LABOR AND FINANCIAL MARKETS

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SUPPLY & DEMAND

Baby Boomers Come of Age

The Census Bureau reports that as of 2013, 20% of the U.S. population was over 60 years old, which means that almost 63 million people are reaching an age when they will need increased medical care.

The baby boomer population, the group born between 1946 and 1964, is comprised of approximately 74 million people who have just reached retirement age. As this population grows older, they will be faced with common healthcare issues such as heart conditions, arthritis, and Alzheimer's that may require hospitalization, long-term, or at-home nursing care. Aging baby boomers and advances in life-saving and lifeextending technologies will increase the demand for healthcare and nursing. Additionally, the Affordable Care Act, which expands access to healthcare for millions of Americans, will further increase the demand.

According to the Bureau of Labor Statistics, registered nursing jobs are expected to increase by 19% between 2012 and 2022. The median annual wage of $67,930 (in 2012) is also expected to increase. The BLS forecasts that 526,000 new nurses will be needed by 2022. One concern is the low rate of enrollment in nursing programs to help meet the growing demand. According to the American Association of Colleges of Nursing (AACN), enrollment in 2011 increased by only 5.1% due to a shortage of nursing educators and teaching facilities.

These data tell us, as economists, that the market for healthcare professionals, and nurses in particular, will face several challenges. Our study of supply and demand will help us to analyze what might happen in the labor market for nursing and other healthcare professionals, as discussed in the second half of this case at the end of the chapter.

DEMAND AND SUPPLY AT WORK IN LABOR MARKETS

Markets for labor have demand and supply curves, just like markets for goods. **The law of demand** applies in labor markets this way: *A higher salary or wage – that is, a higher price in the labor market – leads to a decrease in the quantity of labor demanded by employers*, while a lower salary or wage leads to an increase in the quantity of labor demanded.

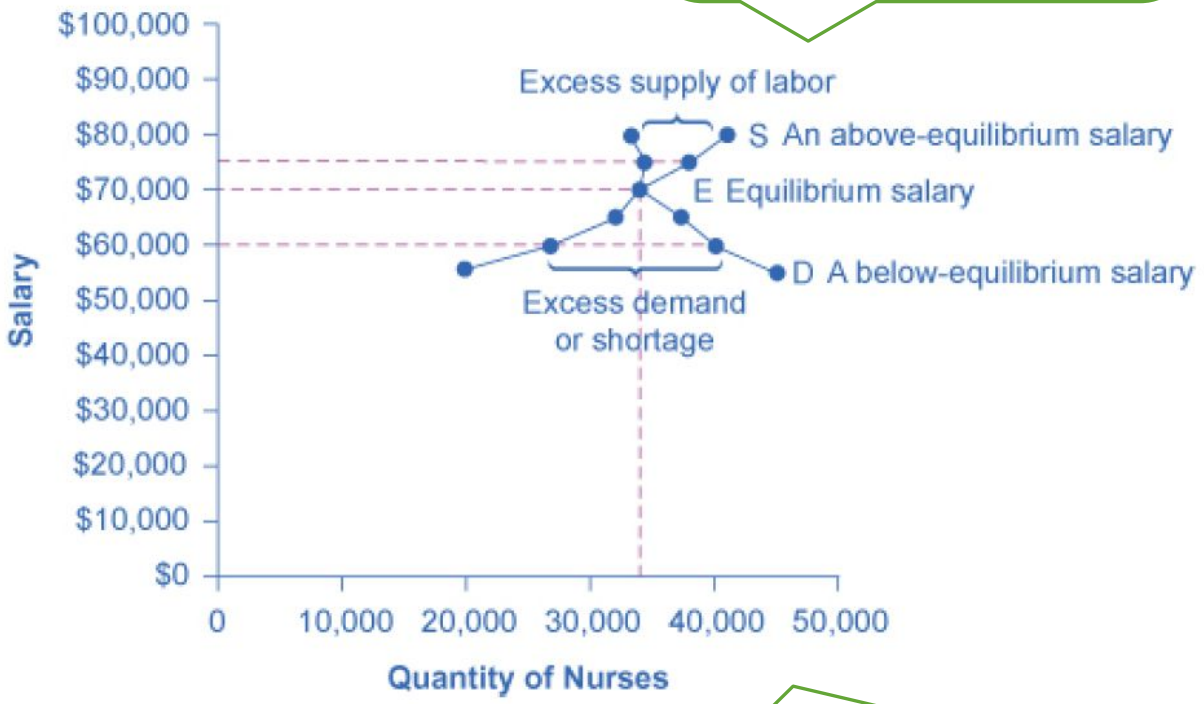
The law of supply functions in labor markets, too: *A higher price for labor leads to a higher quantity of labor supplied; a lower price leads to a lower quantity supplied.*

