

● 24 The Multiplier

● 25 Consumption and Investment Spending

● **26 The Income-Expenditure Model**

The Income-Expenditure Model

- Recall our assumptions:
 - Changes in spending lead to changes in aggregate output
 - The interest rate is fixed
 - Taxes, government transfers, and government purchases are all zero
 - Exports and imports are zero

The Income-Expenditure Model

- With no government and no foreign trade, there are two sources of spending, consumption and investment
- Two basic equations of national income accounting:

$$GDP = C + I$$

$$YD = GDP$$

The Income-Expenditure Model

- Recall, the aggregate consumption function shows the relationship between disposable income and consumer spending

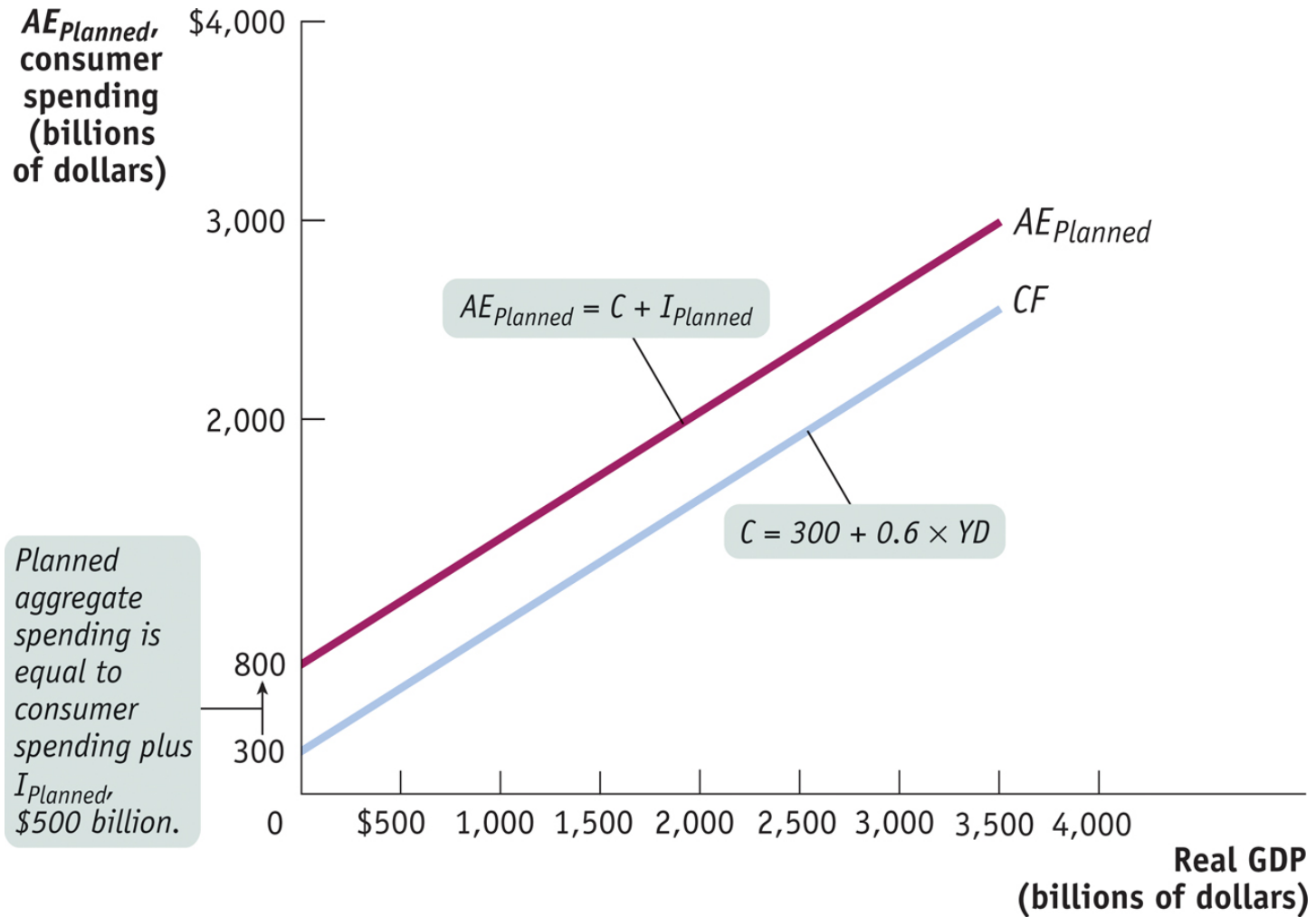
$$C = A + MPC \times YD$$

The Income-Expenditure Model

- Assume planned investment spending, $I_{planned}$, is fixed
- Planned aggregate spending is the total amount of planned spending in the economy

$$AE_{Planned} = C + I_{Planned}$$

The Income-Expenditure Model



The Income-Expenditure Model

- The level of planned aggregate spending in a given year depends on the level of real GDP in that year
- Real GDP and $AE_{Planned}$ are equal at a unique point

