Monopsony

EC 350: Labor Economics

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Winter 2022

Peri et al. (2020)

Discussion

Q_1: What natural experiment did the authors use to measure the effect of immigration on wages and employment? Did you find it compelling?

Q_2: What did the authors find?

Q_3: Do you think their estimates are externally valid?

Q_4: What are the implications for immigration policy?

Monopsony

Monopsony

A **monopsony is a market** with a single buyer.

- In a labor market, this would entail that there is only one employer, which we call a **monopsonist**.

Why does this matter? Monopsonies are inefficient!

- In a monopsonistic labor market, workers **earn less** and there is **underemployment**.
- Can exacerbate inequality!

Most labor markets are probably closer to monopsony than to perfect competition.

- Employers with significant **market power**? Probably the norm rather than the exception.

Monopsony

Discussion

Q: Is Amazon a monopsonist? Why or why not?

Q: Do large public research universities have monopsony power?

Q: Is a sawmill in Eastern Oregon a monopsonist? What about a sawmill in Eugene?

Monopsony

Assumptions

We will continue to make most of the same assumptions as we did when we modeled supply and demand for a competitive market.

- Perfect competition in capital and output markets
- Homogeneous workers within a market
- Various assumptions about preferences and production technology
- Perfect information and complete contracts

We will now assume that there is **only one employer** whose hiring decisions can influence the market wage.[†]

[†] We are still implicitly assuming that there is a single wage—the employer cannot "discriminate" by offering different wages to different workers.

Labor supply elasticity

Definition

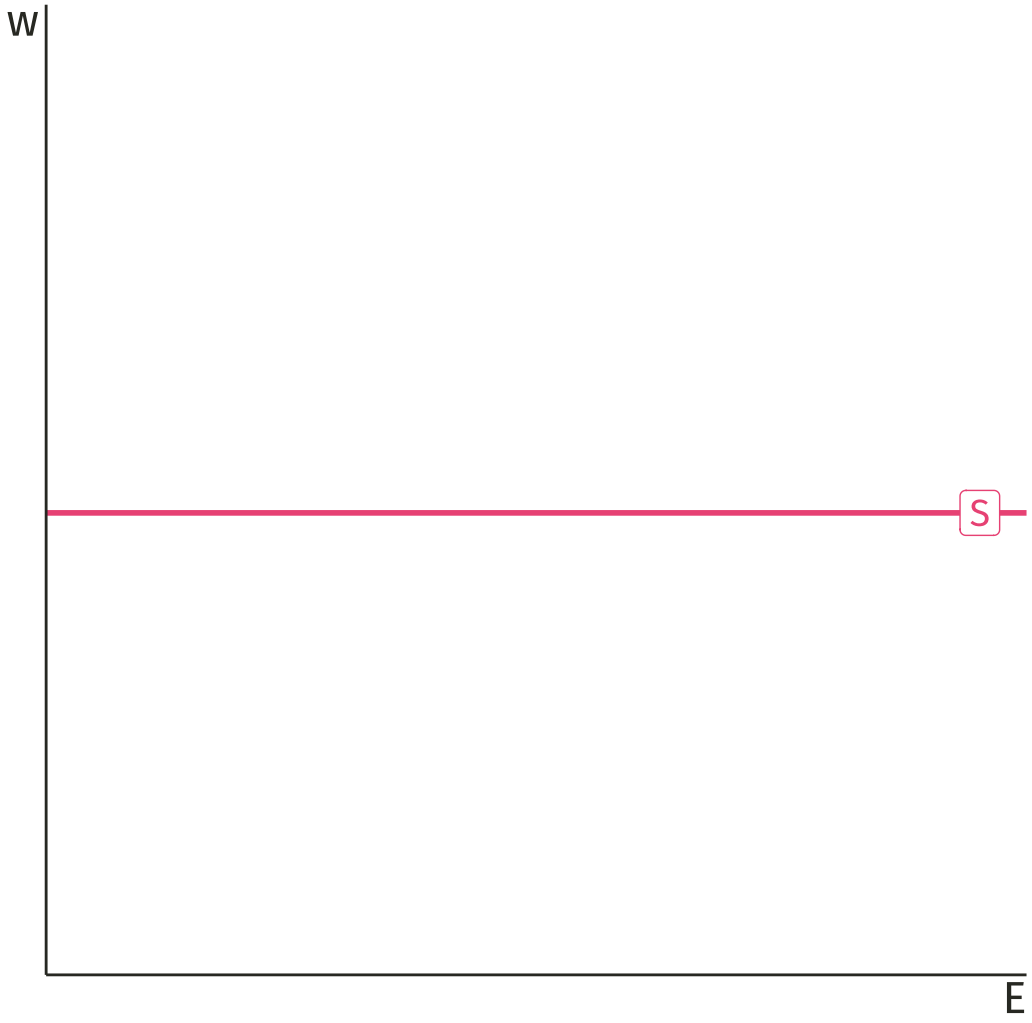
> A measure of the responsiveness of the quantity of labor supplied to changes in the wage

$$\sigma = \frac{\%\ \text{change in quantity of labor supplied}}{\%\ \text{change in wage}}$$

Interpretation? A one-percent increase in wages increases the quantity of labor supplied by σ percent.

- $\sigma > 1 \implies$ labor supply is elastic or sensitive to changes in the wage.
- $0 \leq \sigma < 1 \implies$ labor supply is inelastic or insensitive to changes in the wage.

