Investment and Saving Decisions

• In our story, the capital stock (K), i.e., the plants, machines, etc. used to produce output is fixed in short run.
• The capital stock changes over time via investment, which is that part of output not consumed.
• In other words, household sector saving is equal to business sector investment (in the simple two-sector economy).

[In the three-sector economy, national saving is equal to investment and in the four-sector economy, national saving plus the current account deficit equal investment.]
Investment and Saving Decision

How does household saving get transformed into business sector investment?

1. Saving dollars go from the household sector to the business sector via the financial market.
2. These dollars are used by the business sector to purchase capital goods in the goods market.

Or, in the classical “real” economy, households lend businesses that part of output they choose not to consume.
Investment and Saving Decisions

The investment decisions of the business sector are coordinated with the saving decisions of the household sector via the financial market.

Investment decisions = investment demand
Saving decisions = saving supply

Coordination of these decisions = financial market equilibrium
What is the relevant price variable in the financial market?

Firms borrow output today in exchange for a promise to provide households with this amount of output in the future PLUS an additional amount of output called interest. The “real interest rate” measures this additional output and is the “price” variable in the financial market, since it is the cost of borrowing and the return to lending.
Measuring the Real Interest Rate

Consider a one-year loan in which the borrower agrees to pay the lender the 1.1 times the principal at the end of a year. E.g., borrow $1000 today in exchange for $1100 a year from now. The nominal interest rate on this loan is 10%/year.

Suppose that over the course of the year, the inflation rate turns out to be 5%. Then the real interest rate on this loan will be 5%/year. (The borrower will be able to buy 5% more goods with the $1100 one year from now than with the $1000 today).

More generally, the real interest rate is the nominal interest rate minus the inflation rate.
Investment and Capital

The **capital stock** is the total amount of plant, equipment, buildings, and inventories, physical capital.

**Gross investment** is the purchase of new capital.

**Depreciation** is the wearing out of the capital stock.

**Net investment** equals gross investment minus depreciation, and net investment is the addition to the capital stock.
Investment, Saving, and the Interest Rate

**Investment Decisions**

Business investment decisions are influenced by

- The expected profit rate
- The real interest rate
The Expected Profit Rate

The expected profit rate is relatively high during business cycle expansions and relatively low during recessions.

Advances in technology can increase the expected profit rate.

Taxes affect the expected profit rate because firms are concerned about after-tax profits.
Investment, Saving, and the Interest Rate

The Real Interest Rate

The real interest rate is the opportunity cost of the funds used to finance investment.

Regardless of whether a firm borrows or uses its own financial resources, it faces this opportunity cost.

Either it pays the interest or it forgoes interest on its own funds.
Investment, Saving, and the Interest Rate

Investment Demand

Investment demand is the relationship between the level of planned investment and the real interest rate.

Figure 8.7 illustrates an investment demand curve.
The investment demand curve slopes downward. A fall in the real interest rate increases planned investment along investment demand curve. A rise in the real interest rate decreases planned investment along investment demand curve.
The investment demand curve will shift to the right if expected future profits increase and will shift to the left if expected future profits decrease.
Investment, Saving, and the Interest Rate

Saving

Investment is financed by national saving and borrowing from the rest of the world.
Investment, Saving, and the Interest Rate

**Personal saving** is personal disposable income minus consumption expenditure.

**Business saving** is retained profits and additions to pension funds by businesses.

**Government saving** is the government’s budget surplus.

Any of these components can be negative.

**National saving** is the sum of private saving and government saving.

Households divide their *disposable income* between consumption expenditure and saving.
Household Sector Saving (i.e., Personal Saving) is influenced by

- The real interest rate
- Disposable income
- Wealth
- Expected future income
Investment, Saving, and the Interest Rate

Real Interest Rate
The higher the real interest rate, the greater is a household’s opportunity cost of consumption and so the larger is the amount of saving.

Disposable Income
The higher the disposable income, the greater is a household’s saving.
Investment, Saving, and the Interest Rate

Wealth
The greater is a household’s wealth, other things remaining the same, the greater is its consumption and the less is its saving.

Expected Future Income
The higher a household’s expected future income, the greater is its current consumption and the lower is its current saving.
Saving Supply

Saving supply is the relationship between saving and the real interest rate, other things remaining the same.

Figure 8.8 shows a saving supply curve, which slopes upward.
Investment, Saving, and the Interest Rate

A fall in the real interest rate decreases saving.
A rise in the real interest rate increases saving.
The saving supply curve will shift to the right if:
current income increases;
expected future income decreases;
wealth decreases.
Determining the Real Interest Rate

The real interest rate is determined by investment demand and supply of savings.

In Figure 8.9, \( ID \) is the investment demand curve. \( SS \) is the supply of saving curve.
Investment, Saving, and the Interest Rate

If the interest rate is above its equilibrium level, $SS$ exceeds $ID$.

There is a surplus of funds and the interest rate falls.

If the interest rate is below its equilibrium level, $ID$ exceeds $SS$.

There is a shortage of funds and the interest rate rises.
The equilibrium real interest rate is 6 percent. At the equilibrium real interest rate, there is neither a shortage nor surplus of saving.
Investment, Saving, and the Interest Rate

Changes in the equilibrium level of investment and the equilibrium real interest rate occur in response to changes in the investment demand and/or saving supply curves.

For example, if expected future profits increase, all else equal, the investment demand curve will shift to the right while the saving supply curve will remain unchanged. As a result, the equilibrium real interest rate and investment rate will increase.