TABLE 26-2

Real GDP	$AE_{Planned}$	$I_{Unplanned}$
(billions of dollars)		
\$0	\$800	-\$800
500	1,100	-600
1,000	1,400	-400
1,500	1,700	-200
2,000	2,000	0
2,500	2,300	200
3,000	2,600	400
3,500	2,900	600

The Income-Expenditure Model

$$\begin{aligned}GDP &= C + I \\ &= C + I_{Planned} + I_{Unplanned} \\ &= AE_{Planned} + I_{Unplanned}\end{aligned}$$

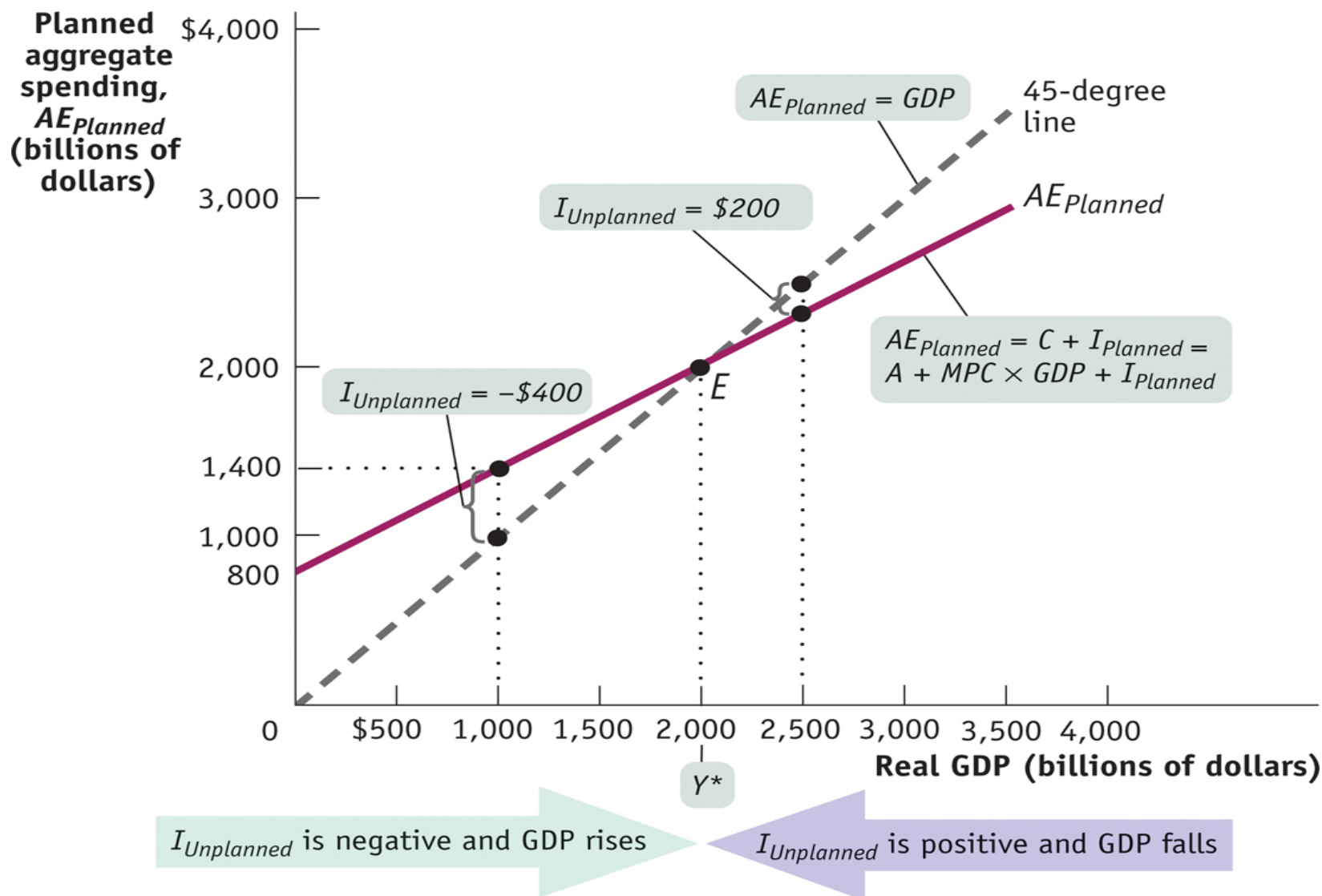
The Income-Expenditure Model

- If inventories increase, producers will reduce production
- If inventories decrease, producers will increase production
- These changes will eliminate the unanticipated changes in inventories and move the economy to the point where real GDP equals planned aggregate spending
- The model is stable and we will move to an equilibrium