Labor supply elasticity

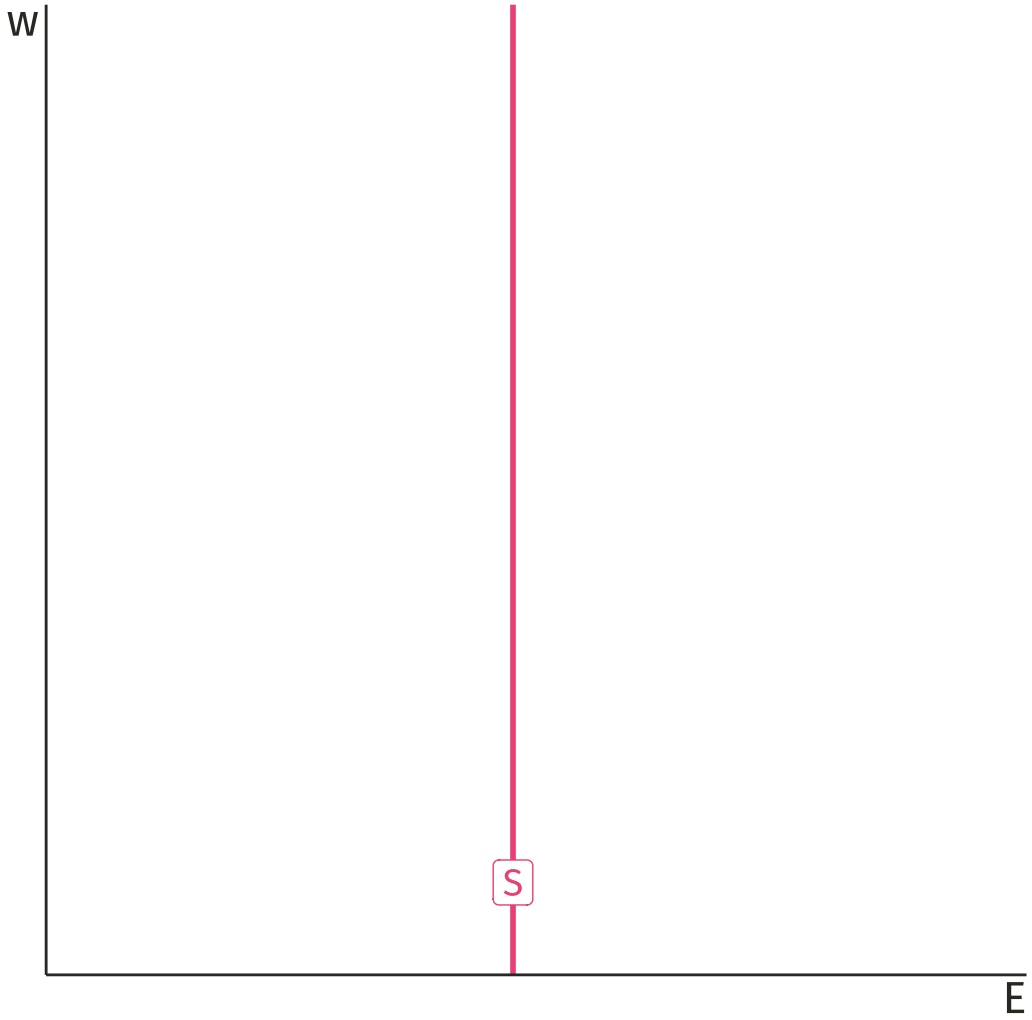


Perfectly elastic labor supply

Quantity of labor supplied falls to zero when the wage decreases and approaches infinity when the wage increases.

$\sigma \to \infty$

Labor supply elasticity

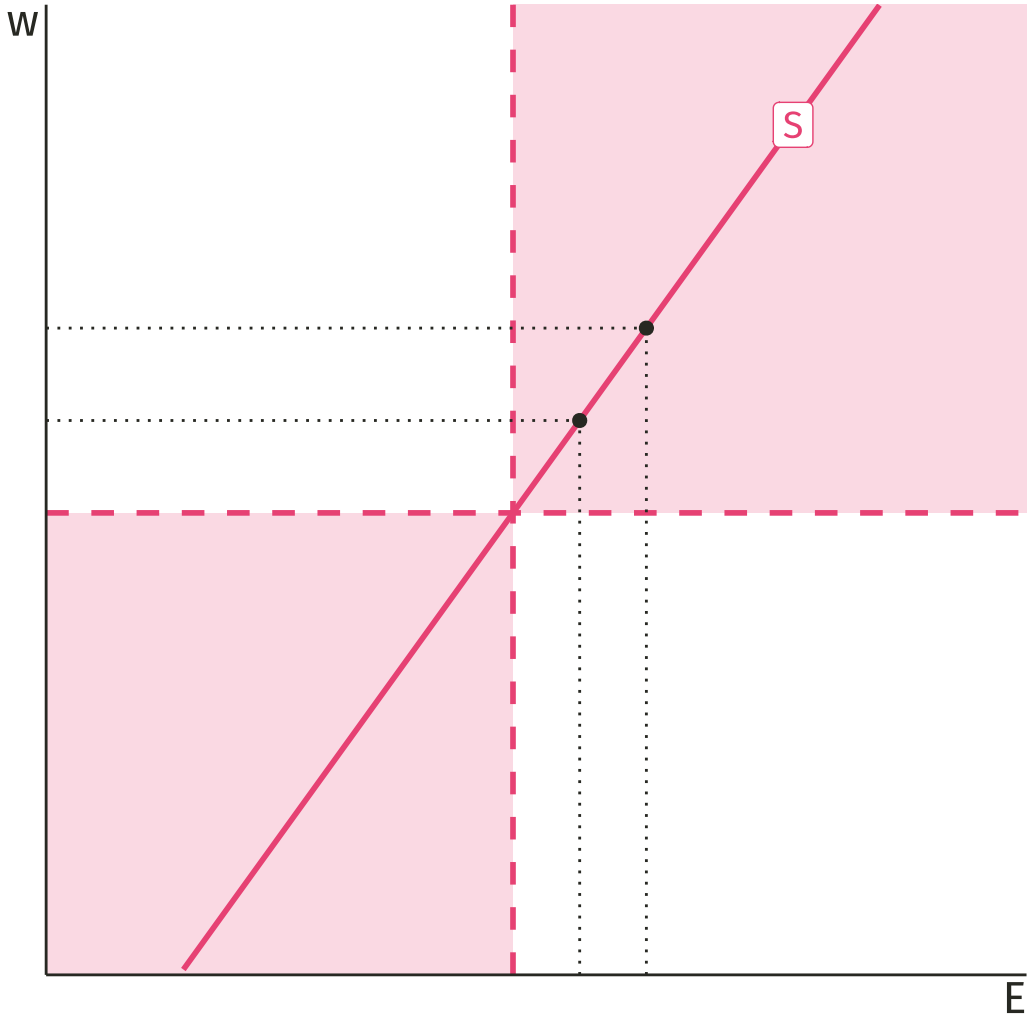


Perfectly inelastic labor supply

Quantity of labor supplied does not change when the wage changes.

