

The Impact of Minimum Wage on Low Wage Formal Employment

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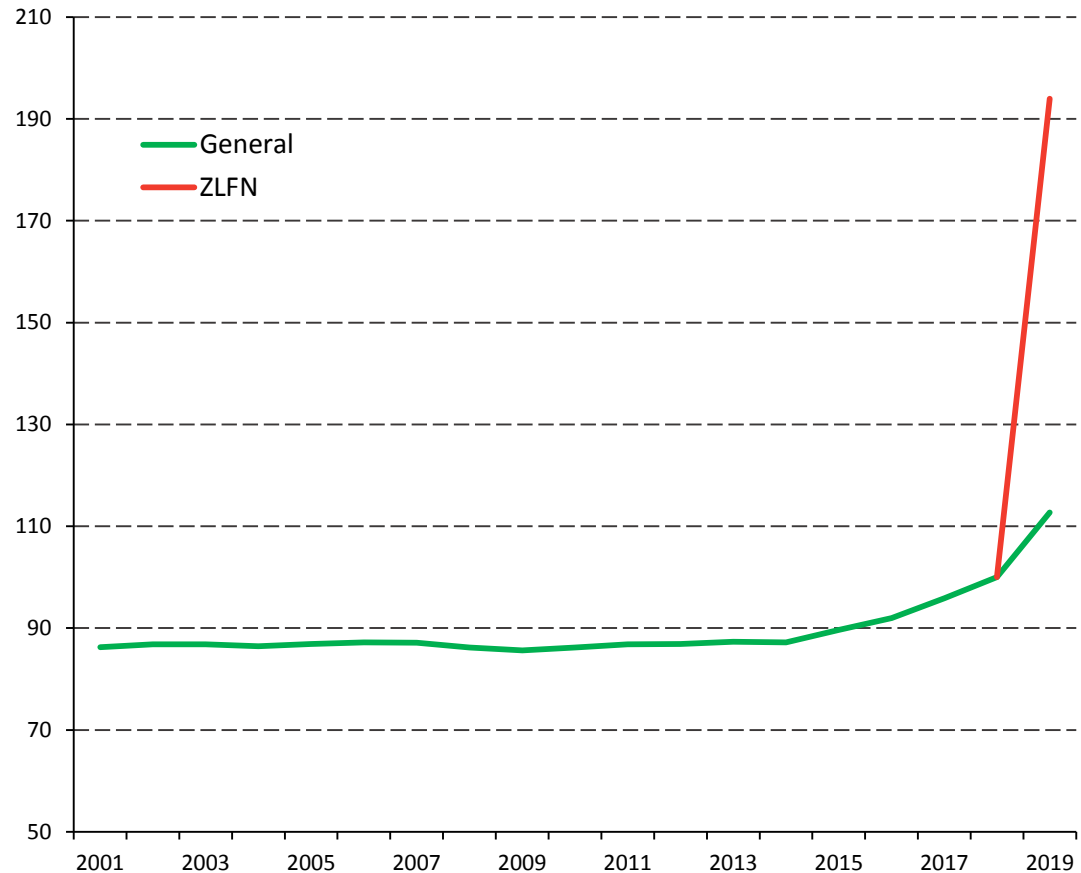
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Introduction

- In this paper, difference-in-differences design developed by Cengiz et al. (2019) to estimate impact of MW increase on formal employment in Mexico.
- Extensive and much-disputed literature on the effects of minimum wage on employment
 - Regional variation in the implementation of this policy: Allegretto et al., (2017), Neumark and Wascher (2008), Card and Krueger (2015), Stigler (1946).
 - Total employment: Cengiz et al. (2019) and Meer and West (2016)
 - México: Bell (1997), Campos, Esquivel, and Santillán (2017), Bouchot Viveros (2018).
- Findings
 - Employment is 0.6% smaller due to the MW increase, which implies a MW elasticity equal to -0.007, on the lower end relative to the ones found in the literature but still negative.

