Effects of Fair Workweek Laws on Labor Market Outcomes

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1 Introduction

2 Theory

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4 Conclusion

Motivation

Many workers face scheduling uncertainty (Gallup 2025)

- unpredictability $\rightarrow$ 27%
- instability $\rightarrow$ 28%
- little or no control in work schedules $\rightarrow$ 41%

Among employees at large retail & food-service firms (Schneider & Harknett 2019)

- would like more stable and predictable schedules $\rightarrow$ 75%
- little or no input into work schedules $\rightarrow$ 80%
- required to keep schedules "open and available" to work whenever needed $\rightarrow$ 69%

Among early career hourly workers (Lambert, Fugiel, and Henly 2014)

- receive their schedule $\leq$ 1 week in advance $\rightarrow$ 41%

40% part-time workers want more hours (Golden and Kim 2020)

- higher in services like fast food

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FWW laws

States and cities have passed fair workweek (FWW) laws to promote schedule predictability and stability

- San Francisco (2014), San Jose (2017), Seattle (2017), NYC (2017), Oregon (2018), Philadelphia (2020), Chicago (2020), Los Angeles (2023)

Two common provision of these laws:

1. schedule-change penalties $\rightarrow$ firms pay employees a fee for changes made on short notice
2. access-to-hours $\rightarrow$ part-time and recently laid-off employees get right of first refusal on newly available hours

As other state and local governments consider these and similar laws, understanding their labor market effect is important

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What we do

Research question: What are the employment effects of FWW laws?

Theory: we construct a model of uncertain demand to evaluate the employment effects of these two provisions

- theoretically, the provisions have opposing effect
- so the overall effect of FWW laws with these provisions is ambiguous

Empirics: we evaluate the NYC law fr fast food provisions which has these two provisions

- use publicly available data (Quarterly Census of Employment and Wages, QCEW)
- use synthetic difference-in-differences (SDID) (Arkhangelsky, Athey, Hirshberg, Imbens, and Wager 2021)

Outline of presentation

Intuitive description of model and theoretical results

Brief description of empirical methods and findings

Conclusion, contributions

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Environment

Discrete time environment with variable and uncertain labor demand (z)

- each period has multiple shifts $\rightarrow$ $S \in \mathbb{N}$
- demand during each shift is uncertain

The firm chooses:

- a workforce size $\rightarrow$ $N \in \mathbb{R}_+$
- a mass of workers per shift $\rightarrow$ $n \in \mathbb{R}_+$

For simplicity, we abstract from wages or a production function

- firm is primarily concerned with avoiding a staffing shortfall each shift

Frictions:

- exogenous job destruction
- hiring costs

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Firm response to variable demand

- $z \rightarrow$ variable and uncertain labor demand
- $N \rightarrow$ workforce size
- $n \rightarrow$ mass of workers per shift

If $z > n$ (demand exceeds workers scheduled) for a shift:

- firm can attempt to add existing workers from their "bench"
- bench $(N - n) \rightarrow$ part of workforce but not scheduled on that shift
- workers can accept or reject this short-notice request

If firm cannot meet demand on short notice, they experience a shortfall cost

- more likely the bigger the gap is $(z - n)$
- less likely the bigger the bench is $(N - n)$

If $z < n$ (workers scheduled exceeds demand) for a shift:

- firm removes the excess workers $(n - z)$
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Firm incentives in a baseline environment

Firm cost minimization problem: choose workforce (N) and workers per shift (n) to minimize expected costs:

- shortfall costs
- per-worker effort cost (from removal)
- hiring costs (hiring necessary because of exogenous job destruction)

When choosing N:

- on one hand: a large bench ($N - n$) reduces chance of shortfall
- on other hand: frictions make maintaining a large workforce costly

When choosing n:

- on one hand: many workers per shift reduce chance of shortfall
- on other hand: many workers per shift increases expected removals

FWW environment

Provisions of FWW law (schedule change penalties split into two)

1. short-notice removal costs
   - firm pays a financial costs to the removed worker
   - exceeds the initial effort cost of removal
2. short-notice add costs
   - firm pays a financial costs to the added worker
3. access to hours
   - firms have to give existing workers all hours they want

