

Equilibrium in the **Financial
Markets**: The Supply and Demand
for Loanable Funds

Continue...

- rewrite the national income accounts identity as $Y - C - G = I$. $Y = C + I + G$
- The term $Y - C - G$ is the output that remains after the demands of consumers and the government have been satisfied; it is called **national saving** or simply saving (S).
- In this form, the national income accounts identity shows that saving equals investment.

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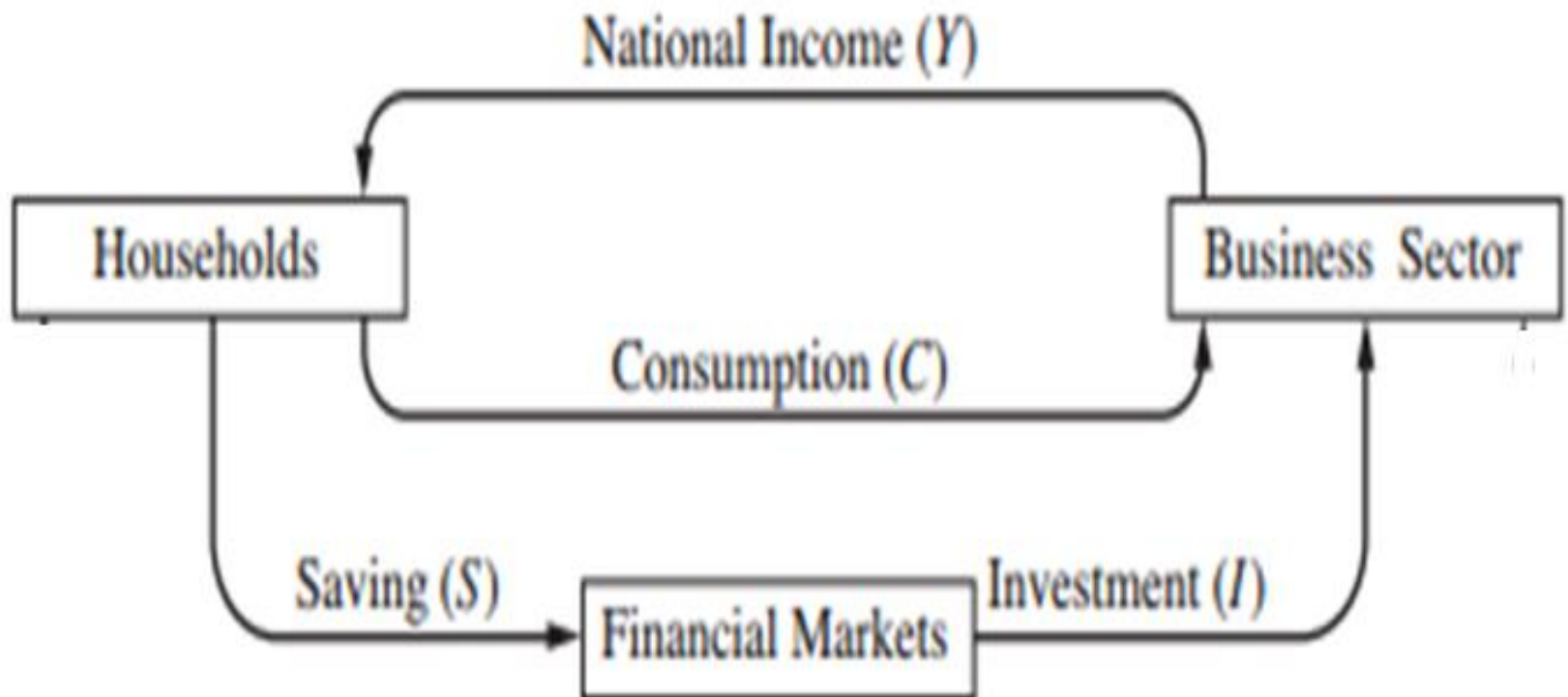
- saving of the private sector and the other the saving of the government:
- $S = \text{NATIONAL SAVING}$
- $S = (Y - T - C) + (T - G) = I.$
- The term $(Y - T - C)$ is disposable income minus consumption, which is **private saving**.
- The term $(T - G)$ is government revenue minus government spending, which is **public saving**.