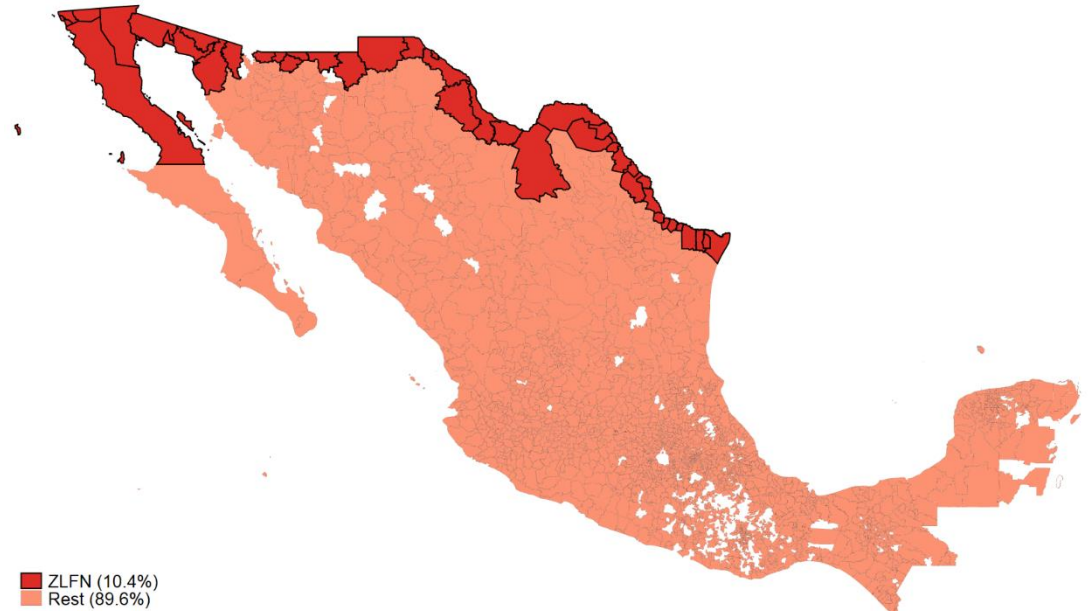
Minimum Wage in Mexico

Real Minimum Wage



Source: Conasami

Minimum Wage Regions



Data

- Data: matched employer-employee dataset from IMSS administrative records.
- Each worker is assigned to a MXN 5 wage bin at the municipal level according to their daily contribution wage (SBC)
 - $[MW, MW+5)$ $[MW+5, MW+10), \dots, [1440, \dots)$.
- Some MXN 5 bins may be sparse with very few or no workers but not due to sampling error.
- Employers might misreport wages, which may introduce attenuation bias.
- The municipal-monthly-level population was estimated by linearly interpolating the census data using the month as the running variable.

Data

Descriptive Statistics (November 2018)

	Whole Population	ZLFN	Rest
Female	0.38	0.40	0.37
Age	37.65	37.04	37.72
Commerce	0.20	0.14	0.21
Manufacturing	0.27	0.54	0.24
Personal Services	0.23	0.14	0.25
Social Services	0.11	0.06	0.11
Employer Size	20.96	26.83	20.45
Affected Workers	0.15	0.29	0.14
N	20,457,926	2,109,465	18,348,461

Methodology

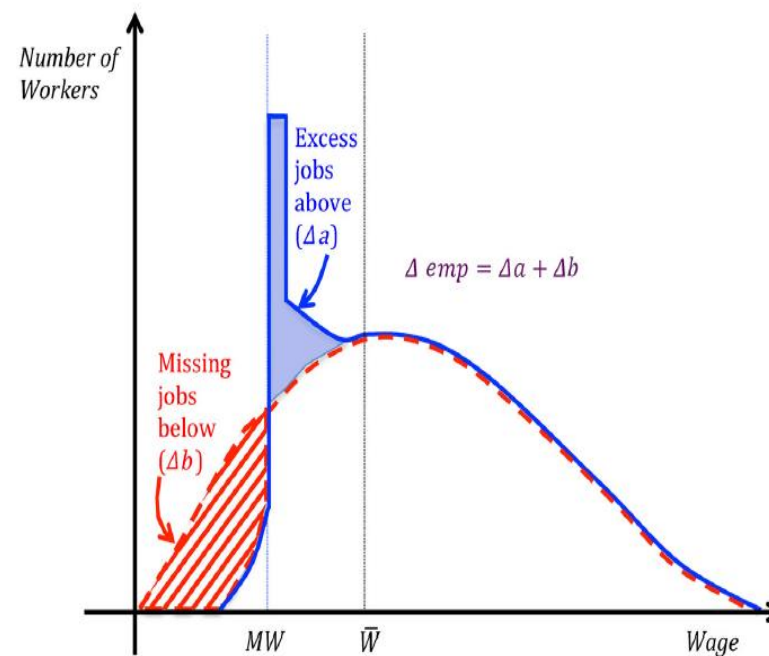


FIGURE I

The Impact of Minimum Wages on the Frequency Distribution of Wages

Source: Cengiz et al. (2019)

Methodology

- Regression:

$$\frac{E_{mjt}}{N_{mt}} = \sum_{l=-5}^4 \sum_{k=-100}^{350} \alpha_{kl} I_{mjl}^k + \text{frontera}_m + \rho_t + \varepsilon_{mjt}$$

- $I_{mjl}^k = 1$ if the minimum wage was raised l quarters from I-2019, for the MXN 5 wage bin j that fall between $k - 25$ and k MXN relative to the new MW in the ZLFN, and for m that is located in ZLFN.
- Difference in the number of jobs in the wage band k

$$\Delta e_{k,l} = \frac{\alpha_{k,l} - \alpha_{k,0}}{\left(\frac{\bar{E}}{\bar{N}_{IV\ 2018}} \right)}$$