We consider the effect of each provision one by one

Effects of removal penalty

Theorem 1: Introducing the removal penalty:

- increases the workforce (N)
- decreases workers per shift (n)
- decreases hours per worker

Removing workers becomes more expensive $\rightarrow$ firm reduces workers per shift (n)

- lowers expected removals (and associated costs)

This will increase the chance of shortfall

- firm compensates by increasing workforce (N) to increase bench ($N - n$)

Fewer hours (since $n \downarrow$) spread across more workers (since $N \uparrow$)

- so hours per worker decreases

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Effects of add penalty

Theorem 2: Introducing the add penalty:

- decreases the workforce (N)
- increases workers per shift (n)
- increases hours per worker

Effects are the exact opposite of a removal penalty $\rightarrow$ intuition is analogous

Removing workers becomes less expensive $\rightarrow$ increases workers per shift (n)

- reduces expected additions (and associated costs)

This will decrease the chance of shortfall

- firm compensates by decreasing workforce (N) *since bench is less helpful*

More hours (since $n \uparrow$) spread across fewer workers (since $N \downarrow$)

- so hours per worker increases

Effects of access to hours (ATH)

Theorem 3: Introducing ATH:

- decreases the workforce (N)
- increases workers per shift (n)
- increases hours per worker

Effects are the same as the removal penalty, but intuition is different

Firm is forced to offer all newly available hours to existing workers

- fewer hours to offer new workers
- firm will hire fewer workers $\rightarrow$ leads to a small workforce (N) over time

Having a smaller bench ($N - n$) makes staff shortfall more likely

- to compensate, firm increases workers per shift (n)

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Summary of results

Counteracting effects

- **removal penalty** $\rightarrow$ increases workforce (N), decreases workers per shift (n), and decreases hours per worker
- **add penalty and ATH** $\rightarrow$ decreases workforce (N), increases workers per shift (n), and increases hours per worker

Policy relevant question: How does the baseline environment (with no provisions) compare to the FWW environment (with all provisions)?

- because of counteracting effects, the overall effects are theoretically ambiguous

Therefore, empirics are necessary

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Overview of empirics

Goal: test the employment effects of NYC's FWW law for fast-food workers

Dataset: Quarterly Census of Employment and Wages (QCEW)

- county-level data at the 6-digit NAICS industry level
- can only test effect on employment, not hours
- consider data from 2014 Q1 to 2019 Q4 (FWW became effective 2017 Q4)

Methodology for causal analysis: synthetic difference-in-differences (SDID)

- Arkhangelsky, Athey, Hirshberg, Imbens, and Wager (2021)

Proxy for affected population is good but not perfect details

- thus, analysis offers a test of employment effects, not unbiased estimates

Synthetic difference-in-differences (SDID)

SDID combines desirable properties of

- the synthetic control method (SCM)
- difference-in-differences (DiD)

We consider changing trends in NYC fast food against changes in two types of comparison groups

- *within-industry* $\rightarrow$ fast food in other U.S. counties
- *within-location* $\rightarrow$ other industries in NYC

In total, we consider four models

1. within-industry, no minimum wage control
2. within-industry, minimum wage control
3. within location
4. pooled (within-industry and within-location together)

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Results

Variable	*Model*			
	Within-ind. (no mw cont.) (1)	Within-ind. (mw cont.) (2)	Within-location (3)	Pooled (4)
Employment	0.0063	0.0114	-0.0014	0.002
	(0.0319)	(0.0129)	(0.042)	(0.0362)
	[0.0031]	[0.0031]	[0.0028]	[0.0019]

For each model, an estimated log employment effect for the NYC fast food proxy is given with:

- standard error $\rightarrow$ in parentheses
- pre-intervention root mean squared prediction error (RMSPE) $\rightarrow$ in brackets

RMSPE $\rightarrow$ standard measure of pre-policy fit for SCM and variants (Abadie 2021)