$\sigma = 0$

Labor supply elasticity



All else being equal, flatter supply curves are more elastic than steeper supply curves.

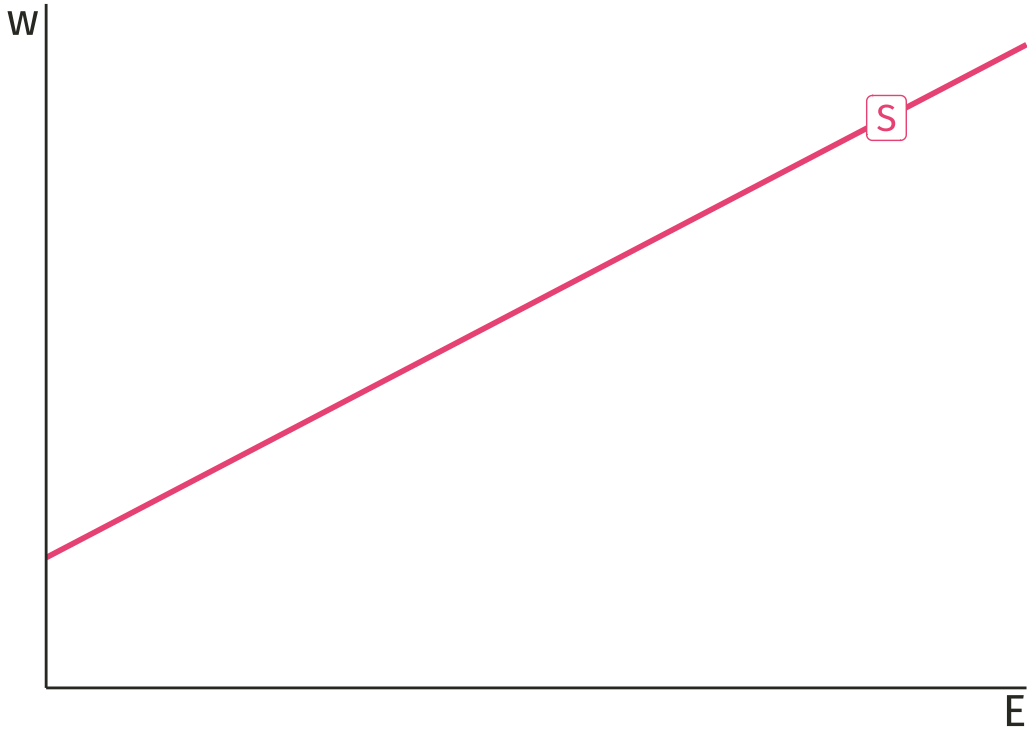
As σ decreases, the same wage increase leads to smaller increases in the quantity of labor supplied.

Monopsonist *vs.* competitive employer

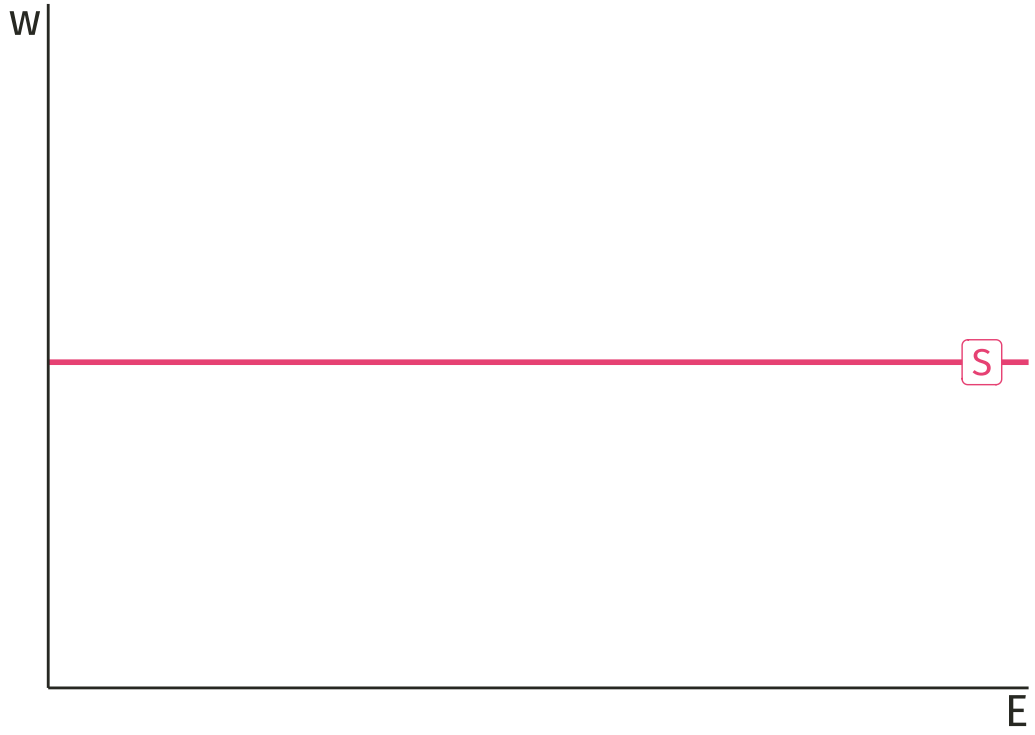
Workers have few employment opportunities in a monopsonistic labor market.