Continue...

The circular flow diagram in Figure 3-1 reveals an interpretation of this equation: this equation states that the flows into the financial markets (private and public saving) must balance the flows out of the financial markets (investment).

Circular flow of income two sectors Economy / Closed economy

Circular Flow of Income and Output



Continue...

- To see how the interest rate brings financial markets into equilibrium, substitute the consumption function and the investment function into the national income accounts identity:

$$Y - C(Y - T) - G = I(r)$$

Continue...

- Next, note that G and T are fixed by policy and Y is fixed by the factors of production and the production function:

$$\bar{Y} - C(\bar{Y} - \bar{T}) - \bar{G} = I(r)$$

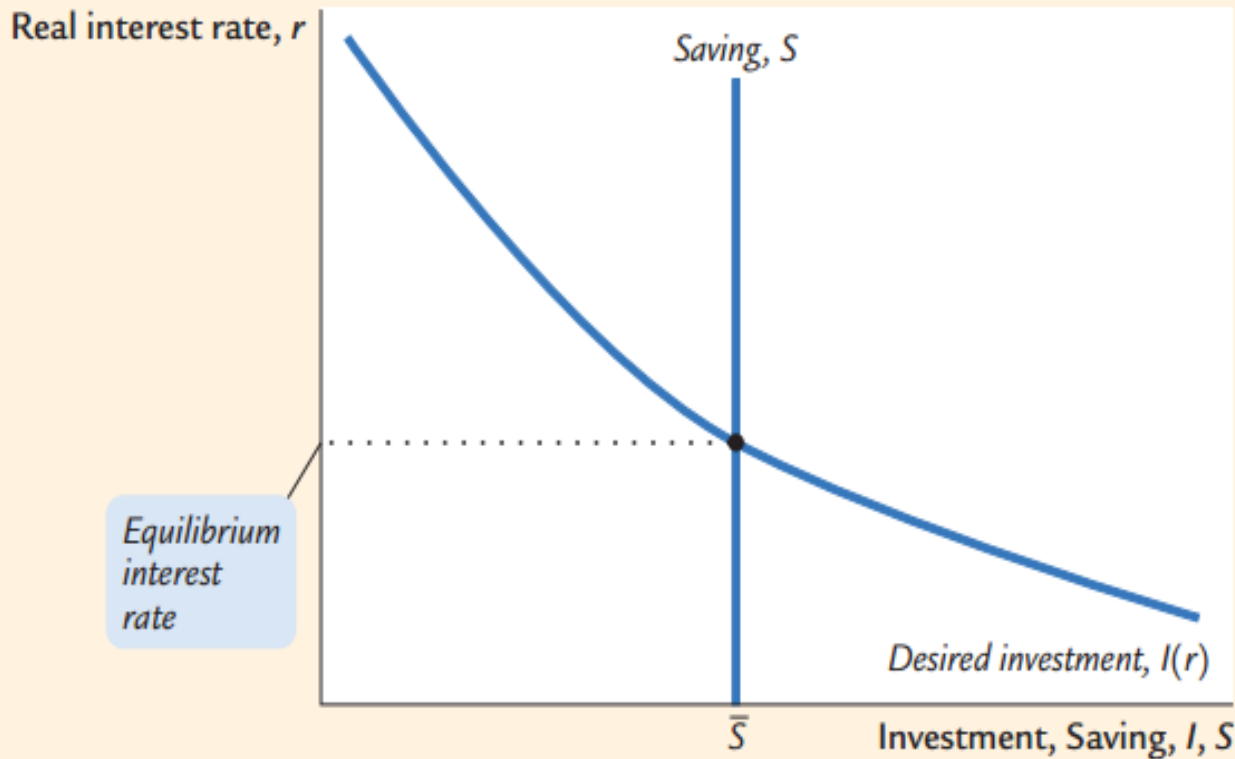
$$\bar{S} = I(r)$$

- National saving depends on income and fiscal policy variables, G & T .