EQUILIBRIUM IN THE LABOR MA

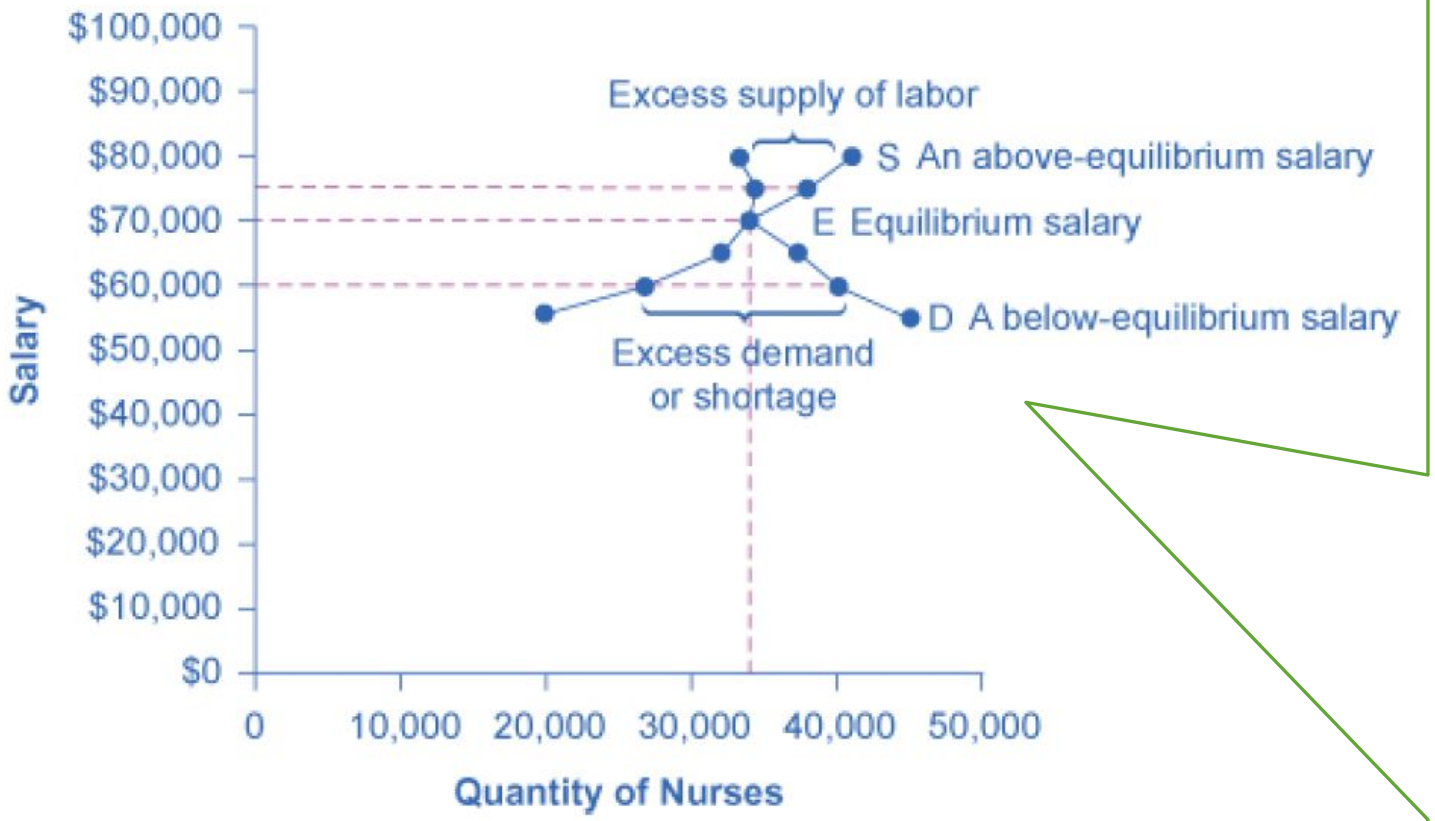
When the price of labor is not at the equilibrium, economic incentives tend to move salaries toward the equilibrium.

