

# La funzione di offerta aggregata

In generale

Replacing  $u$  by  $1 - (Y/L)$  in equation (7.1) gives us the *aggregate supply relation*, or *AS relation for short*:

$$P = P^e (1 + m) F\left(1 - \frac{Y}{L}, z\right) \quad (7.2)$$

$$P = P^e (1 + m) (\delta + \lambda Y)$$

se lineare

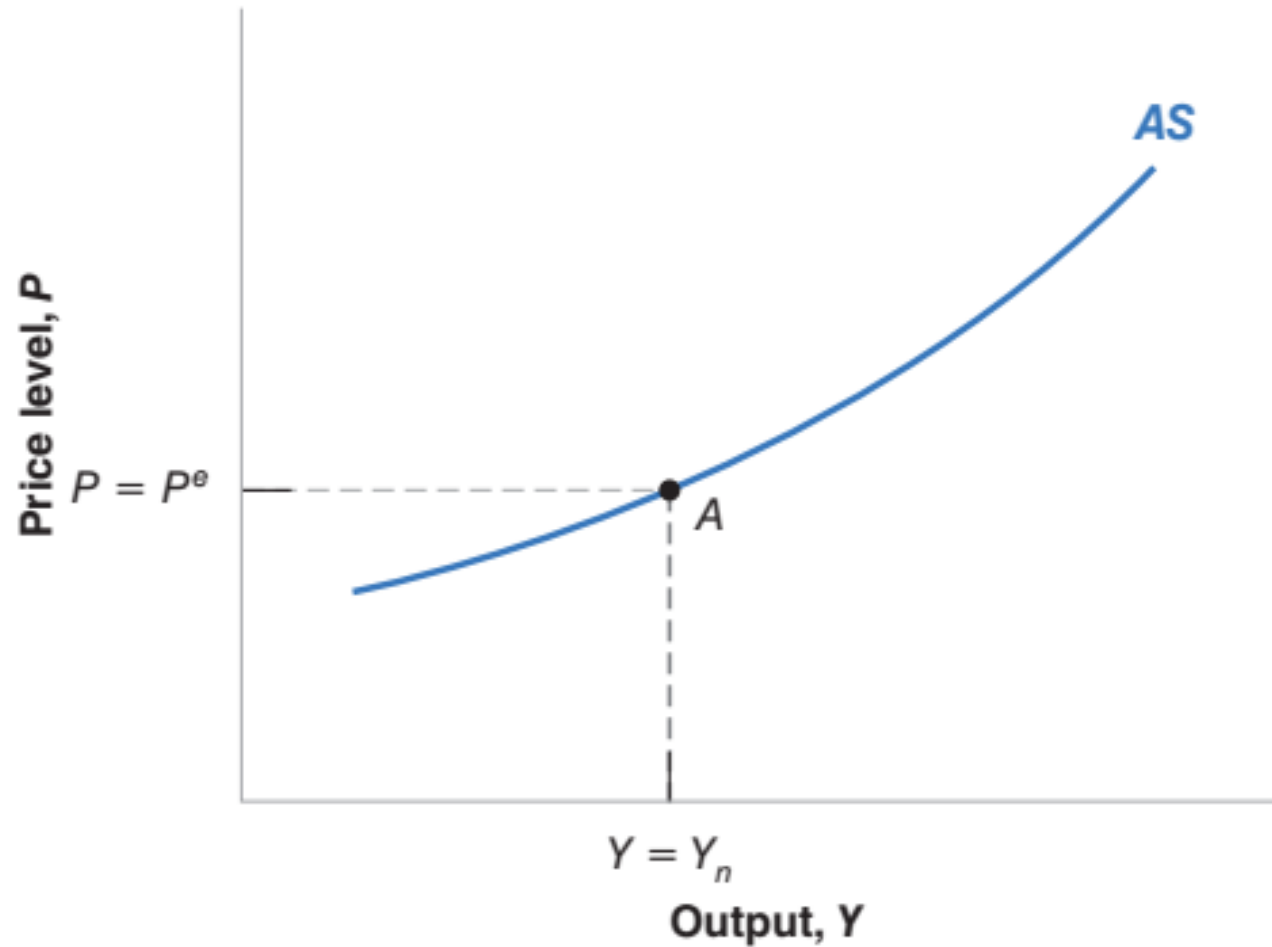
# Proprietà della funzione di offerta aggregata

*The first property is that, given the expected price level, an increase in output leads to an increase in the price level.* This is the result of four underlying steps:

1. An increase in output leads to an increase in employment.
2. The increase in employment leads to a decrease in unemployment and therefore to a decrease in the unemployment rate.
3. The lower unemployment rate leads to an increase in the nominal wage.
4. The increase in the nominal wage leads to an increase in the prices set by firms and therefore to an increase in the price level.



# La funzione di offerta aggregata



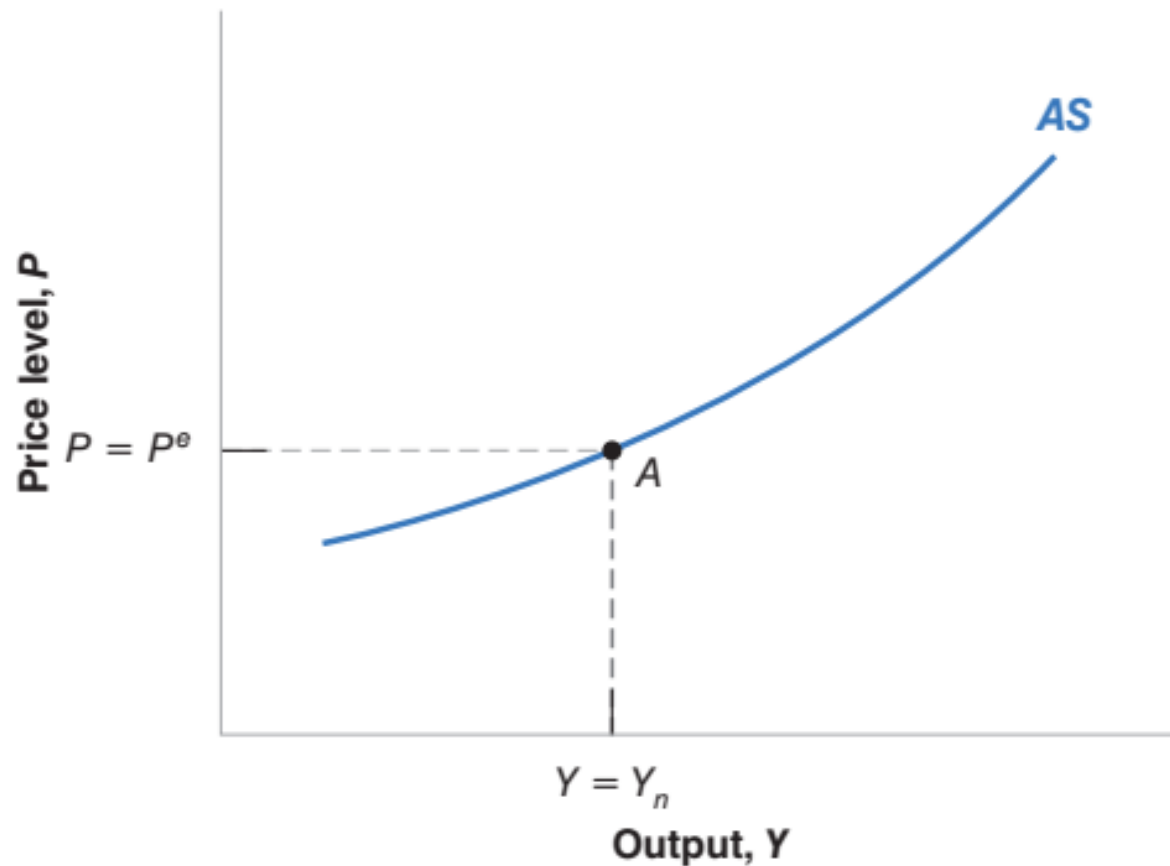
# Proprietà della funzione di offerta aggregata

The aggregate supply curve is upward sloping. Put another way, an increase in output  $Y$  leads to an increase in the price level  $P$ . You saw why earlier.

The aggregate supply curve goes through point  $A$ , where  $Y = Y_n$  and  $P = P^e$ . Put another way: When output  $Y$  is equal to the natural level of output  $Y_n$ , the price level  $P$  turns out to be exactly equal to the expected price level  $P^e$ .



