

Too Many Managers: The Strategic Use of Titles to Avoid Overtime Payments

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Abstract

We find widespread evidence of firms appearing to avoid paying overtime wages by exploiting a federal law that allows them to do so for employees termed as “managers” and paid a salary above a pre-defined dollar threshold. We show that listings for salaried positions with managerial titles exhibit an almost *five-fold* increase around the federal regulatory threshold, including the listing of managerial positions such as “*Directors of First Impression*,” whose jobs are otherwise equivalent to non-managerial employees (in this case, a front desk assistant). Overtime avoidance is more pronounced when firms have stronger bargaining power and employees have weaker rights. Moreover, it is more pronounced for firms with financial constraints and when there are weaker labor outside options in the region. We find stronger results for occupations in low-wage industries that are penalized more often for overtime violations. Our results suggest broad usage of overtime avoidance using job titles across locations and over time, persisting through the present day. Moreover, the wages avoided are substantial - we estimate that firms avoid roughly 13.5% in overtime expenses for each strategic “manager” hired during our sample period.

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Key words: Managerial Titles, Overtime, Strategic Use, Firm Power

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Within organizations, managerial roles are traditionally thought to encompass increased responsibility and oversight scope. For example, managers are often in charge of budgets and schedules, thus determining the workload and pay of others. In addition, they often interview potential employees, along with decisions regarding promotion or firing, thus helping to shape the entire company's employee quality.¹ In line with this enhanced responsibility, compared to non-managerial employees, managers often receive higher salaries, other forms of pay (e.g., bonuses), and perquisites. Even the Federal Government recognizes “managers” as a unique and special class. In fact, the federal government has gone further to establish a law to delineate a manager from a regular employee to decide who is entitled to overtime pay.

In this paper, we exploit that law, *The Fair Labor Standards Act §7(g)* (hereafter FLSA), in investigating whether firms appear to strategically assign titles to exploit regulatory thresholds in order to pay less for “overtime” work. Specifically, we make use of the FLSA provisions that allow firms to be exempt from paying employees overtime wages if the employee is a “manager” and receives a salary above a threshold set by the FLSA.² We investigate the extent to which companies hire employees with potentially deceptive managerial job titles (e.g., front desk attendants hired as *Directors of First Impressions*) with otherwise equivalent work parameters as other non-managers in order to avoid having to pay overtime for extra hours worked.³ As an example, consider the Family Dollar Store,⁴ which was alleged to have given a disproportionate share of employees managerial titles such as “Store Managers.” While these employees occasionally performed managerial duties, they essentially spent 60 to 90 hours a week performing manual labor tasks such as “stocking shelves, running the cash registers, unloading trucks, and cleaning the parking lots, floors and bathrooms,” according to a class-action suit filed in 2008.⁵ The plaintiffs also claimed that “store managers spent only five to 10 hours of their time managing anything.” In this case, the court ruled that these employees' job titles did not accurately describe their daily routines and awarded 1,424 employees \$35 million in unpaid overtime pay due to the fabricated job titles.

¹ According to “Exemption for Executive Employees Under the Fair Labor Standards Act (FLSA)” regulation of the Department of Labor, a manager is someone whose “primary duty must be managing the enterprise, or managing a customarily recognized department or subdivision of the enterprise”, “customarily and regularly direct the work of at least two or more other full-time employees”, “have the authority ... for the hiring, firing, advancement, promotion or any other change of status of other employees” https://www.dol.gov/sites/dolgov/files/DOL/legacy/files/fs17b_executive.pdf

² We discuss the relevant portions of the Fair Labor Standards Act (FLSA) in detail in Section 1.

³ We provide several examples of such deceptive managerial titles in Appendix A.

⁴ <https://abelllaw.typepad.com/files/morgan-v-family-dollar-stores-inc-no.-07-12398-11th-cir-december-16-2008.pdf>

⁵ Ibid.

Such lawsuits are not rare. In fact, wage theft-related violations rank among the top corporate violations after workplace safety violations, as seen in Figure 1. Based on enforcement data from the Department of Labor, between 2010 and 2021, about 73% of wage theft violations that resulted in fines or back-wages contained overtime-related charges, and back-wages owed for overtime accounted for over 80% of the total back-wages and fines. Perhaps more strikingly, overtime violations exceed environmental and employment discrimination violations (combined) – being almost twice as prevalent. These overtime violation lawsuits are also widely seen across industries, locations, and time (see Appendix B for a sample of such violations).

<Insert Figure 1 here>

Our central finding is that there is a systematic, robust, and sharp increase in firms’ use of managerial titles around the federal regulatory threshold that allows them to avoid paying for overtime. In particular, we see a 485% increase in the usage of managerial titles for salaried employees just above the salary threshold set in the Federal Labor Standards Act (\$455/week) – allowing the firms to avoid paying overtime compensation to these workers. In addition, many of these “managerial” titles seem questionable (such as *Director of First Impressions* and *Assistant Bingo Manager*).

In contrast, while we, perhaps unsurprisingly, observe the prevalence of managerial positions increasing in average wage levels, we do not observe *any* similar abnormal “jumps” in demand for managers around any other thresholds besides that set forth by the FLSA. Furthermore, five states have augmented laws to the FLSA and use overtime exemption thresholds from these laws (different from the FLSA) that vary over time and across locations. As a result, in these states, FLSA thresholds do not apply. We find no such spikes in managerial titles around the FLSA threshold. Finally, for firms to avoid paying overtime to a managerial employee, the employee’s pay must be above the regulatory threshold, and the position must be *salaried*. We thus also explore the prevalence of managerial titles for *hourly* employees of the same firms and same places that do spike their demand for salaried “managers” at the given FLSA threshold. We find that holding the compensation threshold fixed at \$455, there are *no* such spikes in the use of managerial titles for hourly employees (whose overtime cannot be avoided through the conferring of the manager title) by these same firms.⁶

Next, as out-of-sample validation tests, we explore the relationship between overtime-avoiding positions and two other measures. First, we examine the Department of Labor’s Wage and Hour

⁶ In Appendix C, we provide the list of top 25 firms with the highest percentage of overtime avoiding positions.

Division (hereafter DOL) enforcement actions. We find that having salaried positions with managerial titles that pay just above the overtime threshold is strongly and positively associated with future DOL enforcement actions. Second, we explore the usage of suspect or “fake”-sounding managerial titles (such as assistant bingo manager or director of first impressions). Again, we find strong evidence of over a 100% increase in the usage of these fake-sounding titles just about the FLSA threshold. Thus, we find validating evidence from two out-of-sample data sources that our analysis captures strategic firm behavior of overtime avoidance just above the FLSA mandated overtime threshold.

We then move on to explore in more depth the characteristics of which firms appear to utilize managerial titles most intensively just above the threshold (vs. below and hourly), avoiding the need to pay overtime. We find that the probability of firms’ strategic use of managerial titles increases when they appear to have more bargaining power and laws governing employee protection are weaker. Specifically, the strategic use of managerial titles is 52.8-91.8% higher in places where state laws are less protective of worker rights. Moreover, to explore if specific industries appear to have the willingness (or ability) to utilize this more, we use low wage-high violation industries identified by the Department of Labor. These industries are retail, food/drink services, janitorial/housekeeping services, and hotels. We then subset the data to these industries to see if they appear to be utilizing managerial titles more intensively. Indeed, consistent with the strategic use of titles for overtime avoidance, they are more intensive users of these seemingly strategic managerial titles.

One might still ask if some industry or firm-level characteristic (observable or unobservable) could be driving the relationships we see regarding the seemingly strategic use of managerial titles. For this to be the case, the characteristic would have to occur: i.) solely at the \$455/week threshold, but not at other nearby thresholds; ii.) occur only for salaried (but not hourly) employees in states that follow FLSA (but not in non-FLSA states) even at this exact threshold; iii.) be stronger (more prevalent) in instances where employees have less bargaining power, where firms have more bargaining power, and even within the same locations, and be more present for firms facing financial constraints. The confluence of precisely these dynamics and relations in these particular patterns seem otherwise somewhat unlikely.

To investigate the abovementioned channel in even more depth, we focus on a subset of our sample firms that operate establishments in multiple states concurrently. For these firms, we run a finer test, including firm fixed effects, to see whether *within* the same firm, we see evidence of more overtime avoidance through the strategic use of titles in the places where the firm’s bargaining power is greater. The clear advantage of this test is that because it exploits variation within the same firm, it

controls for any differences across firms that one might worry could be driving any of the relations. This is particularly true for the more homogeneous unit economic firms we observe (e.g., Family Dollar stores in Milton, VT vs. Tuscaloosa, AL). We find strong evidence that the same firms appear to engage significantly more in the strategic use of titles for overtime pay avoidance in states where they have relatively greater bargaining power. Moreover, firms in the sub-sample of high FLSA violation industries (many of which happen to also be in more homogenous production structures such as retail and food service) exhibit even larger effects. Lastly, we find that our results persist strongly and significantly through the present-day, in fact being even larger in point estimate in the recent period.

In follow-on tests, we examine the relation between firms' incentives and overtime avoidance. Using local credit supply shocks from oil shale well discoveries, we find evidence that firms' financial constraints play a role in their usage of overtime avoidance practices. We also find that overtime avoidance is higher when firms face less competition in the labor market for the positions they are hiring, consistent with firms using the overtime rule exemption rules more intensively when they have more bargaining power vis-à-vis labor supply. Additionally, when the labor pool is better educated, firms tend to offer fewer overtime-avoiding positions, potentially due to increased labor mobility and the legal consciousness of employees.

Our study adds to the literature that explores the effects of bright-line thresholds on firm behavior by altering managerial incentives. Many studies use such thresholds in order to establish whether regulatory policies, such as R&D tax subsidies (Dechezleprêtre, Einiö, Martin, Nguyen, and Van Reenen, 2016), regulations around pollution (Chay and Greenstone, 2005), or housing (Avery, and Brevoort, 2015) create the intended incentives for firms. More closely related to our study are the papers that examine changes in firm behavior to avoid dropping below or exceeding such thresholds. Examples include labor laws based on firms' employee count distorting firms' hiring decisions (Garicano, Lelarge, and Van Reenen, 2016), limits specified in Section 179 for bonus depreciation affecting firm investment behavior (Zwick and Mahon, 2017), 20% rule incentivizing managers in high agency cost/low institutional holding firms to structure acquisition deals in order to avoid shareholder voting (Li, Liu, and Wu, 2018), and disclosure requirements tied to public float leading firms to increase payouts to shareholders and reduce the number of shares held by affiliates (Gao, Wu, and Zimmerman, 2009). In our setting, the FLSA threshold incentivizes firms that try to avoid mandatory overtime payments to alter the job characteristics and possibly leads to an implicit wealth transfer from employees to the firms.

