

Minimum Wages, Efficiency and Welfare

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Can a minimum wage address inefficiency due to labor market power?

1. Develop and quantify a general equilibrium macro model

Firm heterogeneity and strategic interactions in concentrated labor markets

2. Quantitatively replicates reduced form evidence on channels through which minimum wages may improve allocative efficiency

3. Compute optimal Federal minimum wage & Welfare gains

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 - Firm heterogeneity and strategic interactions in concentrated labor markets
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3. Compute optimal Federal minimum wage & Welfare gains

Answer: No

- Optimal minimum wage: \$8.27
- Increase welfare by 0.17 percent

Outline

1. Model ingredients
2. Efficiency losses due to labor market power
3. Effects of a minimum wage
4. Quantitative results
5. The elements of the data that imply small efficiency gains

Environment

Household types $h \in \{\text{Non-High School, High school, College-Workers, College-Owners}\}$

- Identical workers in each household share resources
- Send workers to labor markets $j \in [0, 1]$, and the finitely many M_j firms in each market
- More elastic between firms in a market (η), than across markets (θ)
- Heterogeneity: Disutility of labor, Productivity, Capital endowment, Profit share

Firms

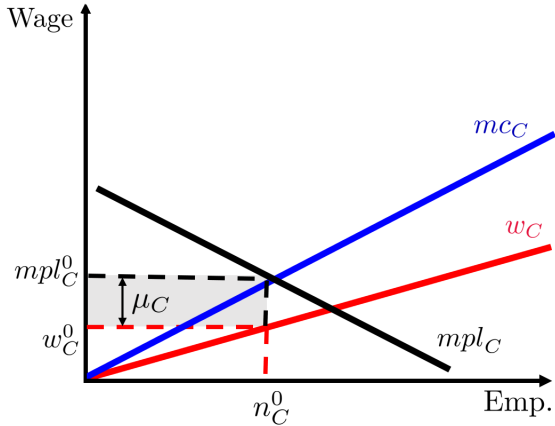
- Heterogeneity: Firm- ij has productivity \bar{z}_{ij} , with dispersion (σ)
- Production function separable across worker types, decreasing returns for each type (α)

Markets

- Local, Cournot competition for labor. Walrasian for capital, goods.