# La funzione di offerta aggregata



$$1 = (1 + m) (\alpha - \beta u)$$

# Proprietà della funzione di offerta aggregata

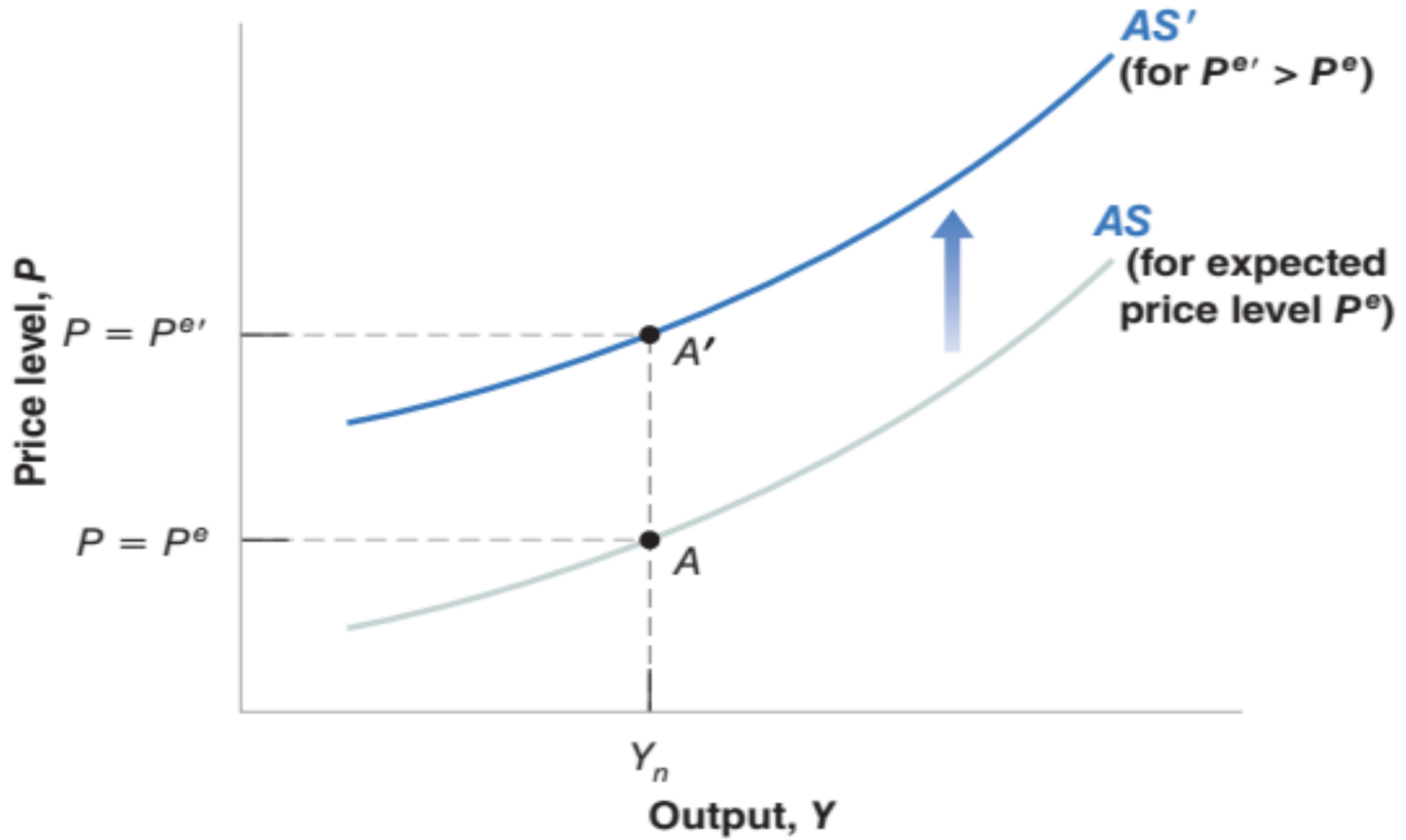
*The second property is that, given unemployment, an increase in the expected price level leads, one for one, to an increase in the actual price level. For example, if the expected price level doubles, then the price level will also double. This effect works through wages:*

1. If wage setters expect the price level to be higher, they set a higher nominal wage.
2. The increase in the nominal wage leads to an increase in costs, which leads to an increase in the prices set by firms and a higher price level.

If output is equal to the natural level of output, the price level is equal to the expected price level.



# La funzione di offerta aggregata





# 1. Il modello IS-LM riconsiderato

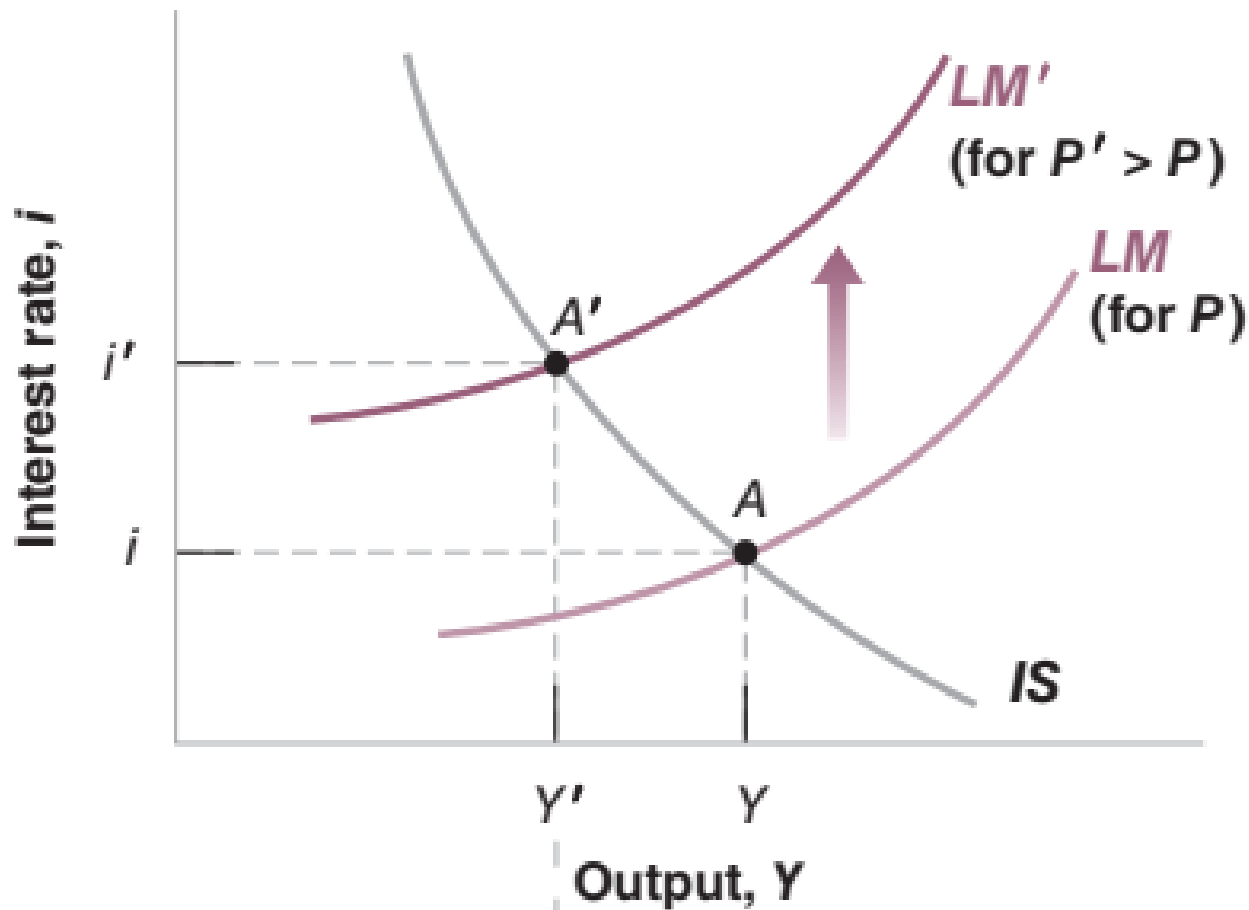
*Relazione IS:*  $Y = C(Y - T) + I(Y, r+x) + G$