- For fixed values of Y , G , and T , national saving S is also fixed.
- The right-hand side of the equation shows that investment depends on the interest rate.

Continue...

FIGURE 3-9



Saving, Investment, and the Interest Rate The interest rate adjusts to bring saving and investment into balance. The vertical line represents saving—the supply of loanable funds. The downward-sloping line represents investment—the demand for loanable funds. The intersection of these two curves determines the equilibrium interest rate.

An Increase in Government Purchases

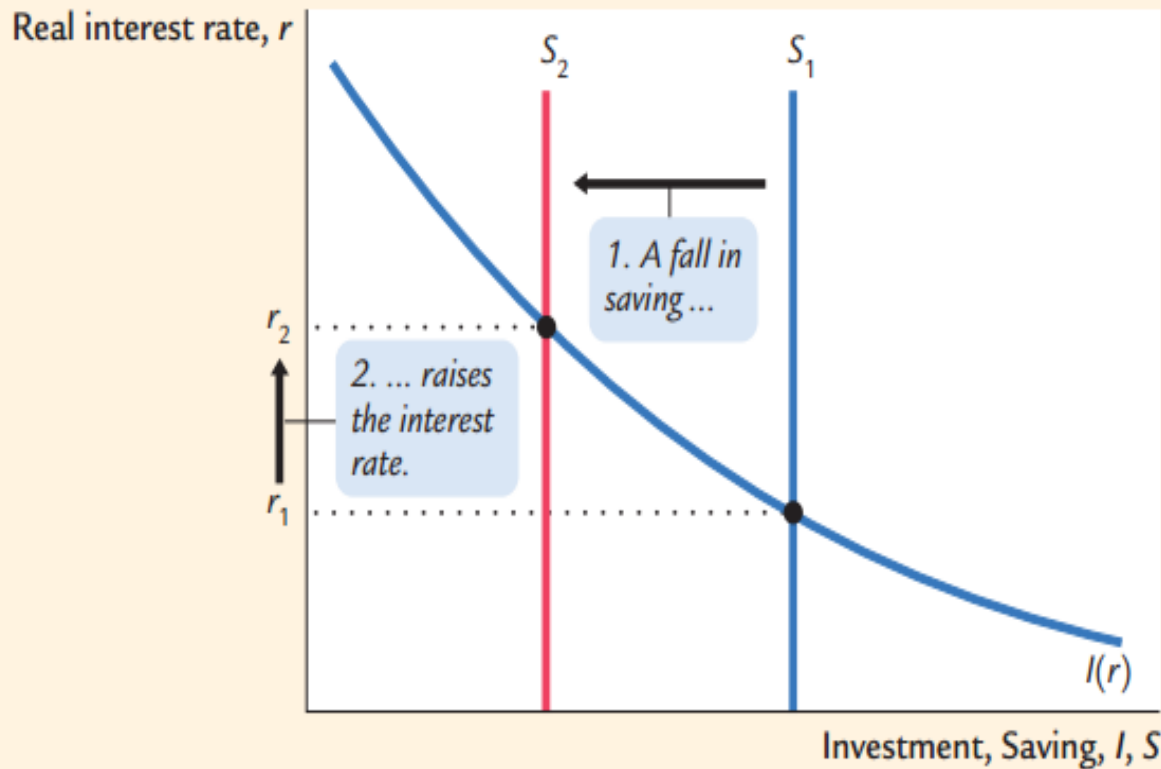
- $Y=C+I+G$
- $Y-T$ UNCHANGED due to no change in T
- SO $Y-T$ IS UNCHANGED
- SO, C UNCHANGED

An Increase in Government Purchases

- To grasp the effects of an increase in government purchases, consider the impact on the market for loanable funds.
- Because the increase in government purchases is not accompanied by an increase in taxes, the government finances the additional spending by borrowing—that is,
 - by reducing public saving.
 - With private saving unchanged,
 - this government borrowing reduces national saving.