Monopsony 101

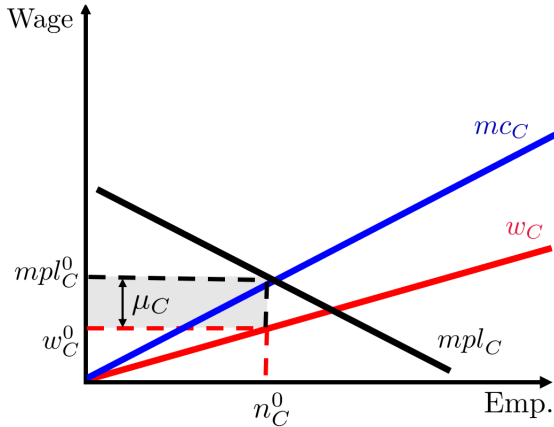
A. Corner store



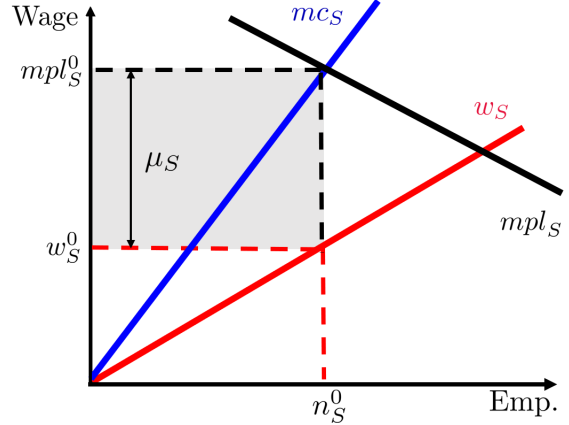
B. Supermarket

Oligopsony 101

A. Corner store

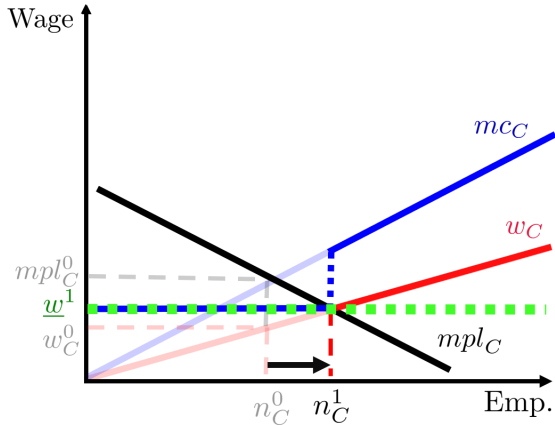


B. Supermarket

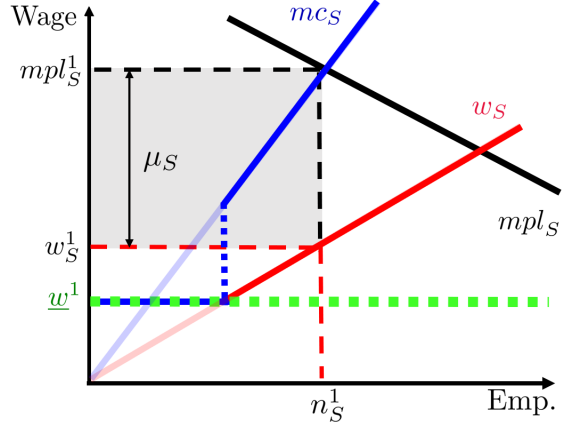


Low minimum wage - \underline{w}_1

A. Corner store

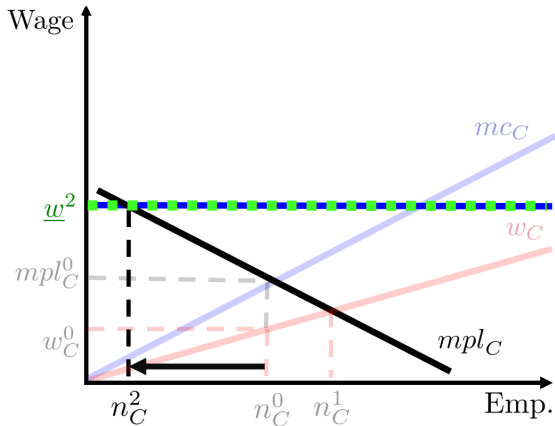


B. Supermarket

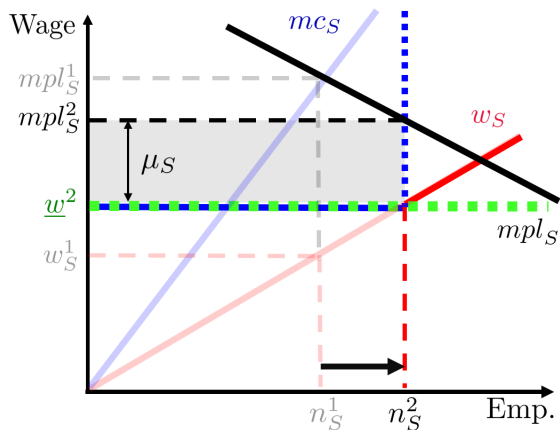


High minimum wage - w_2

A. Corner store



B. Supermarket



General equilibrium forces

1. Spillovers - Supermarket raises wages in response to the corner-store
2. Reallocation - Corner-store “excess supply” reallocated to supermarket
3. Concentration - Larger employment effects in concentrated markets

General equilibrium forces

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 - Derenoncourt et al (2022) - *Spillover effects of voluntary employer minimum wages*
 - Staiger et al (2010) - *Is there monopsony power in the labor market?*
2. Reallocation - Corner-store “excess supply” reallocated to supermarket
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Quantitatively the model is consistent with recent empirical studies

Can a minimum wage address inefficiency due to labor market power?