Our study is also related to the literature on overtime, which essentially focuses on the effects of overtime regulations on (a) compensation, (b) employment level, and (c) labor health and well-being. On the first aspect, in one of the earlier studies on the effects of overtime on labor compensation, Trejo (1991) investigates whether increasing overtime costs indeed incentivizes firms to substitute employment for overtime hours and finds that firms adjust base salaries to offset the additional cost of an expanded overtime pay rule. Hamermesh (2014) discusses that imposing a penalty on employers to pay for overtime work discourages employers from demanding long hours of individual employees and argues that policies that increase labor costs (e.g., overtime, the minimum wage, and payroll taxes) can substantially affect both employment levels and work hours. Barkume (2010) studies the effects of FLSA overtime pay regulation firms' labor costs and finds that overtime pay regulation affects the structure of compensation as jobs requiring more overtime work are often lower-wage jobs (see also Bell and Hart 2003, Kuroda and Yamamoto 2012). On the second aspect, the employment level, several studies test whether imposing a penalty on employers for overtime indeed increases the incentive for firms to hire more workers to undertake the tasks that could be done over time. Along these lines, a series of papers provide evidence that overtime-related laws reduce firms' willingness to schedule long workdays (see Costa, 2000; Hamermesh and Trejo, 2000; Hart and Ma, 2010; Askenazy, 2013), whereas Trejo (2003) finds that increasing the statutory overtime premium or expanding FLSA coverage does not increase employment. Finally, on the effect of overtime regulations on worker well-being, Hamermesh et al. (2017) find a positive association between mandatory reductions in overtime hours and labor life satisfaction.

The paper proceeds as follows: Section I provides institutional background on the Fair Labor Standards Act and its provisions related to firms' obligation (and avoidance of obligation) in paying overtime compensation. Section II develops our predictions using a simple stylized model for a firm that contemplates the two alternatives: hire a new employee or have an existing employee work overtime, and how this decision depends on the relative bargaining power of the parties and the cost of hiring and litigation. Section III describes the multiple datasets used. Section IV provides empirical analyses of the paper. This includes the main results regarding firms' usage of "managerial" titles, the spike in usage just around the threshold over which they allow firms to avoid paying for overtime, and which firms utilize these titles most intensively (and when). Section V concludes.

I. Institutional Background

The origins of overtime regulations in the United States go back to financial reforms and regulations enacted by President Franklin D. Roosevelt between 1933 and 1939 as a part of the New Deal. Before and during the great depression, employers in the U.S. had more power than their workers. Few employers offered pensions and benefits, and firms could set wages as low as they wished. Anecdotal evidence suggests that workplace safety was not a priority, and unions had only limited legal protection.⁷ Working hours were long (up to 16 hours a day), and many employers took advantage of high poverty rates to force their employees to work around the clock.⁸ In response to deteriorating working conditions, Franklin Roosevelt wrote: *“Today there is general recognition that there should be a floor to wages and a ceiling to hours...that working conditions should be safe and healthy and that child labor should be eliminated from industry.”*⁹

The landmark labor law, The Fair Labor Standards Act, enacted in 1938, aimed to establish a national minimum wage and a forty-hour week for industry workers, but not for workers in agriculture, domestic service, and some other service areas. In addition, a set of overtime pay regulations were introduced to discourage companies from overworking their employees and encourage additional hiring to cover for the remaining hours not worked by their existing employees. Although the federal overtime provisions of FLSA has changed several times since the 1940s, the general principle remained the same: employees must receive overtime pay for hours worked over forty hours in a workweek at a rate not less than time and one-half their regular rates of pay, except for exempt employees.

Today, FLSA defines an exempt employee as one that passes the following three tests. First is the “salary basis test,” which requires the employee to receive a pre-determined and fixed salary on a weekly or less frequent basis, independent of the number of hours or quantity of work performed (i.e., must be salaried as opposed to hourly). Second is the “salary test,” which requires the employee's salary to meet the exemption threshold, which is \$455/week (\$23,660/year) during our sample period. Third is the “duties test,” which requires the employee’s work to primarily involve executive, administrative, or professional duties as defined by the regulations.

⁷ The great steel strike of 1919 organized by Amalgamated Association of Iron, Steel, and Tin Workers and joined by close to half of all the steelworkers in the US, demanded higher wages, shorter work hours, and better working conditions. Neither the senate nor the employers responded to any of the employee demands. The strike was a major defeat for workers, which also led to a vast decline in union membership and strikes.

⁸ For instance, a bill introduced to the senate in 1907 forbid more than sixteen consecutive hours on duty for railway employees. Railway employees expressed mixed support to the bill because it lowered their earnings too much (Aldrich, 1997 p.172).

⁹ Letter of greeting on the twenty-fifth anniversary of the Department of Labor, available at <https://www.presidency.ucsb.edu/documents/letter-greeting-the-twenty-fifth-anniversary-the-department-labor>

To satisfy executive duties criteria, a position's primary duty must be to manage the business or a customarily defined department or subdivision. The position must also involve supervision of two or more employees and providing some input in hiring/firing decisions. A position satisfies the administrative duties criteria if it involves office/non-manual work directly related to management or business operations and requires judgment and discretion about significant business decisions. The professional exemption applies to learned professions such as teachers, professors, doctors, dentists, registered nurses, lawyers, and clergy, which require advanced knowledge acquired through a prolonged course of intellectual instruction.¹⁰

While salary, pay frequency, and whether a position is a learned profession are typically externally verifiable, whether a position satisfies the executive or administrative duties criteria depends on the employer's assessment of the position's responsibilities and is difficult to verify externally. Often, the only piece of externally observable information suggestive of a position's duties is the job's title. Thus, employers can strategically choose job titles to imply that a position involves managerial duties, and as such exempt from mandatory overtime payments, although the actual responsibilities of the position do not satisfy the executive or administrative duties tests.

While most states follow FLSA, several states determine their own rules regarding overtime exemptions. Specifically, Alaska, Connecticut, California, New York, and Maine impose their own thresholds for the salary test. In these states, the threshold is typically tied to the state's minimum wage and thus varies overtime.¹¹ In New York, the thresholds also vary across firms by location and size since 2017. Except for Connecticut, the thresholds in these states were significantly higher than the FLSA threshold during our sample period.

¹⁰ FLSA also provides more specific exemptions based on job duties within some occupations. Details of the primary and additional exemptions are available from <https://www.dol.gov/agencies/whd/fact-sheets/17a-overtime>.

¹¹ In Alaska the weekly salary threshold is set at 80x the state's minimum hourly wage. The same multiple was used in New York and California until 2017 but starting 2017 these states implemented thresholds that vary within state based on location and firm size. In Maine the threshold is equal to 57.69x (3000/52) the minimum wage. As of the end of 2018, the last year of our sample period, the salary thresholds in these states were \$787.2/week in Alaska, \$880/week in California (based on large employers), \$1,125/week in New York (based on large employers in NYC), and \$519.2/week in Maine. In Connecticut the threshold was \$475/week throughout our sample period.

II. Conceptual Framework of Incumbent Firm Labor Decision: Existing Employee versus Hiring an Incremental Employee

In this section, we provide a simple framework for a firm's choice to hire a new employee or have an existing employee work overtime when dealing with demand fluctuations. The model considers hiring costs, differences in bargaining power between firms and employees, and the potential regulatory enforcement and penalties for wage-theft.¹²

Suppose that an employee can produce output α during regular work hours, and that compensation for work performed during regular hours is proportional to that output, $\theta\alpha$, where $0 < \theta < 1$. We can think of θ as representing the employee's bargaining power and $(1 - \theta)$ the firm's power.

In addition to regular work, the firm has certain tasks that can be performed during "overtime" hours. When employed overtime, the employee produces A . It is not essential how α compares to A ; we use separate notation primarily to distinguish these two types of tasks clearly. Due to regulations, overtime compensation (per unit) is a multiple of the compensation for regular work, $\gamma\theta A$ and regulations require $\gamma = \gamma^f$. For example, FLSA requires $\gamma^f = 1.5$. However, we allow the firm to set γ such that $0 < \gamma < \gamma^f$. This would occur, for example, if the firm misclassifies its employee as a manager and does not pay any overtime. While setting $\gamma < \gamma^f$ allows the firm to lower its wage bill, it gives rise to an expected compliance cost of L , which incorporates the probability of being litigated due to misclassification of the employee and damages to be paid if litigation is lost (i.e., $L=0$ if $\gamma = \gamma^f$)

Thus, the total compensation of the employee is $w = \theta\alpha + \gamma\theta A$, and the payoff to the firm is $\alpha + A - (\theta\alpha + \gamma\theta A) - L$. We assume that the employee has a separable utility function that is linear in monetary compensation, $u(w, \alpha, A) = w - g(\alpha) - G(A)$, and has a reservation utility u_0 . The employee participation constraint ensures that θ is sufficiently high so that $\theta\alpha - g(\alpha) \geq u_0$.

Instead of having an existing employee cover overtime work, the firm can generate the same output A by hiring an additional employee. Even though hiring an additional employee means the firm does not have to offer overtime pay, it has disadvantages. First, hiring an extra employee often means various additional expenses to the firm, such as candidate screening, training, and fringe benefits (e.g., health insurance). It may also be difficult to supervise and incentivize an employee who only works during irregular hours. Let C represent all such additional costs. Second, it is also possible that an incumbent employee is more productive at overtime tasks due to learning by doing (experience) or economies of scale or scope in the tasks being similar or linked to the employees' existing tasks. We

¹² We are grateful to Nina Baranchuk for her extremely helpful suggestions in sketching out this frame and setting.

capture this possibility by letting A/β , where $\beta < 1$, represent the work the new hire must perform to produce output A . That is, if the regular per-unit wage is θ , then the new employee will require an incremental per-unit wage $\theta/\beta > \theta$ in order to produce the (previously overtime) output of A . This results in a total wage expense of $w = \theta\alpha + \theta A/\beta$.

The difference in the firm's profits between the two options (hiring a new worker versus utilizing overtime with the incumbent employee) is:

$$\Delta\pi = [\alpha + A - (\theta\alpha + \theta A/\beta) - C] - [\alpha + A - (\theta\alpha + \gamma\theta A) - L] = \theta A(\gamma - 1/\beta) - (C - L) \quad (1)$$

Consider the case where employee supply is limited, leading to the expected employee utility strictly exceeding the reservation level:¹³

$$\theta\alpha - g(\alpha) + \gamma\theta A - G(A) > u_0; \quad (2)$$

$$\theta(A/\beta) - G(A/\beta) > u_0. \quad (3)$$

Proposition 1. *Under assumptions (2) and (3), the following results hold:*

- i. The firm strictly prefers to rely on overtime rather than hire a new employee when $(C-L)$ is sufficiently high or the new worker productivity β is sufficiently small.*
- ii. When $\beta > 1/\gamma$ (a new employee is productive), the firm strictly prefers to rely on overtime only if θ is sufficiently low (that is, the firm has enough bargaining power).*
- iii. When $\beta \leq 1/\gamma$ the firm prefers to use overtime for any bargaining power θ .*

Proof. The firm strictly prefers to rely on overtime rather than hire a new *employee* if and only if $\Delta\pi < 0$. The left-hand side of this inequality is given by (1). The results follow from observing that (1) is decreasing in $(C-L)$ and increasing in β . Furthermore, it is negative when $\beta \leq 1/\gamma$, and when $\beta > 1/\gamma$, it increases in θ .¹⁴

This simple model delivers three important predictions that we carry to the data:

- (1) A firm will exhibit more overtime avoidance when compensation for overtime payment, γ , increases.
- (2) A firm will exhibit less overtime avoidance in places where employees have higher bargaining power, θ .
- (3) A firm will exhibit more overtime avoidance when the expected litigation cost, L , is low.

