



MICROECONOMICS UNIT 5

Factor Markets



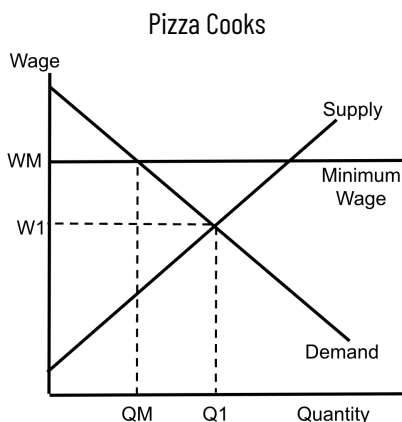
BIG PICTURE IDEAS

- #1. A **factor** market is where businesses purchase the resources they need to produce goods or services. This is also called an input market or **resource** market.
- #2. The idea that the demand for resources is determined by the products they produce is called **derived** demand.
- #3. In a perfectly competitive labor market, workers have identical skills and are wage **takers**.
- #4. Firms maximize profit by hiring workers when the marginal **revenue** product equals the marginal **resources/factor** cost.
- #5. A market controlled by only one buyer is called a **monopsony**.

■ Topic 5.1- Introduction to Factor Markets

1. Explain the difference between the factor market and the product market. **Factor markets are where the factors of production are sold by households to businesses. Product markets are where goods/services are sold by businesses.**
2. The four factors of production are **land**, **labor**, capital, entrepreneurship.
3. The four factor payments **rent**, wage, **interest**, and profit.
4. Why is the demand for labor downward-sloping? **The number of workers that businesses are willing and able to hire increases as the wage falls.**
5. Why is the supply for labor upward-sloping? **The number of workers that are willing and able to sell their labor increases as the wage increases.**

■ Topic 5.2- Changes in Factor Demand and Supply



6. Draw the supply and demand for cooks and show a binding minimum wage. Label the equilibrium wage (W_1) and quantity (Q_1) and the minimum wage (W_M) and quantity (Q_M).
 7. A binding minimum wage can cause **unemployment** since businesses often hire fewer workers.
 8. Identify the shifters of labor demand.
 - Change in the demand for the product
 - Change in the productivity of the resource
 - Change in the price of related resources (substitute and complementary resources)
 9. Identify the shifters of labor supply.
 - Number of qualified workers (including immigration)
 - Government regulation/licensing
 - Cultural expectations
10. For each scenario, identify the initial change (\uparrow , \downarrow , or no change) in demand or supply, price, and quantity of pizza cooks

Scenario	Demand	Supply	Wage	Quantity
The government requires pizza cooks to pass an exam to get certified to make pizza.	NC	\downarrow	\uparrow	\downarrow
The price of burgers increases, causing the price of pizza to increase.	\uparrow	NC	\uparrow	\uparrow
Technological advancements lower the price of robots that can make pizza.	\downarrow	NC	\downarrow	\downarrow
The government establishes a binding minimum wage that affects pizza cooks. (No shift)	NC	NC	\uparrow	\downarrow
Instagram influencers encourage teenagers to get jobs at pizza restaurants.	NC	\uparrow	\downarrow	\uparrow



MICROECONOMICS UNIT 5

Factor Markets

■ Topic 5.3- Profit-Maximizing Behavior in Perfectly Competitive Factor Markets

11. Workers in perfectly competitive labor markets work for the same **wage** which is set by the **market** .

12. Define marginal revenue product (MRP).
The additional revenue generated by hiring one additional resource/worker.

Number of Workers	Total Product	MRP
0	0	-
1	5	\$25
2	15	\$50
3	20	\$25
4	23	\$15
5	24	\$5

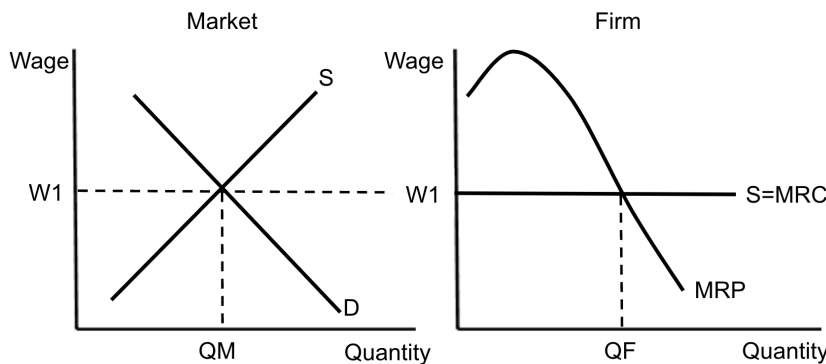
13. Define marginal resources cost (MRC).
The additional cost from hiring one additional resource/worker. Also called marginal factor cost (MFC).

14. Assume perfectly competitive product and labor markets. If the price of the product is \$5 and the wage is \$20, how many workers should be hired?
3 workers. Where $MRP = MRC$

15. How much is the profit or loss? **Profit = \$40 = \$100 - \$60 = TR - TC**

16. Assume this firm develops a process that makes only their workers more productive. What will happen to the wage and quantity of workers hired? **Wage stays the same, quantity will increase.**

17. Draw a perfectly competitive labor market and firm. Label the wage W_1 the quantity in the market Q_M and the quantity for the firm Q_F .



18. The **supply** of labor for firms in perfect competition is perfectly elastic.

19. If the government sets a binding minimum wage, will the MRP of the last worker hired increase, decrease, or stay the same? Explain. **The MRP of the last worker hired will increase. Workers with lower MRPs will no longer be hired since the minimum wage increased. Only workers with higher MRP will continue to have a job.**

■ Topic 5.3- Profit-Maximizing (continued)

20. What is the least cost rule when combining resources?
 $\text{Marginal Product Labor} = \text{Marginal Product of Capital}$
Price of Labor Price of Capital

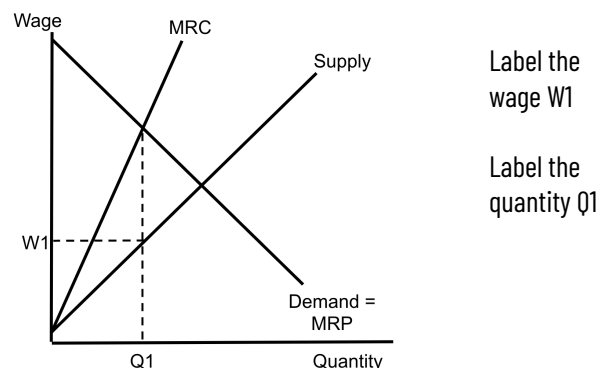
Assume a firm hires the cost-minimizing combination of labor and capital. The marginal product of the last worker is 60 units and the marginal product of the last unit of capital is 20 units.

21. If the wage rate is \$30 per hour, what is the price of capital?
The price of capital is \$10

22. If the wage falls to \$10 per hour, the company should hire **more** workers and **fewer** capital.

■ Topic 5.4- Monopsonistic Markets

23. Draw a monopsony and label the unregulated wage and quantity.



■ Unit Review

True or False

24. If the demand for houses increases, the wage of carpenters will increase and the quantity will decrease. **False.**

25. Assume bricks and wood are substitute resources. If the price of bricks increases, the price of wood will increase. **True.**

26. A binding minimum wage leads to relatively less unemployment when the demand for labor is inelastic. **True.**

27. A monopsony hires less workers and pays lower wages than a competitive labor market. **True.**