

## 4.13: Labor and Financial Markets

### Learning Objectives

- Describe how the theories of supply & demand can be applied labor markets and financial markets
- Use the four-step process to predict how economic conditions cause a change in supply, demand, and equilibrium

The theories of supply and demand do not apply just to markets for goods. They apply to any market, even markets for labor and financial services. **Labor markets** are markets for employees or jobs. **Financial markets** are markets for saving or borrowing.

When we think about demand and supply curves in goods and services markets, it is easy to picture who the demanders and suppliers are: businesses produce the products and households buy them. Who are the demanders and suppliers in labor and financial service markets? In labor markets job seekers (individuals) are the suppliers of labor, while firms and other employers who hire labor are the demanders for labor. For example, the grocery store needs workers, or in other words, has a demand for labor. That labor is supplied by grocery workers. In financial markets, any individual or firm who saves contributes to the supply of money, and any who borrows (person, firm, or government) contributes to the demand for money.

As a college student, you most likely participate in both labor and financial markets. Employment is a fact of life for most college students: in 2011, according to the BLS, 52% of undergraduates worked part time and another 20% worked full time. Most college students are also heavily involved in financial markets, primarily as borrowers. Among full-time students, about half take out a loan to help finance their education each year, and those loans average about \$6,000 per year. Many students also borrow for other expenses, like purchasing a car. We can analyze labor markets and financial markets with the same tools we use to analyze demand and supply in the goods markets. Let's take a look at a few examples.

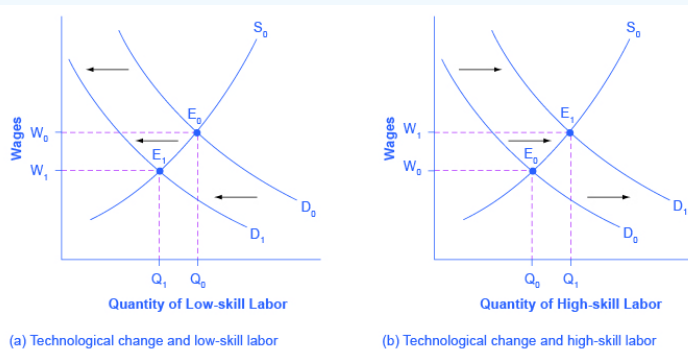
### Supply and Demand in Labor Markets

Economic events can change the equilibrium salary (or wage) and quantity of labor. Consider how the wave of new information technologies, like computer and telecommunications networks, has affected low-skill and high-skill workers in the U.S. economy. From the perspective of employers who demand labor, these new technologies are often a substitute for low-skill laborers like file clerks who used to keep file cabinets full of paper records of transactions. However, the same new technologies are a complement to high-skill workers like managers, who benefit from the technological advances by being able to monitor more information, communicate more easily, and juggle a wider array of responsibilities. So, how will the new technologies affect the wages of high-skill and low-skill workers? For this question, let's again use the four-step process of analyzing how shifts in supply or demand affect a market.

### Technology and Wage Inequality: The Four-Step Process

**Step 1.** What did the markets for low-skill labor and high-skill labor look like before the arrival of the new technologies?

In Figure 1(a) and Figure 1(b),  $S_0$  is the original supply curve for labor and  $D_0$  is the original demand curve for labor in each market. In each graph, the original point of equilibrium,  $E_0$ , occurs at the price  $W_0$  and the quantity  $Q_0$ .



**Figure 1.** (a) The demand for low-skill labor shifts to the left when technology can do the job previously done by these workers. (b) New technologies can also increase the demand for high-skill labor in fields such as information technology and network administration.

**Step 2.** Does the new technology affect the supply of labor from households or the demand for labor from firms?

[reveal-answer q="560678"]Show Answer[/reveal-answer]

[hidden-answer a="560678"]The technology change described here affects demand for labor by firms that hire workers.[/hidden-answer]

**Step 3.** Will the new technology increase or decrease demand?

[reveal-answer q="110674"]Show Answer[/reveal-answer]

[hidden-answer a="110674"]Based on the description earlier, as the substitute for low-skill labor becomes available, demand for low-skill labor will shift to the left, from  $D_0$  to  $D_1$ . As the technology complement for high-skill labor becomes cheaper, demand for high-skill labor will shift to the right, from  $D_0$  to  $D_1$ .[/hidden-answer]

**Step 4.** Compare the new equilibrium price and quantity to the original equilibrium price.

[reveal-answer q="72321"]Show Answer[/reveal-answer]

[hidden-answer a="72321"]The new equilibrium for low-skill labor, shown as point  $E_1$  with price  $W_1$  and quantity  $Q_1$ , has a lower wage and quantity hired than the original equilibrium,  $E_0$ . The new equilibrium for high-skill labor, shown as point  $E_1$  with price  $W_1$  and quantity  $Q_1$ , has a higher wage and quantity hired than the original equilibrium ( $E_0$ ).[/hidden-answer]

So, the demand and supply model predicts that the new computer and communications technologies will raise the pay of high-skill workers but reduce the pay of low-skill workers. Indeed, from the 1970s to the mid-2000s, the wage gap widened between high-skill and low-skill labor. According to the National Center for Education Statistics, in 1980, for example, a college graduate earned about 30% more than a high school graduate with comparable job experience, but by 2012, a college graduate earned about 60% more than an otherwise comparable high school graduate. Many economists believe that the trend toward greater wage inequality across the U.S. economy was primarily caused by the new technologies.