*Relazione LM:*  $\frac{M}{P} = Y L(i)$

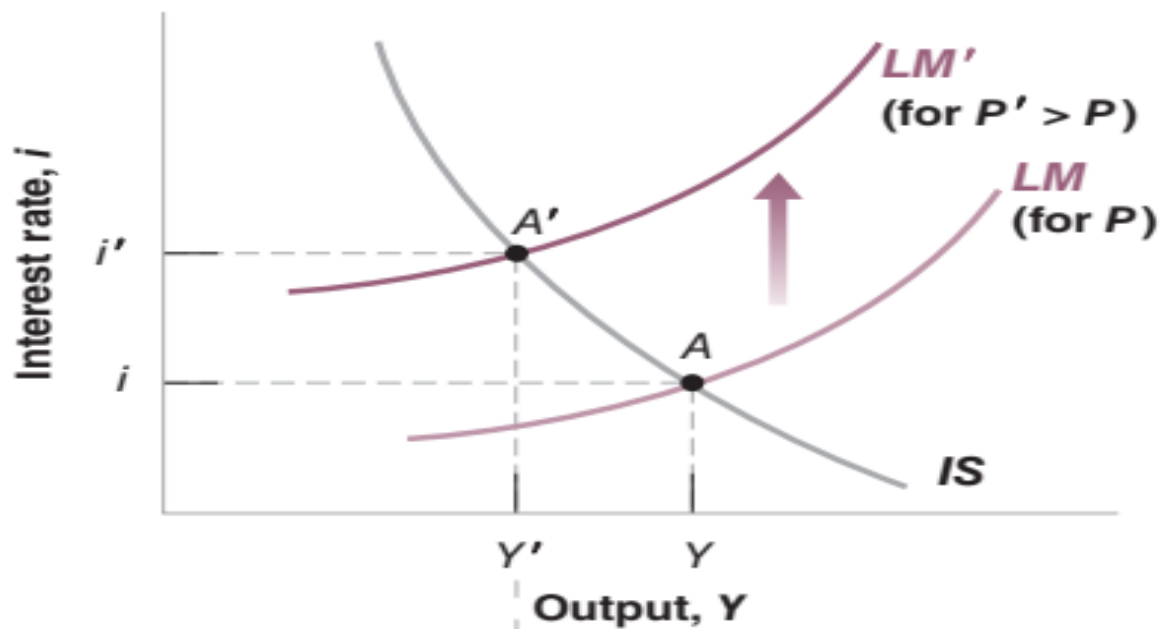
*Equazione di Fisher:*  $r = i - \pi^e_{t+1}$



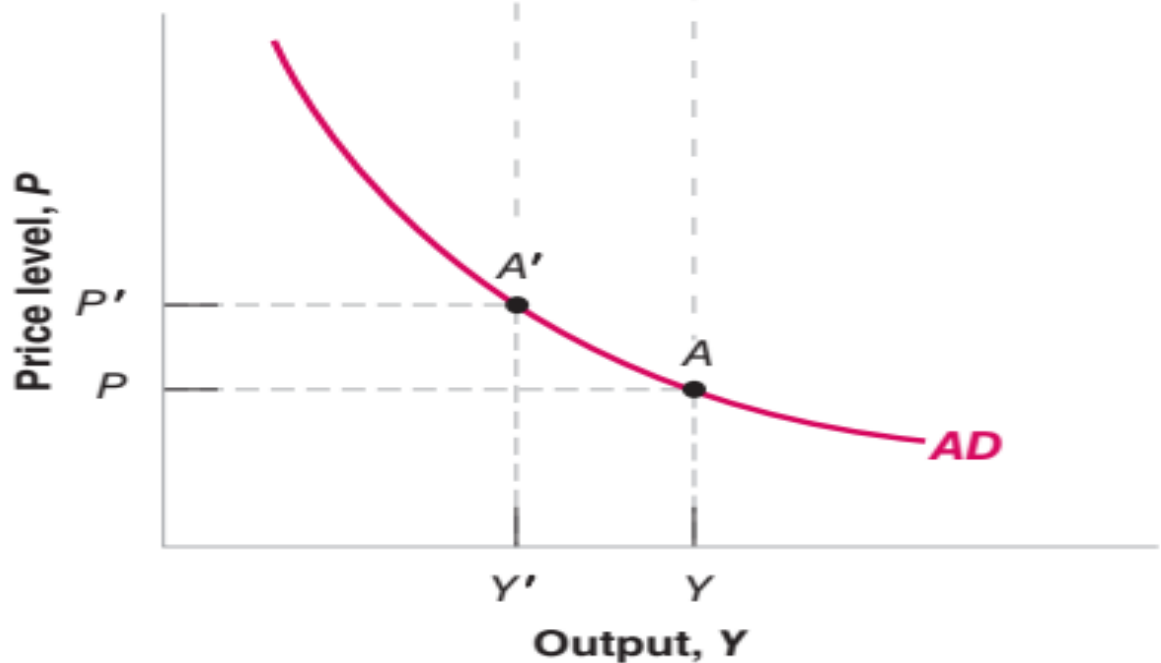
# che succede in IS-LM se i prezzi aumentano?



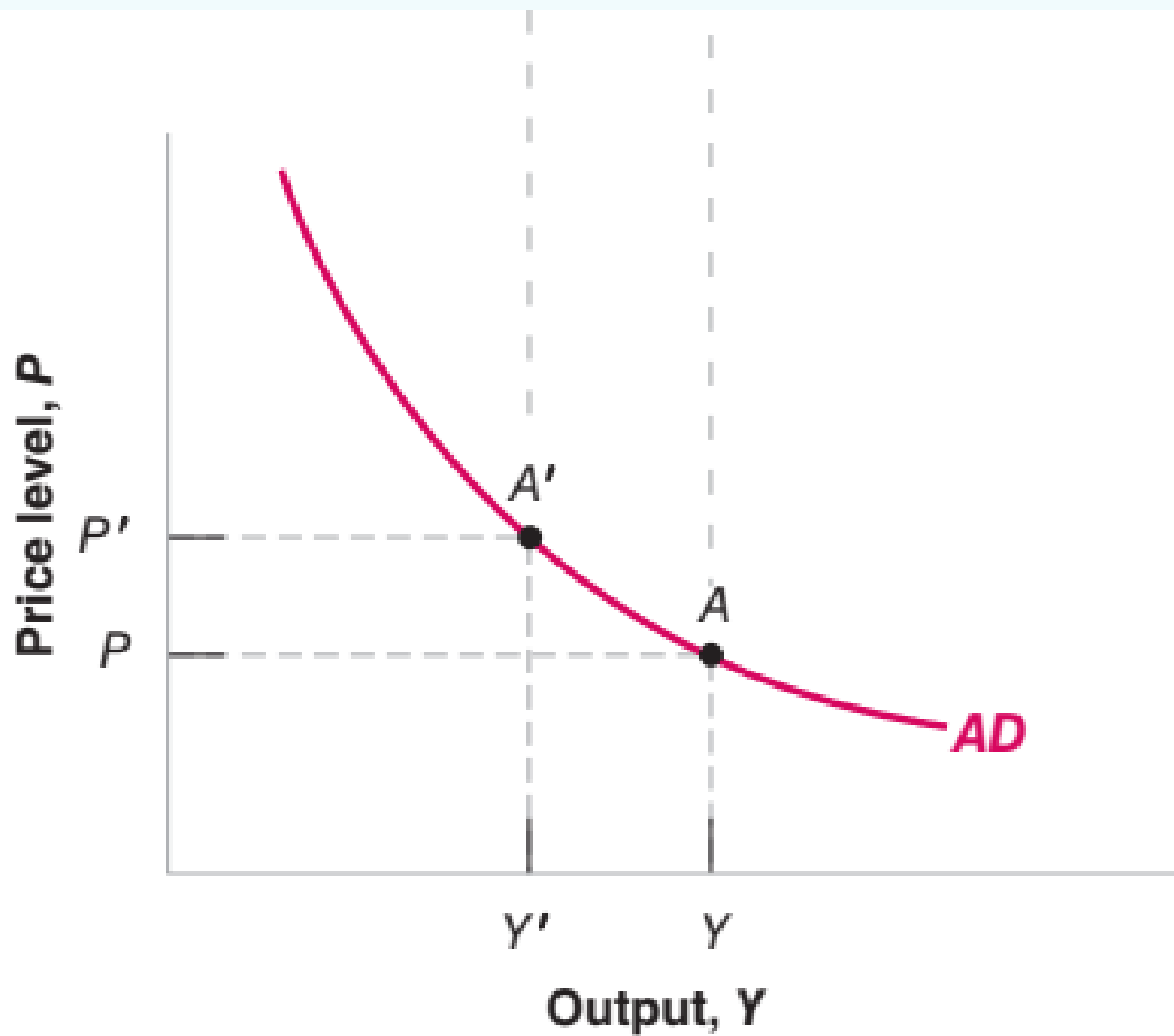
(a)



(b)



# Domanda aggregata



# e l'inflazione attesa?

Ipotesi 1: aspettative sui prezzi fisse!