In 2013, about 34,000 registered nurses worked in the Minneapolis-St. Paul-Bloomington, Minnesota-Wisconsin metropolitan area, according to the BLS. They worked for a variety of employers: hospitals, doctors' offices, schools, health clinics, and nursing homes.

Annual Salary	Quantity Demanded	Quantity Supplied
55,000	45,000	20,000
60,000	40,000	27,000
65,000	37,000	31,000
70,000	34,000	34,000
75,000	33,000	38,000
80,000	32,000	41,000



At equilibrium, the quantity supplied and the quantity demanded are equal. Thus, every employer who wants to hire a nurse at this equilibrium wage can find a willing worker, and every nurse who wants to work at this equilibrium salary can find a job.



This example simplifies the nursing market by focusing on the "average" nurse. In reality, of course, the market for nurses is actually made up of many smaller markets, like markets for nurses with varying degrees of experience and credentials. Many markets contain closely related products that differ in quality; for instance, even a simple product like gasoline comes in regular, premium, and super-premium, each with a different price.

Even in such cases, discussing the average price of gasoline, like the average salary for nurses, can still be useful because it reflects what is happening in most of the submarkets. When the price of labor is not at the equilibrium, economic incentives tend to move salaries toward the equilibrium.

SHIFTS IN DEMAND

Here are some examples of derived demand for labor:

- ❖The demand for chefs is dependent on the demand for restaurant meals.
- ❖The demand for pharmacists is dependent on the demand for prescription drugs.
- ❖The demand for attorneys is dependent on the demand for legal services.

The demand curve for labor shows the quantity of labor employers wish to hire at any given salary or wage rate, under the ceteris paribus assumption. A change in the wage or salary will result in a change in the quantity demanded of labor => movement along the demand curve.

Shifts in the demand curve for labor occur for many reasons. One key reason is that the **demand for labor is based on the demand for the good or service that is being produced**. Therefore the demand for labor is called a "**DERIVED DEMAND**."

- Demand for Output
- Education &Training
- Technology

Factors	Result
Demand for Output	✔When the demand for the good produced (output) increases, both the output price and profitability increase. As a result, producers demand more labor to ramp up production.
Education &Training	✔A well-trained and educated workforce causes an increase in the demand for that labor by employers. Increased levels of productivity within the workforce will cause the demand for labor to shift to the right. ✔If the workforce is not well-trained or educated, employers will not hire from within that labor pool, since they will need to spend a significant amount of time and money training that workforce. Demand for such will shift to the left
Technology	✔Technology changes can act as either substitutes for or complements to labor. When technology acts as a **substitute,** it replaces the need for the number of workers an employer needs to hire. This shifted the demand curve for typists left. An increase in the availability of certain technologies may increase the demand for labor. Technology that acts as a **complement** to labor will increase the demand for certain types of labor, resulting in a rightward shift of the demand curve.

Factors	✔Result
Number of Companies	✔An increase in the number of companies producing a given product will increase the demand for labor resulting in a shift to the right. A decrease in the number of companies producing a given product will decrease the demand for labor resulting in a shift to the left
Government Regulations	✔Complying with government regulations can increase or decrease the demand for labor at any given wage.
Price and Availability of Other Inputs	✔ Labor is not the only input into the production process. ✔As the amount of inputs increases, the demand for labor will increase. As the quantity of other inputs decreases, the demand for labor will decrease. Similarly, if prices of other inputs fall, production will become more profitable and suppliers will demand more labor to increase production. The opposite is also true. Higher input prices lower demand for labor

THE LOW-SKILLED LABOR MARKET

The definition of “low-skilled” can be based either on the skills required for the job performed, or according to the educational level of the worker. In other words, “lowskilled” can be either a characteristic of the job or a characteristic of the worker.