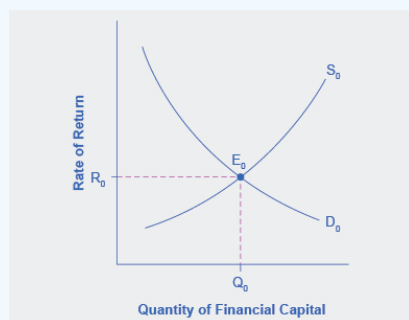
## Supply and Demand in Financial Markets

Now let's examine how the theories of supply and demand also affect financial markets. Imagine that the U.S. economy became viewed as a less desirable place for foreign investors to put their money because of fears about the growth of the U.S. public debt. Using the four-step process for analyzing how changes in supply and demand affect equilibrium outcomes, how would increased U.S. public debt affect the equilibrium price and quantity for capital in U.S. financial markets?

### THE EFFECT OF GROWING U.S. DEBT: The Four-Step Process

**Step 1.** Draw a diagram showing demand and supply for financial capital that represents the original scenario in which foreign investors are pouring money into the U.S. economy.

Figure 2 shows a demand curve,  $D$ , and a supply curve,  $S$ , where the supply of capital includes the funds arriving from foreign investors. The original equilibrium  $E_0$  occurs at interest rate  $R_0$  and quantity of financial investment  $Q_0$ .



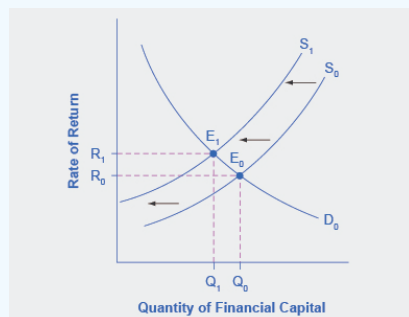
**Figure 2.** The graph shows the demand for financial capital and supply of financial capital into the U.S. financial markets by the foreign sector before the increase in uncertainty regarding U.S. public debt. The original equilibrium ( $E_0$ ) occurs at an equilibrium rate of return ( $R_0$ ) and the equilibrium quantity is at  $Q_0$ .

**Step 2.** Will the diminished confidence in the U.S. economy as a place to invest affect demand or supply of financial capital?

[reveal-answer q="346682"]Show Answer[/reveal-answer]

[hidden-answer a="346682"]Yes, it will affect supply. Many foreign investors look to the U.S. financial markets to store their money in safe financial vehicles with low risk and stable returns. As the U.S. debt increases, debt servicing will increase—that is, more current income will be used to pay the interest rate on past debt. Increasing U.S. debt also means that businesses may have to pay higher interest rates to borrow money, because business is now competing with the government for financial resources.[/hidden-answer]

**Step 3.** Will supply increase or decrease? When the enthusiasm of foreign investors' for investing their money in the U.S. economy diminishes, the supply of financial capital shifts to the left. Figure 3 shows the supply curve shift from  $S_0$  to  $S_1$ .



**Figure 3.** The graph shows the demand for financial capital and supply of financial capital into the U.S. financial markets by the foreign sector before and after the increase in uncertainty regarding U.S. public debt. The original equilibrium ( $E_0$ ) occurs at an equilibrium rate of return ( $R_0$ ) and the equilibrium quantity is at  $Q_0$ .

**Step 4.** Compare the new equilibrium price and quantity to the original equilibrium price.

[reveal-answer q="121808"]Show Answer[/reveal-answer]

[hidden-answer a="121808"]Foreign investors' diminished enthusiasm leads to a new equilibrium,  $E_1$ , which occurs at the higher interest rate,  $R_1$ , and the lower quantity of financial investment,  $Q_1$ .[/hidden-answer]

The economy has experienced an enormous inflow of foreign capital. According to the U.S. Bureau of Economic Analysis, by the third quarter of 2014, U.S. investors had accumulated \$24.6 trillion of foreign assets, but foreign investors owned a total of \$30.8 trillion of U.S. assets. If foreign investors were to pull their money out of the U.S. economy and invest elsewhere in the world, the result could be a significantly lower quantity of financial investment in the United States, available only at a higher interest rate. This reduced inflow of foreign financial investment could impose hardship on U.S. consumers and firms interested in borrowing.

In a modern, developed economy, financial capital often moves invisibly through electronic transfers between one bank account and another. Yet these flows of funds can be analyzed with the same tools of demand and supply as markets for goods or labor.

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#### Learning Objectives

[glossary-page][glossary-term]financial markets: [/glossary-term]

[glossary-definition]supply and demand for financial services; i.e. saving & borrowing[/glossary-definition][glossary-term]labor markets: [/glossary-term][glossary-definition]supply and demand for jobs[/glossary-definition][glossary-page]

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