*Relazione IS:*  $Y = C(Y - T) + I(Y, r+x) + G$

*Relazione LM:*  $\frac{M}{P} = Y L(i)$

*Equazione di Fisher:*  $r = i - \pi^e_{t+1}$

*Aspettative:*  $P_t^e = \bar{P}$

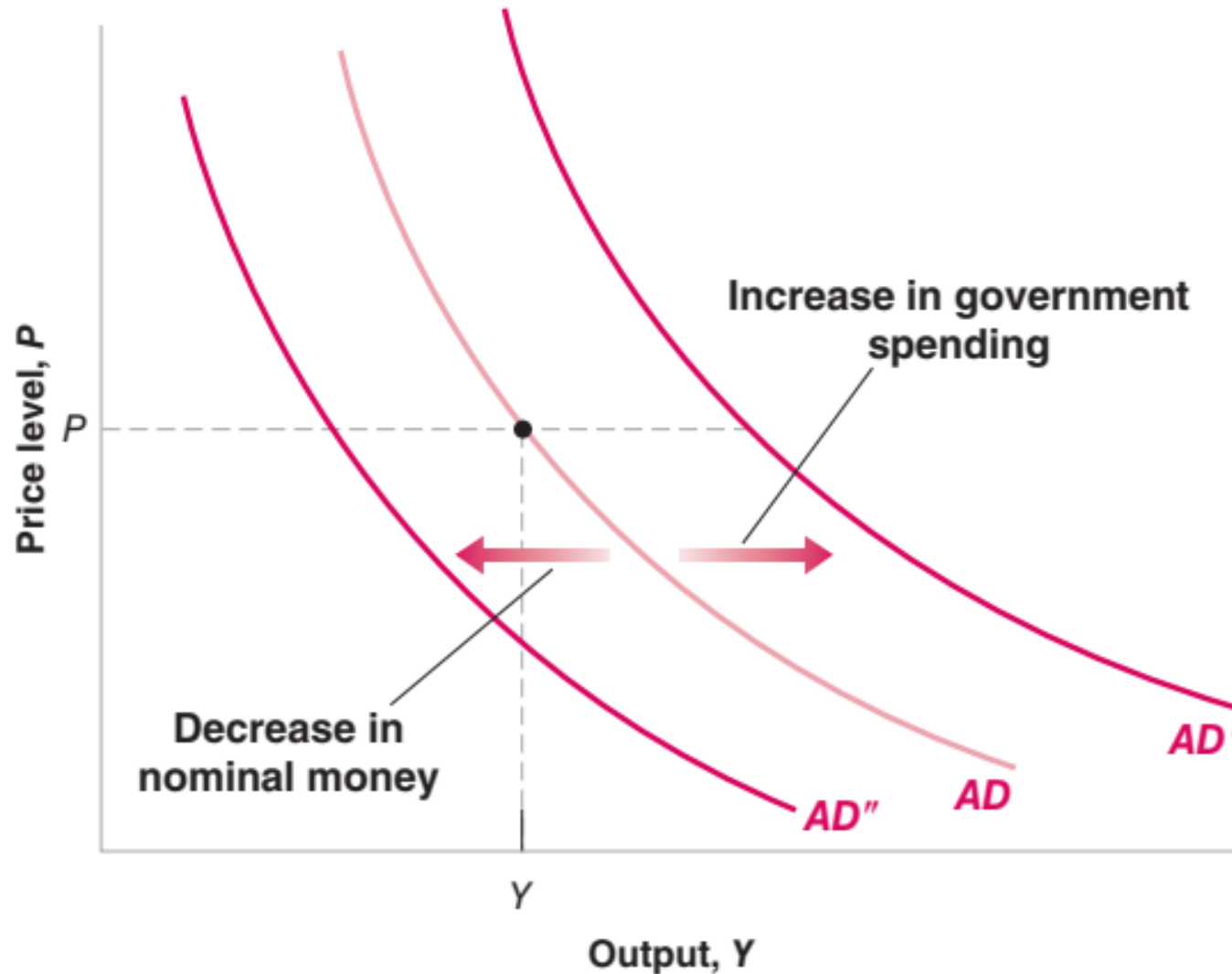
# modello semplificato di domanda aggregata

$$Y = C(Y - T) + I(Y, i - \pi^e + x) + G$$

$$\frac{M}{P} = Y L(i)$$

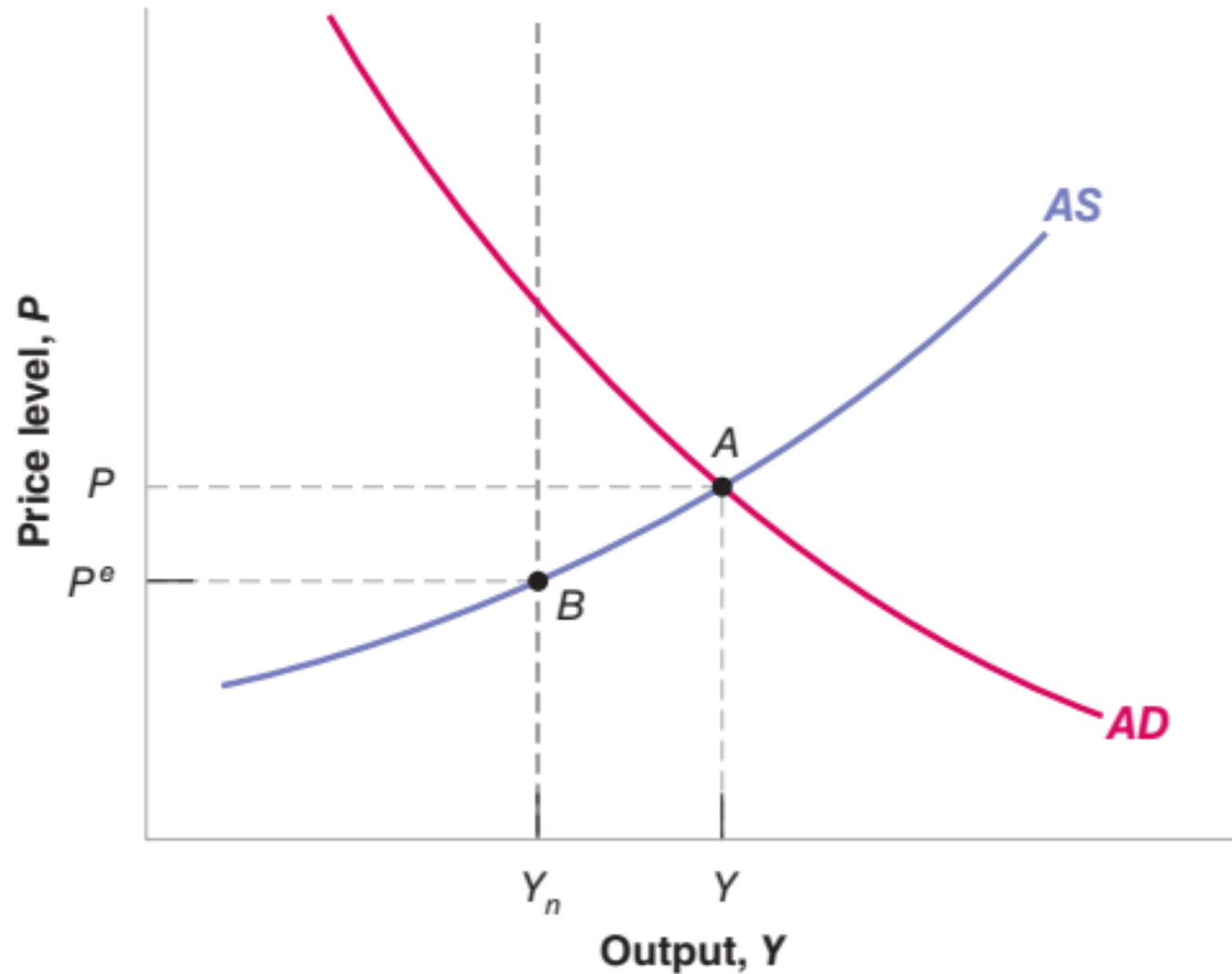
L'inflazione attesa è pure data!