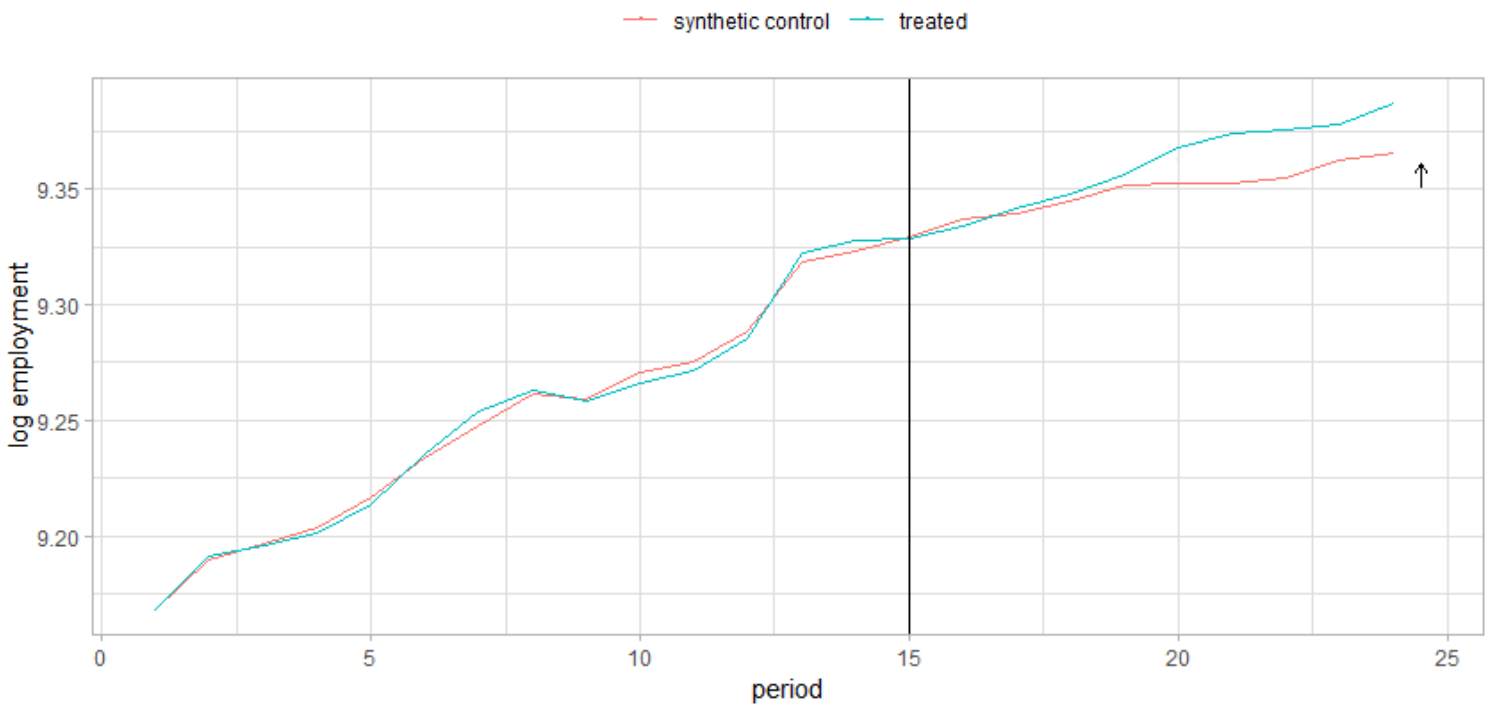
Estimates are consistently null

Visualizing employment effect

Below figure for second specification: within-industry with minimum wage control

- we consider this model to be the most trustworthy

details



Notes: The x-axis is the period (quarter) in the corresponding sample, and the black line denotes the last pre-policy period. The sample spans from 2014 Q1 to 2019 Q4, and the last pre-policy period is 2017 Q3 (i.e., 15). The y-axis is in units of log employment. The blue line is the treatment group's log employment trend, and the red is that of the synthetic control. To better see the quality of the pre-policy fit, the synthetic control is shifted to have the same pre-policy average as the treatment group (but these averages are different in general). The black arrow at the end of the post-policy period denotes the measured effect of the law on employment. It points from the post-policy average of the synthetic control to that of the treatment group.

