Wages, Minimum Wages, and Price Pass-Through: The Case of McDonald's Restaurants

ECAG-6665: Research Report

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Research Question

- The research question for this study is whether the minimum wage increase affects the prices of McDonald's products. [1]

Justification of Research

- This study provides insight into whether increases of the minimum wage affect the prices of products and determine its elasticity.
- The study also provides whether the introduction of labor saving technology like touch screens ordering kiosks affects the price of products.

Literature Review

- Minimum wage hikes are often associated with a positive spillover (or ”ripple effect”) on wages above the new minimum [2].
- Wage spillovers may reflect the value of outside options or within-firm pay norms [3]
- Potential for technological substitution of low-skill labor is limited to cognitively routine tasks, i.e., it may not apply to manually routine jobs. [5]
- Under monopsonistic competition in local markets, fims face an upward sloping labor supply curve. [4]

Data Characteristics and Data Sources

- The data comes form the annual geo-coded listing of all McDonald's restaurants.
- The database was obtained from AggData, a market research company
- 2016-2020 annual telephone surveys of McDonald's restaurants done by the author of the study.
- of these, 720 observations come from stores that are observed only once.
- The reliability ration corresponding to annual wage changes is about 0.9.
- The survey data was supplemented with data from owner identities by FranData.

Methodology

- Estimating the McWage elasticity with respect o minimum wages from 2016 to 2020.

$$\ln McWage_{it} = \alpha + \beta \ln MW_{it} + \delta_i + \phi_t + \epsilon_{it} \quad (1)$$

- Estimating a two-stage least square regression of prices on wages where wages are instrumented using minimum wages.

$$\ln BigMacPrice_{it} = \alpha + \beta \ln McWage_{it} + \delta_i + \phi_t + \epsilon_{it} \quad (2)$$

- The reduced form relationship between prices and minimum wages is given by:

$$\ln BigMacPrice_{it} = \alpha + \beta \ln MW_{it} + \delta_i + \phi_t + \epsilon_{it} \quad (3)$$

Methodology

- Estimate a specification relating the probability of restaurant ecit to minimum wages at the county level.

$$\ln Exit_{it} = \alpha + \beta \ln MW_{it} + \delta_i + \phi_t + \epsilon_{it} \tag{4}$$

Results Figures

Tab. 5: *ln(BigMacPrice)* and Minimum Wages (MW), 2016-20

	(1)	(2)	(3)	(4)
ln(MW)	**0.138**	**0.124**	**0.131**	**0.127**
	(0.031)	(0.042)	(0.041)	(0.052)
Affected by MW Increase			-0.042	-0.043
			(0.027)	(0.033)
ln(MW)*Affected			0.017	0.017
			(0.011)	(0.014)
Observation Level	Restaurants	Counties	Restaurants	Counties
Fixed Effects		Restaurant/County and Year		
N	52,281	2,659	40,739	2,273