# Curva di domanda aggregata per un dato valore dei prezzi attesi





# Equilibrio temporaneo, ma dopo?



*improbabile che le aspettative rimangano ancorate al valore precedente*

# e l'inflazione attesa?

## Ipotesi 2: aspettative adattive

*Relazione IS:*  $Y = C(Y - T) + I(Y, r+x) + G$

*Relazione LM:*  $\frac{M}{P} = Y L(i)$

*Equazione di Fisher:*  $r = i - \pi^e_{t+1}$

*Aspettative :*  $P^e_t = P_{t-1}$

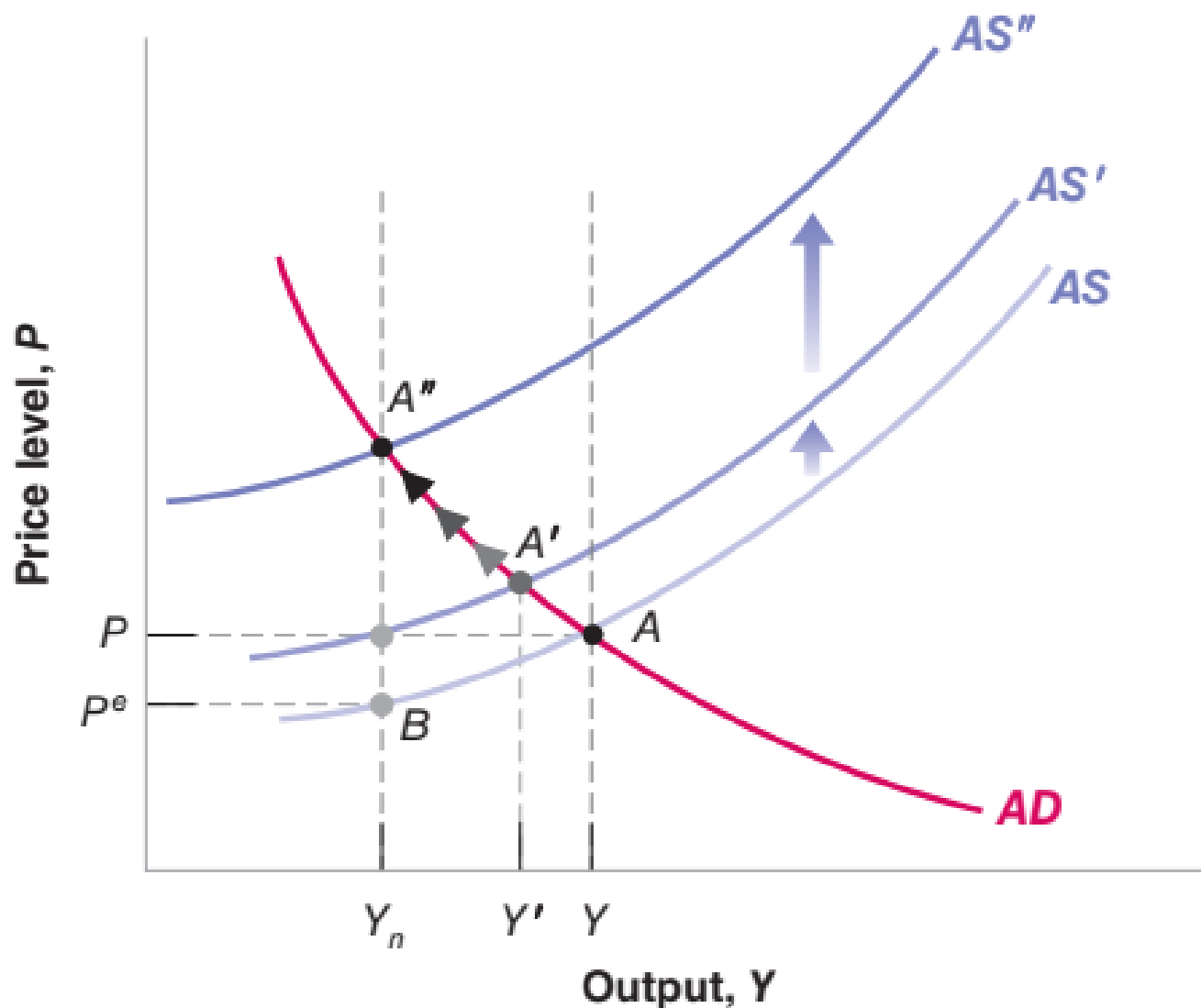
# modello semplificato di domanda aggregata con $\pi^e = 0$