¹³ In Appendix D, we discuss the case where there is abundant supply of new workers.

¹⁴ Note that this case allows for a situation where the firm prefers to use overtime and the worker accepts it because it satisfies the participation constraint (2), but the worker wishes that overtime were not included because $\gamma\theta A - G(A) < 0$.

III. Data and Sample Construction

The primary data source for our analyses is the Burning Glass Technologies dataset on job postings. This section describes this and other data sources and outlines our sample construction. Further details on sample construction are provided in Appendix E.

III.1. Data Sources and Sample Construction

We obtain data on job postings from Burning Glass Technologies (BGT)'s online job postings database for the period between January 2010 and December 2018. BGT collects data from over 40,000 online job boards and company websites.¹⁵ The dataset starts in 2007 but lacks postings from 2008 and 2009. Therefore, we begin our sample in 2010. Our analyses focus on full-time positions with valid data on salary, title, employer name, and pay frequency that are posted by corporations and are located in the U.S.¹⁶ We further exclude ground, rail, and air transportation industries as most jobs in these industries are governed by federal laws other than FLSA and non-depository credit intermediaries (i.e., NAICS 5222-5223) as an FLSA exemption applies to positions that require collection and analysis of customers' financial circumstances and determining and offering financial products for a customer.¹⁷

We also exclude positions located in New York, California, Alaska, Maine, and Connecticut, as these states have different exemption thresholds than FLSA states. Because our interest lies in examining firms' strategic use of job characteristics to avoid mandatory overtime payments, we examine 450,025 job postings that have a weekly salary within \$50 of \$455 (i.e., between \$405 and \$505), which is the FLSA's salary threshold for mandatory overtime payments during our sample period.¹⁸

We source states' rankings based on worker protection policies from OXFAM America, a nonprofit organization specializing in reducing injustice and poverty. OXFAM started compiling the

¹⁵ Hershbein and Kahn (2018) provides a detailed discussion of this dataset.

¹⁶ We manually standardize the employer names as the same firm's name is written in alternative ways in the database. We exclude non-business entities using NAICS codes, employer names, and position titles. In particular, we exclude all entities in NAICS codes 92-Public Administration, 813-Religious, Grantmaking, Civic, and similar Organizations, 61-Educational Services, and 62-Social Assistance and Healthcare, and employer names or position titles that include words that are typically used by government or non-profit institutions but not commonly used by businesses (e.g., "Federal Bureau of", "Department of", "National Guard", "City/State/Town/District of", "Girl/Boy Scouts", "High School", "College", "Church", "Museum", "Institute").

¹⁷ Full list of exemptions is available at <https://webapps.dol.gov/elaws/whd/flsa/screen75.asp>. The specific exemptions in the credit intermediation is available at https://www.dol.gov/sites/dolgov/files/DOL/legacy/files/fs17m_financial.pdf.

¹⁸ This threshold was set in 2004 and used until 2020. In 2020 it was increased to \$684 p/w.

rankings in 2018, and we use the 2019 rankings for our analyses. Data on private-sector union membership and coverage come from unionstats.com. This website compiles annual estimates of union membership from the monthly household Current Population Survey (CPS) using the U.S. Bureau of Labor Statistics' (BLS) methods. Data on the enactment of right-to-work laws by state is sourced from the National Conference of State Legislatures (NCSL)'s website. NCSL compiles this data from the Department of Labor and states' websites. In addition, we obtain data on state-level unemployment and job opening rates from the BLS's Local Area Unemployment Statistics and Job Opening and Labor Turnover Surveys, respectively.

We use the annual estimates of population and educational attainment from the U.S. Census Bureau and state minimum wages from the Department of Labor's website. Data on anti-immigration policies by state comes from the website of the Urban Institute, a nonprofit organization that carries out economic and social policy research to measure policy effects. Finally, in our tests of financial constraints, we use shale well activity data from Gilje (2019).

III.2. Descriptive Statistics

Table 1, Panel A provides descriptive statistics for our main sample, which consists of 450,025 job postings that satisfy our data requirements. 12% of the positions in our sample have managerial titles (*Manager=1*), where we define managerial titles as those that include one of the following terms: "Manager," "Supervisor," "Leader," "Coordinator," "Lead," "Head," or "Director."¹⁹ 16% of the observations in our sample are salaried positions (*Salaried=1*). Salaried managerial positions that pay just above the FLSA threshold (*OTAvoided=1*) account for 3.1% of the sample. The average weekly pay in our sample is \$463, which is \$8 above the FLSA threshold of \$455. Education and experience variables are not provided for all job postings; therefore, the observation count is lower for these variables. The average position in our sample requires two years of experience and eight and a half years of education. In terms of worker protection variables, the mean value of *FPI* is 2.2, and OXFAM's *WPRank* is 27.0. Over half of the positions in our sample are in states with right-to-work laws in place (*RTW=1*).

¹⁹ We do not include "President", "Chairman", "Executive", or "Chief" because these terms are common among top-executives rather than entry- or mid-level managers that we focus on. We caveat that there are 54,951 unique titles in our sample and our classifications may have some inaccuracies. However, we believe such inaccuracies are not material because after manually reviewing the most common 200 titles in our sample (which represent over half of the observations) we have not identified any misclassification of managerial titles as non-managerial or vice-versa.

We also conduct our analyses using a subsample of directly comparable positions from four industries that the Department of Labor's Wage and Hour Division classify among the top low wage-high violation.²⁰ In particular, we use positions from the following industries: Food Services, Retail, Hotels and Motels, and Janitorial Services. DOL's list includes construction, agriculture, healthcare/childcare, temporary help, landscaping, amusement, apparel manufacturing, auto repair, guard services, and hair/nail/skin care services. We do not examine these industries separately because most are small industries with few job postings. Two exceptions are healthcare and construction. As noted earlier, we exclude hospitals and medical institutions from our sample since we cannot distinguish among for-profit, nonprofit, and public institutions. We do not examine occupations in construction since most occupations in this sector involve independent contractors and do not have an easily identifiable manager-worker separation based on titles (e.g., welders, plumbers, carpenters, electricians).

Within the four low wage-high violation industries, we identify occupations that are well represented in our sample and may be more prone to misclassification due to blurrier boundaries between managerial and worker-level duties. These are (i) customer-facing retail store employees, (ii) customer-facing food and drink service employees, (iii) hotel front-desk/reception employees, and (iv) housekeepers and janitors. Arguably, it is easier for a firm to label a receptionist as a front desk coordinator or director of first-impressions, or a restaurant host as an assistant restaurant manager, than to label a specialized position such as CNC operators as managers. While not as comprehensive as the general sample, the low wage-high violation industries sample allows us to focus on comparable positions and improve identification. To identify managerial and worker titles in this sample, we search for key terms associated with managerial and worker titles within the occupation and then comb through the results to eliminate irrelevant titles. In Appendix F, we list search terms and the most common managerial and worker titles by occupation.

The low wage-high violation subsample contains 42,650 job postings. Table 1, Panel B provides descriptive statistics for this subsample. Positions that avoid mandatory overtime payments are three and a half times more common in this sample relative to the full sample. Specifically, 10.8% of the positions in this sample avoid mandatory overtime payments. This is consistent with our surmise that due to blurrier lines between managerial and worker-level positions in these professions, it can be easier to use job titles to structure positions that avoid mandatory overtime payments in this

²⁰ See <https://www.dol.gov/agencies/whd/data/charts/low-wage-high-violation-industries>

sample. Additionally, the average position in this sample pays \$459, just \$4 above the FLSA threshold, and requires less education (7.3 years) and experience (1.7 years) than that in the full sample. Statistics for firm power proxies are generally similar to those in the full sample.

<Insert Table 1 here>

IV. Empirical Analysis

IV.1. Diagnostics Analysis

We begin our analysis with a simple histogram of the salaried managerial positions around the FLSA threshold to observe whether the job postings around this cut-off exhibit an abnormal spike that is not present at other salary levels. Figure 2 plots the percentage of salaried managerial positions around the FLSA threshold. The figure shows that the percentage of salaried managerial positions starts below 1% for the salary range of \$355-\$380 p/w and gradually increases in the subsequent two salary ranges to reach 2.8% for the salary range of \$405-\$430. The percentage is lower (1.4%) in the bin immediately before the FLSA threshold but exhibits a major increase at the FLSA threshold, reaching 6.9%. In other words, the probability of observing a salaried managerial position among jobs that pay at or slightly above the FLSA threshold is almost five times greater than that among jobs that pay slightly below the FLSA threshold. The subsequent two bins have a lower percentage of salaried managerial positions, although the percentage remains elevated compared to the bins before the FLSA threshold. These patterns are consistent with the first prediction of our model: firms strategically seek to hire employees with a salary just above the FLSA threshold and assign them a managerial title to avoid overtime payments, as this is more cost effective than hiring regular employees at the FLSA threshold and paying overtime.

<Insert Figure 2 here>

Next, we test whether the spike in salaried managerial positions at the FLSA threshold is statistically significant and whether a similar spike exists for other types of positions or at alternative thresholds. For this test, we run the following regression model:

$$\Pr\{SalariedManager_i = 1\} = \gamma_1 + \gamma_2 Above_i + \gamma_3 WeeklyPay_i + \gamma_4 Min_Edu_i + \gamma_5 Min_Exp_i + \gamma_6 Max_Edu_i + \gamma_7 Max_Exp_i + \sum FirmFE + \sum YearFE + \varepsilon_i \quad (4)$$

where *SalariedManager_i* is an indicator variable equal to one if job posting *i* is a salaried position with a managerial title, and zero otherwise. *Above* is the variable of interest and is an indicator variable that takes the value of one if the position's pay is within \$50 above the given weekly pay threshold and zero if it is within \$50 below the threshold. Thus, the sample for alternative thresholds, which are not included in our main sample or any part of the rest of our analyses, is restricted to positions that pay within \$50 above or below the threshold. Control variables include *WeeklyPay_i*, the weekly equivalent salary of listing *i*, and lower and upper ranges of the education and experience requirements for the position (*Min_Edu*, *Max_Edu*, *Min_Exp*, *Max_Exp*). We include *WeeklyPay* since managerial positions would be more likely at higher salary levels regardless of the threshold and include education and experience requirements, as these factors may determine the salary level and title. Experience and education variables have missing values for a substantial portion of the observations in our sample. Therefore, we generate a missing value indicator for each of these variables and set the value of the missing value indicator (variable itself) to one (zero) when the variable's value is missing. To control for firm- and year-specific effects, we include firm- and year-fixed effects in the models.

