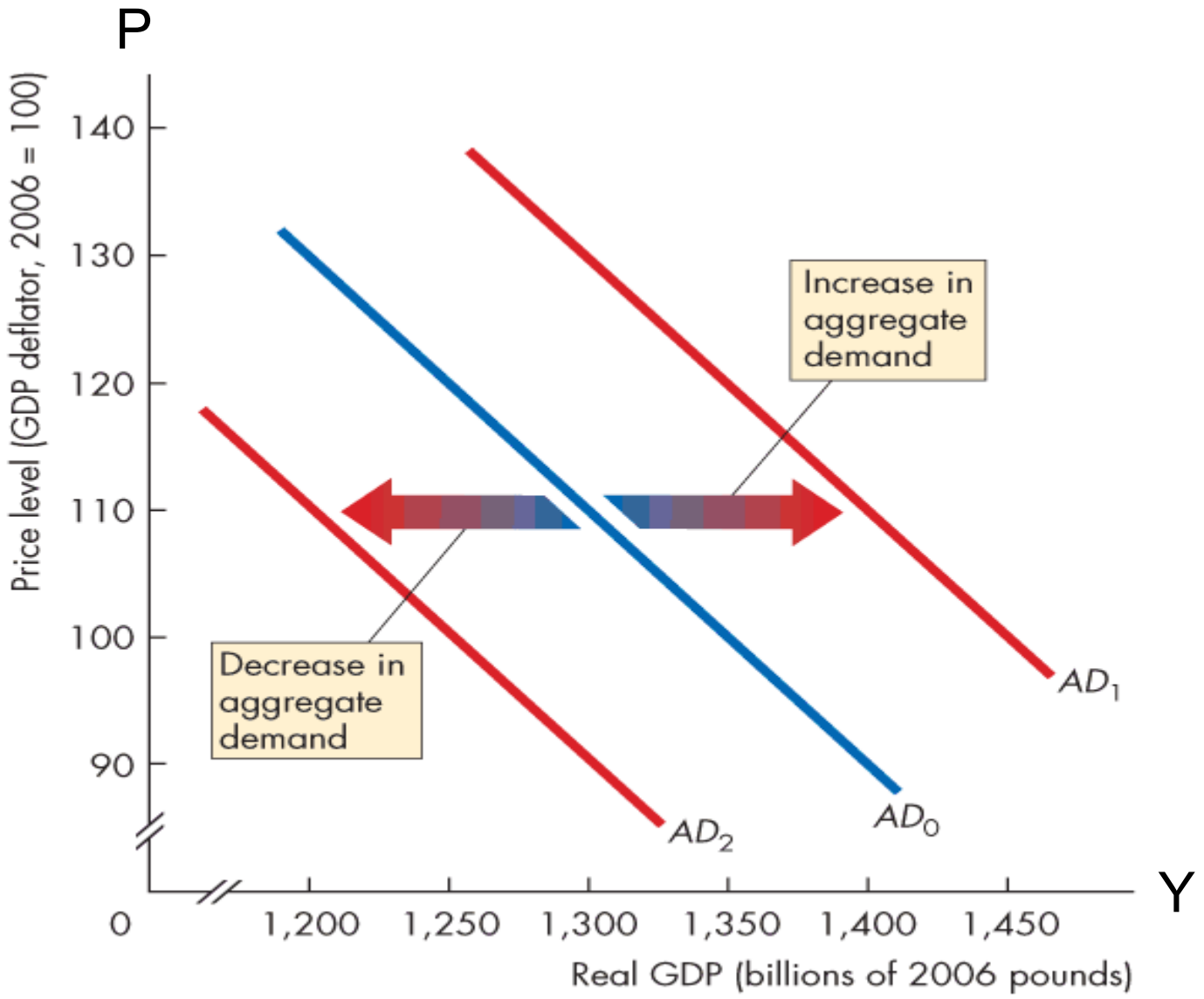
- The original AE curve is at AE_0 with equilibrium at E_0, real GDP = Y_0 and Price level = P_0; this gives point E_0 on AD_0
- AE_0 shifts to AE_1 because of an autonomous expenditure increase ΔA, and GDP increases to Y_1
- With a given price level P_0, the AD curve shifts rightward to E_1

