The role of state-level wage and hour protections under weakened federal enforcement

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Abstract

This paper investigates the impact of the Supreme Court decision in *EPIC Systems v. Lewis* on the incidence of wage theft, specifically focusing on overtime violations. The 2018 ruling mandated individual arbitration for wage and hour disputes, potentially undermining collective legal recourse at the federal level and thus deterring employees from reporting violations. Utilizing data from the Current Population Survey's Outgoing Rotation Group/Earner Study, we examine differential changes in overtime work and apparent underpayment for overtime across states with varying strengths of administrative enforcement mechanisms. By imputing weekly earnings based on reported hours and wages, and identifying discrepancies indicative of underpayment, we identify instances of overtime violations. Our analysis, employing two-way fixed effects and event study methodologies, finds no significant differential impact of the *EPIC* decision between strong and weak enforcement states. Robustness checks excluding states without codified overtime statutes confirm these findings. This study contributes to the wage theft literature by developing a novel measure of overtime underpayment and leveraging unique state-level enforcement variation.

1 Introduction

Administrative enforcement of wage and hour laws is an important means for wage-earning employees to seek recourse for wage theft, including subminimum wage payment, underpayment for overtime work, or other forms of underpayment for wages earned. In *Epic Systems*

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v. Lewis, decided on May 21, 2018, the United States Supreme Court held that the Federal Arbitration Act requires courts to uphold and enforce agreements between employers and employees to engage in individual arbitration of wage and hour disputes. This holding prohibits class action proceedings for alleged Federal Labor Standards Act (FLSA) violations by employees subject to such agreements. One potential concern is that this holding may have a chilling effect on the reporting of wage and hour violations, rendering state and federal enforcement processes ineffective by eliminating employees' access to administrative enforcement. Indeed, we observe a large drop in reports of wage and hour law violations to the National Labor Relations Board Wage and Hour Division (see Figure 3). If such decreases in federal-level legal enforcement reduce employers' incentives to comply with the Fair Labor Standards Act and other wage and hour regulations, the decision may lead to increases in the prevalence of subminimum wage payments, overtime violations, or other forms of wage theft.

In certain states, another avenue of resolution for wage and hour disputes exists in the form of state-level administrative agencies. While most states have an agency that administers and enforces wage and hour laws, there is considerable heterogeneity in the scope and functions across state-level agencies regarding dispute resolution. We have identified a key enforcement capability of state-level agencies; upon determining that an employee has been aggrieved in a wage theft dispute, some state-level agencies have the authority to order the employer to pay back wages (issue remedies).[1][2] Issuing remedies is a strong enforcement capability because low wage earners may struggle to justify costly private right of action (including class action lawsuits). Filing a complaint with an administrative agency that can

[1]We use "order the employer to pay back wages," "order the employer to provide back pay," and "issue remedies" interchangeably.

[2]Using the Wage and Hour Laws: A State-by-State Survey, we identified five different administrative functions of state-level wage and hour law enforcement agencies in addressing wage theft – investigating firms for possible wage and hour law violations of their own initiative, handling complaints of wage and hour law violations (including conducting investigations, deposing witnesses, holding administrative hearings, and determining whether the employee has been aggrieved), issuing penalties, ordering employers to give back pay, and the power to litigate the case on behalf of the aggrieved employee. We then determined whether each state's agency had each of the five functions. See Supplemental Section on Treatment Status.

issue remedies is a low-cost and low-risk alternative, and, therefore, an inducement to seek resolution for a perceived incidence of wage theft. As such, the cost of violating wage and hour laws is higher for employers in these states. Following the "chilling effect" of the *EPIC* decision (demonstrated by Figure 3), then, we may expect a smaller increase in overtime violations in the strong enforcement states relative to the weak enforcement states.

In this paper, we present a descriptive analysis to explore whether the decision in *Epic Systems v. Lewis* caused differential changes in overtime work and apparent overtime violations between strong and weak enforcement states. We employ data from the Outgoing Rotation Group/Earner Study (ORG/ES) of the Current Population Survey for the period of May 2016-December 2019 and exploit the discrepancy between two measures of earnings, as well as number of hours worked, in the ORG/ES to capture instances of apparent underpayment for overtime work. Specifically, we impute net weekly earnings for each wage-earner by multiplying their hours worked in the previous week and their hourly wage; if an individual works more than 40 hours per week, we multiply their hourly wage by forty, and then multiply hours worked in excess of 40 by 1.5 times their hourly wage. Once we obtain this measure of weekly earnings, we compare it with the weekly earnings (from a typical week) reported by the respondent in the ORG/ES. If their reported weekly earnings is an "underpayment" of more than 10%, we classify this as an instance of apparent underpayment for overtime work, or "overtime violation". We define "treatment" as having legal recourse in the form of administrative enforcement. As such, in our analysis, treatment states are those under strong enforcement regimes, and comparison states are those under weak enforcement regimes. Using both two-way fixed effects and event study methodologies, we do not find a differential change in overtime work or overtime violations following the *EPIC* decision by potency of state-level administrative enforcement.