We run the model specified in Eq. (4) for the FLSA threshold of \$455 and pseudo-thresholds (\$405, \$505) for which we do not expect a spike in salaried positions with managerial titles. Furthermore, for our analyses at the FLSA threshold, we run the model separately for job postings in FLSA states (i.e., our full sample) and for those in non-FLSA states, for which we do not expect to observe a spike. We note that job postings in pseudo-thresholds and those in non-FLSA states are not included in our sample statistics reported in Table 1 as they are used only as placebos in this analysis and not elsewhere. Finally, we also run the same model at the FLSA threshold by replacing the dependent variable with an indicator variable equal to one if job posting *i* is an hourly or daily paid position with a managerial title and zero otherwise (*HourlyManager*). As stated earlier, the FLSA threshold only applies to salaried positions. Thus, we do not expect to find any spike in hourly or daily paid managerial positions at the same threshold if our findings are driven by firms' attempts to avoid overtime.

We report the results from the estimation of Eq. (4) in Table 2.²¹ We find that salaried positions with a managerial title significantly increase at the FLSA threshold in states that follow FLSA, confirming that the spike we observe in Figure 2 is statistically and economically significant. The coefficient of 0.015 (t=3.68) represents an 80% increase in salaried positions with a managerial title

²¹ For presentation purposes we multiply the coefficient on *WeeklyPay* by 100 in Table 2.

above the threshold relative to below the threshold, where such positions account for 1.9% of the observations. We do not observe a similar spike at alternative threshold levels. Moreover, we find that at the FLSA threshold, our results only hold for positions in states that follow FLSA, and we find no significant increase in salaried positions with a managerial title in non-FLSA states. Hourly or daily paid positions with a managerial title also do not exhibit any significant increase at the FLSA threshold. Overall, the results strongly suggest that firms designate managerial titles around the FLSA threshold to avoid overtime payments.

<Insert Table 2 here>

To add context to the spike we document, we also provide a back-of-the-envelope calculation for the dollar amount overtime avoided across the U.S. Assuming overtime avoidance primarily occurs in relatively lower-paid positions (as we observe), we focus this calculation on salaried managerial positions that pay less than \$50,000. Based on our estimates from the BLS data, there were approximately 2.65 million salaried managers with a salary less than \$50,000 in May 2019 in the U.S.²² Per BLS, the average weekly number of overtime hours in industries for which the estimates are calculated in December 2018 was 3.6. Multiplying this value by 2.65 million workers and 52 weeks, and assuming that about 30.7% of managerial titles above the threshold are aimed at avoiding overtime (=1.5% / 5.01% where 1.5% is the estimated coefficient in Table 2, and 5.01% is the percentage of positions that are salaried and managerial), we estimate that firms avoid paying for over 151 million employee-hours by strategically using managerial titles. That is equal to nearly 73,000 full-time employees. Based on the estimated weighted average overtime wage for these employees, this equates to roughly \$4 billion in overtime payments avoided per year. From the employee perspective, for an employee who is paid exactly at the threshold (\$23,660/year), a loss of 3.6 hours of overtime over a year equals a loss of \$3,194 (=3.6 hours *52 weeks * \$11.375 per hour *1.5 overtime premium) or 13.5% of their total salary. Therefore, our estimates indicate that overtime avoidance has significant implications for firms and possibly more so for their employees.

This 13.5% represents the cost to employees - and equivalently, the benefits to firms - from the avoidance of payment of these overtime wages. The natural question is then, what disciplines

²² Specifically, in the 2019 Occupational Employment and Wage Statistics Dataset we focus on occupation titles with the words “manage” or “supervisor” in them. We then use the distribution of wages to identify approximately what percentage of positions in each title earn less than \$50,000 and add our estimates up to arrive at 3,864,149 employees. Finally, as per BGT dataset 68.2% of managerial positions that pay above the threshold but less than \$50,000 are salaried. Multiplying this percentage with our estimated number of managers, we arrive at 2,635,350 employees who are salaried managers with a salary below \$50,000.

firms from engaging in this behavior? To get a dollar estimate for the cost of this behavior, we collect the data on litigation brought against firms for engaging in overtime avoidance. Namely, DOL compliance actions for FLSA violations resulted in \$226 million in back wages in 2019. In comparing this with the benefit, this implies a roughly 18x benefit multiplier on avoiding overtime wages (when comparing E(benefit) to E(cost)). The incredibly high ROI on this activity of avoiding overtime wages might explain why we see firms across every industry – from Staples to JP Morgan, to Facebook, to Walmart, to Verizon, to Avis, to Lowes. (see Appendix B) – engaging in this activity even up through the present-day, with full knowledge of potential litigation.

IV.2. Out of Sample Validation Tests for Overtime Avoiders - *Department of Labor (DOL) Compliance Actions & Fake Titles*

Next, we explore our identification in more depth to gather out of sample evidence that we are capturing overtime avoidance behavior with the unexpected “spike” in managers and managerial titles we see at the mandated overtime avoiding-allowance threshold. In particular, we explore 2 measures – First, the number of DOL Violation Compliance Actions brought against firms just above the threshold (and whether there is an equivalent “spike” in these, particularly among the firms that appear right above the threshold); and Second, whether there is a “spike” in suspect or “fake” managerial title usage (such as “Directors of First Impression”) by firms just above the threshold.

Turning first to DOL actions, in Table 3 we test whether overtime avoidance based on job posting data is associated with the likelihood of DOL compliance actions for FLSA violations. To the extent the managerial titles assigned to salaried positions just above the FLSA threshold are aimed at avoiding overtime, we might expect them to also potentially be more likely to result in FLSA violations and DOL compliance actions in the future.

To define overtime avoidance using job posting data, we rely on the FLSA overtime exemption criteria described in Section I and the job description information provided in the BGT dataset. Specifically, we define job postings that marginally avoid overtime payment requirements ($OT_{Avoided}=1$) as salaried positions with managerial titles and a weekly salary equivalent within \$50 above the \$455 threshold. We classify the remaining positions within \$50 above or below the threshold as those that do not avoid the overtime payment requirements ($OT_{Avoided}=0$).

While DOL compliance actions are reported at the establishment-level, job postings include a broader geographic unit. Accordingly, we aggregate DOL enforcement actions and job postings by firm, state, and year, and conduct our validation tests at the firm-state-year level. Specifically, we use

three measures for DOL compliance actions: (i) an indicator variable equal to one if any establishment of the firm in a given state and year is ex-post found to violate FLSA rules; (ii) an indicator variable equal to one if any establishment of the firm in a given state and year is ex-post found to be in willful or repeat violation of FLSA rules, which are more aggressive types of violations, and; (iii) the total number of FLSA violations identified across all establishments of a firm in a given state and year. We define two overtime avoidance metrics: (i) the average value of *OTAvoided* by firm-state-year (*%OTAvoiding*) and (ii) an indicator variable equal to one if *OTAvoided* is equal to one for at least one of the job postings by the firm in a given state and year (*D_OTAvoiding*).

Again, the results of these DOL validation tests are shown in Table 3. The evidence presented in this table suggests that overtime-avoiding positions are strongly associated with DOL enforcement activity, and the economic sizes of the effects are large. For example, the marginal effect of *D_OTAvoiding* relative to the baseline of unconditional means of the dependent variable in Columns (4) and (5) are 84% and 130%, respectively.

Perhaps more importantly, the results in Table 3 indicate that basic information in job postings can be a strong indicator of whether a firm may be violating FLSA's overtime rules and a low-cost measure that DOL can monitor to identify enforcement targets. DOL compliance actions are typically taken in response to complaints that allege violations of FLSA.²³ As such, they likely capture a relatively small part of the actual violations and are taken a relatively long period after the start of the violation. In these respects, our indicator of overtime avoidance is timelier and can indicate FLSA violations for a broader set of firms.

<Insert Table 3 here>

As a second validation test, we next turn to the prevalence of “fake-sounding” managerial titles around the FLSA threshold. As the examples in Appendix B suggest, firms may attempt to avoid overtime payments would likely use boilerplate managerial titles, such as (assistant) manager/coordinator/supervisor, to ensure that the position seems like a proper managerial position and does not draw attention. Nevertheless, there are many managerial job titles in our sample that are unconventional to say the least, such as: food cart manager, price scanning coordinator, carpet

²³ According to DOL, around 80% of FLSA cases in 2010 and 2011 were complaint-driven. Since 2011 the agency has ramped up its efforts to move towards directed (i.e., agency initiated) investigations, rather than complaint-driven ones. As a result, between 2012 and 2019, complaint-driven cases decreased to around 65%. The related GAO report is available at <https://www.gao.gov/products/gao-21-13>.

shampoo manager, lead shower door installer, director of first impressions, and grooming manager. These somewhat suspect managerial job titles could partly result from firms' attempts to assign managerial titles to otherwise ordinary employees.

To examine whether such job titles exhibit a spike around the FLSA threshold, we manually collect all managerial titles in our sample and categorize the tens of thousands of titles into those that have may (and may not) be suspect sounding. Using a conservative overlapping sample classification procedure, we end categorizing 256 titles from 830 job listings as fake-sounding. By definition, fake-sounding job titles are uncommon. Despite the small sample, we find a statistically significant and economically large increase in salaried positions with fake-sounding managerial job titles just above the FLSA threshold. In particular, in Table 4, we replicate our regression in column 2 of Table 2 after replacing the dependent variable with an indicator variable for salaried positions with fake-sounding managerial titles. We find a statistically significant coefficient on *Above*. Considering that the percentage of salaried jobs with fake-sounding managerial titles just below the FLSA threshold is 0.045%, the coefficient indicates a 139% ($t=2.21$) increase in salaried positions with fake-sounding managerial titles just above the FLSA threshold relative to those just below the threshold, again consistent with the spike we see in managerial titles just at the FLSA mandated threshold being correlated with overtime avoidance.