Shifts in the Aggregate Demand Curve – Demand Shocks

- Real GDP can change due to shifts in the aggregate demand curve. The factors that lead to such shifts are:

- Fiscal Policy (Spending & Taxation)
- Monetary Policy (Money & Interest Rates)
- International Factors (World Demand)
- Expectations (Future Profits)
- Changes in autonomous spending components at any given price level i.e. Δ I, . Δ G, . Δ X and the factors underlying these components

Aggregate Demand Shocks

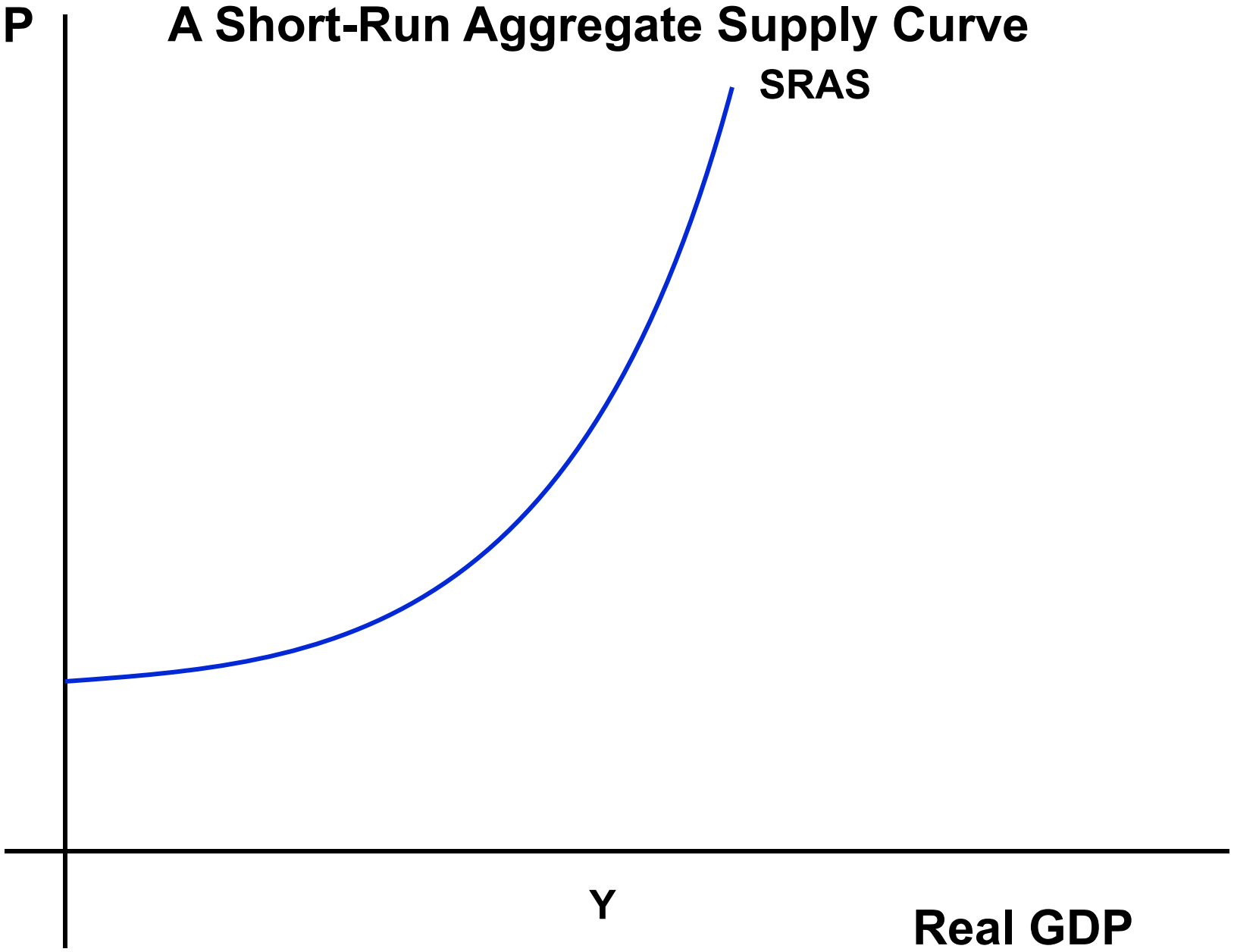


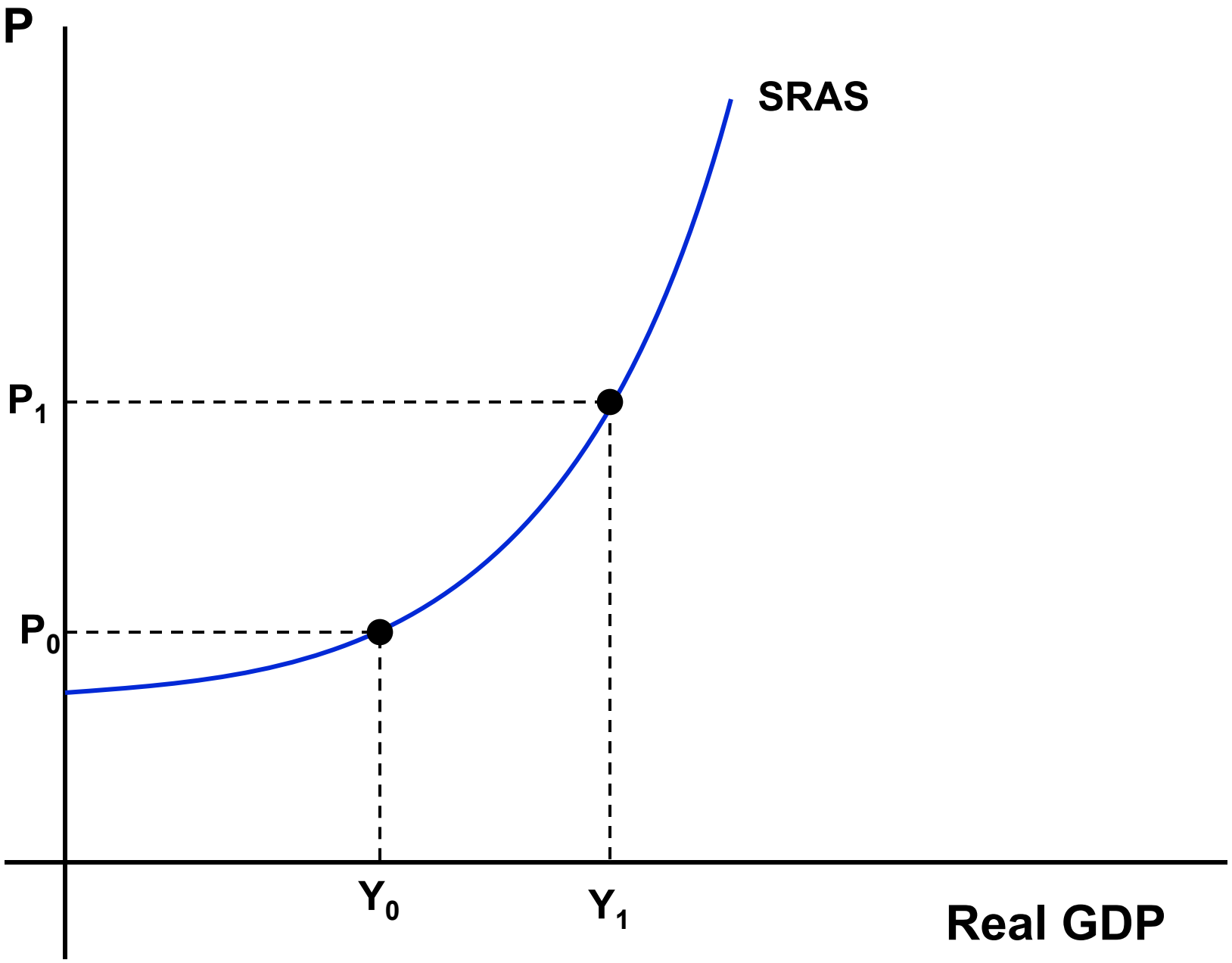
What Determines Aggregate Supply in the Economy?