A few states do not have a codified overtime statute enshrined in their wage and hour law code, despite having an strong administrative enforcement regime. As a robustness check, we remove these states from the sample and repeat our empirical analyses. Still, we do not

find a differential effect of the *EPIC* decision on either overtime work or overtime violations.

Much of the economics literature on wage theft in the United States is focused on sub-minimum wage payment (Neumark and Wascher (1992)). It is easy to measure sub-minimum wage payment in survey data. Moreover, the changes in minimum wage offer plausible policy variation. Our contribution in this paper is twofold; first, we devise a novel measure to measure underpayment for overtime work using Current Population Survey data; and second, we exploit variation in administrative enforcement capabilities across states using novel, hand-collected information on state-level wage and hour laws.

2 Background

2.1 Administrative Enforcement of Wage and Hour Laws

Administrative enforcement of wage and hour laws varies greatly from one state to another. Four states (Alabama, Florida, Louisiana, and Mississippi) do not have a wage and hour agency that handles complaints against employers. Among the state-level agencies that handle complaints, the procedure is roughly as follows: the agencies are authorized and empowered to investigate the complaints.[3] These investigations broadly include actions such as entering the premises of a company (announced or otherwise, depending on the power of each specific agency), seizing documents and other items, issuing subpoenas, deposing witnesses, and holding administrative hearings. After investigating, agencies then determine whether a violation of wage and hour laws has occurred.

Upon adjudicating in favor of the employee, roughly half of state-level agencies have the power to issue a legally binding order to an employer to pay back wages. These "strong enforcers" constitute the treated group in our analysis, because we define treatment as having

[3]While some states investigate firms for instances of violations proactively, these are a subset of the states whose investigations are initiated by complaints of violations.

administrative enforcement as an avenue of legal recourse. [4][5] In the period before *EPIC*, employees in the "weak enforcer" states had access to administrative enforcement in the form of the National Labor Relations Board. Post-*EPIC*, these employees lost access to any administrative enforcement. Because these states go from receiving treatment (administrative enforcement) to not receiving treatment, "weak enforcers" constitute the comparison group in our analysis. In Figure 2 we include a map distinguishing the strong enforcers (treated group) from the weak enforcers (comparison group).[6][7]

2.2 Conceptual Framework

A state with a strong administrative enforcement regime, as we define it, offers employees a channel of remedy for an overtime violation that is low cost to pursue. In states with weak administrative enforcement, employees relied on National Labor Relations Board (NLRB) Wage and Hour Division, at the federal level, to handle administrative enforcement (or pursued collective action suits under the FLSA) for remedy. In the wake of the EPIC decision, not only was private right of action curtailed; there is evidence of a chilling effect causing NLRB complaints to fall, as well (see Figure 3). Without private right of action or the confidence to seek administrative enforcement at the federal level, employees in states with weak administrative enforcement find their options for remedy severely limited by the *EPIC* decision. In such states, employers' cost of engaging in overtime violations has decreased relative to states with strong enforcement.

Thus, while we expect overtime violations to increase overall as a result of the *EPIC* decision, we hypothesize that states with strong administrative enforcement regimes (treat-

[4]We require a state to not only be able to issue such an order, but to also be able to enforce this order in court.
Some states, in addition to ordering payment of back wages, may also order the employer to pay damages to the aggrieved employee. We do not require ordering payment of damages to be considered a strong enforcer in our analysis.

[5]We call states with such strong enforcement capabilities "strong enforcers" or "enforcers" moving forward.

[6]We also use the term "non-enforcers" to describe the weak enforcers (comparison group).

[7]In Section 8.1, we include a full description of the enforcement capabilities of each state-level wage and

ment group) will see a smaller increase in overtime violations relative to states with weak administrative enforcement regimes (comparison group).

Moreover, it is possible that an employer may respond to a lower cost of engaging in overtime violations by asking their employees to work more overtime hours. In strong enforcement states, we expect pre-*EPIC* overtime hours to be lower than weak enforcement states, due to greater cost of potential overtime violations. We hypothesize that, following the decision, employees in states with weak administrative enforcement work more overtime compared to those in states with strong enforcement.

In the next section, we discuss the data used in our analysis, as well as our methodology for measuring overtime violations.

3 Data

We use Current Population Survey (CPS) data maintained by the Integrated Public Use Microdata Series (Flood et al. (2023)). Individual respondents in each household are surveyed over four consecutive calendar months per year for two consecutive years. Individuals are surveyed in the same calendar months in both years; that is, they are surveyed in months 1-4, not surveyed in months 5-12, then surveyed again in months 13-16.[8]

In each survey month, the CPS gathers data on individuals' demographics, labor market activity, and education, among other characteristics. To identify potential underpayment for overtime work, we use the Outgoing Rotation Group/Earner Study (ORG/ES), administered in months four and eight that an individual is surveyed. For those who are age 15+ and employed as a wage or salaried worker, this module includes questions on labor market aspects such as pay frequency, hourly wage, weekly earnings, and weekly hours worked. Using discrepancies between these reports of income, we construct a measure of underpayment for overtime work. Our method is outlined in the next section.

hour administrative enforcement agency.