<Insert Table 4 here>

IV.3. Firm Power and Overtime Avoidance

In this section, we analyze the second prediction of our model: is avoidance of mandatory overtime payments associated with firms' bargaining power relative to employees? We test this prediction by examining whether the likelihood of observing positions that avoid overtime payments is associated with firms' power relative to employees. In particular, we estimate the following logit model:

$$\Pr\{OTAvoided_i = 1\} = \beta_1 + \beta_2 FirmPower_i + \beta_3 WeeklyPay_i + \beta_4 Min_Edu_i + \beta_5 Min_Exp_i + \beta_6 Max_Edu_i + \beta_7 Max_Exp_i + \sum IndustryFE + \sum YearFE + \varepsilon_i \quad (5)$$

where *FirmPower*_{*i*} is one of the three proxies of firm power relative to employees (*FPI*, *WPRank*, or *RTW*) for the state and year the position *i* is posted.²⁴ Our first firm/employee relative power proxy is *FPI*, a self-constructed firm power index that takes a value between zero and four based on four characteristics of the state that the job is located for the year of the job posting. These characteristics are whether the state: has a lower average union membership than the median state in the same year; has a higher average annual unemployment rate than the median state in the same year; has a lower job opening rate as of the end of the year than the median state in the same year; and has right-to-work laws in place. Unions often promote labor rights by acting as a countervailing power that forces firms to bring labor standards to a competitive level (e.g., Kaufmann, 2005; Caskey and Ozel, 2017). Stronger job market conditions can also improve workers' bargaining power by providing them with more opportunities (e.g., Bils, 1985). Finally, right-to-work laws are often viewed as improving firms' bargaining power by reducing union power (e.g., Holmes, 1998; Johnson, 2020). Thus, we surmise that firms have greater bargaining power over employees for positions in a state with a high index value than those with a low value.

Our second firm/employee relative power proxy is *WPRank*, ranking of each state based on its worker rights protection laws as measured by OXFAM America. Starting in 2018, OXFAM America has been ranking each state in three dimensions: wages, worker rights protection, and the right to organize. The wage dimension assesses a state's minimum wage laws and the standing of minimum wages relative to the living wage. The worker rights dimension assesses laws that protect workers' rights, such as fair scheduling, equal pay, paid/sick leaves, and protection from harassment. The right-to-organize dimension focuses on collective bargaining and union membership, mainly in the public sector. We use OXFAM America's 2019 rankings on the workers' rights dimension as a proxy for the extent to which a state has laws to protect employee rights. Higher values for rankings imply weaker employee rights protection and stronger firm power. Figure 3 presents the distribution of rankings across states.

Our last firm/employee relative power proxy, *RTW*, is an indicator equal to one for states that enacted right-to-work laws and zero otherwise. Right-to-work laws ban union security agreements that require all employees in a bargaining unit to either join the union or pay their dues for representation by the union as a condition of employment. Prior studies find that right-to-work laws have a substantial negative impact on union organization and union power in workplaces (e.g., Ellwood and

²⁴ As reported in Appendix H Tables A1-A3, our main inferences remain qualitative and quantitatively similar using an OLS model.

Fine, 1987; Moore, 1998) and some negative effect on employee wages (Farber, 1984; Garofalo and Malhotra, 1992). These laws are correlated with policies that disproportionately benefit employers over workers, and they are used as a proxy for low employee bargaining power in prior studies (e.g., Holmes, 1998; Johnson, 2020). As such, we use right-to-work laws as an indicator of less labor-friendly sentiment in a state. As of 2022, 27 states have enacted right-to-work laws, of which five (Indiana, Michigan, Kentucky, Wisconsin, and West Virginia) occurred during our sample period.

We report our estimates from Eq. (5) and marginal effects for the proxy for firm power in Table 5 using the full sample and Table 6 using the low wage-high violation industries sample. Each column for each sample corresponds to a proxy for firm power. We cluster standard errors at the firm level.

<Insert Table 5 here>

Table 5 shows that each firm power proxy is statistically significantly and positively associated with the probability of observing overtime avoiding positions. In the last two rows of each column, we report the marginal effect of each firm power proxy relative to the baseline percentage of salaried managerial positions in the full sample (i.e., 3.1%). Since fixed effects complicate the interpretation of the marginal effects, we report marginal effects for the firm power proxies both with and without considering the fixed effects. In Column 1, the marginal effect of *FPI* relative to the baseline is 13.2% when we ignore the fixed effects and 15.5% when we include the fixed effects. Since *FPI* ranges between zero and four, this estimate suggests that the probability of observing overtime avoiding positions increase by 52.8% to 62.0% when moving from a state with the lowest firm power to a state with the highest power. In Column 2, the marginal effect of *WPRank* relative to baseline is 1.5% without fixed effects and 1.8% with fixed effects. This corresponds to an increase of 76.5% to 91.8% when moving from the highest-rank state to the lowest-rank state. Finally, Column 3 shows that in states that enacted *RTW*, the probability of observing overtime-avoiding positions increases by 10.0% to 21.2% relative to the baseline.

Next, we test the third prediction of our model, i.e., do firms exhibit more overtime avoidance through managerial classification when expected penalties, L , is low? While it is hard to develop a precise metric for expected penalties for each case, one can argue that industries with high violation are likely to have lower expected penalties than other industries. If so, we expect our results reported in Table 5 to be stronger in these high-violation industries.

In Table 6, we report the results: we find that our inferences from Table 5 continue to hold for each of the four occupations we examine and that the effect sizes are generally stronger in these subsamples. In particular, the marginal effect of *FPI* with (without) fixed effects relative to the baseline are 18.8% (20.4%), 16.8% (20.6%), 48.0% (41.7%), and 25.2% (25.2%) in occupations in retail, food/drink services, hotel, and janitorial services industries. These estimates suggest that the probability of observing overtime avoiding positions in these industries increases by 75.2%-81.6% in retail, 67.2%-82.3% in food/drink services, 100.8% in hotels, and 166.8%-192.1% in janitorial services when moving from a state with the lowest firm power to a state with the highest power. Thus, the effect sizes in industries that gained a bad reputation for wage theft are notably larger than those in the full sample. Our inferences hold for the other two measures of firm power, *WPRank*, and *RTW*, as we find statistically and economically significant effects for all occupations. The effect sizes are generally stronger than those reported for the full sample.

<Insert Table 6 here>

In Tables 4 and 5, the correlation between our main explanatory variable, state-level relative firm power index, and the error term may arise only if an unobserved omitted variable is confounding both the state-level relative firm power index and the overtime avoidance at the same time (simultaneity bias). This scenario is unlikely if we assume that no single firm is economically or politically sufficiently influential in determining the state-level relative firm power index. Under this assumption, the results we document between overtime avoidance and firm power can be interpreted as causal relations. Using a state-level relative firm power index also helps mitigate another form of endogeneity concern – reverse causality – which would arise if we used a firm-level index. This is again due to the plausible assumption that an individual firm cannot influence state-level relative firm power index due to its size, political connections, or through other channels. Having said this, in the following section, we provide a within-firm analysis to investigate whether overtime avoidance of the same firm varies across states with different relative firm power indexes.

IV.4. Within-Firm Variation in Overtime Avoidance

As discussed above, we interpret the evidence presented in Tables 4 and 5 as causal effects of relative firm power over overtime avoidance behavior because we surmise individual firms typically cannot significantly alter the state-level labor laws, i.e., they take the hiring environment as given and decide on the overtime practices based on the policies of the states they are operating. In this section,

we dig into the causal effect of firm power on overtime avoidance using a within-firm specification. More specifically, we investigate whether overtime avoidance of the *same firm* varies across states based on the firm's relative power over employees. Keeping the firm constant helps us mitigate the possibility that a firm-level unobserved variable (such as CEO characteristics or firm investment opportunities) is driving the results due to its correlation with state-level relative firm power metrics.

We examine within-firm variation in overtime-avoiding positions by including firm-year fixed effects in our specifications. This specification allows us to tease out variation in overtime avoidance driven by variations in firms' power in different states. While firms may have policies to standardize human resources activities across different locations, regional conditions can influence the specifics of the hiring decisions. To the extent regional labor market conditions influence hiring decisions, we predict a higher likelihood of observing overtime-avoiding positions when the position is in a state where firms have a stronger bargaining position than employees.

We report results from conditional logit regressions of *OTAvoided* on proxies for firm power, controls, and firm-year fixed effects in Table 7. We run our models for both the full and low wage-high violation samples. Since all models include firm-year fixed effects, the coefficients on proxies for firm power represent differences across states within the same firm.

<Insert Table 7 here>

Our findings in Table 7 indicate that within the same firm, the probability of observing overtime-avoiding positions is higher when the position is in a state with stronger firm power over employees. The coefficients of interest are significant in all models and for all three proxies of firm power. Given the large number of fixed effects in these regressions, we do not attempt to interpret the marginal effects.²⁵ Instead, we report odds ratios for the firm proxy variable at the bottom of each column. Odds ratios generally indicate that one unit increase in each of the firm power proxies is associated with large increases in the odds of observing an overtime-avoiding position. These findings indicate that even among establishments within the same firm-year, there are significant differences in overtime-avoiding positions, and these differences are positively associated with the firm's power relative to its employees in the establishment's location.

IV.5. The Enactment of Right-to-Work Laws and Overtime Avoidance

²⁵ The marginal effects remain statistically significant at one percent level in the full sample but cannot be estimated in the subsamples.

As a second identification test, we use the enactment of right-to-work laws as a positive shock to firm power relative to employees and examine whether the likelihood of observing overtime-avoiding positions increases following the enactment of these laws. This analysis is essentially a difference-in-differences analysis that utilizes the five states that enacted right-to-work laws during our sample period (Indiana, Michigan, Wisconsin, West Virginia, and Kentucky) as the treatment sample. The enactment of right-to-work laws determines the treatment period for these states. Indiana and Michigan passed the right-to-work laws in 2012. Wisconsin, West Virginia, and Kentucky passed the same law in 2015, 2016, and 2017, respectively.²⁶

To examine whether right-to-work laws had any impact on the likelihood of observing overtime-avoiding positions, we restrict our sample to firms that operate in at least one of the five states that enacted right-to-work laws and at least one other state, which serves as our control group. We further require that the sample firms have at least one job postings before and one after passing the laws in both the treatment and control states. Next, we use a logit model to regress *OTAvoidance* on the *RTW* indicator and state and year fixed effects. To control for firm characteristics, we also include firm fixed effects.

We report results from the right-to-work enactment analysis in Table 8. The coefficients on *RTW* are statistically significant in both columns, suggesting that relative to its establishments located in states with no change in right-to-work status, a firm's establishments located in a state that enacts right-to-work laws see an increase in overtime-avoiding positions during the post-enactment period. The odds ratios suggest that these increases are economically large, particularly in industries that are more susceptible to wage theft. Overall, we find strong support to our inferences from the baseline analyses in the two settings (within-firm and RTW enactment) that better identify the relationship between overtime avoidance and firm power relative to employees.

