Perfectly Competitive Labor Markets

AP Microeconomics | Unit 5 | the market, the wage-taking firm, side-by-side graphs

1. The market sets the wage

On the market graph the axes are **Wage** and **Quantity of labor**.

- **Demand for labor** comes from firms (their MRP curves). It slopes down.
- **Supply of labor** comes from workers. It slopes up.
- Where they cross: the equilibrium wage. *Example:* \$120 a day, 600 workers.

2. The firm is a wage taker

One firm is tiny next to the market: it can hire all the workers it wants at the market wage.

The firm's graph

- Labor supply to the firm is **horizontal** at the market wage.
- Every extra worker costs the same wage, so $\boldsymbol{MRC = W}$. Label the line $S = MRC = W$.
- The firm's demand for labor is its **MRP** curve (slopes down).
- The firm hires where $\boldsymbol{MRP = MRC}$.

Example. With MRP of \$200, \$160, \$120, \$80, \$40 for workers 1 to 5 and a wage of \$120, the firm hires 3 workers.

Side-by-side graphs: draw the market on the left and the firm on the right, with a dashed line carrying the market wage across to the firm's horizontal line.

3. When the market changes

Always in this order: **the market changes the wage, then the firm responds.**

Example. Many new workers arrive. Market supply of labor shifts right; the wage falls to \$80. The firm's wage line drops to \$80; its MRP curve does *not* move; it now hires 4.

If market demand for labor rises instead, the wage rises, the firm's wage line moves up, and the firm hires fewer workers.

4. The same picture as unit 3

	product market (unit 3)	labor market (unit 5)
the firm is a	price taker	wage taker
horizontal line	$D = MR = P$	$S = MRC = W$
sloping curve	MC, slopes up	MRP, slopes down
the firm stops where	$MR = MC$	$MRP = MRC$

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5. Minimum wage, hiring, and wage gaps

- **Minimum wage** (market $D = 240 - 20x$, $S = 20x$, equilibrium \$120 and 600 workers): a floor at or below \$120 does nothing; at \$160 firms hire only 400 (quantity *demanded*), 800 want to work, and the surplus of 400 is unemployment.
- **Gain from one more worker** $= MRP - W$ with $MRP = MP \times P$: 25 units $\times$ \$50 = \$1,250 against a wage of \$1,000 raises profit by \$250. Hire while it is positive.
- **Market labor demand** is the horizontal sum of the firms' MRP curves; entry of new firms shifts it right.
- A **compensating differential** persists under free mobility: the gap for an unpleasant or risky job narrows but does not vanish.
- If demand for a skilled product rises, skilled MRP rises and the **wage gap widens**.

Where students lose points

1. Drawing the firm's labor supply sloping up: for a wage taker it is horizontal.
2. The firm's wage line at a different height from the market wage.
3. Axes labeled Price and Quantity instead of Wage and Quantity of labor.
4. Mixing up the sides: firms demand labor, workers supply it.
5. Shifting the firm's MRP when the market supply of labor changes.

Now practise it

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