[8]For example, if an individual is surveyed in December 2013, January 2014, February 2014, and March

3.1 Measuring Underpayment for Overtime Work

In the ORG/ES module, each person who is employed and earns an hourly wage reports the following: (1) hours worked last week in their main job,[9] (2) their hourly wage rate, and (3) their usual weekly earnings. We compute the net pay each individual should have received in the previous week by multiplying the hours worked in the previous week by their hourly wage. If the individual worked overtime – that is, over 40 hours in the previous week – we multiply each hour in excess of 40 by time-and-a-half, or 1.5 times their hourly wage, and then add the overtime earnings to the product of 40 hours times their hourly wage. That is,

$$ImputedWeekEarn_{ist} = (40 * HourWage_{ist}) + ((WorkHours_{ist} - 40) * HourWage_{ist} * 1.5).$$

We then compare this imputed measure of weekly earnings that we construct against the reported usual weekly earnings measure reported by each individual in the CPS ORG/ES, as follows:

$$PercentDifference_{ist} = \frac{ImputedWeekEarn_{ist} - WeekEarn_{ist}}{WeekEarn_{ist}} \times 100$$

In the above equation, WeekEarn represents weekly earnings reported by an individual in the CPS. An individual is underpaid for their overtime work if they reported having earned at least ten percent less than the constructed weekly earnings measure; we define this apparent "underpayment" as an Overtime Violation. This is one of the main outcome variables in our analysis (along with Overtime Work).

We include a histogram of the distribution of $PercentDifference_{ist}$ in Figure 2 for all instances of overtime violations.

2014, they will be surveyed again in December 2014, January 2015, February 2015, and March 2015.

[9] ORG/ES includes information on secondary jobs, as well. However, since we have hourly wage rates for the first job, alone, we do not consider second jobs.

3.2 Sample and Sample Restrictions

Our sample consists of prime-age workers, 15-55 years old. As noted above, our measure of underpayment for overtime work is only relevant for those paid by the hour, so we include only hourly wage-earning employees in the sample. Due to the COVID-19 pandemic's profound effect on the U.S. labor market, it is difficult to treat pre-pandemic and post-pandemic work, especially with respect to overtime work and pay, as though they are the same. For this reason, we drop all observations post-2020 and conduct a pre-pandemic analysis.

The Affordable Care Act's employer mandate, which requires employers to provide health insurance, took effect in 2016. We anticipate varying responses from employers in states with strong versus weak enforcement regarding employee work hours. Our analysis starts in May 2016, once employer reactions to the mandate have stabilized. Our analysis ends in December 2019, just before the COVID-19 pandemic, in order to conduct a pre-pandemic analysis.

In addition, we consider only workers whose occupation and industry of employment are covered by federal overtime laws. Certain occupations and industries are explicitly exempt from overtime compensation laws, and others are exempt due to the nature of the pay structure prevalent within that occupation. For example, many tipped workers such as restaurant servers and hotel cleaning staff, as well as many fire protection employees employed in the National Parks Service, whose schedules require unique flexibility are mostly exempt from overtime protections. We have included a full list of exempt occupations and industries in Table 1.

4 Methodology

We hypothesize that, relative to employers in states with strong enforcement regimes, employers in states with weak administrative enforcement will respond to the Epic v. Lewis decision by (1) increasing overtime hours of current employees greater rates while (2) simultaneously underpaying them at greater rates. We make use of a basic two-way fixed effects

methodology, modeling the outcome y_{ist} (overtime work and overtime violations) for person i, month-year t, and state s, as follows:

$$y_{ist} = \alpha_s + \lambda_t + \beta Post_t \times StrongEnforcer_s + \epsilon_{ist}$$

$Post_t$ is defined to indicate whether a month-year occurs after the EPIC v. Lewis decision date of May 2018. $StrongEnforcer_s$ indicates whether a state has a strong administrative enforcement agency. To control for time-invariant factors specific to each state, we include state fixed effects, α_s. To control for factors specific each month-year, we include a vector of year-month fixed effects, λ_t. Finally, we use $\epsilon_i st$ to represent the error term.

β represents the difference between the strong enforcers' and weak enforcers' change in the outcome variables (overtime work and overtime violations) following the EPIC decision. Because we expect both outcomes to to increase more in the control group states than in the treatment states, we expect this coefficient to be negative in both specifications. We discuss estimates of β in the next section.