<Insert Table 8 here>

IV.6. Cross-Sectional and Time-Series Variation in Overtime Avoidance

Thus far, we show that overtime avoidance is positively associated with firms' power over employees. In this section, we focus on a set of cross-sectional tests in which we explore the structural reasons that may help explain our findings. For this analysis, we split our sample based on three

²⁶ Since Michigan (West Virginia) enacted its right-to-work laws on December 11, 2012 (July 1, 2016) we consider 2013 (2017) as the first year of post-enactment period. The remaining three states enacted these laws in the first three months of the year and therefore we consider the year of enactment as the first year of post-enactment.

features of labor markets: size, wage, and competition from immigrants. The idea behind the first metric, size, is straightforward: in places where the labor pool is larger, firms are more likely to engage in overtime violation because they are more likely to attract someone willing to respond to the firms' job postings. We use commuting zone population, a coarse measure of labor pool size, for this purpose. Our second measure, minimum wage, is a metric that captures the level of competing wage employees can get in the state. Again, holding other factors constant, the lower the minimum wage is, the more likely for firms to find a group of people who are likely to go along with firms' overtime practices. The last measure, regarding immigration policy, aims to capture differences in labor market competition created by immigration-related policies.

We obtain annual estimates of county population from the U.S. Census Bureau, commuting zone definitions from the U.S. Department of Agriculture, and annual data on minimum wage by state from the Department of Labor's websites. We use data from the state immigration policy dataset of the Urban Institute to measure anti-immigration policies of a state as the sum of five indicator variables: (i) whether some or all counties in the state have a 287(g) jail agreement with the Department of Homeland Security to allow local law enforcement to arrest and detain individuals for suspected illegal immigration, (ii) whether some or all counties in the state have a policy not to honor some or all ICE detainer requests, (iii) whether the state disallows illegal immigrants to receive a driver's license, (iv) whether the state funds public health insurance for children regardless of their immigration status, and (v) whether the state allows students to access state financial aid regardless of their immigration status. We construct the indicator variables such that each indicator variable equals one if the state laws are not immigrant-friendly and calculate the total anti-immigration score as the sum of the five indicators. Using population, minimum wage, and anti-immigration policies, we split the sample from the median in each year and replicate our main analysis reported in Table 5 for each subsample. Additionally, we split the sample into two from the end of 2016 to test whether our findings vary over the sample period.

<Insert Table 9 here>

We report findings from each of these splits in Table 9 using our full sample. For brevity's sake, we report the findings using only *FPI*; however, unless noted otherwise, our inferences remain unchanged using *WPRank* or *RTW*. We generally find that our results hold across all splits. The first two columns show that our findings vary between areas with relatively high and low populations. The marginal effect of *FPI* relative to baseline is slightly larger in less populated areas compared to more

populated areas. Columns 3 and 4 present the splits based on the states' minimum wage. We find a statistically significant relation between *FPI* and *OTAvoided* in both columns. However, the marginal effect of *FPI* relative to the baseline is not consistently larger for one group and depends on whether the fixed effects are taken into account. Columns 5 and 6 present splits based on the anti-immigration score of states. The relation between *FPI* and *OTAvoided* is statistically significant in both columns. The marginal effect of *FPI* relative to baseline is much larger in less immigrant-friendly states (24.9%) compared to immigrant-friendly states (11.9%). One possible explanation for these results is that to the extent illegal immigrants provide a cheap workforce for businesses, employers in less immigrant-friendly states face greater difficulty in hiring such workers and seek alternative ways to lower their labor costs. Thus, they resort to avoiding overtime payments more often. In our final split, reported in Columns 7 and 8, we observe that our findings are significant in both the earlier and later years of our sample period, and the marginal effects of *FPI* are larger in the more recent part of the sample period.

IV.7. Firm Incentives and Overtime Avoidance

The evidence presented thus far suggests that overtime avoidance exists and is related to the relative bargaining power of a firm over employees. We now turn our attention to firms' incentives to engage in such practices. We examine three forms of incentives. First, financial constraints can be an important determinant of hiring decisions. Disruption in access to financing is associated with contractions in demand for labor (e.g., Popov and Rocholl, 2018; Benmelech, Frydman, and Papanikolaou, 2019; Benmelech, Bergman, and Seru, 2021). Thus, firms become more likely to conduct their operations with fewer workers, potentially resulting in a greater need for overtime. Second, experiencing stiffer competition in hiring for a given position can restrict a firm's ability to avoid listing positions that avoid overtime payment. As a result, overtime avoidance can decline when a firm competes with other firms more strongly for the same position. Third, as the educational attainment of the labor pool increases, firms can be less incentivized to offer positions that avoid overtime payments for at least two reasons. First, since education is strongly associated with labor mobility (e.g., Greenwood, 1969; Machin, Salvanes, and Pelkonen, 2012), firms may need to offer more competitive terms when the educational attainment of the labor pool is high. Second, to the extent education is associated with legal consciousness and knowledge of employee rights (e.g., Blackstone, Uggen, and McLaughlin, 2009; Hirsh and Lyons, 2010), better educated employees may

be more likely to avoid or report/protest wage theft. This may incentivize firms to keep away from overtime-avoiding positions when the labor pool is better educated.

To test the effect of financial constraints on overtime avoidance, we follow Gilje (2019) and use natural gas shale discoveries as a shock to the availability of local credit that is exogenous to the local communities' underlying characteristics. Gilje (2019) shows that following new shale discoveries, annual deposit growth in local banks triples, and the number of new establishments significantly increases. To test whether the relaxation of financing constraints affects overtime avoidance, we use the following model:

$$\Pr\{OTAvoided_i = 1\} = \phi_1 + \phi_2 ShaleBoom_i + \phi_3 WeeklyPay_i + \phi_4 Min_Edu_i + \phi_5 Min_Exp_i + \phi_6 Max_Edu_i + \phi_7 Max_Exp_i + \sum Ind.FE + \sum YearFE + \sum FIPSFE + \varepsilon_i \quad (6)$$

where $ShaleBoom_{j,t}$ equals the natural logarithm of one plus total wells discovered in the region specified by federal information processing code (FIPS) f from 2003 to time t , and $FIPSFE$ are fixed effects for FIPS codes. We define $ShaleBoom$ following Gilje (2019).²⁷ We report results from the analyses of financial constraints in column 1 of Table 10.

<Insert Table 10 here>

Consistent with the argument that following greater availability of credit after discoveries of new shale wells, financial constraints become less binding for local businesses, and the demand for positions that avoid mandatory overtime payments is reduced, we find a negative and statistically significant coefficient on $ShaleBoom$. The odds ratio for $ShaleBoom$ is 0.78, suggesting that a 100% increase in shale count is associated with a decline of around 22% in overtime avoidance relative to baseline.

To test the effect of competition for hiring on overtime avoidance, we examine the relationship between the total demand for similar occupations in the region and overtime avoidance. We measure the demand for similar occupations in the region as the total number of job postings in a given commuting zone-year-standardized occupation code in our sample scaled by the total population (in hundred thousand) of the commuting zone in the same year ($LaborDemand$). We use the following model, which includes commuting zone fixed effects ($CZFE$), and predict that firms

²⁷ Our inferences remain identical when we use the alternative definition of shale boom in Gilje (2019) based on an indicator variable of high well counts.

will be less likely to offer positions that avoid mandatory overtime payments when there is a higher demand for the occupation:

$$\Pr\{OTAvoided_i = 1\} = \phi_1 + \phi_2 LaborDemand_i + \phi_3 WeeklyPay_i + \phi_4 Min_Edu_i + \phi_5 Min_Exp_i + \phi_6 Max_Edu_i + \phi_7 Max_Exp_i + \sum Ind.FE + \sum YearFE + \sum CZFE + \varepsilon_i \quad (7)$$

We present results from the analyses of the relationship between labor demand and overtime avoidance in the second column of Table 9. We find a statistically significant and negative coefficient on *LaborDemand*. In terms of the odds ratio, one unit increase in *LaborDemand* reduces the likelihood of observing an overtime-avoiding position to 92% of the baseline. Considering that the standard deviation of *LaborDemand* is 3.01, this effect size is economically meaningful. Overall, these findings suggest the weakening of overtime avoidance when firms face stiffer competition for the positions they are planning to hire.

Finally, we examine whether the educational attainment of potential employees influences the likelihood of observing overtime-avoiding positions. We measure educational attainment as the percentage of the population over 25 years old with a bachelor's or a higher degree in a given commuting zone multiplied by 100 (*EducAttain*).²⁸ We use the following model and predict that firms will be less likely to offer positions that avoid mandatory overtime payments when educational attainment is higher:

$$\Pr\{OTAvoided_i = 1\} = \phi_1 + \phi_2 EducAttain_i + \phi_3 WeeklyPay_i + \phi_4 Min_Edu_i + \phi_5 Min_Exp_i + \phi_6 Max_Edu_i + \phi_7 Max_Exp_i + \sum Ind.FE + \sum YearFE + \sum CZFE + \varepsilon_i \quad (8)$$

We present the estimates from this model in the third column of Table 10. *EducAttain* has a negative and statistically significant relation with overtime avoidance. In terms of the odds ratio, one unit (i.e., one percentage point) increase in *EducAttain* reduces the likelihood of observing an overtime-avoiding position to 96% of the baseline. The effect is economically meaningful as the standard deviation of *EducAttain* is 6.9. Thus, our evidence is consistent with education reducing firms' incentives to offer overtime-avoiding positions.

²⁸ All our inferences remain similar with slightly weaker statistical significance levels (10% or better) when we focus on the percentage of population over 25 years old with a high school diploma or a higher degree instead.

V. Conclusion

We document widespread and systematic evidence of firms exploiting the provision of the FLSA that allows them to be exempt from having to pay overtime wages if an employee has a “managerial title” and is paid a salary above a bright-line threshold. We document a sharp spike in firms’ use of managerial titles (especially suspect titles) just above this threshold. We do not find any similar spikes around alternative thresholds or for positions to which FLSA overtime rules do not apply. Our evidence indicates that firms strategically use job titles to exploit regulatory thresholds to avoid paying for overtime work. We find that such strategic use of job titles is also strongly associated with the usage of fake managerial titles and future DOL compliance actions and thus can be used as a timely indicator of potential FLSA violations.

In addition, we find that the probability of strategic use of managerial titles increases when firms have more bargaining power. This is true even for jobs that appear identical (except one employee is termed “manager” while the other is not). The probability of strategic use of managerial titles decreases when firms experience a loosening of financial constraints, face stiffer labor market competition, or face a more educated labor pool. Moreover, the strategic use of titles persists across industries, geographical location, the firm size distribution, and through the present day - being even stronger in point estimate in the most recent period.

Stepping back, the centrality of firm-employee power dynamics are becoming more salient as private labor organizations have been on a 70 year decline since the mid-1950s (Bureau of Labor Statistics, 2022). Moreover, in recent decades several industries have been characterized by concentratingly large firms growing even larger in size and scope – seen, for instance, in their increasing share of overall profits (Kahle and Stulz, 2017). This, has resulted in a dynamic power relationship that continues to evolve. While this changing dynamic might be optimal economy-wide, we believe it is important to keep careful track of the balance of power between sides, and the potential transfers between firms and employees which occur as a result.