- The Aggregate Production Function
- Potential Real GDP (Y) is determined by Labour Input (L), Capital Input (K), Technology (T)
- Provides the link to economic growth, the long run and to fluctuations in real GDP, the short run,

Short-Run Aggregate Supply (SRAS)

- The relationship between the quantity of real GDP supplied and the price level holding all other input prices constant (ceteris paribus)
- More precisely - AS Curve shows 'for each possible price level , the quantity of goods and services that all the nation's businesses are willing to produce during a specified period of time holding all other determinants of aggregate quantity supplied constant'
- So movements up and down SRAS mean that only the price level is changing; other input prices are held fixed
- The SRAS curve is positively sloped
- The positive slope shows that with prices of labour and other inputs given, total desired output and the price level will be positively associated
- A rise in the price level from P_0 to P_1 will be associated with a rise in output supplied from Y_0 to Y_1


P
A Short-Run Aggregate Supply Curve
SRAS
Y
Real GDP

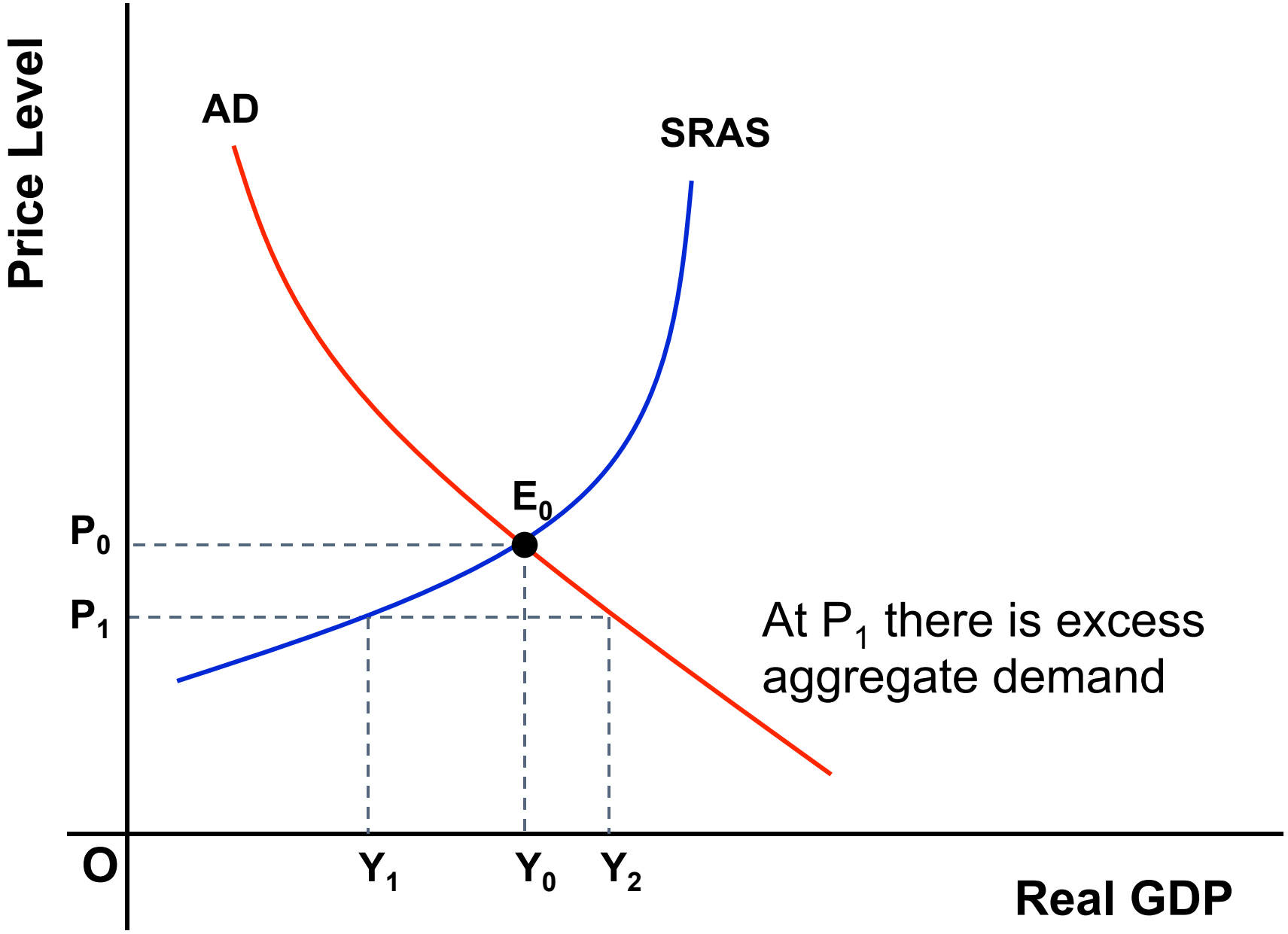

P
SRAS
P_1
P_0
Y_0
Y_1
Real GDP

Short-Run Macroeconomic Equilibrium

➢ **Short-run Macroeconomic equilibrium:**

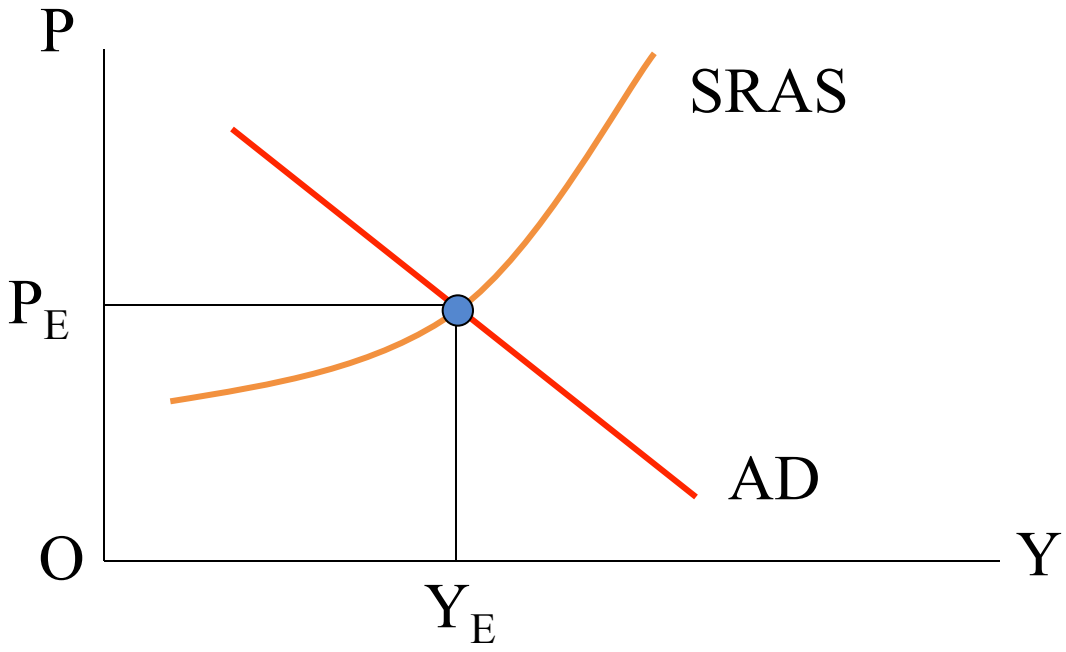
- occurs when the quantity of real GDP demanded equals the quantity of real GDP supplied in the short-run, AD = SRAS
- In the diagram on next slide, macroeconomic equilibrium occurs at the intersection of the AD and SRAS curves
- Equilibrium occurs at E_0 with real GDP equal to Y_0 and the price level P_0
- If the price level were P_1, below P_0, the desired output of firms would be Y_1 but desired demand would be Y_2, so desired spending would exceed desired production which would lead to higher output and prices