Descriptive Statistics

Tab. A.1: McDonald's Survey Descriptive Characteristics

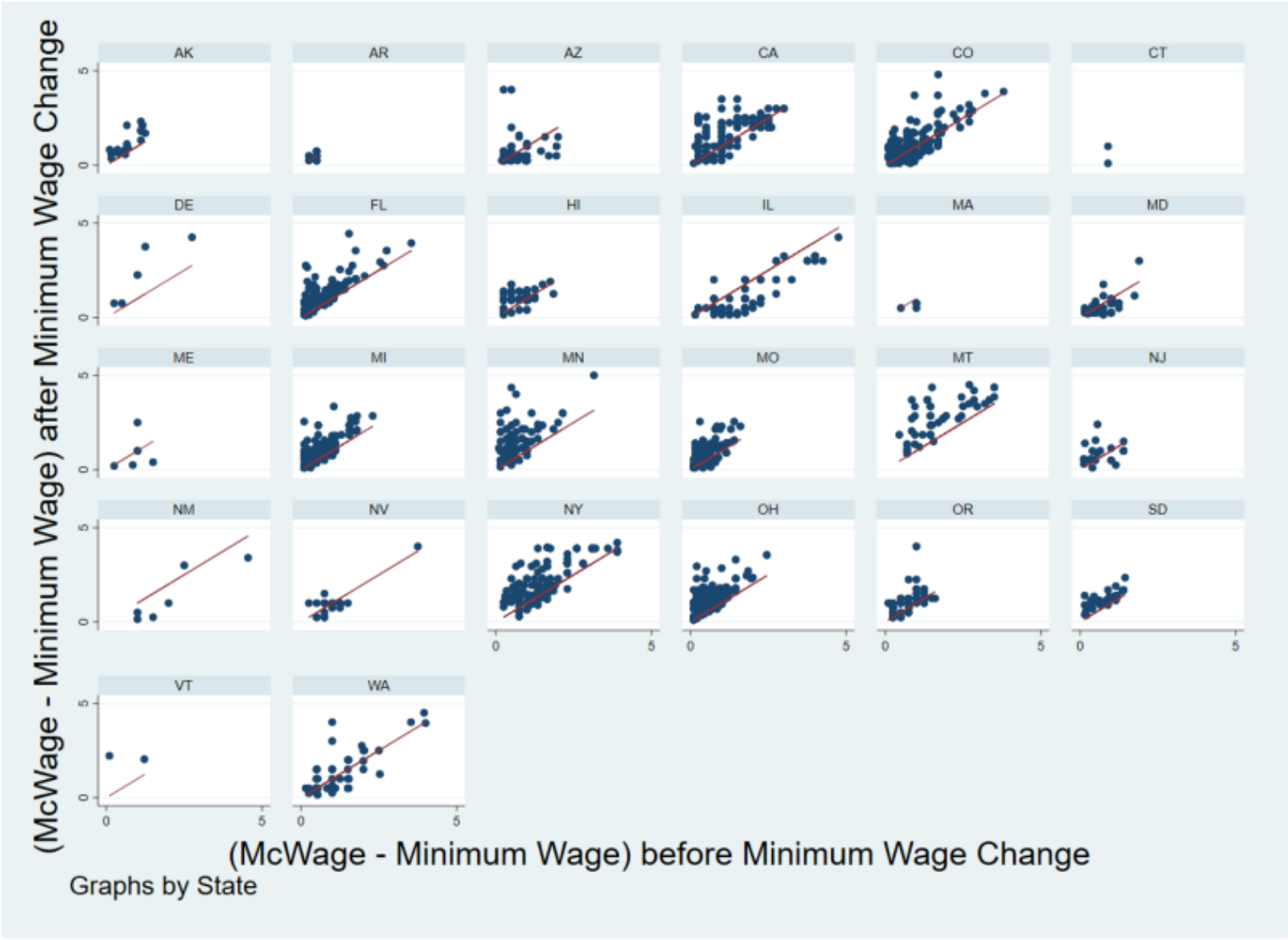
	2016	2017	2018	2019	2020
ln(BigMacPrice)	1.489	1.520	1.552	1.579	1.576
	(0.099)	(0.106)	(0.102)	(0.103)	(0.106)
ln(McWage)	2.136	2.179	2.216	2..256	2.298
	(0.119)	(0.148)	(0.167)	(0.187)	(0.201)
ln(Effective Minimum Wage)	2.085	2.121	2.143	2.171	2.201
	(0.114)	(0.149)	(0.172)	(0.197)	(0.217)
Restaurant is company owned	0.109	0.100	0.095	0.097	0.900
on highway	0.119	0.111	0.116	0.119	0.117
on parkway	0.024	0.023	0.023	0.023	0.023
free standing	0.862	0.857	0.860	0.865	0.876
has touch-screen ordering	--	0.203	0.533	0.724	0.726
Crew (not manager) answered	0.050	0.031	0.035	0.032	0.043
N	11,365	10,873	10,408	10,003	9,713

Note: Standard deviations in parentheses.

Results

- The results show that the McWage elasticity with respect to minimum wages is 0.3.
- The results also show that the price elasticity of Big Mac prices with respect to McWages is 0.1.
- The results also show that the price elasticity of Big Mac prices with respect to minimum wages is 0.03.

Graphs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(McWage - Minimum Wage) after Minimum Wage Change
(McWage - Minimum Wage) before Minimum Wage Change
Graphs by State

Conclusions

- McDonald's restaurants adjust wages in response to minimum wage hikes, with a 0.68 elasticity of McWages. Many maintain a wage "premium" above the minimum wage, reflecting spillover effects on pay norms across employers and employee turnover.
- Despite higher labor costs from minimum wage increases, McDonald's restaurants do not adopt labor-saving technology like touch-screen ordering, and there is no evidence of restaurant closures. The elasticity of Big Mac prices with respect to labor cost increases is high, indicating strong price pass-through.

Bibliography

[1] Orley Ashenfelter and Štěpán Jurajda. “Minimum wages, wages, and price pass-through: The case of McDonald’s Restaurants”. In: *Journal of Labor Economics* 40.S1 (2022), S179–S201.

[2] Doruk Cengiz et al. “The effect of minimum wages on low-wage jobs”. In: *The Quarterly Journal of Economics* 134.3 (2019), pp. 1405–1454.

[3] Christopher J Flinn. “Minimum wage effects on labor market outcomes under search, matching, and endogenous contact rates”. In: *Econometrica* 74.4 (2006), pp. 1013–1062.

[4] Alan Manning. *Monopsony in motion: Imperfect competition in labor markets*. Princeton University Press, 2013.

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[5] Brian J Phelan. “Hedonic-based labor supply substitution and the ripple effect of minimum wages”. In: *Journal of Labor Economics* 37.3 (2019), pp. 905–947.