The Organization for Economic Cooperation and Development (OECD), for example, defines low-skilled on the basis of the person (and their education level) rather than on the basis of the job.

- Interestingly, about 60% of migrants in low-skilled jobs come from non-EU countries: roughly 1.2 million people.
- The latest UK Office for National Statistics (ONS) migration figures showed that of the 230,000 EU citizens estimated to have arrived in the UK in the year ending March 2017, 112,000 had a definite job, while another 47,000 were looking for work. (Others were coming to study or to join other family members.)
- ONS data for 2015 estimates that the most popular industry for EU workers overall is "households as employers" (nannies and au pairs to you and me), in which they make up about 16% of the workforce.
- Next comes accommodation and food (roughly 13%), followed by administration and manufacturing (10%), transport (8%) and construction (7%).
- But these figures refer to very broad sectors of the economy. In some specific jobs - such as waiters or fruit pickers - the numbers will be far higher

	Unemployment rate	
	Foreign-born	**Native-born**
Austria	13.8	7.8
Belgium	24.0	11.9
Czech Republic	32.6	24.3
Denmark	10.9	6.3
Finland	29.7	18.2
France	18.1	13.4
Germany	21.3	18.1
Greece	7.1	8.5
Hungary	12.7	16.7
Ireland	8.8	7.0
Italy	9.0	8.1
Luxemburg	7.1	6.1
Netherlands	13.2	6.5
Norway	19.7	6.3
Portugal	9.7	8.3
Spain	12.2	10.0
Sweden	19.7	12.7
Switzerland	10.0	5.3
US	6.5	15.0

SHIFTS IN LABOR SUPPLY

Factors	Result
Number of Workers	✔An increased number of workers will cause the supply curve to shift to the right. An increased number of workers can be due to several factors, such as immigration, increasing population, an aging population, and changing demographics:
Required Education	✔The more required education, the lower the supply.
Government Policies	✔The government may support rules that set high qualifications for certain jobs: academic training, certificates or licenses, or experience. When these qualifications are made tougher, the number of qualified workers will decrease at any given wage. ✔On the other hand, the government may also subsidize training or even reduce the required level of qualifications. ✔In addition, government policies that change the relative desirability of working versus not working also affect the labor supply.

TECHNOLOGY AND WAGE INEQUALITY: THE FOUR-STEP PROCESS

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.

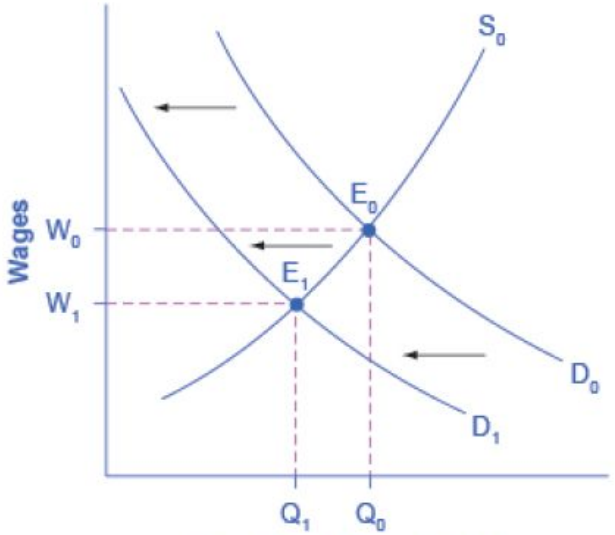
- From the perspective of employers who demand labor, these new technologies are often a **substitute** for low-skill laborers like file clerks who used to keep file cabinets full of paper records of transactions.
- However, the same new technologies are a **complement** to high-skill workers like managers, who benefit from the technological advances by being able to monitor more information, communicate more easily, and juggle a wider array of responsibilities.