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FIGURE 1: DISTRIBUTION OF VIOLATIONS BY OFFENSE TYPE

This figure presents the distribution of the count of corporate violations with a penalty amount of \$10,000 or greater by primary offense type for all offenses compiled by Good Jobs First for the years 2004 through 2019. Overtime violations are included under Wage and Hour violations.

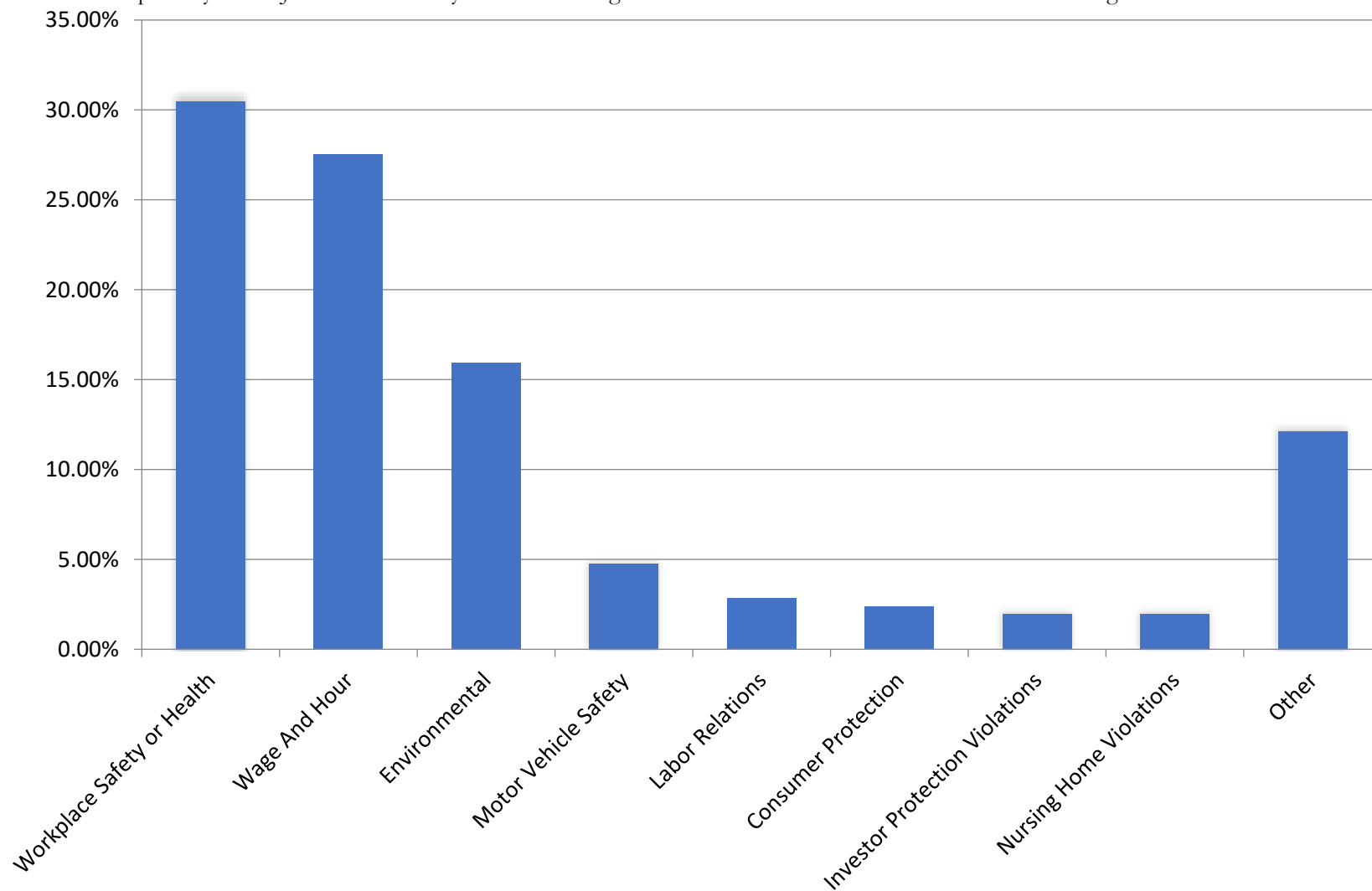


FIGURE 2: DISTRIBUTION OF SALARIED MANAGERIAL POSITIONS AROUND FLSA THRESHOLD

This figure presents the percentage of salaried managerial positions around the FLSA threshold of \$455 per week.

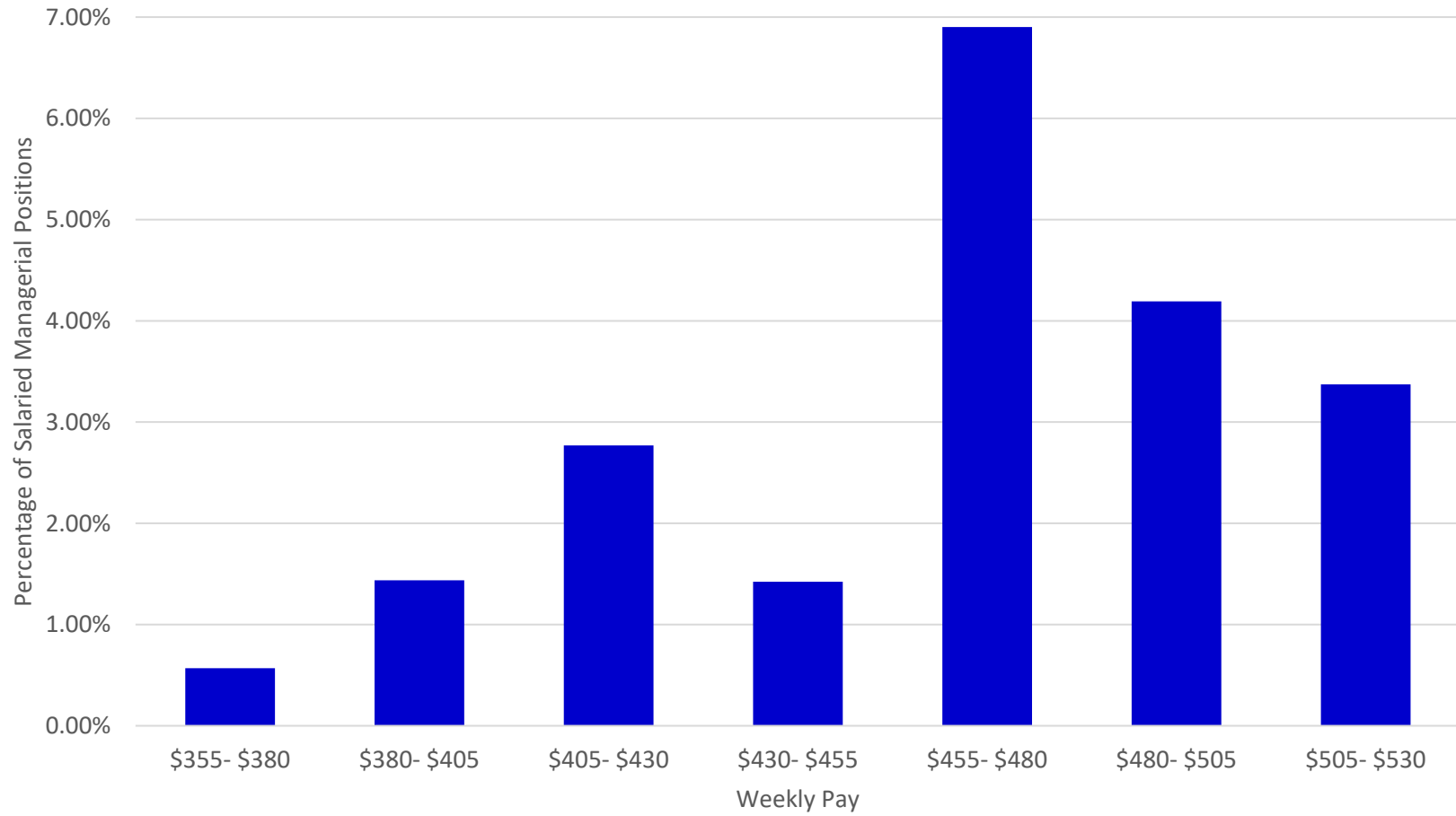


FIGURE 3: OXFAM AMERICA 2019 WORKER PROTECTION RANKINGS BY STATE

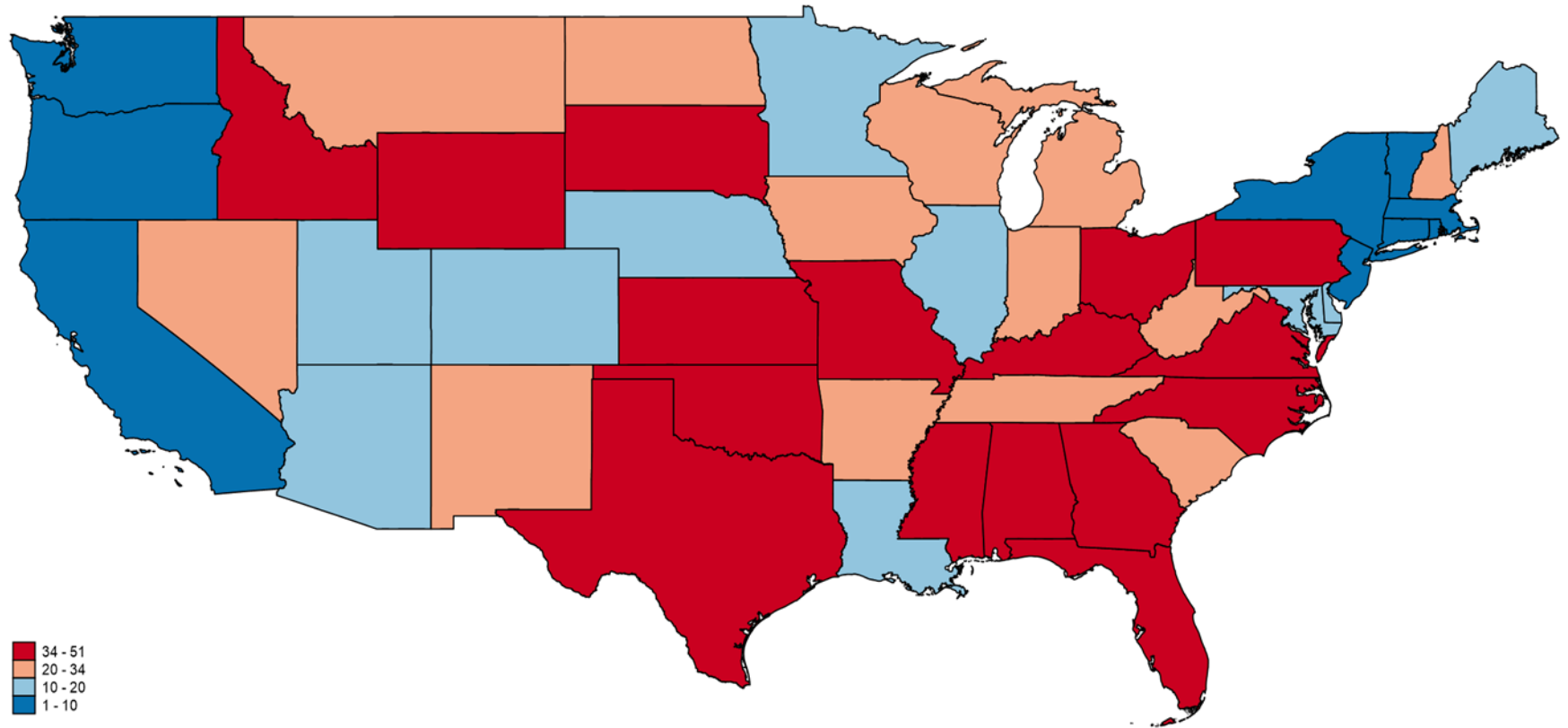


TABLE 1: DESCRIPTIVE STATISTICS

This table presents descriptive statistics for the full sample and a subsample of occupations from the top violation industries. The subsample includes listings in the four occupations listed in Appendix F. Detailed definition of each variable is reported in Appendix G.