An Increase in Government Purchases

FIGURE 3-10



A Reduction in Saving

A reduction in saving, possibly the result of a change in fiscal policy, shifts the saving schedule to the left. The new equilibrium is the point at which the new saving schedule crosses the investment schedule. A reduction in saving lowers the amount of investment and raises the interest rate. Fiscal-policy actions that reduce saving are said to crowd out investment.

A Decrease in Taxes

- Now consider a reduction in taxes of ΔT .
- The immediate impact of the tax cut is to raise disposable income and thus to raise consumption.
- Disposable income rises by ΔT , and consumption rises by an amount equal to ΔT times the marginal propensity to consume MPC .
- The higher the MPC , the greater the impact of the tax cut on consumption.

A Decrease in Taxes

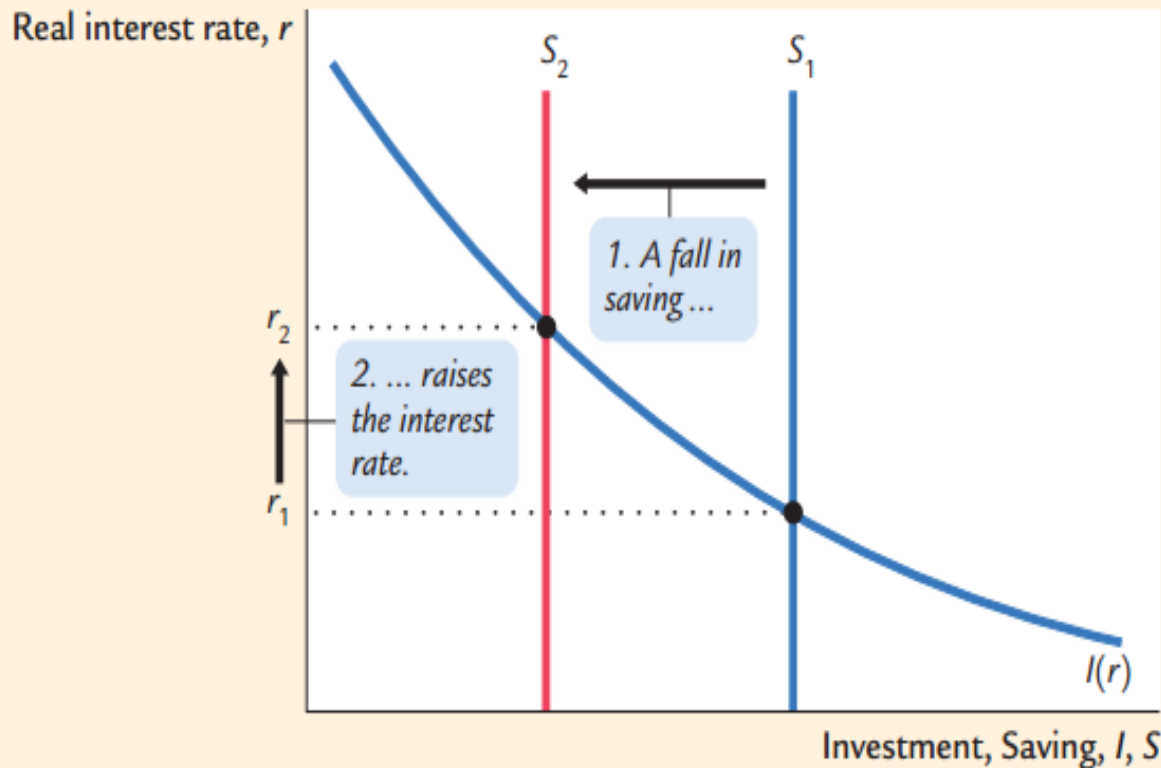
- Because the economy's output is fixed by the factors of production and the level of government purchases is fixed by the government, the increase in consumption must be met by a decrease in investment.
- For investment to fall, the interest rate must rise.
- Hence, a reduction in taxes, like an increase in government purchases, crowds out investment and raises the interest rate.