We then expand the difference-in-differences specification to a richer event-study, where we nonparametrically model y_{ist} as a function of each event-period relative to the EPIC v. Lewis decision month-year. Specifically:

$$y_{ist} = \alpha_s + \lambda_t + \sum_{j=-21}^{18} \tau_j E_{st}^j + \epsilon_{ist}$$

E_{st}^j are a set of dummy variables indicating that a month-year is j periods away from the EPIC decision in May 2018, and the τ_j coefficients represent the change in overtime work or overtime violations in each time period. In the next section, we discuss our plot of the τ_j coefficients.

5 Results

In Table 2, we present the results of our two-way fixed effects specifications with state and month fixed effects. Neither overtime work nor apparent overtime violations change significantly more between states with strong enforcement regimes and states with weak enforcement regimes. We find that the growth in the share of workers who worked overtime is 0.478 percentage points more negative in strong enforcement states following the *EPIC* decision, with a 95 percent confidence interval of (-0.014,0.004). By comparison to the pre-*EPIC* average rate of overtime work, 6.25 percent, our point estimate represents a modest 8 percent decrease. The lower bound of the confidence interval represents a 22.4 percent decrease relative to the pre-*EPIC* average, and the upper bound represents a 6.4 percent increase. The interval contains zero.

We also find that rates of apparent overtime violations have grown by an additional 0.216 percentage points in the strong enforcement states relative to weak enforcement states, which represents a 1.7 percent increase relative to the average overtime violation rate of 11.9 percent in the pre-*EPIC* period. The confidence interval suggests that, with 95 percent confidence, the true effect is no more negative than -0.009 percentage points (representing a 7.5 percent decrease compared to the pre-*EPIC* period overtime violation rate) and no more positive than 0.013 percentage points (a 10.9 percent increase).

While we do not find statistically significant effects, the direction of the overtime work result is consistent with our hypothesis – incidences of overtime work appear to have increased in states with weak administrative enforcement relative to states with strong enforcement regimes. Perhaps this result can help explain the positive direction of the overtime violations result; if employers under weak administrative regimes are increasing their employees' overtime work hours, it is possible that the incidences of underpayment for overtime work have increased, while each underpayment amount has decreased. In this case, perhaps our measure of overtime violations does not capture the true increase in overtime violations.

Figure 4 shows event plots of the above event study specification. Reassuringly, there

appear to be no differential pre-trends in either outcome between weak and strong enforcement states. Both plots show no effect of the EPIC case on the evolution of the difference in outcomes between strong and weak administrative enforcers.

6 Robustness

Four states (Delaware, Idaho, Kansas, and Minnesota) have strong enforcement regimes, but do not have overtime pay protections enshrined in their wage and hour law. Essentially, they do not have an overtime statute to strongly enforce. As a robustness check, we drop observations in those four states from our two way fixed effects and event study analyses.

The results from the regression are presented in Table 3, and the results from the event study are presented in Figure 5. There is little change in the results from either analysis.

7 Conclusion

The policy environment of wage and hour laws, including enforcement, is complex. In our paper, we attempt to codify one aspect of administrative enforcement and understand the extent of its effect on employers' willingness to engage in overtime violations and other forms of wage theft. Perhaps other dimensions of administrative enforcement play a greater role in an employer's tendency to withhold overtime pay.

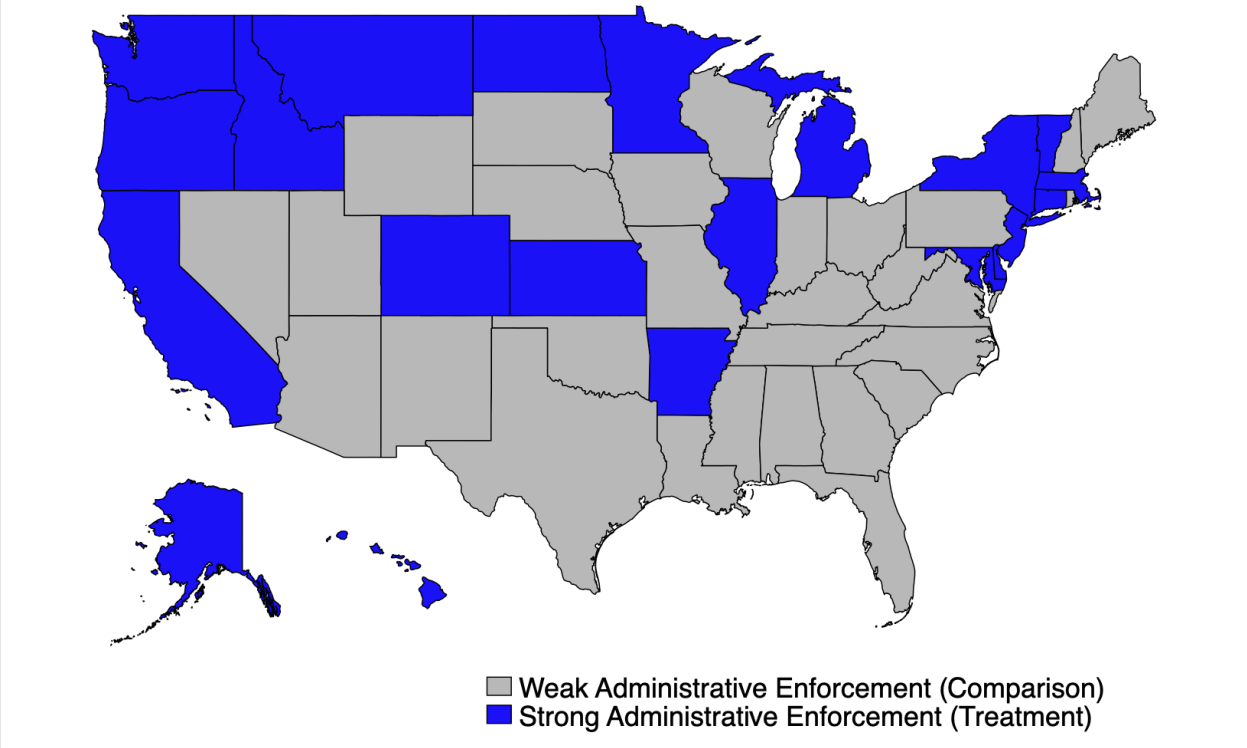
Moreover, employer response to fewer complaints may vary, as well. Employers may engage in other forms of wage theft, including misclassification of employees. This allows employers to evade paying benefits, overtime, and certain taxes, thereby reducing labor costs. As a result, workers may be denied legal protections and compensation they are entitled to under employment laws. It is possible that, following the decision in *EPIC*, employers engage in misclassification, and the underpayment is unobserved in our analysis.