$$Y = C(Y - T) + I(Y, i+x) + G$$

$$\frac{M}{P} = Y L(i)$$

# Offerta aggregata:

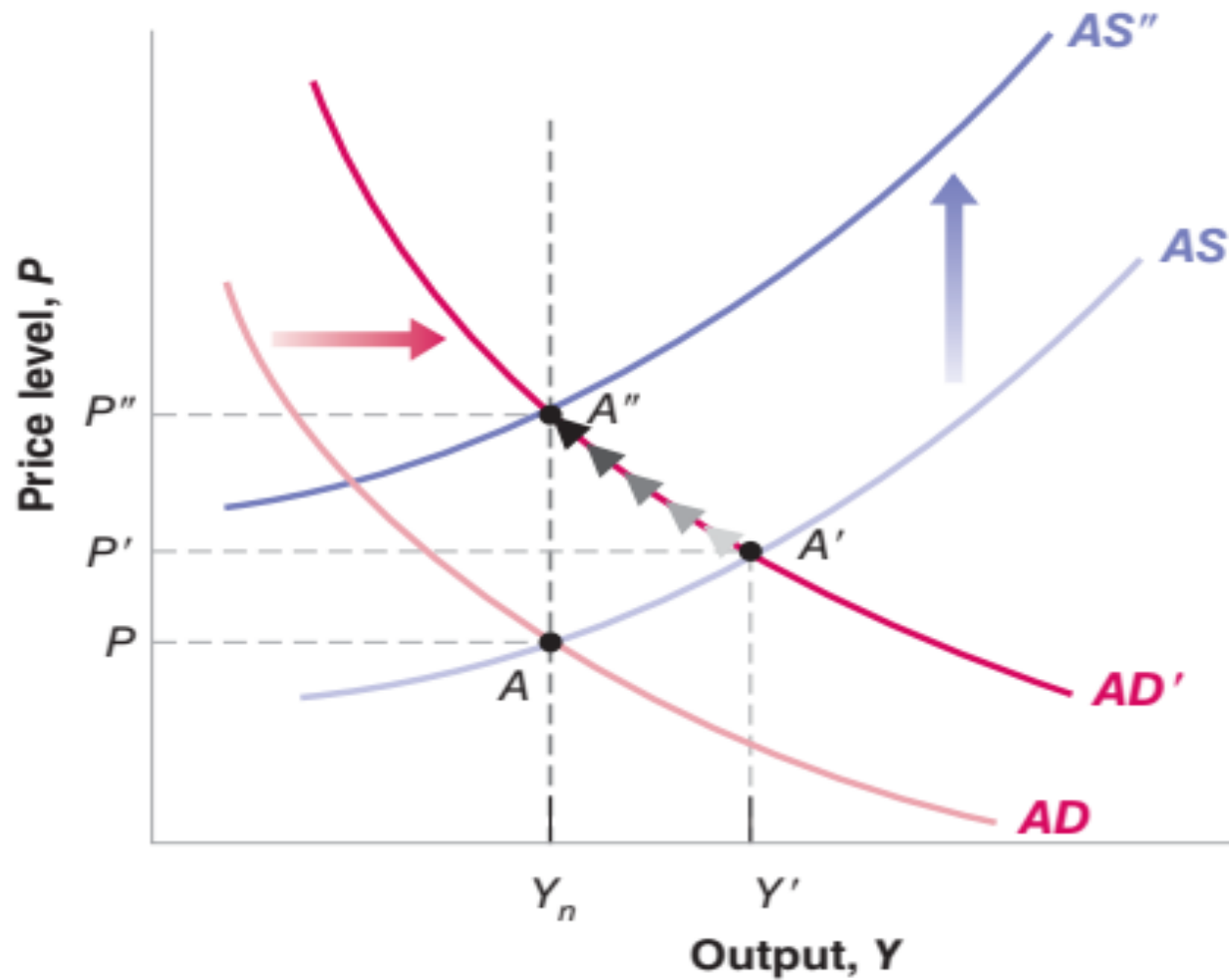
$$P = P_{-1} (1 + m) F(Y, z)$$



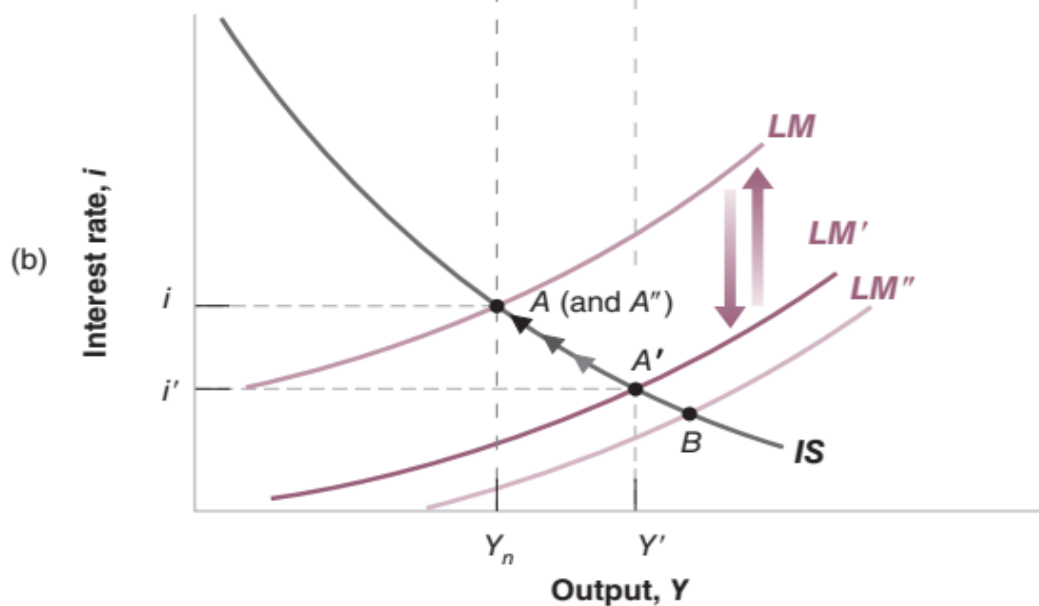
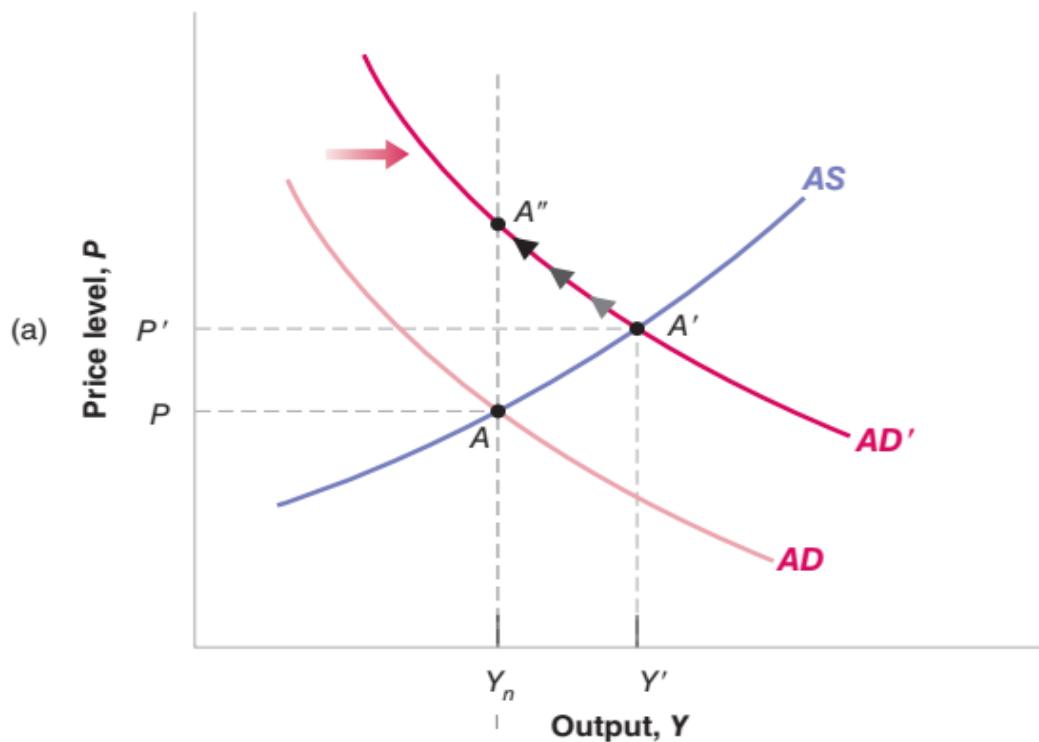
# Equilibrio di breve e medio periodo

In the *short run*, output can be above or below the natural level of output. Changes in any of the variables that enter either the aggregate supply relation or the aggregate demand relation lead to changes in output and to changes in the price level. In the *medium run*, output eventually returns to the natural level of output. The adjustment works through changes in the price level. When output is above the natural level of output, the price level increases. The higher price level decreases demand and output. When output is below the natural level of output, the price level decreases, increasing demand and output.

# Espansione monetaria



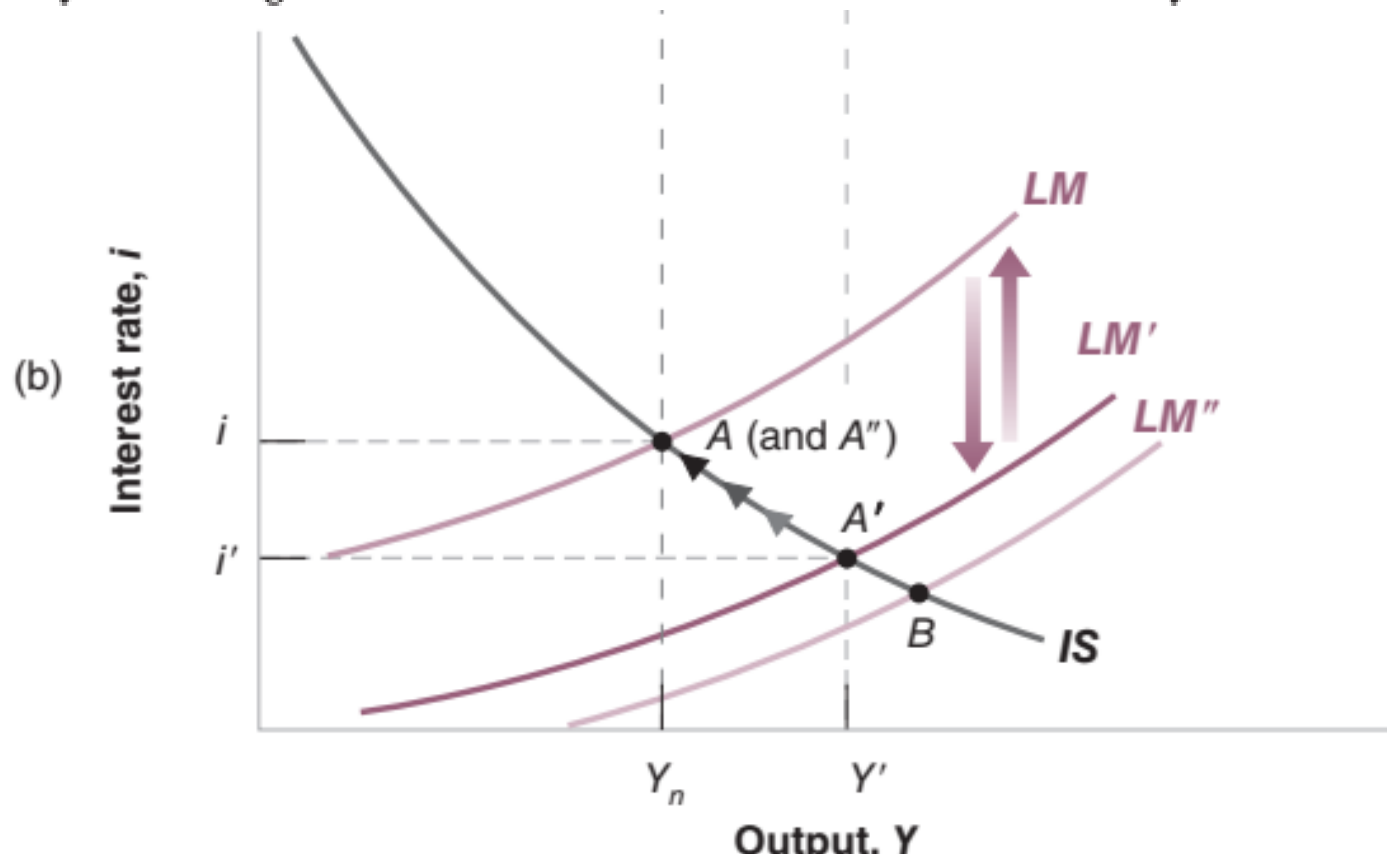




The increase in nominal money initially shifts the  $LM$  curve down, decreasing the interest rate and increasing output. Over time, the price level increases, shifting the  $LM$  curve back up until output is back at the natural level of output.