- Issue Minimum wage has **Efficiency** and **Redistributive** effects
- Solution Construct a Ramsey problem that separates them out

- Objective

$$\sum_h \psi_h \times (\text{Utility of household } h)$$

- Constraints Optimality conditions of firms and households

- Tools

- Budget neutral lump sum transfers $\{T_h\}_{h=1}^H$, $\sum_h T_h = 0$
- Minimum wage w

Results

	Optimal \underline{w}^*	Welfare gain
A. Full model	\$ 8.27	0.17%

Note: All results computed under Utilitarian social welfare weights

Result 1 - Efficiency maximizing minimum wage close to current US policy

Results

	Optimal \underline{w}^*	Welfare gain
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Result 2 - Welfare gains are small. Efficient allocation: Welfare gain = **6.3%**

Results

	Optimal \underline{w}^*	Welfare gain
A. Full model	\$ 8.27	0.17 %
B. Homogeneous households	\$ 7.74	0.21 %

Note: All results computed under Utilitarian social welfare weights

Result 3 - Driven by firm, rather than worker heterogeneity

Results

	Optimal \underline{w}^*	Welfare gain
A. Full model	\$ 8.27	0.17 %
B. Homogeneous households	\$ 7.74	0.21 %
C. Regional calibration		
Low income states	\$ 7.71	0.18 %
High income states	\$ 10.03	0.16 %

Note: All results computed under Utilitarian social welfare weights

Result 4 - Small welfare gains are robust across states

Why are the efficiency gains small?

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1. Productivity heterogeneity

Large M_j on average, but highly concentrated

$$\sigma = 27\%$$

2. Low productivity firms face very elastic labor supply

Estimated in Berger, Herkenhoff, Mongey (2022)

$$\eta = 10$$

3. Firm labor demand is highly elastic

Match labor, capital shares

$$\alpha = 0.94$$

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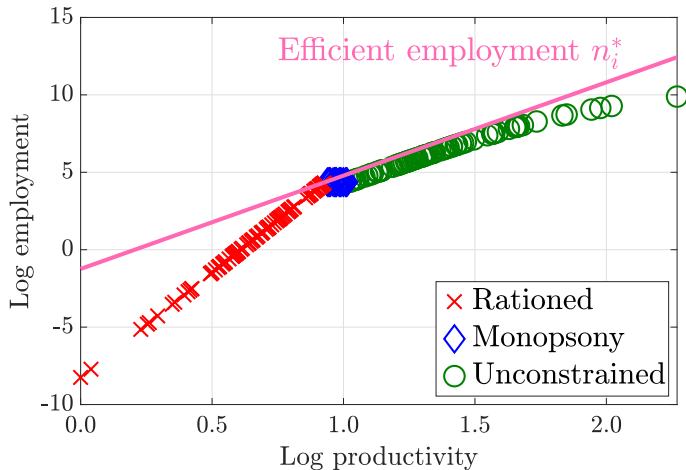
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Implications for efficiency and the minimum wage

1. Low productivity firms have a small share of employment and narrow markdowns
2. Monopsony channel operates in a narrow window
3. Gains quickly become losses as firms shrink
4. Spillover channel limited, Reallocation channel undone

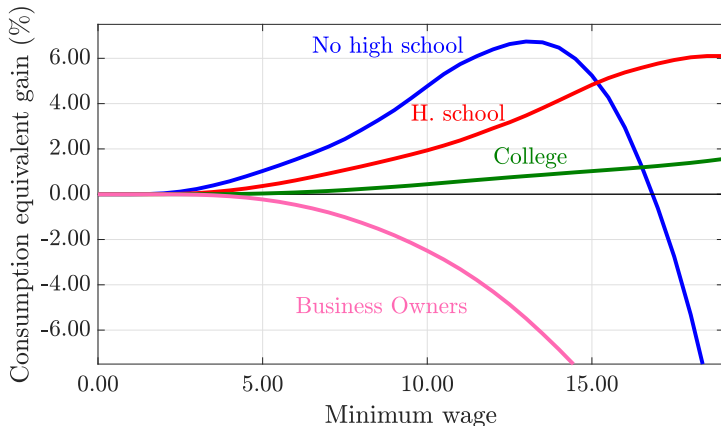
Why are the efficiency gains small? - Example: 200 firms, $\underline{w} = \$10$