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

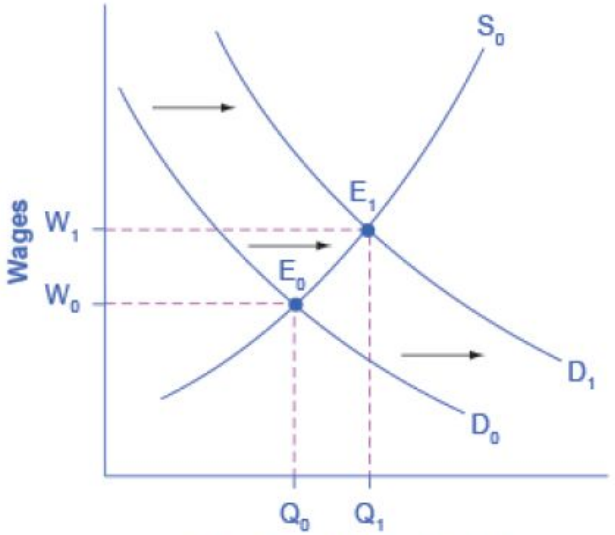
Step 2. Does the new technology affect the supply of labor from households or the demand for labor from firms? The technology change described here affects demand for labor by firms that hire workers.

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

Step 4. 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).



(a) Technological change and low-skill labor



(b) Technological change and high-skill labor

PRICE FLOORS IN THE LABOR MARKET: LIVING WAGES AND MINIMUM WAGES

In contrast to goods and services markets, price ceilings are rare in labor markets, because rules that prevent people from earning income are not politically popular. There is one exception: sometimes limits are proposed on the high incomes of top business executives.

The labor market, however, presents some prominent examples of price floors, which are often used as an attempt to increase the wages of low-paid workers.

MINIMUM WAGE – a price floor that makes it illegal for an employer to pay employees less than a certain hourly rate.

In public policy, a **living wage** is the minimum income necessary for a worker to meet their basic needs

Promoters of living wage laws maintain that the minimum wage is too low to ensure a reasonable standard of living. They base this conclusion on the calculation that, if you work 40 hours a week at a minimum wage of $7.25 per hour for 50 weeks a year, your annual income is $14,500, which is less than the official U.S. government definition of what it means for a family to be in poverty.
(A family with two adults earning minimum wage and two young children will find it more cost efficient for one parent to provide childcare while the other works for income. So the family income would be $14,500, which is significantly lower than the federal poverty line for a family of four, which was $23,850 in 2014.)

DEMAND AND SUPPLY IN FINANCIAL MARKETS

Who Demands and Who Supplies in Financial Markets?

In any market, the price is what suppliers receive and what demanders pay. In financial markets, those who supply financial capital through saving expect to receive a rate of return, while those who demand financial capital by receiving funds expect to pay a rate of return.

This rate of return can come in a variety of forms, depending on the type of investment. The simplest example of a rate of return is the **interest rate.**

For example, when you supply money into a savings account at a bank, you receive interest on your deposit. The interest paid to you as a percent of your deposits is the interest rate. Similarly, if you demand a loan to buy a car or a computer, you will need to pay interest on the money you borrow.

SHIFTS IN DEMAND AND SUPPLY IN FINANCIAL MARKETS

Participants in financial markets must decide when they prefer to consume goods: now or in the future. Economists call this **INTERTEMPORAL DECISION MAKING** because it involves decisions across time. Unlike a decision about what to buy from the grocery store, decisions about investment or saving are made across a period of time, sometimes a long period.

- Most workers save for retirement because their income in the present is greater than their needs, while the opposite will be true once they retire. So they save today and supply financial markets. If their income increases, they save more. If their perceived situation in the future changes, they change the amount of their saving.

So when consumers and businesses have **greater confidence** that they will be able to repay in the future, the quantity demanded of financial capital at any given interest rate will shift to the right.