If the price level did not change, the increase in nominal money would shift the  $LM$  curve down to  $LM''$ . So, if the price level did not change—as was our assumption in Chapter 5—the equilibrium would be at the intersection of  $IS$  and  $LM''$ , or point  $B$ . But even in the short run, the price level increases—from  $P$  to  $P'$  in Figure 7-8(a). This increase in the price level shifts the  $LM$  curve upward from  $LM''$  to  $LM'$ , partially offsetting the effect of the increase in nominal money.



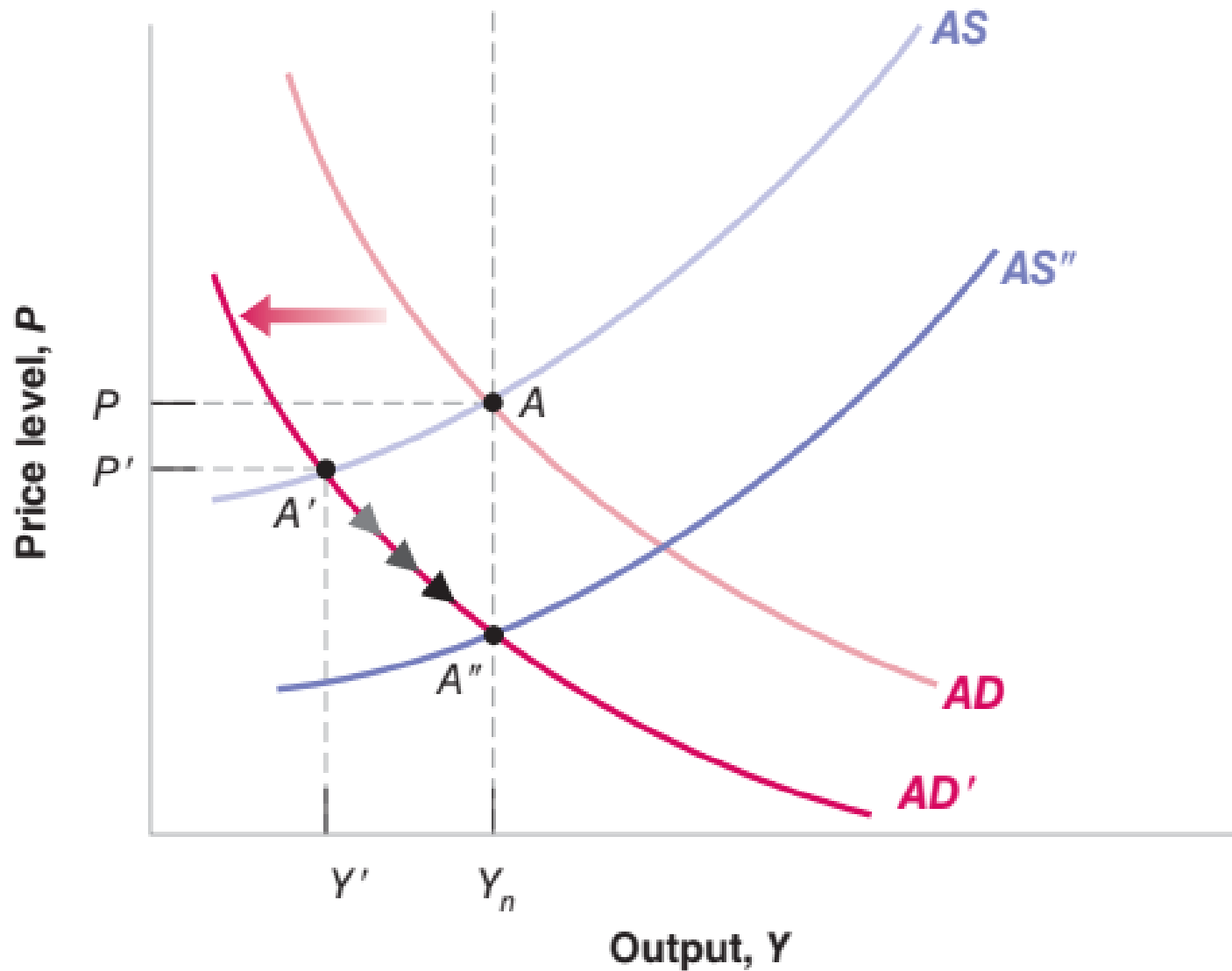
# Neutralità della moneta

$$\frac{M}{P} = Y L(i)$$

Nel medio periodo il tasso d'interesse (con aspettative adattive reale = nominale) deve essere quello Wickselliano o di lungo periodo, come l'output è quello naturale (tutti i termini alla destra sono dati)

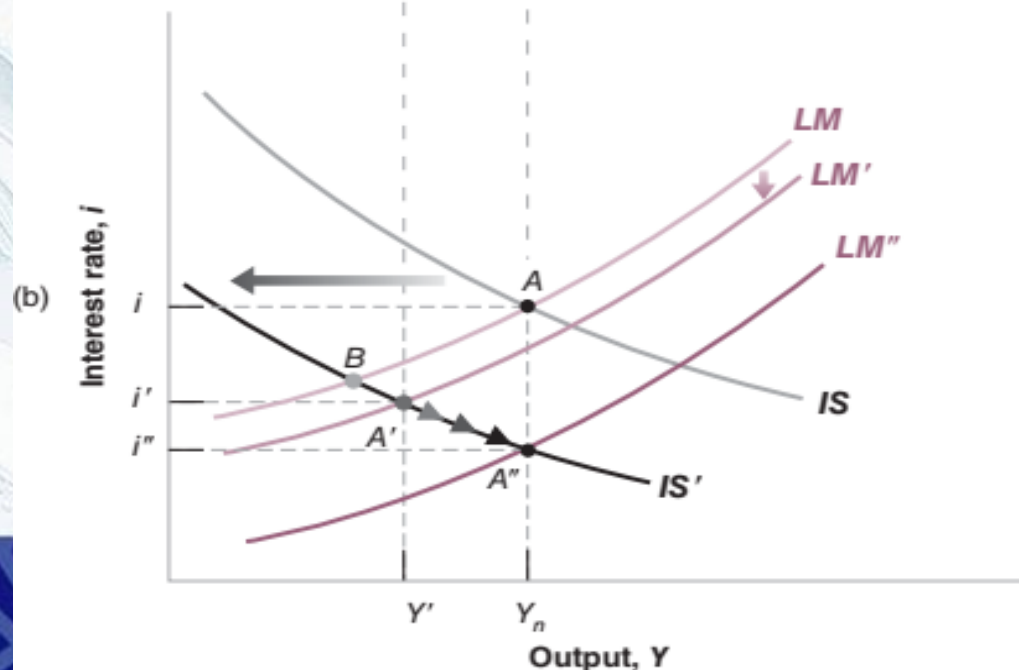
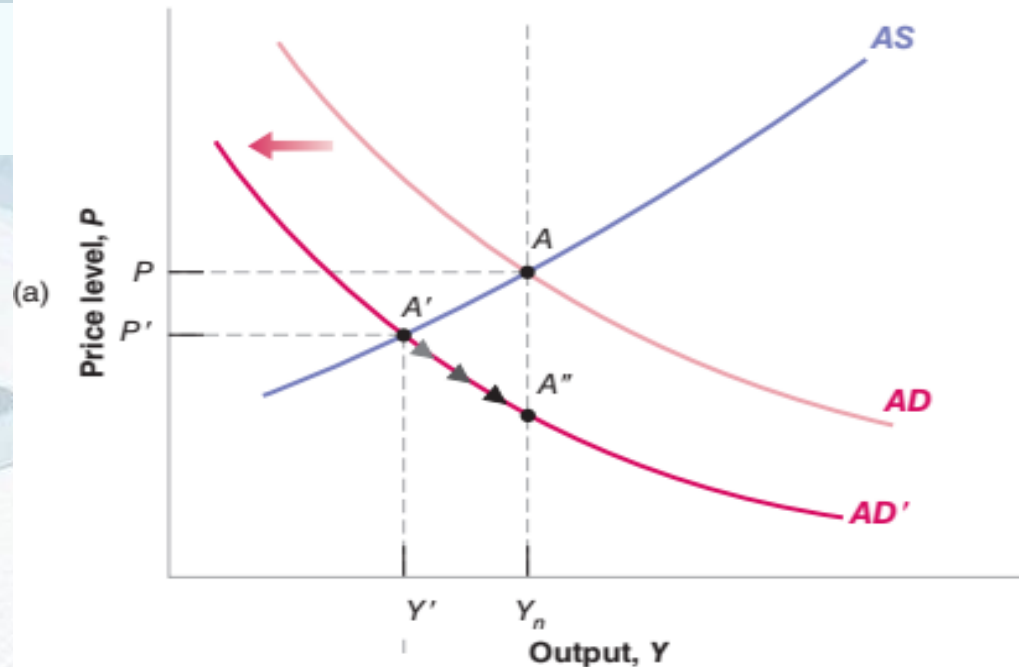
quindi anche quello alla sinistra ed ogni aumento della moneta si riflette in toto sui prezzi

# Effetti consolidamento fiscale



## The Dynamic Effects of a Decrease in the Budget Deficit on Output and the Interest Rate

A deficit reduction leads in the short run to a decrease in output and to a decrease in the interest rate. In the medium run, output returns to its natural level, while the interest rate declines further. In the long run, output increases, while the interest rate declines further.