$\longrightarrow$ A monopsonist faces the labor supply curve for the entire market.

Monopsonist



Perfectly competitive employer

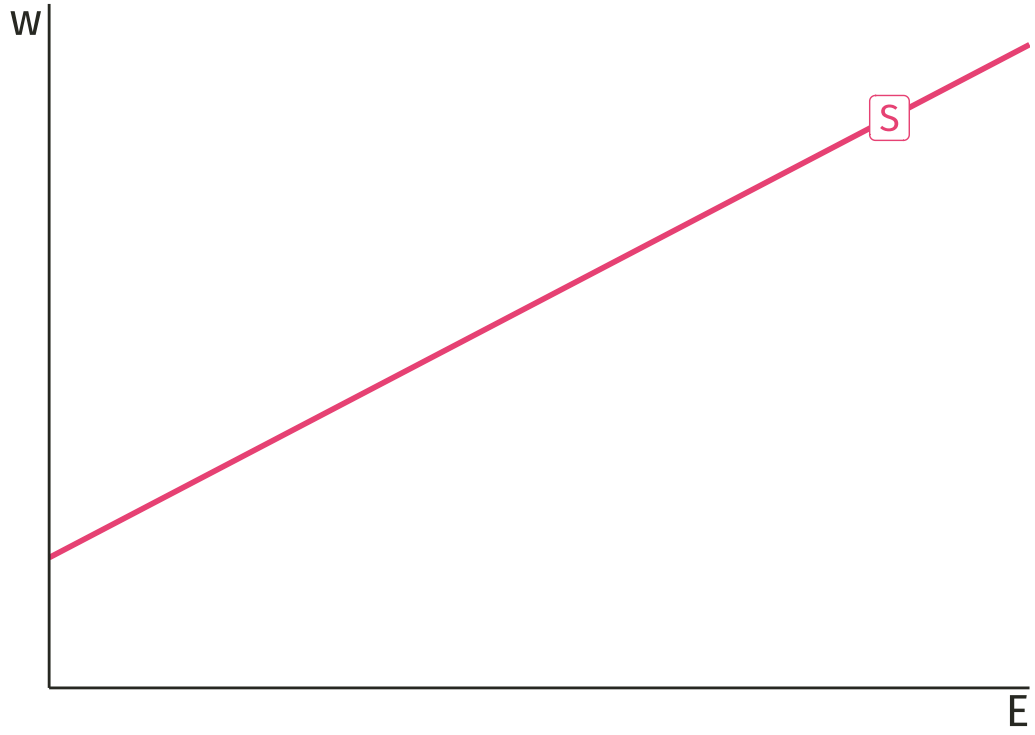


Monopsonist *vs.* competitive employer

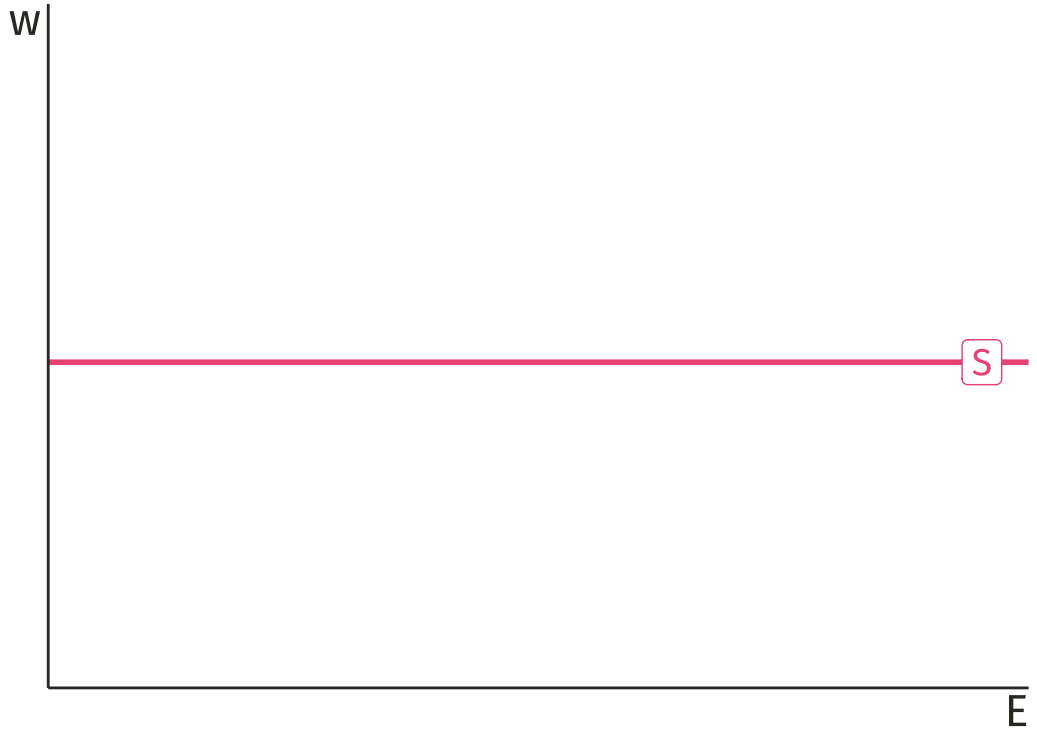
Workers have more employment opportunities in a competitive labor market.

$\longrightarrow$ Individual employers face flat supply curves.

Monopsonist



Perfectly competitive employer



Profit maximization

Perfect competition

A competitive employer maximizes profit by hiring E^* workers such that $w = \text{VMP}_E$ and VMP_E is decreasing.

- The employer keeps hiring until the **marginal cost** of the last worker equals the **marginal benefit** of the last worker.

Monopsony

A monopsonist maximizes profit maximizes profit by hiring E^* workers such that $\text{MC}_E = \text{VMP}_E$ and VMP_E is decreasing.

- **The difference?** Marginal cost is no longer equal to the wage—the monopsonist has increase the wage to attract additional workers *and* pay this new wage to existing workers.