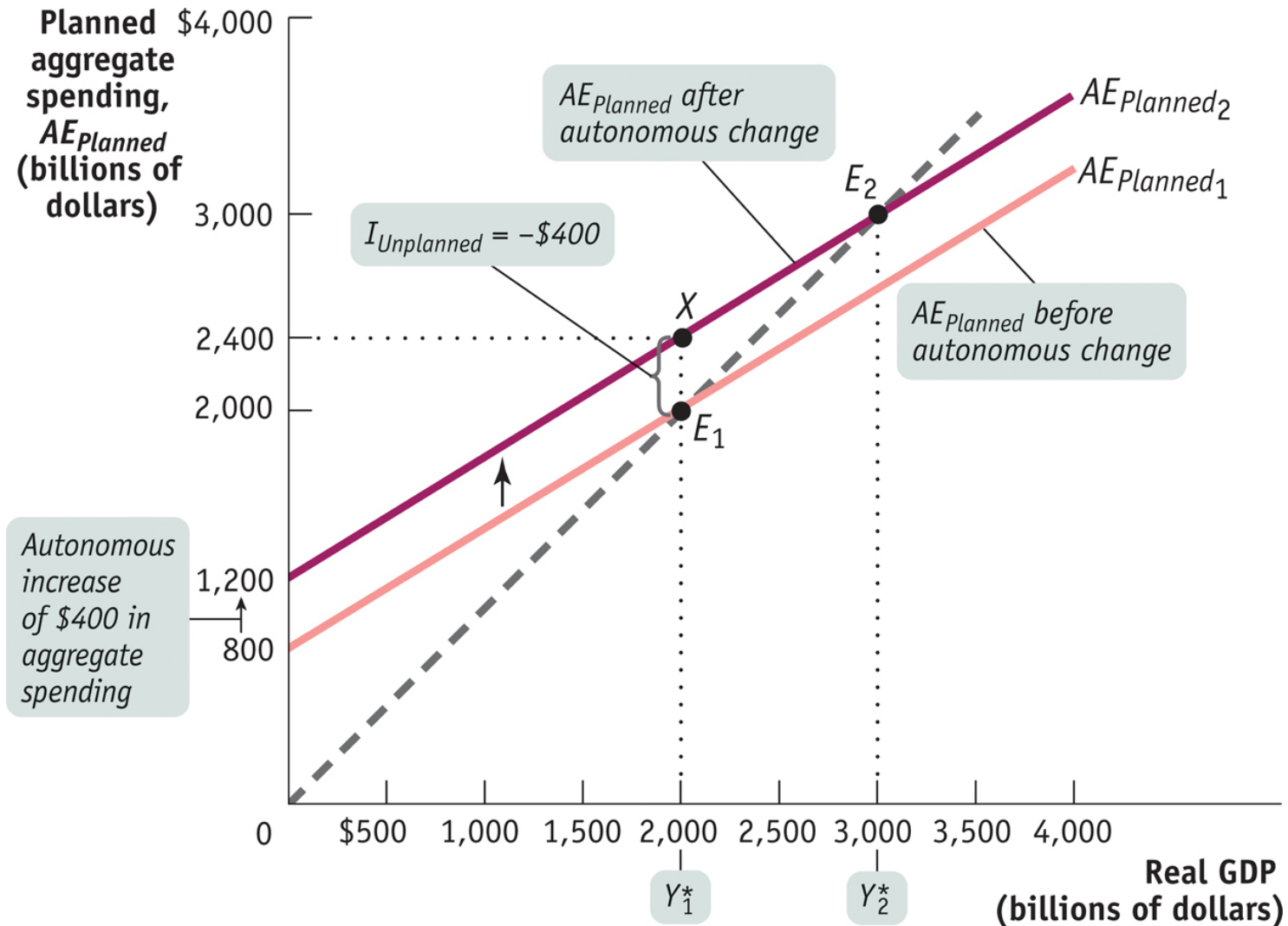
The Income-Expenditure Model

- When real GDP is equal to planned aggregate expenditures, firms do not have the incentive to change output and the economy is in equilibrium
- The equilibrium level of real GDP is denoted Y^*

The Income-Expenditure Equilibrium



Increase (Shift) in Spending and the Multiplier



The Multiplier and Inventory Adjustment

TABLE 26-3

Real GDP	$AE_{Planned}$ before autonomous change	$AE_{Planned}$ after autonomous change
(billions of dollars)		
\$0	\$800	\$1,200
500	1,100	1,500
1,000	1,400	1,800
1,500	1,700	2,100
2,000	2,000	2,400
2,500	2,300	2,700
3,000	2,600	3,000
3,500	2,900	3,300
4,000	3,200	3,600

The Multiplier and Inventory Adjustment

- The process can be summarized:

$$\Delta Y^* = \text{Multiplier} \times \Delta AAE_{Planned} = \frac{1}{1 - MPC} \times \Delta AAE_{Planned}$$