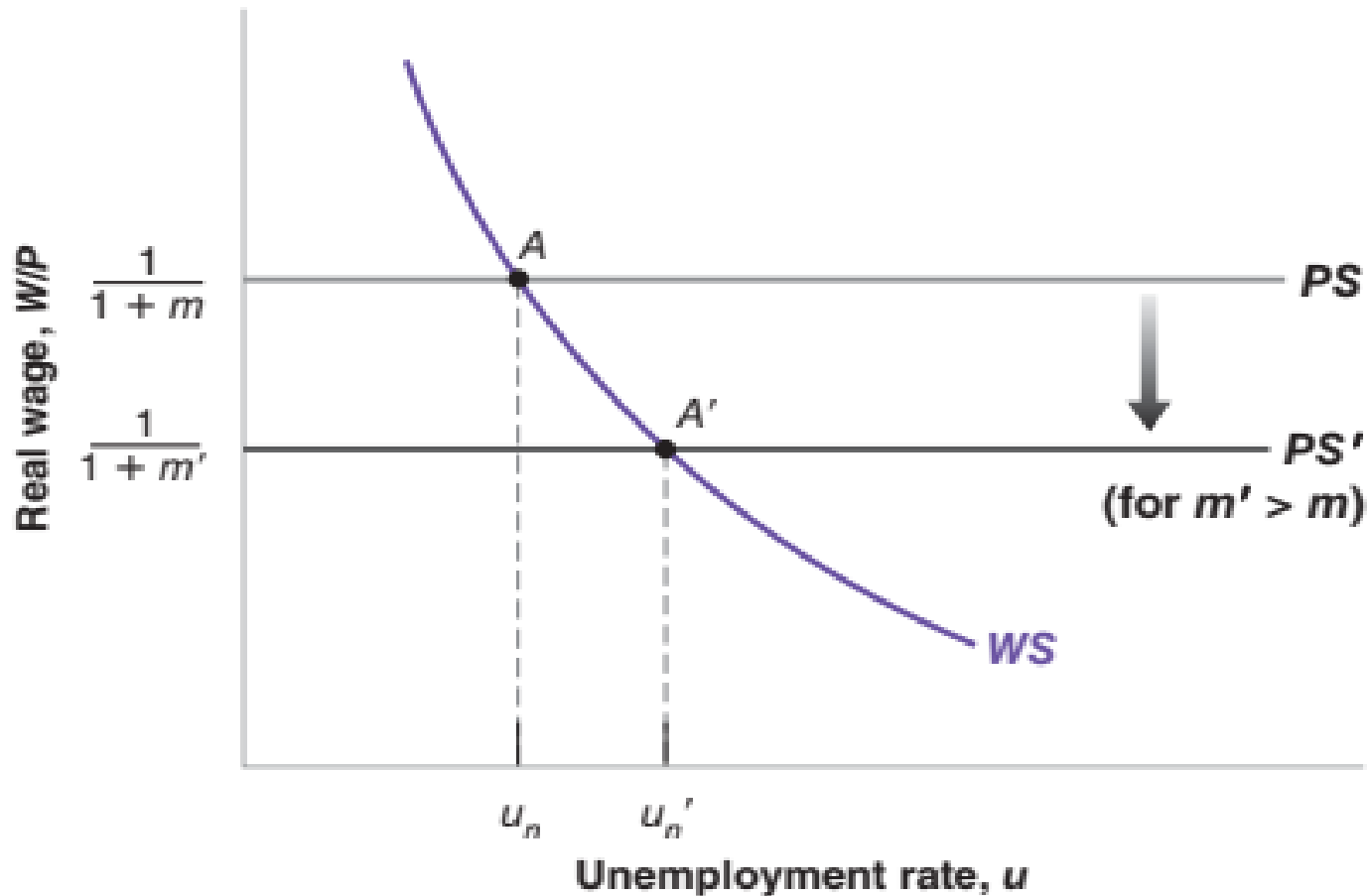


Short run:  $Y$  decreases,  $i$  increases or decreases.

Medium run:  $Y$  unchanged,  $i$  increases.

Long run:  $Y$  increases,  $i$  increases.

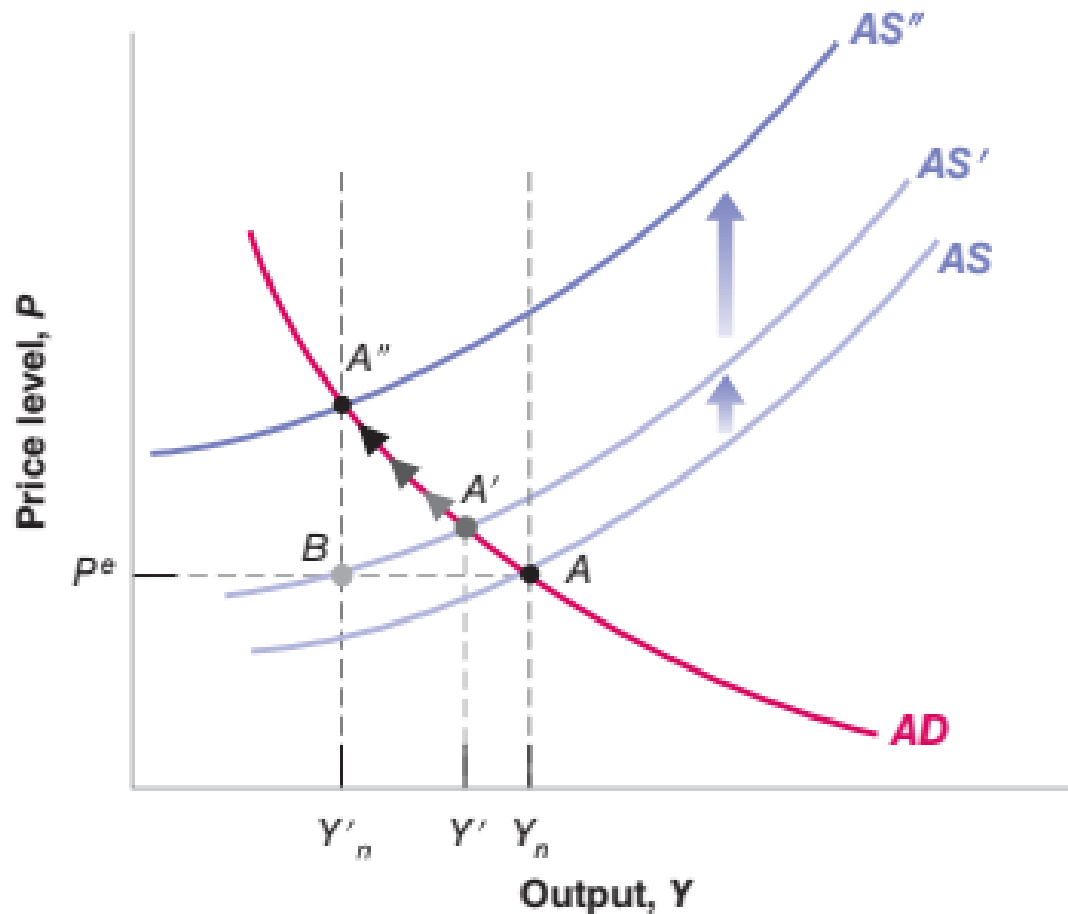
# Con il petrolio la storia è diversa!



Il tasso di disoccupazione naturale aumenta!



# Con il petrolio la storia è diversa!



Il PIL di pieno impiego diminuisce!