Q: Given supply and demand for labor, how many workers would a monopsonist hire?

Workers (E)	VMP (demand)	Wage (supply)	Wage × E	Marginal cost
0	—	80	0	0
1	70	85	85	85
2	120	90	180	95
3	95	95	285	105
4	50	100	400	115

A: A monopsonist would hire 2 workers.

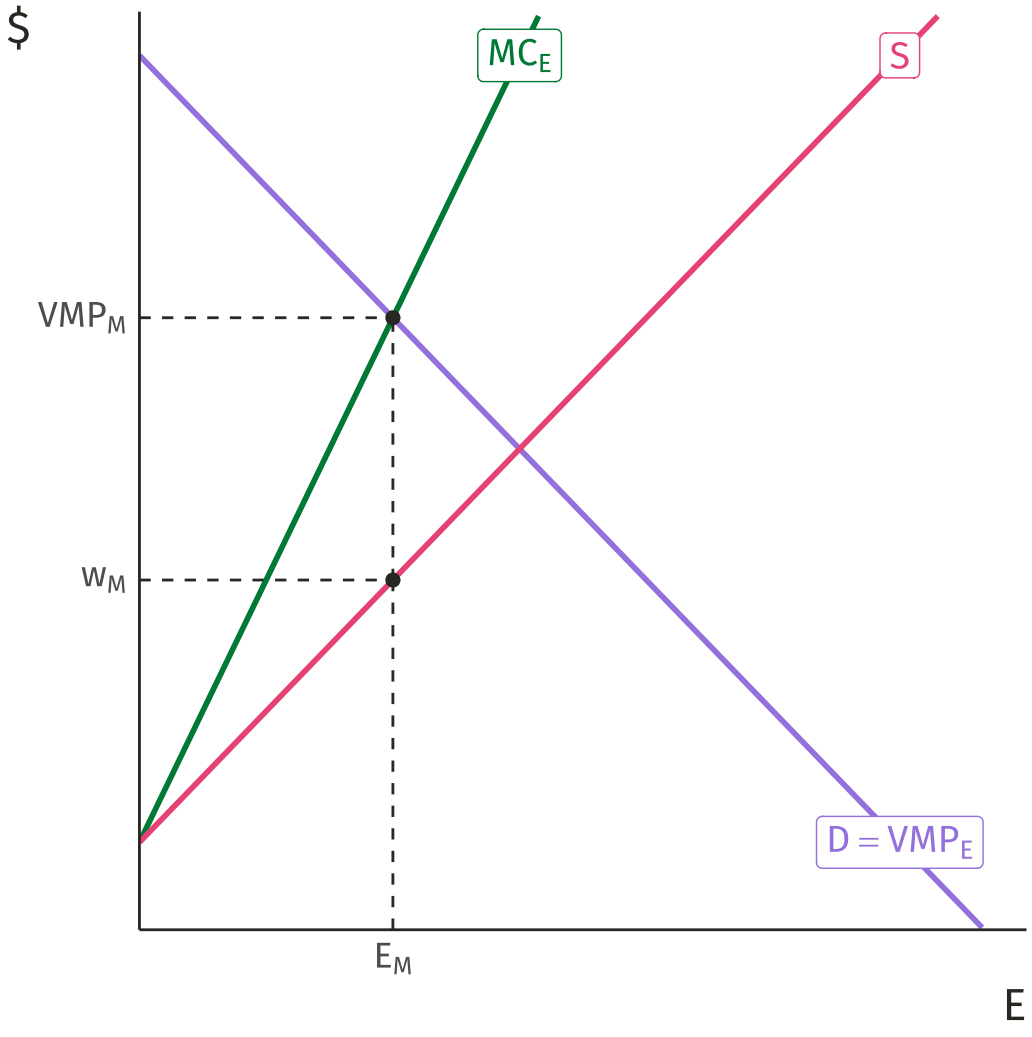
- As close to $\mathrm{MC}_E = \mathrm{VMP}_E$ as the employer can get.

Q: How many employees would a perfectly competitive employer hire?

A: A perfectly competitive employer would hire 3 workers.

- Where $w = \mathrm{VMP}_E$.

Profit maximization



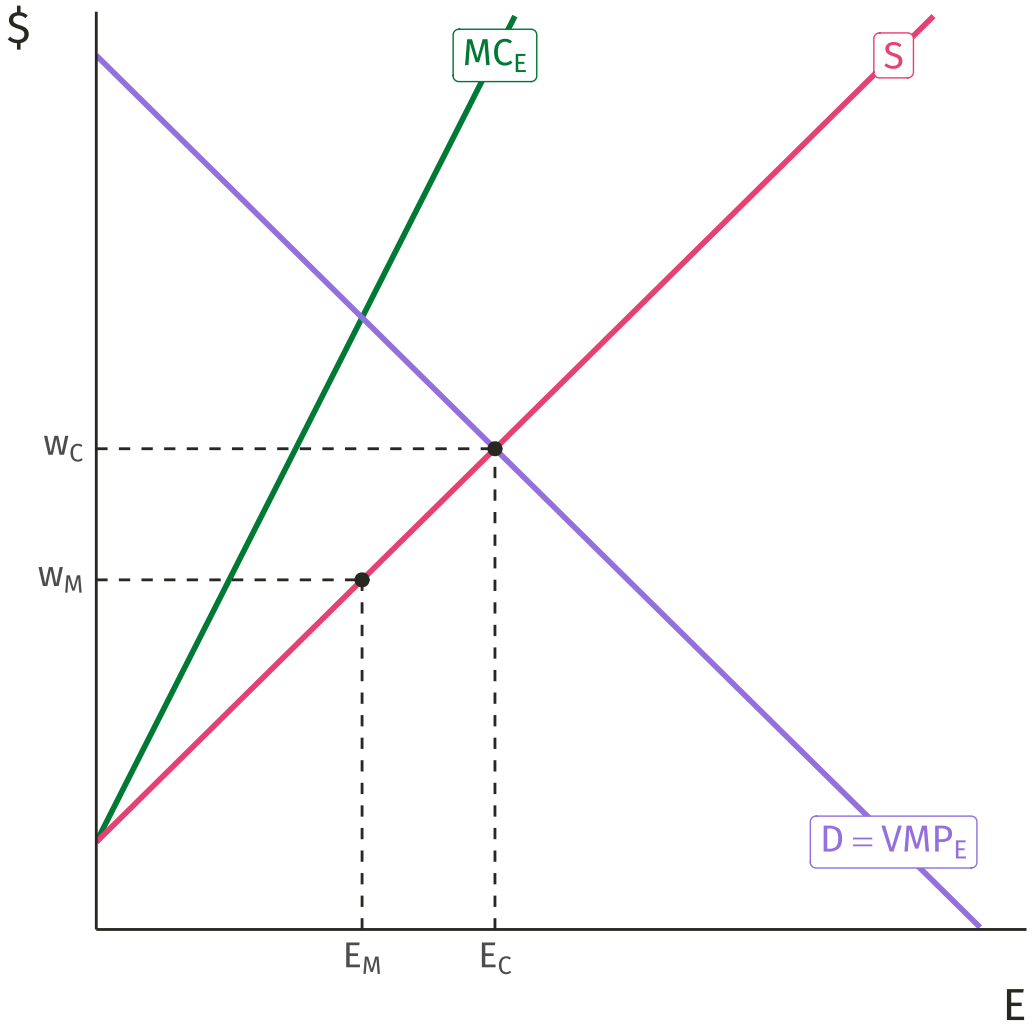
Q: How does a monopsonist maximize profit?

