



What is an hour of work worth?

A worker is hired for what they add: hire until $MRP = MRC$. Many employers → wage taker; one employer → monopsony.

1

Derived demand

why firms hire

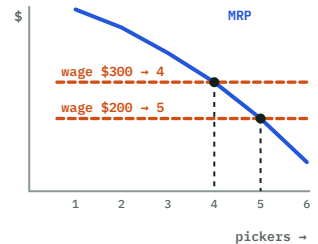
- **Derived demand** → demand for a worker comes from demand for what they make
- Frost ⇒ apple price $\times 2$ ⇒ each basket worth more ⇒ pay per picker $\uparrow$ (same baskets, higher price)
- **MP** (marginal product) = extra output from one more worker · orchard: 50, 45, 38, 30, 20, 8 baskets (pickers 1 → 6)
- **Diminishing marginal returns** ⇒ fixed input (trees) ⇒ each extra worker adds less than the one before

2

Hiring rule

MRP and the wage

- **MRP** (marginal revenue product) = extra revenue from one more worker · $MRP = MP \times P$ · apples \$10: \$500, 450, 380, 300, 200, 80
- **Wage taker** = firm too small to move the wage ⇒ **MRC** (extra cost of one more worker) = wage
- **Rule** ⇒ hire while $MRP \geq MRC$ · wage \$300 → 4 pickers · wage \$200 → 5 pickers
- Practice · strawberries \$10, MP 40, 34, 28, 20, 12, 4 ⇒ MRP \$400, 340, 280, 200, 120, 40 · wage \$250 ⇒ hire 3 · 4th picker: \$200 – \$250 = **–\$50**



3

Shifts of demand

MRP curve moves

- **Product price** $\uparrow$ ⇒ MRP $\uparrow$ at every worker ⇒ curve **right/up** · price $\downarrow$ ⇒ curve **left/down**
- **Productivity** $\uparrow$ (motorized ladders) ⇒ MP $\uparrow$ ⇒ MRP $+\$100$ at every worker ⇒ more pickers at \$300
- **Other inputs** → machine replaces workers ⇒ demand $\downarrow$ · cheaper crates speed them up ⇒ demand $\uparrow$
- Practice · wage \$110, price \$10 → \$5 ⇒ MRP halves: \$200, 170, 140, 100, 60, 20 ⇒ pickers **5 → 3**
- Wage changes ⇒ move along MRP · anything else ⇒ MRP shifts

4

Labor market

supply, wage, minimum wage

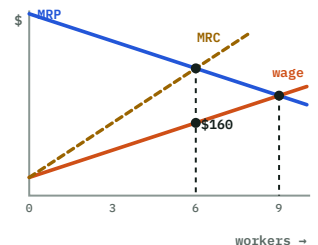
- **Labor supply** → higher wage ⇒ more people offer their time · market wage = supply meets demand
- Region: demand $W = 600 - 60L$, supply $W = 60L$ (L in 000s) ⇒ **\$300, 5,000** workers
- **Minimum wage** \$360 > \$300 ⇒ demand 4,000 < supply 6,000 ⇒ **2,000 unemployed**
- Practice · $W = 500 - 50L$ vs $W = 50L$ ⇒ \$250, 5,000 · university: +2,000 at every wage ⇒ $W = 50(L - 2)$ ⇒ **\$200, 6,000** · wage $\downarrow$, jobs $\uparrow$

5

Monopsony

one employer

- **Monopsony** = the only employer (ski resort in a remote town) · one wage for all ⇒ hiring one more raises pay of everyone ⇒ **MRC > wage**
- Rule = same: $MRP = MRC$ ⇒ **wage read on the supply curve**, not on MRC
- Resort: MRP $400 - 20L$, wage $40 + 20L$, MRC $40 + 40L$ ⇒ 6 workers (MRP = MRC = \$280) at **\$160** · competitive: 9 workers, \$220
- Practice · MRP $300 - 20L$, wage $60 + 20L$, MRC $60 + 40L$ ⇒ 4 workers, MRP = MRC = \$220, wage **\$140** · competitive: 6, \$180
- Monopsony ⇒ fewer workers and lower wage than competition · MRC – wage = what it saves (\$80)



6

Minimum wage in a monopsony

can help, or hurt

- Floor ⇒ no raise for others when hiring one more ⇒ MRC = floor (flat) ⇒ hire until $MRP = \text{floor}$
- Floor $\leq$ **competitive wage** ⇒ wage $\uparrow$ **and** jobs $\uparrow$ · resort: \$220 ⇒ 9 workers (= competitive) · practice: \$180 ⇒ 6 workers, wage \$140 → \$180
- Floor > **competitive wage** ⇒ jobs $\downarrow$ · practice: \$260 ⇒ MRP = \$260 at 2 workers < 4 (monopsony alone)
- Competitive market: floor above equilibrium ⇒ unemployment (block 4) · monopsony: floor at or below competition ⇒ can fix it
- A floor is not always bad for jobs: it depends on who sets the wage (market, or a single employer)