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Summary of findings

Theory: common provisions of FWW laws have opposing effects

- removal penalty $\rightarrow$ increases workforce (N), decreases workers per shift (n), and decreases hours per worker
- add penalty and ATH $\rightarrow$ decreases workforce (N), increases workers per shift (n), and increases hours per worker

Counteracting effects make overall effects theoretically ambiguous

- empirics are necessary

Empirics: use QCEW & SDID to test employment effects on NYC fast food

- null estimates across four models

Additional analysis suggests: details

- specific provisions are unlikely to have large effects that cancel
- overall null effect is robust
- lack of enforcement may be relevant

Contributes meaningfully to the relevant literature details future work

Thank you for listening!

5 Supplementary Slides

Quality of proxy for affected population

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To measure workers affected by the regulation, we consider limited-service restaurants (NAICS code 722513) in the five counties that constitute NYC

722513 includes all NYC workers affected by the regulation, but some unaffected workers as well:

- supervisory worker
- workers at non-chain restaurants (i.e., less than 300 employees nationally)

Estimates from Wolfe and Cooper (2018) suggest at least 10% of 722513 in NYC not covered by FWW

- relevant table for our analysis: here

Proxy quality

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county	estimate of covered workers	722513 employment
Bronx	6,260	7,081
Kings	11,684	13,218
New York	28,780	32,556
Queens	13,396	15,154
Richmond	2,289	2,589
Total	**62,409**	**70,598**

Table: Comparing 722513 employment with an estimate of covered workers

Notes: In our analysis, we use the NYC *limited-service restaurant* industry (NAICS code 722513) from the QCEW to proxy for the affected population of workers. This table compares an estimate of covered workers in 722513 to actual 722513 employment in 2016 by NYC county. The third column gives the average quarterly employment in 2016 data, and the second column estimates the number of workers that would be covered under the provision (if it had been effective in 2016). The second column is simply obtained by multiplying the third column by the non-supervisory share of 722513 employment in 2016 (88.4%); this share is taken from wolfe2018fair, who uses a national estimate.

Minimum wage control

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Variable	*Model*			
	Within-ind. (no mw cont.) (1)	Within-ind. (mw cont.) (2)	Within-location (3)	Pooled (4)
Employment	0.0063	0.0114	-0.0014	0.002
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	[0.0031]	[0.0031]	[0.0028]	[0.0019]

The estimate with the minimum wage control is slightly higher than the other three

This is what we would expect given:

1. the NYC fast-food minimum wage increased during the analysis period
2. minimum wage increases have been linked to lower restaurant employment in some contexts (e.g., Karabarbounis, Lise, and Nath 2022)

Additional analysis

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Assess potential role of different policy provisions within FWW by testing:

- Oregon's FWW law $\rightarrow$ similar to NYC law but does not have an ATH provision
- NYC's FWW law on *retail* workers $\rightarrow$ does not include ATH or schedule change penalties

Null estimates suggest none of the provisions is likely to have a large effect

- scenario where sizable countervailing effects of provisions cancel out is unlikely

Test role of time-weighting by using two alternative schemes

- SDID weights pre-intervention periods in addition to control units

Gauge possible anticipatory effects by starting "treatment period" in:

- 2017 Q2 $\rightarrow$ when law was passed and signed
- 2016 Q3 $\rightarrow$ when Mayor de Blasio announced his intentions
- (as opposed to 2017 Q4 when law went into effect)

These results are consistent with null effects

- TWFE estimates (from a separate test) are unreliable because of positive pretrends

Contributions

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To our knowledge, our paper is the first to theoretically model FWW provisions and their effects

- McCrate, Lambert, and Henly (2019) is similar $\rightarrow$ model relationship between schedule instability and underemployment for hourly employees

Adds to a small literature on the labor market effects of FWW laws

- Choper, Schneider, and Harknett (2022)
- Yelowitz (2022)
- Kwon and Raman (2023)
- Pickens and Sojourner (*ILR Review* 2025)

Also relevant to the just-in-time scheduling literature

- Luce and Fujita (2012); Kamalahmadi, Yu, and Zhou (2021); Lambert and Haley (2021); Harknett, Schneider, and Luhr (2022)

Avenues for future work

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Rigorous exploitation of different provisions across jurisdictions and industries

- lead to a more full understanding of different provisions

Testing how different demographic groups are affected

Could do more with better data

- individual- or shift-level data could give a quality measurement of employment and other effects