A: Two steps!

- **Step 1:** Hire E_M where $MC_E = VMP_E$.
- **Step 2:** Set w_M on the supply curve.

The point (E_M, w_M) characterizes the monopsony equilibrium.

Perfect competition *vs.* monpsony



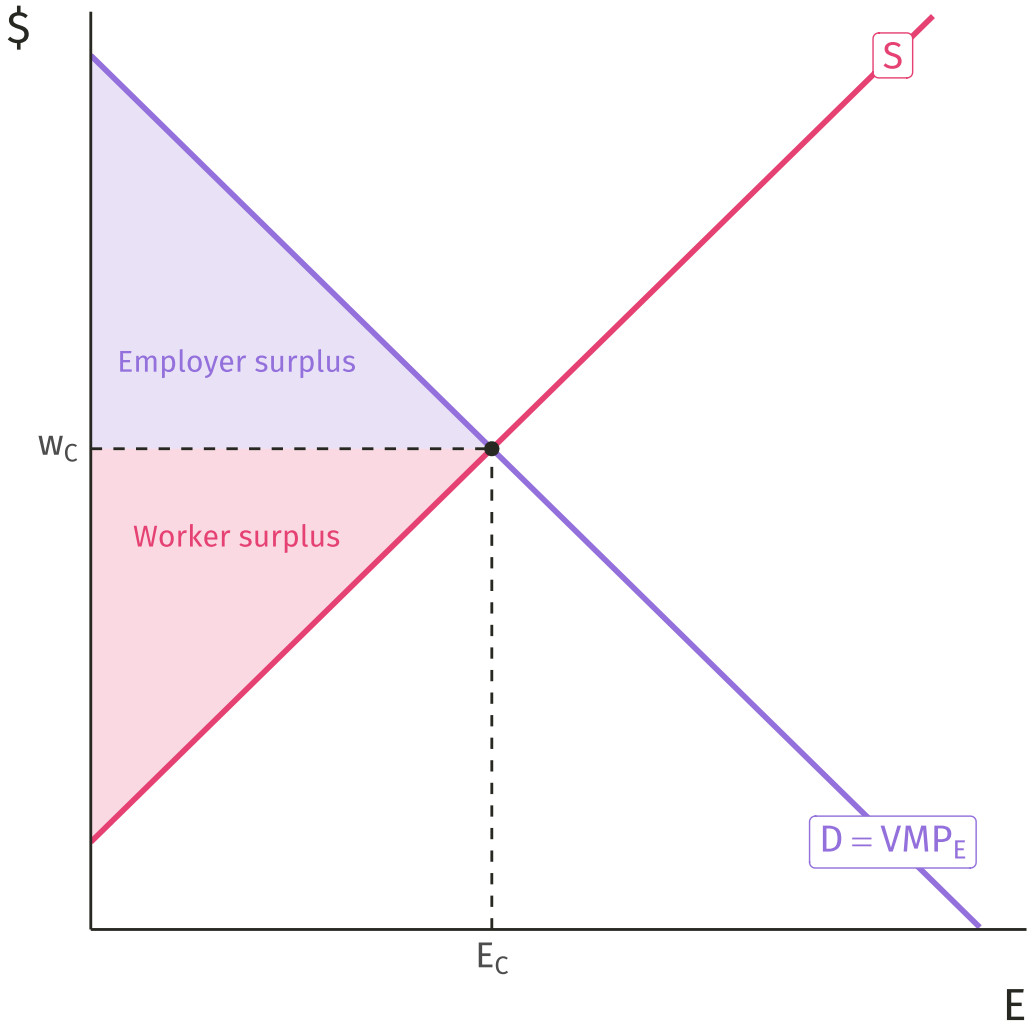
In a perfectly competitive market, the point (E_C, w_C) characterizes the market equilibrium.

In a monopsony, the point (E_M, w_M) characterizes the market equilibrium.

The takeaway? Monopsonies generate lower wages and less employment than competitive markets.

- **Q:** Why does this matter?