Methodology

- Change in the number of jobs
 - Below the new minimum wage

$$\Delta b = \sum_{k=-100}^{-25} \Delta e_{k,l}$$

- Above the new minimum wage

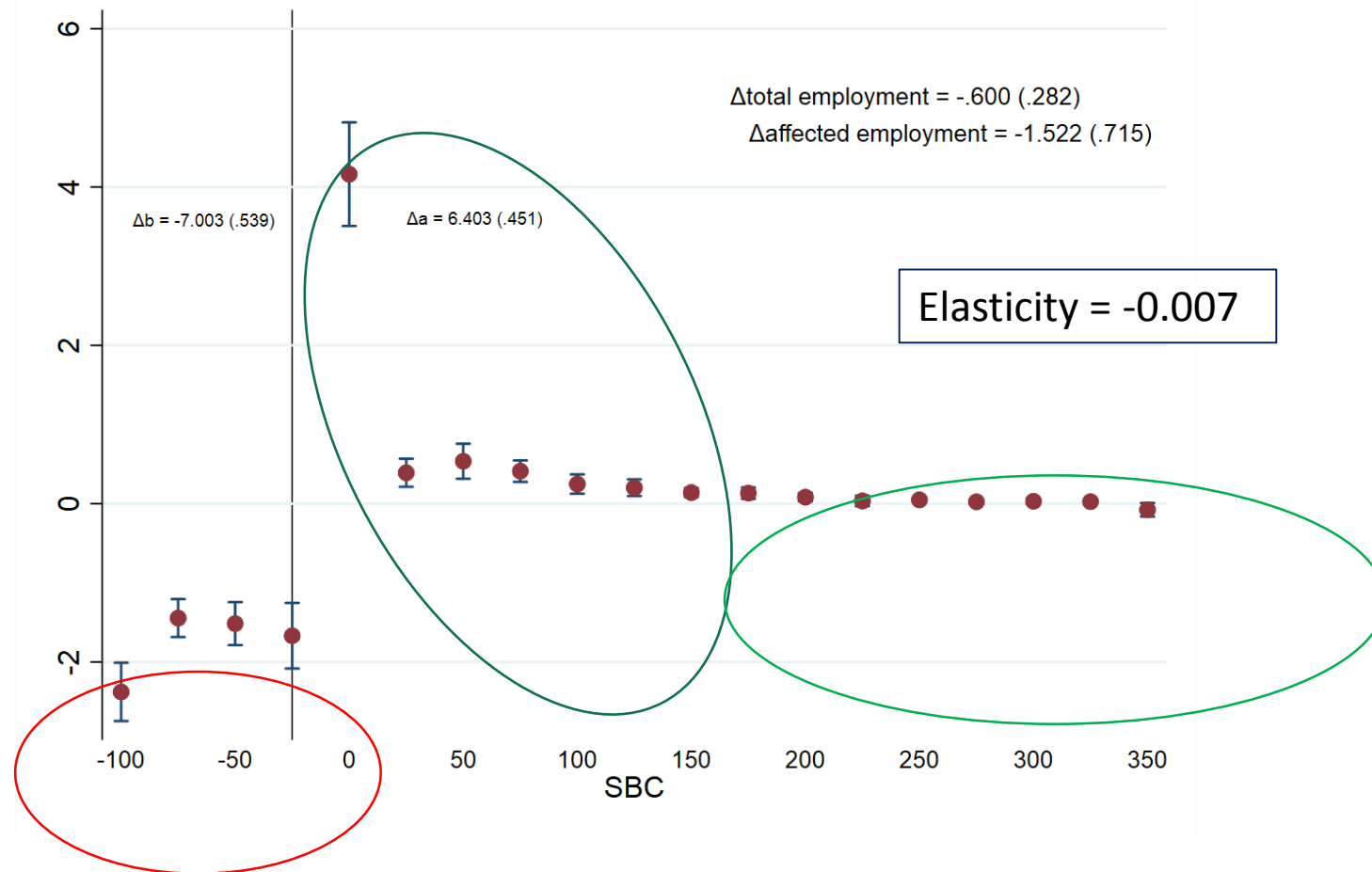
$$\Delta a = \sum_{k=0}^{350} \Delta e_{k,l}$$