Lastly, it is possible that state-level administrative enforcement mechanisms have been rendered ineffective following the *Epic v. Lewis* decision, particularly in the face of the sharp

decline in reporting of violations after the decision (see Figure 3). If state enforcement, federal enforcement, and private lawsuits are complements rather than substitutes, state enforcement regimes may not be sufficient to fill any gaps left by reduced access to other remedies.

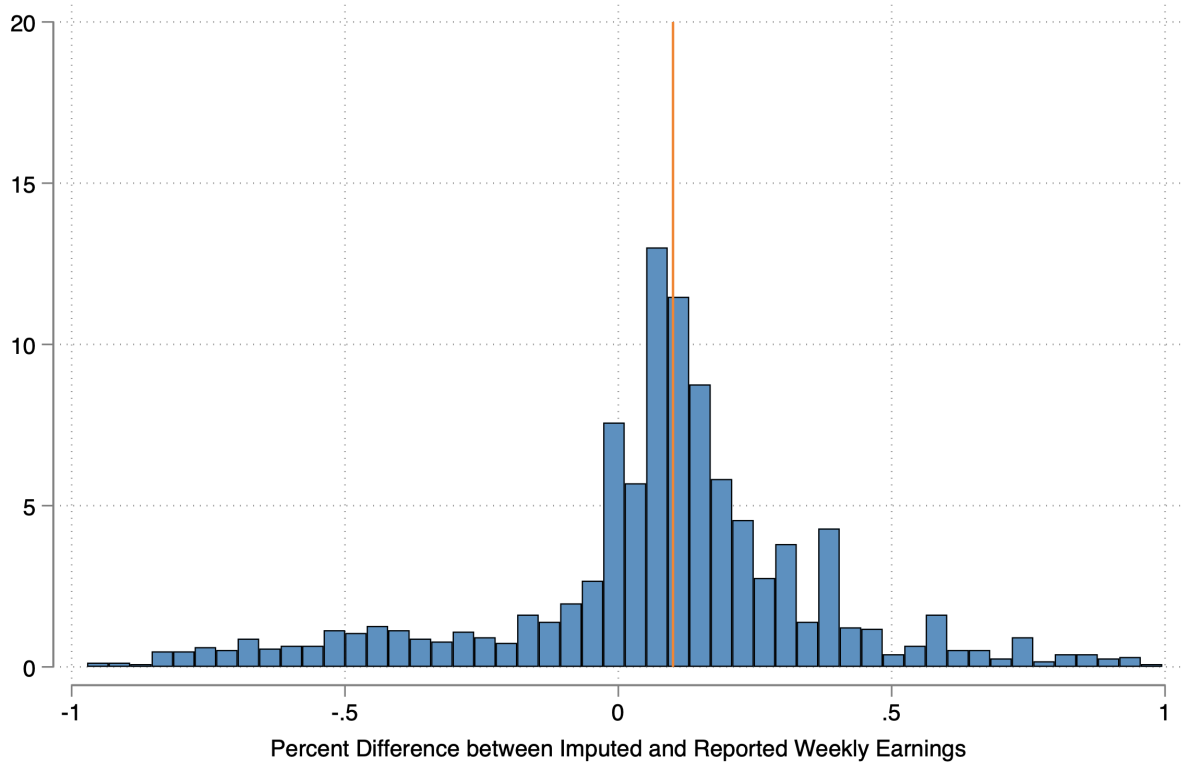
8 Figures and Tables

Figure 1: State Enforcement Status Map



Source: Wage and Hour Laws: A State-by-State Survey (2010)

Figure 2: Percent Difference between CPS WeekEarn and Imputed WeekEarn



Source: Current Population Survey, Outgoing Rotation Group/Earner Study 2016-2019

This histogram illustrates the distribution of the percent difference between imputed weekly earnings and reported weekly earnings in the CPS data. The construction of the percent difference is discussed in Section 3.1.