Perfect competition *vs.* monpsony

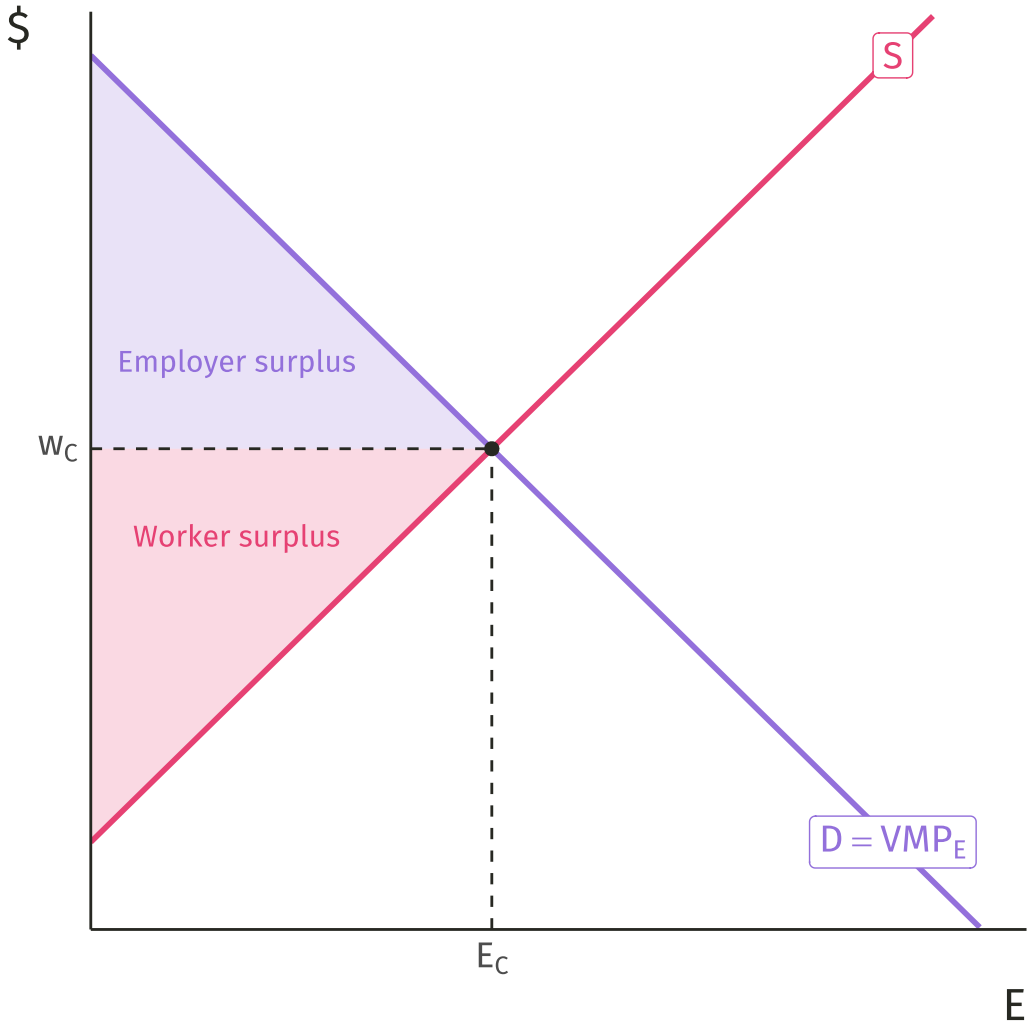


Welfare analysis

Total surplus describes **mutual gains** from employment.

- Workers experience monetary benefits from working (worker surplus).
- Employers experience monetary benefits from hiring (employer surplus).
- Total surplus = worker surplus + employer surplus.

Perfect competition *vs.* monpsony

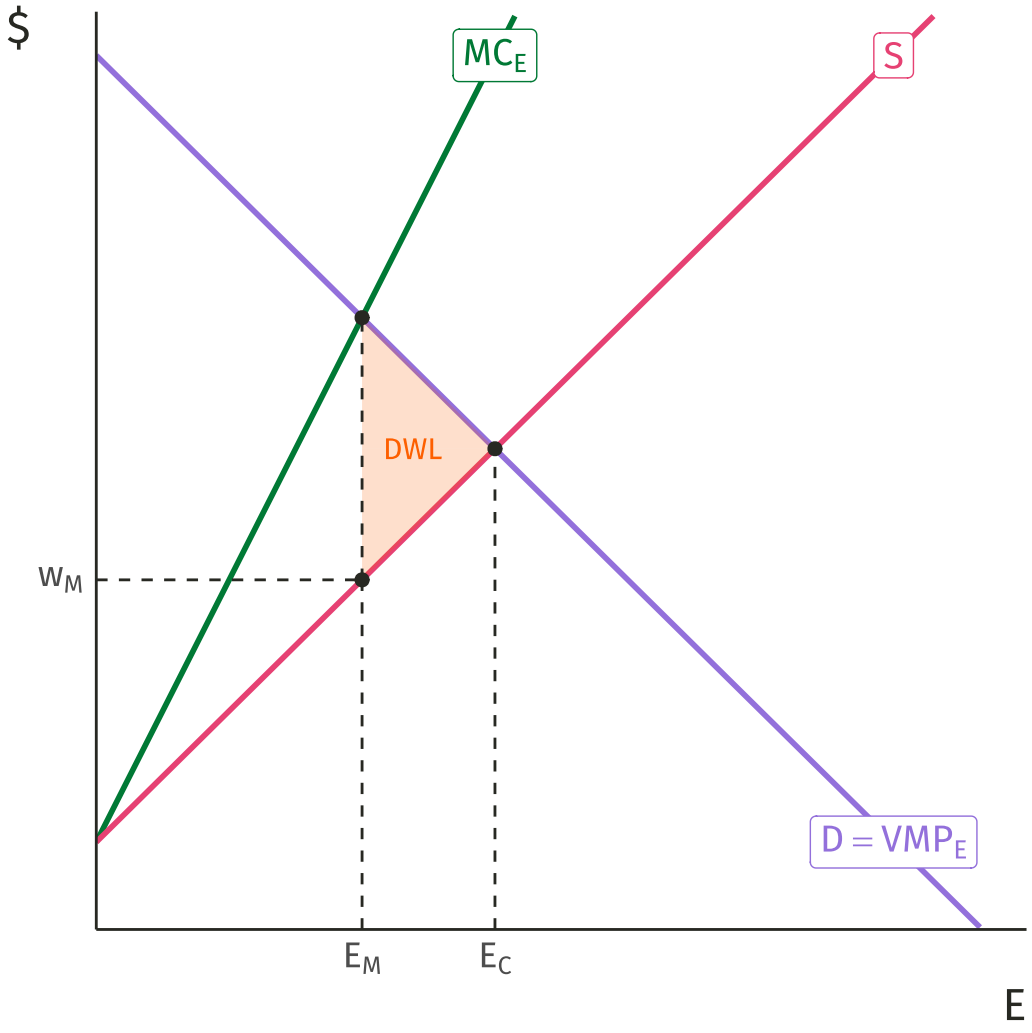


Welfare analysis

Total surplus describes **mutual gains** from employment.