- Net

$$\Delta e = \Delta a + \Delta b$$

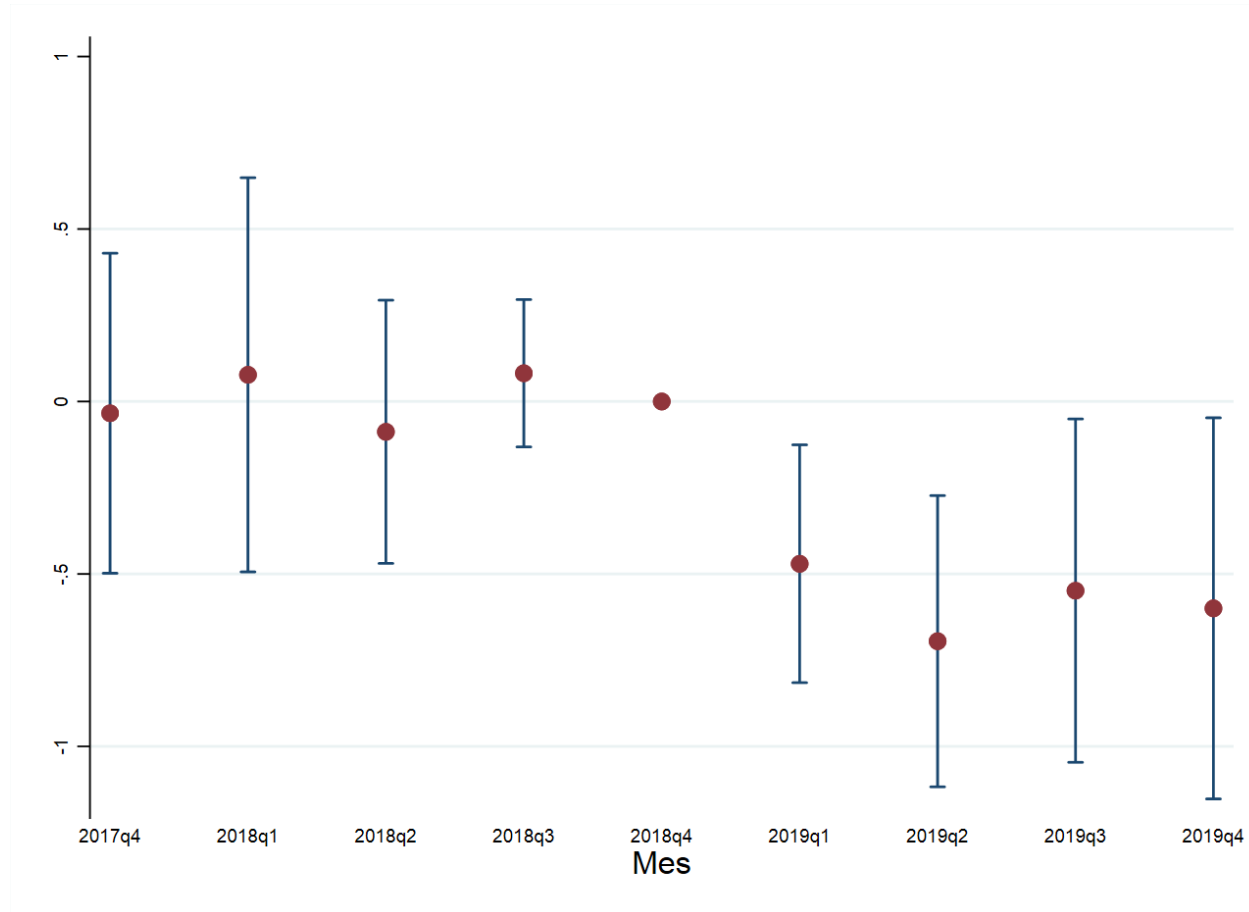
Results

Impact of Minimum Wage Increase on the Wage Distribution



Results

Impact of Minimum Wage Increase over Time



Results

Robustness Check

	(1)	(2)	(3)	(4)
Below MW	-7.003	-6.840	-7.303	-5.390
S.E.	(0.539)	(0.538)	(0.539)	(0.627)
Above M.W.	6.403	6.295	6.454	6.137
S.E.	(0.451)	(0.449)	(0.558)	(0.692)
Effect	-0.600	-0.545	-0.850	0.747
S.E	(0.282)	(0.289)	(0.457)	(0.714)
Municipality- by-Time FE	No	No	No	Yes
Wage-bin-by- municipality FE	No	No	Yes	Yes
Wage-bin-by- time FE	No	Yes	Yes	No
Municipality FE	No	Yes	No	No

Conclusions

- Formal employment effects of a regionally differentiated minimum wage increase in Mexico from the change in the frequency distribution of wages.
- Event study analysis exploiting a 100% minimum wage increase in one region of Mexico in comparison 16% increase in the rest of the country.
- Employment in the ZLFN is 0.6% smaller due to the MW increase, which implies a MW elasticity equal to -0.007 , on the lower end relative to the ones found in the literature but still negative.
- Focus on the effect on net formal employment.
- Not much about worker's margin of adjustment.