A Decrease in Taxes

- The effect of a tax cut by looking at saving and investment.
- Because the tax cut raises disposable income by ΔT , consumption goes up by $MPC * \Delta T$.
- National saving S , which equals $Y - C - G$, falls by the same amount as consumption rises.
- As in Figure 3-10, the reduction in saving shifts the supply of loanable funds to the left,
- Which increases the equilibrium interest rate and crowds out investment.

A Decrease in Taxes

FIGURE 3-10



A Reduction in Saving

A reduction in saving, possibly the result of a change in fiscal policy, shifts the saving schedule to the left. The new equilibrium is the point at which the new saving schedule crosses the investment schedule. A reduction in saving lowers the amount of investment and raises the interest rate. Fiscal-policy actions that reduce saving are said to crowd out investment.

Changes in Investment Demand

- So far, we have discussed how fiscal policy can change national saving.
- We can also use our model to examine the other side of the market—the demand for investment.
- In this section we look at the causes and effects of changes in investment demand.
- One reason investment demand might increase is technological innovation.

Changes in Investment Demand

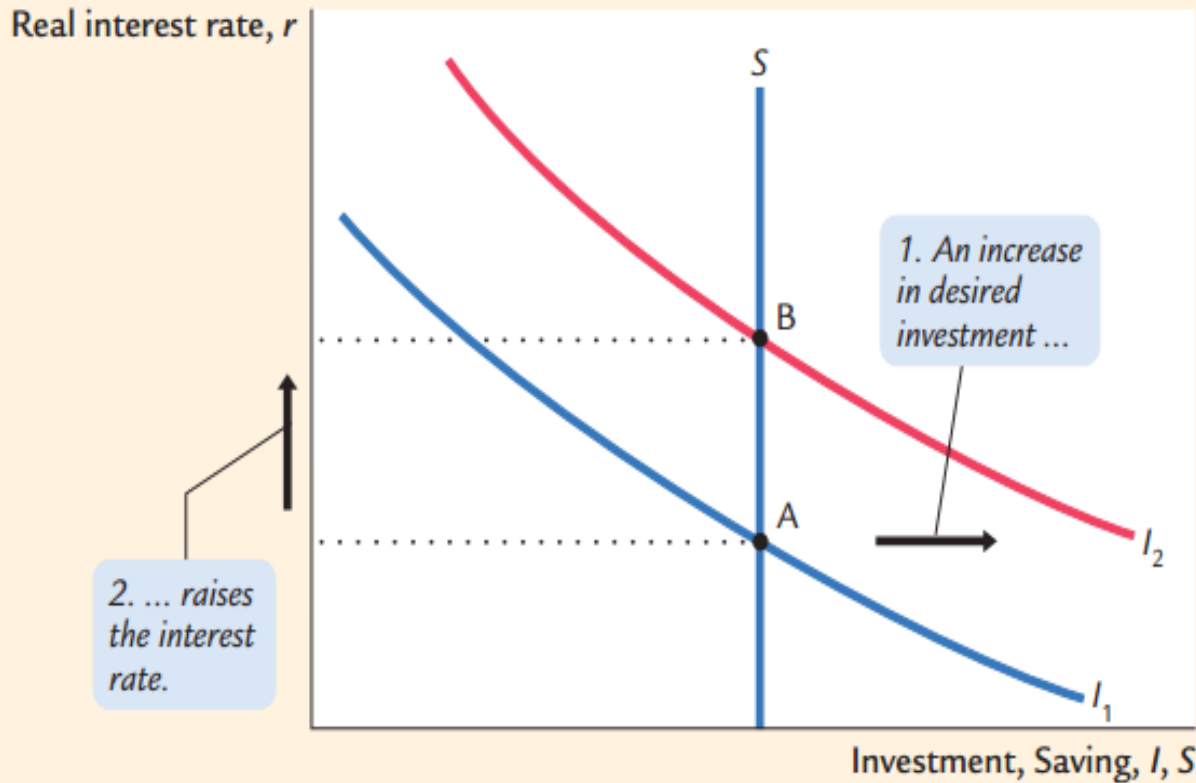
- Suppose, for example, that someone invents a new technology, such as the railroad or the computer.
- Before a firm or household can take advantage of the innovation, it must buy investment goods.