A perfectly competitive market **maximizes** total surplus!

Perfect competition *vs.* monpsony



Welfare analysis

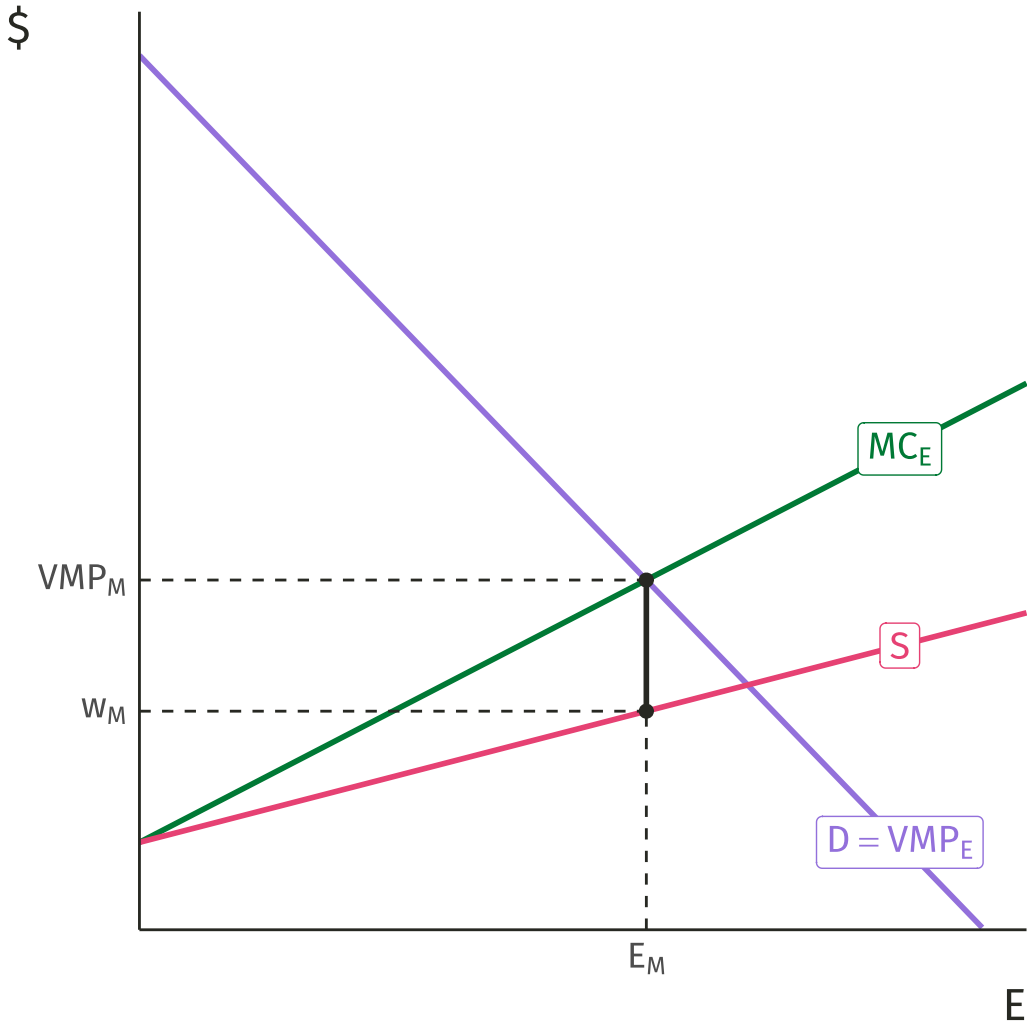
Total surplus describes **mutual gains** from employment.

A monopsony **fails to maximize** total surplus!

- Deadweight loss (DWL) represents unrealized mutual gains from employment.

A monopsony **transfers** surplus **from workers to employers.**

Wage markdown



The **wage markdown** is the difference between VMP_M and w_M.

- The marginal worker is paid less than than her marginal contribution to the firm!

The size of this markdown depends on the elasticity of labor supply.

- As σ increases, the markdown decreases.

Perfect competition *vs.* monpsony

Perfect competition

1. Many employers
2. Each employer is a **price taker** in the labor market—the hiring decisions of an employer have no impact on the market wage
   $\longrightarrow$ no market power!
3. The marginal worker receives a wage **equal to** the value of her marginal product.
4. Efficient!

Monopsony

1. One employer
2. Monopsonist is a **price maker** in the labor market—the hiring decisions of this employer affect the market wage
   $\longrightarrow$ significant market power!
3. The marginal worker receives a wage **less than** the value of her marginal product.
4. Inefficient!

Policy implications?

Q: If monopsonistic labor markets are inefficient and perhaps inequitable, what can we do about it?

- Perhaps we should extend anti-trust laws to employers?
- Increase the minimum wage?
- Unions?
- Something else?

Housekeeping

Assigned reading for Wednesday: Labor Market Concentration by Jose Azar, Ioana Marinescu, and Marshall Steinbaum (2020).

- Reading Quiz 6 is due by **Wednesday, February 16th at 12:00pm (noon)**.
- The quiz instructions describe the sections I want you to read closely.