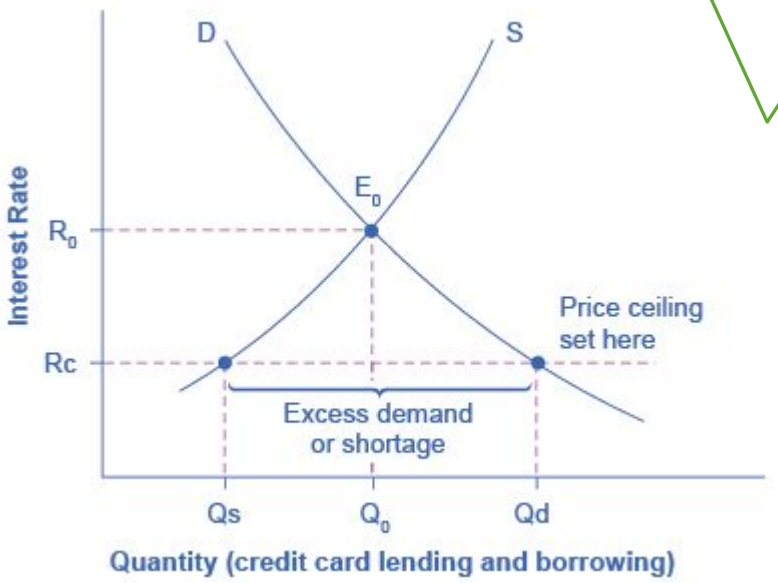
- For example, in the technology boom of the late 1990s, many businesses became extremely confident that investments in new technology would have a high rate of return, and their demand for financial capital shifted to the right. Conversely, during the Great Recession of 2008 and 2009, their demand for financial capital at any given interest rate shifted to the left.

PRICE CEILINGS IN FINA MARKETS: USURY LAWS

Many states do have **usury laws,** which impose an upper limit on the interest rate that lenders can charge. However, in many cases these upper limits are well above the market interest rate.

For example, if the interest rate is not allowed to rise above 30% per year, it can still fluctuate below that level according to market forces. A price ceiling that is set at a relatively high level is nonbinding, and it will have no practical effect unless the equilibrium price soars high enough to exceed the price ceiling.

The demand and supply model predicts that at the lower price ceiling interest rate, the quantity demanded of credit card debt will increase from its original level of Q0 to Qd; however, the quantity supplied of credit card debt will decrease from the original Q0 to Qs.
At the price ceiling (Rc), quantity demanded will exceed quantity supplied. Consequently, a number of people who want to have credit cards and are willing to pay the prevailing interest rate will find that companies are unwilling to issue cards to them. The result will be a credit shortage.



SUMMARY

- In the labor market, households are on the supply side of the market and firms are on the demand side. In the market for financial capital, households and firms can be on either side of the market: they are suppliers of financial capital when they save or make financial investments, and demanders of financial capital when they borrow or receive financial investments. In the demand and supply analysis of labor markets, the price can be measured by the annual salary or hourly wage received. The quantity of labor can be measured in various ways, like number of workers or the number of hours worked. Factors that can shift the demand curve for labor include: a change in the quantity demanded of the product that the labor produces; a change in the production process that uses more or less labor; and a change in government policy that affects the quantity of labor that firms wish to hire at a given wage. Demand can also increase or decrease (shift) in response to: workers' level of education and training, technology, the number of companies, and availability and price of other inputs. The main factors that can shift the supply curve for labor are: how desirable a job appears to workers relative to the alternatives, government policy that either restricts or encourages the quantity of workers trained for the job, the number of workers in the economy, and required education.
- In the demand and supply analysis of financial markets, the "price" is the rate of return or the interest rate received. The quantity is measured by the money that flows from those who supply financial capital to those who demand it. Two factors can shift the supply of financial capital to a certain investment: if people want to alter their existing levels of consumption, and if the riskiness or return on one investment changes relative to other investments. Factors that can shift demand for capital include business confidence and consumer confidence in the future—since financial investments received in the present are typically repaid in the future.
- The market price system provides a highly efficient mechanism for disseminating information about relative scarcities of goods, services, labor, and financial capital. Market participants do not need to know why prices have changed, only that the changes require them to revisit previous decisions they made about supply and demand. Price controls hide information about the true scarcity of products and thereby cause misallocation of resources.