To obtain this distribution, we include only instances of Overtime Work – that is, when an individual reports working more than 40 hours in the previous week. We also truncate the distribution to only include percent differences between -100% and 100% (labeled as -1 and 1 in this graph), in order to better illustrate the shape of the distribution, as outliers beyond this range can obscure the main patterns.

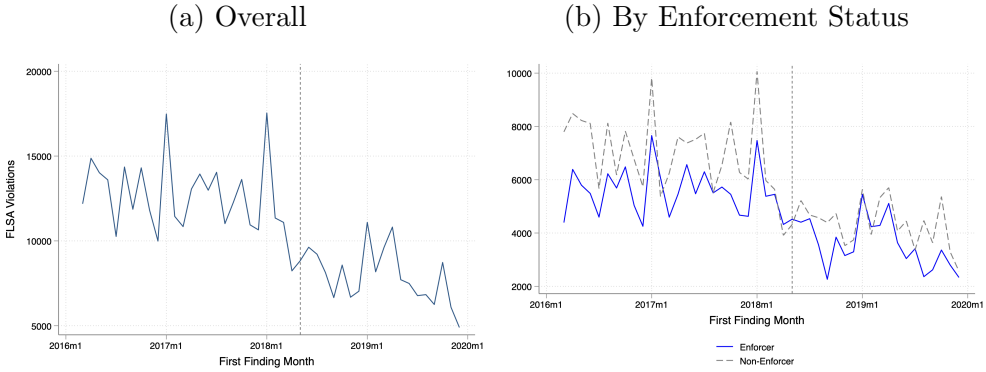
The orange line, drawn where the percent difference is 10% (labeled 0.1), represents the threshold for the overtime violations variable: all instances where the percent difference between imputed weekly earnings and reported weekly earnings are 10% or more are classified as an instance of overtime violation in our analysis.

Table 1: List of Excluded Occupations and Industries

Occupation	Industry	Sector	Exclusion Rationale
Buyers and purchasing agents, farm prod	All	All	Livestock auction workers, Buyers of agricultural products, and Farm implement salespeople are exempt from overtime work FLSA protections
Detectives and criminal investigators	All	Federal government employee	Federal Criminal investigators are exempt from overtime work FLSA protections
Waiters and waitresses	All	All	This occupation is comprised of workers who are commissioned sales employees. See note below.
Maids and housekeeping cleaners	All	All	This occupation is comprised of workers who are commissioned sales employees. See note below.
Baggage porters, bellhops, and concierge	All	All	This occupation is comprised of workers who are commissioned sales employees. See note below.
Ushers, lobby attendants, and ticket takers	Motion pictures and video industries	All	Motion picture theater employees are exempt from overtime work FLSA protections
Childcare workers	Individual and family services, Private households	All	Babysitters on a casual basis and Domestic employees who live-in are exempt from overtime work FLSA protections
Personal care aides	Private households	All	Companions for the elderly and Domestic employees who live-in are exempt from overtime work FLSA protections
Personal care and service workers, all	Private households	All	Companions for the elderly and Domestic employees who live-in are exempt from overtime work FLSA protections
Switchboard operators, including answer	All	All	Switchboard operators are exempt from overtime work FLSA protections
Fishers and related fishing workers	All	All	Fishing occupations are exempt from overtime work FLSA protections
Elevator installers and repairers	All	All	Country elevator workers (rural) are exempt from overtime work FLSA protections
Aircraft pilots and flight engineers	Air Transportation	Private, for profit	Airline Employees are exempt from overtime work FLSA protections
Flight attendants	Air Transportation	Private, for profit	Airline Employees are exempt from overtime work FLSA protections
Taxi drivers and chauffeurs	All	All	Taxicab drivers are exempt from overtime work FLSA protections
Locomotive engineers and operators	Rail Transportation	All	Railroad employees are exempt from overtime work FLSA protections
Railroad brake, signal, and switch oper	Rail Transportation	All	Railroad employees are exempt from overtime work FLSA protections
Railroad conductors and yardmasters	Rail Transportation	All	Railroad employees are exempt from overtime work FLSA protections
Subway, streetcar, and other rail trans	Rail Transportation	All	Railroad employees are exempt from overtime work FLSA protections
Sailors and marine oilers	All	All	Seamen on American vessels and Seamen on other than American vessels are exempt from overtime work FLSA protections
Ship and boat captains and operators	All	All	Seamen on American vessels and Seamen on other than American vessels are exempt from overtime work FLSA protections