- Large efficiency losses, Narrow monopsony gains, Small spillovers

Redistribution

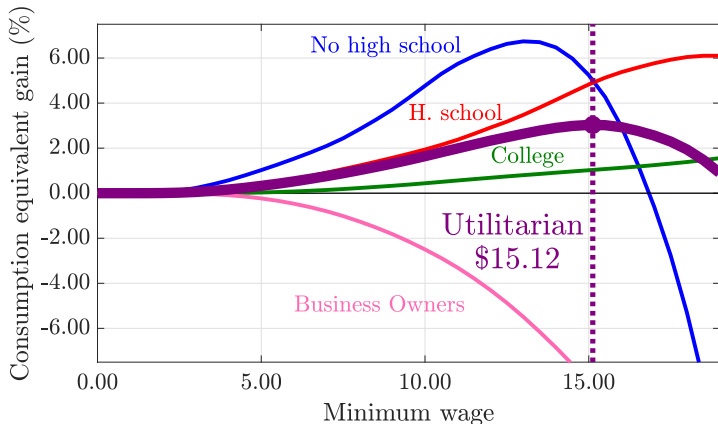
Redistribution



Depending on welfare weights, optimal minimum wage could be \$0 or \$31

Other proxies: Labor share, Wage inequality, College wage premium all monotonically 'improve'

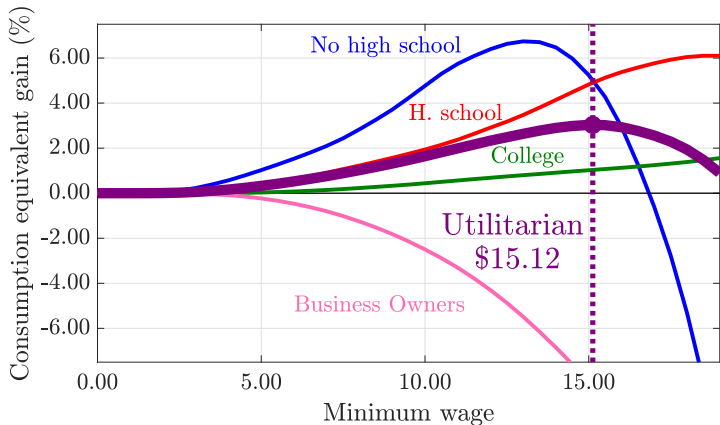
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Redistribution



From **\$8** to **\$15**: Redistribution gain = **2.5%** , Efficiency loss = **-0.6%**

Conclusion

U.S. Treasury Report (2022) - *State of Labor Market Competition*

(1) Efficiency

Raising the minimum wage is a straightforward approach to addressing lower wages under monopsony and can help increase employment.

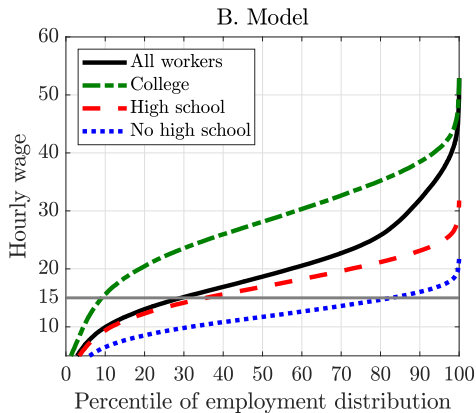
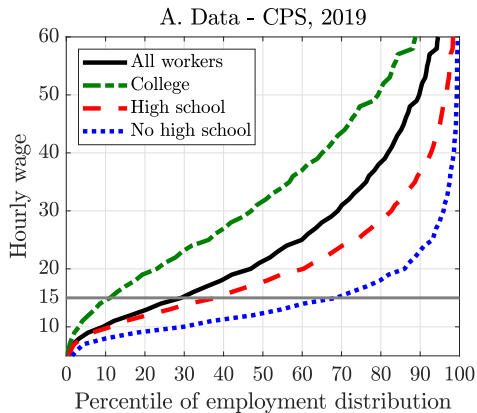
(2) Redistribution

... would give nearly 32 million Americans a raise and boost the purchasing power of low-income families ...

- **Our paper** - Not (1), and leaves open whether its a good tool for (2)
 - Hurst et al. (2022) - *Distributional Impact of Minimum Wage in Short and Long Run*

EXTRA SLIDES

Distribution of wages



- In paper - Matches distribution of consumption by education group (BLS)