- Only at E_0 are desired plans of producers and consumers consistent


Price Level
AD
SRAS
E_0
P_0
P_1
At P_1 there is excess aggregate demand
O
Y_1
Y_0
Y_2
Real GDP

Macroeconomic Equilibrium

$P > P_E$ implies excess supply, SRAS>AD
$P < P_E$ implies excess demand, AD>SRAS

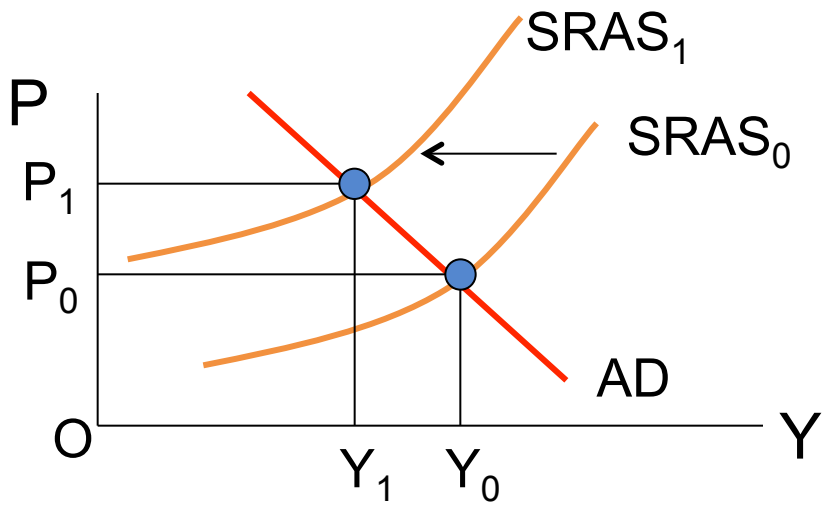


SRAS can be drawn as an upward sloping straight line

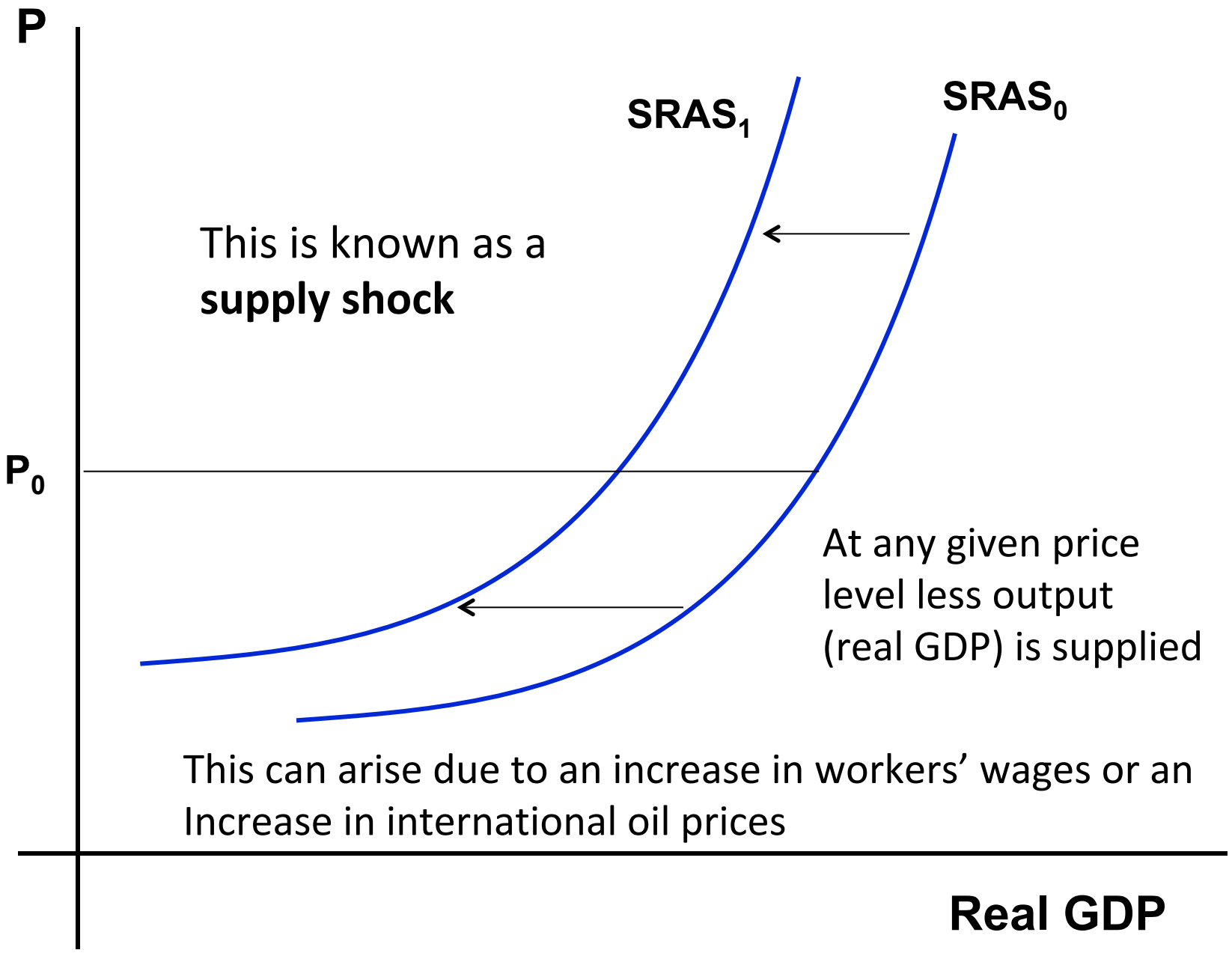
Supply Shocks and Macroeconomic Equilibrium

- Input prices - Higher input prices results in shifts of SRAS to the leftward – If output prices do not rise, the firms responds by cutting production and hence lower quantity produced
- An increase in productivity or a decrease in input prices shifts the SRAS curve to the right
- A decrease in productivity or an increase in input prices shifts the SRAS curve to the left

Negative supply shock increases the price level and reduces real GDP



2008 had big negative supply shocks from oil and food prices as does late 2010 and 2011


P
SRAS1
SRAS0
This is known as a
supply shock
P0
At any given price
level less output
(real GDP) is supplied
This can arise due to an increase in workers' wages or an
Increase in international oil prices
Real GDP

Summary

- the concepts of aggregate demand and short-run aggregate supply
- the shapes of these relationships and what causes them to shift (demand and supply shocks)
- familiarization and drawing of the basic diagrams
- macroeconomic equilibria (Y, P) using the AD-AS model