Note: The above occupations are excluded from our analysis; we have provided information as to of our decision to exclude the occupation from our analysis.
Per Department of Labor rules, Commissioned Sales Employees are exempt from overtime FLSA protections if the amount of their commission is at least half of their total earnings AND if their average hourly earnings is at least one-and-a-half times the minimum wage. These professions are generally considered to fit these criteria.
Source: https://webapps.dol.gov/elaws/whd/flsa/screen75.asp#:~:text=Executive%2C%20administrative%2C%20professional%20and%20outside,overtime%20provisions%20of%20the%20FLSA.%20https://www.naics.com/naics-code-description/?code=712190#

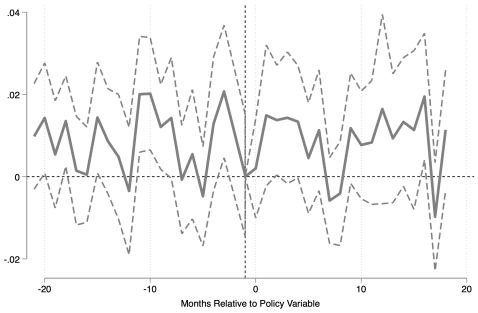
Figure 3: Reported Wage and Hour Violations by Violation Start Month



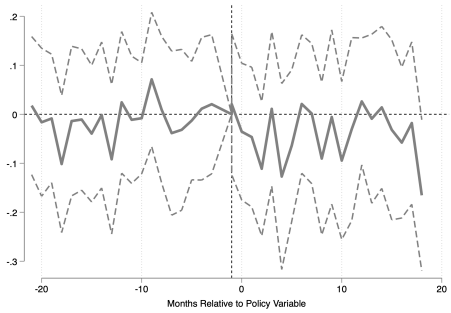
Notes: Data source is NLRB Wage and Hour decision data from March 2016 to December 2019. Includes all FLSA violations believed to have started in a given month. Excludes mass violation investigations, defined as complaints in the top 1% of all observations, consisting of more than 230 violations in a single complaint.

Figure 4: Two Way Fixed Effects: Dynamic Effects Event Plot

(a) Overtime Work



(b) Overtime Violations



Source: Current Population Survey Earner Study/Outgoing Rotation Group, 2016-2019. In these graphs, we plot estimates of the coefficients τ_j in the event study specification given in Section 4.

Table 2: The Effect of EPIC v. Lewis on Overtime Work and Violations

	(1) Overtime Work	(2) Overtime Violations
STRONGENFORCER × POST	-0.00478	0.00216
	(0.00456)	(0.00549)
Observations	65039	65039
Pre-*EPIC* Mean (Outcome Variable)	.0625	.1190

Standard errors in parentheses

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Source: Current Population Survey, 2016-2019

In this table, we report estimates of β in the two-way fixed effects specification given in Section 4. The outcome used for each estimate is given in the column headings.

Table 3: The Effect of EPIC v. Lewis on Overtime Work and Violations

	(1) Overtime Work	(2) Overtime Violations
STRONGENFORCER × POST	-0.00562	0.00155
	(0.00450)	(0.00596)
Observations	65039	65039

Standard errors in parentheses

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Source: Current Population Survey, 2016-2019

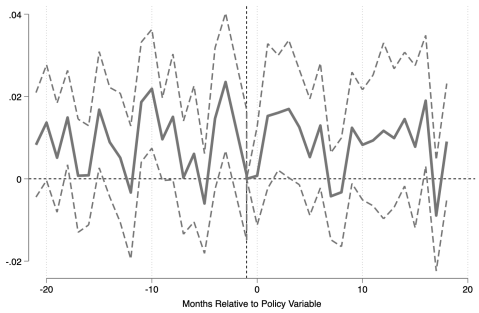
In this table, we report estimates of β in the two-way fixed effects specification given in Section 4.

The outcome used for each estimate is given in the column headings.

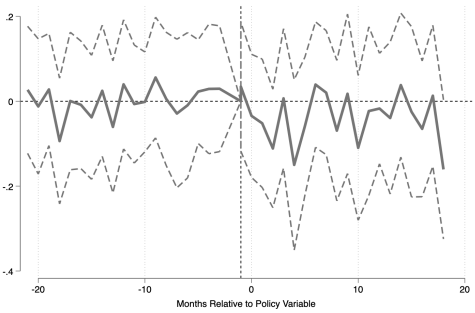
In this robustness analysis, we drop the four states which have strong enforcement regimes but do not have an overtime statute.