Changes in Investment Demand

- The invention of the railroad had no value until railroad cars were produced and tracks were laid.
- The idea of the computer was not productive until computers were manufactured.
- Thus, technological innovation leads to an increase in investment demand.

Increase in investment

FIGURE 3-11



An Increase in the Demand for Investment An increase in the demand for investment goods shifts the investment schedule to the right. At any given interest rate, the amount of investment is greater. The equilibrium moves from point A to point B. Because the amount of saving is fixed, the increase in investment demand raises the interest rate while leaving the equilibrium amount of investment unchanged.

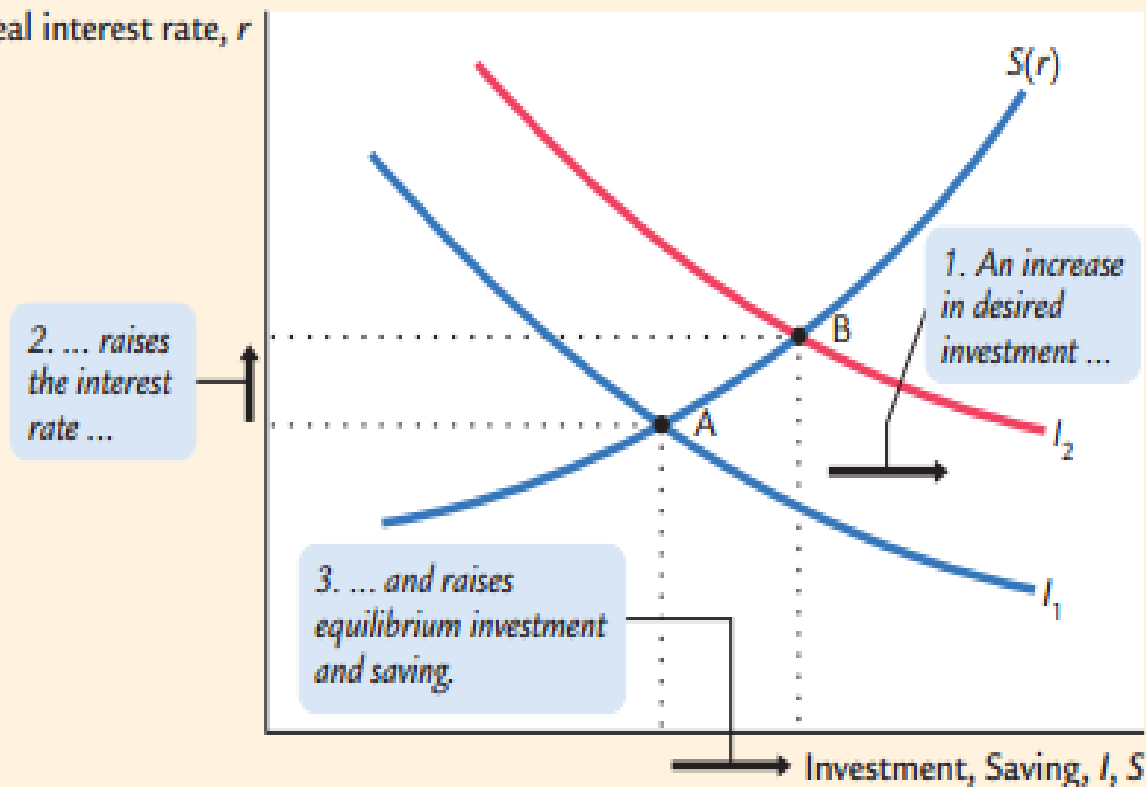
With an upward-sloping saving
schedule,

- an increase in investment demand would raise both the equilibrium interest rate and the equilibrium quantity of investment.

Increase in investment when saving is positively sloped

FIGURE 3-12

Real interest rate, r



An Increase in Investment Demand When Saving Depends on the Interest Rate

Rate When saving is positively related to the interest rate, a rightward shift in the investment schedule increases the interest rate and the amount of investment. The higher interest rate induces people to increase saving, which in turn allows investment to increase.