Figure 5: Two Way Fixed Effects: Dynamic Effects Event Plot

(a) Overtime Work



(b) Overtime Violations



Source: Current Population Survey Earner Study/Outgoing Rotation Group, 2016-2019. In these graphs, we plot estimates of the coefficients τ_j in the event study specification given in Section 4. In this robustness analysis, we drop four states from the sample. These states are strong enforcers, but do not have an overtime statute.

9 Supplemental

9.1 Treatment Status: Administrative Enforcement Capabilities of Agencies

With the help of *Wage and Hour Laws: A State-by-State Survey* ((ed.)), we categorized the enforcement capabilities of state-level agencies into five major areas:

1. **Investigations:** This signifies an agency's authority and power to initiate investigations into employers proactively, beyond merely responding to complaints.

2. **Handling Complaints:** This is a broad category that encompasses an agency's power to receive wage and hour law-related complaints, conduct investigations into employers based on the complaints, depose witnesses, hold administrative hearings, and, finally, adjudicate the claim and determine whether the employee has been wronged. In all but four states (Alabama, Florida, Louisiana, and Mississippi), the wage and hour agency has this enforcement capability. Some states allow anonymous complaints while others do not, and some states explicitly describe their adjudication process as a "mediation"; however, as long as the above procedure roughly applies, we consider that agency to be one which handles complaints.

3. **Issuing Penalties:** Upon finding that an employer has violated a wage and hour law, the agency can issue a penalty in the form of an administrative fine.

4. **Issuing Remedies:** Upon finding that an employer has violated a wage and hour law, the agency can order the employer to pay back wages (and damages, if applicable in that state) to the aggrieved employees.

5. **Litigation:** This is a broad category that encompasses an agency's power to bring the complaint before a court on behalf of the complainant (employee). In certain states, all other tools of the agency must be exhausted before bringing the case before a court.

In other states, the agency can bring a lawsuit if an employer fails to pay back wages or fines. In all these cases, we categorize that agency as having the power to litigate.

Among those agencies that handle complaints, a majority have the power to issue remedies. Of those that can issue remedies, some states are able to enforce that order in a court. These state-level agencies are the treated group in our analysis. A full list of states and their enforcement capabilities is included in the table below.

State	Investigations	Handling Complaints	Issuing Penalties	Issuing Remedies	Litigation
Alabama					
Alaska	✓	✓	✓	✓	✓
Arizona	✓	✓	✓	✓	
Arkansas	✓	✓	✓	✓	✓
California	✓	✓	✓	✓	✓
Colorado	✓	✓	✓	✓	✓
Connecticut	✓	✓	✓	✓	✓
Delaware	✓	✓	✓	✓	✓
D.C.	✓	✓	✓	✓	✓
Florida					
Georgia	✓	✓			✓
Hawaii	✓	✓	✓	✓	✓
Idaho		✓	✓	✓	✓
Illinois	✓	✓	✓	✓	✓
Indiana	✓	✓	✓	✓	
Iowa		✓			✓
Kansas		✓	✓	✓	✓
Kentucky	✓	✓			✓
Louisiana					
Maine		✓			✓
Maryland	✓	✓	✓	✓	✓
Massachusetts	✓	✓	✓		✓
Michigan	✓	✓	✓	✓	✓
Minnesota	✓	✓	✓	✓	✓
Mississippi					
Missouri		✓			
Montana	✓	✓	✓	✓	✓
Nebraska		✓			
Nevada	✓	✓	✓	✓	
New Hampshire	✓	✓		✓	
New Jersey	✓	✓	✓	✓	✓
New Mexico		✓			✓
New York	✓	✓	✓	✓	✓
North Carolina		✓			✓
North Dakota	✓	✓	✓	✓	✓
Ohio	✓	✓		✓	
Oklahoma		✓	✓	✓	
Oregon	✓	✓	✓	✓	✓
Pennsylvania		✓			✓
Rhode Island		✓			✓
South Carolina		✓	✓		
South Dakota		✓		✓	
Tennessee		✓			✓
Texas		✓	✓	✓	
Utah		✓		✓	
Vermont	✓	✓	✓	✓	✓
Virginia		✓	✓	✓	
Washington	✓	✓	✓	✓	✓
West Virginia		✓			✓
Wisconsin		✓			
Wyoming		✓		✓	

References

Gregory K. McGillivary (ed.). *Wage and Hour Laws: A State-by-State Survey*. Bloomberg BNA, Arlington, VA, 2 edition, 2011.

Sarah Flood, Miriam King, Renae Rodgers, Steven Ruggles, J. Robert Warren, Daniel Backman, Annie Chen, Grace Cooper, Stephanie Richards, Megan Schouweiler, and Michael Westberry. IPUMS CPS: Version 11.0 [dataset]. *Minneapolis, MN: IPUMS*, 2023. URL `https://doi.org/10.18128/D030.V11.0`.

David Neumark and William Wascher. Employment effects of minimum and subminimum wages: Panel data on state minimum wage laws. *Industrial and Labor Relations Review*, 46(1):55–81, 1992.