Panel A: Full sample

| | Obs. count | Mean | St.dev | 25% | 50% | 75% |
|-----------------------|------------|-------|--------|-------|-------|-------|
| <i>Manager</i> | 450,025 | 0.12 | 0.33 | 0.0 | 0.0 | 0.0 |
| <i>Salaried</i> | 450,025 | 0.16 | 0.37 | 0.0 | 0.0 | 0.0 |
| <i>OTAvoided</i> | 450,025 | 0.031 | 0.172 | 0.0 | 0.0 | 0.0 |
| <i>FPI</i> | 450,025 | 2.2 | 1.0 | 2.0 | 2.0 | 3.0 |
| <i>WPRank</i> | 450,025 | 27.0 | 11.6 | 17.0 | 31.0 | 35.0 |
| <i>RTW</i> | 450,025 | 0.6 | 0.5 | 0.0 | 1.0 | 1.0 |
| <i>WeeklyPay</i> | 450,025 | \$463 | \$25.7 | \$440 | \$480 | \$480 |
| <i>Min_Experience</i> | 155,752 | 1.9 | 2.0 | 1.0 | 1.0 | 2.0 |
| <i>Min_Education</i> | 335,297 | 8.5 | 5.8 | 0.0 | 12.0 | 12.0 |
| <i>Max_Experience</i> | 155,752 | 2.3 | 2.3 | 1.0 | 2.0 | 3.0 |
| <i>Max_Education</i> | 335,297 | 8.8 | 6.1 | 0.0 | 12.0 | 12.0 |

Panel B: Low wage-high violation industries subsample

| | Obs. count | Mean | St.dev | 25% | 50% | 75% |
|-----------------------|------------|-------|--------|-------|-------|-------|
| <i>Manager</i> | 42,650 | 0.38 | 0.49 | 0.0 | 0.0 | 1.0 |
| <i>Salaried</i> | 42,650 | 0.19 | 0.39 | 0.0 | 0.0 | 0.0 |
| <i>OTAvoided</i> | 42,650 | 0.108 | 0.311 | 0.0 | 0.0 | 0.0 |
| <i>FPI</i> | 42,650 | 2.1 | 1.0 | 2.0 | 2.0 | 3.0 |
| <i>WPRank</i> | 42,650 | 26.1 | 11.7 | 14.0 | 31.0 | 35.0 |
| <i>RTW</i> | 42,650 | 0.6 | 0.5 | 0.0 | 1.0 | 1.0 |
| <i>WeeklyPay</i> | 42,650 | \$459 | \$25.7 | \$440 | \$460 | \$480 |
| <i>Min_Experience</i> | 13,397 | 1.7 | 1.4 | 1.0 | 1.0 | 2.0 |
| <i>Min_Education</i> | 32,524 | 7.3 | 6.0 | 0.0 | 12.0 | 12.0 |
| <i>Max_Experience</i> | 13,397 | 1.9 | 1.7 | 1.0 | 2.0 | 2.0 |
| <i>Max_Education</i> | 32,524 | 7.5 | 6.3 | 0.0 | 12.0 | 12.0 |

TABLE 2: SALARIED MANAGERIAL POSITIONS AROUND FLSA AND ALTERNATIVE THRESHOLDS

This table presents linear regressions of *SalariedManager* (*HourlyManager*), an indicator equal to one for salaried managerial positions and zero otherwise (i.e., hourly/daily paid positions), on an indicator *Above*, which is equal to one if the weekly salary for the position is above the FLSA threshold of \$455 or alternative pseudo-thresholds. The band above and below each threshold is set to \$50. All models include indicator variables for missing values of each control variable. Detailed definition of each variable is reported in Appendix G. Standard errors are clustered by firm. t-stats are reported in parentheses. ***, **, and * indicate statistical significance at a two-sided 1%, 5% and 10% level, respectively.

| <i>Dep.Var.:</i> | <i>SalariedManager</i> | | | | <i>HourlyManager</i> |
|-----------------------|------------------------|--------------------|------------------------|----------------------|----------------------|
| | <i>\$405</i> | <i>\$455</i> | <i>\$455</i> | <i>\$505</i> | <i>\$455</i> |
| | | <i>FLSA States</i> | <i>Non-FLSA States</i> | | <i>FLSA States</i> |
| <i>Above</i> | 0.001 (0.74) | 0.015*** (3.68) | 0.004 (0.95) | -0.019*** (-5.27) | -0.024*** (-3.56) |
| <i>WeeklyPay</i> | 0.022*** (4.22) | 0.019** (2.07) | 0.021** (1.97) | 0.085*** (6.52) | 0.101*** (6.35) |
| <i>Min_Experience</i> | -0.000 (-0.53) | 0.000 (0.15) | 0.003 (1.29) | -0.003 (-1.08) | 0.006** (2.29) |
| <i>Min_Education</i> | -0.001 (-1.04) | -0.004 (-0.96) | -0.006** (-2.12) | -0.002 (-0.54) | -0.013*** (-3.10) |
| <i>Max_Experience</i> | 0.002** (2.57) | 0.002** (2.14) | -0.000 (-0.01) | 0.003*** (3.02) | -0.001 (-0.76) |
| <i>Max_Education</i> | 0.003** (2.13) | 0.005 (1.43) | 0.008*** (2.61) | 0.004 (1.50) | 0.013*** (3.15) |
| <i>Firm F.E.</i> | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>Year F.E.</i> | ✓ | ✓ | ✓ | ✓ | ✓ |
| Adj. R ² | 0.257 | 0.431 | 0.431 | 0.506 | 0.338 |
| Obs. count | 566,643 | 450,025 | 88,460 | 536,232 | 450,025 |

TABLE 4: SALARIED FAKE-SOUNDING MANAGERIAL POSITIONS AROUND FLSA

This table presents linear regressions of *SalariedFakeManager*, an indicator equal to one for salaried positions with a fake-sounding managerial title and zero otherwise, on an indicator *Above*, which is equal to one if the weekly salary for the position is above the FLSA threshold of \$455. The model includes indicator variables for missing values of each control variable. Detailed definition of each variable is reported in Appendix G. Standard errors are clustered by firm. t-stats are reported in parentheses. ***, **, and * indicate statistical significance at a two-sided 1%, 5% and 10% level, respectively.

| | <i>Full Sample</i> |
|-----------------------|---------------------|
| <i>Above</i> | 0.00062** (2.21) |
| <i>WeeklyPay</i> | -0.00039 (-0.78) |
| <i>Min_Experience</i> | 0.00005 (0.56) |
| <i>Min_Education</i> | 0.00000 (0.02) |
| <i>Max_Experience</i> | 0.00004 (0.64) |
| <i>Max_Education</i> | 0.00001 (0.05) |
| <i>Firm F.E.</i> | ✓ |
| <i>Year F.E.</i> | ✓ |
| Adj. R ² | 0.144 |
| Obs. count | 450,025 |

TABLE 5: RELATION BETWEEN OVERTIME AVOIDING POSITIONS AND FIRM POWER

This table presents estimates from logistic regressions of *OTAvoided* on proxies for firms' power over employees and control variables using all job listings that satisfy data requirements, are in states where FLSA overtime non-exemption threshold (\$455 p/w) is binding and have a salary within \$50 of the threshold. *OTAvoided* is an indicator variable equal to one for salaried positions with a managerial title that pay above the FLSA non-exemption threshold and zero for all other positions. *FPI* (ranges from 0 to 4), *WPRank* (ranges from 1 to 51), and *RTW* (ranges from 0 to 1) are state-level proxies for firms' power relative to employees, where higher values of each proxy indicate weaker employee protection and stronger firm power. All models include indicator variables for missing values of each control variable. Detailed definition of each variable is reported in Appendix G. Standard errors are clustered by firm. z-stats are reported in parentheses. ***, **, and * indicate statistical significance at a two-sided 1%, 5% and 10% level, respectively.

| | (1) | (2) | (3) |
|--|---------------------|---------------------|---------------------|
| <i>FPI</i> | 0.175*** (4.18) | | |
| <i>WPRank</i> | | 0.020*** (7.99) | |
| <i>RTW</i> | | | 0.240*** (3.91) |
| <i>WeeklyPay</i> | 0.044*** (17.91) | 0.044*** (18.23) | 0.044*** (17.95) |
| <i>Min_Experience</i> | -0.026 (-0.57) | -0.020 (-0.45) | -0.021 (-0.46) |
| <i>Min_Education</i> | -0.165** (-2.31) | -0.161** (-2.38) | -0.161** (-2.31) |
| <i>Max_Experience</i> | 0.046* (1.77) | 0.042 (1.58) | 0.042 (1.63) |
| <i>Max_Education</i> | 0.196*** (2.83) | 0.192*** (2.92) | 0.192*** (2.84) |
| <i>Industry F.E.</i> | ✓ | ✓ | ✓ |
| <i>Year F.E.</i> | ✓ | ✓ | ✓ |
| Obs. count | 450,025 | 450,025 | 450,025 |
| Marginal eff. w/o F.E. relative to baseline | 13.2% | 1.5% | 10.0% |
| Marginal eff. with F.E. relative to baseline | 15.5% | 1.8% | 21.2% |

TABLE 6: RELATION BETWEEN OVERTIME AVOIDING POSITIONS AND FIRM POWER IN LOW WAGE-HIGH VIOLATION INDUSTRIES

This table presents estimates from logistic regression of *OTAvoided* on proxies for firm power over employees using four subsamples of job listings from industries classified as low wage-high violation by the DOL. The subsamples examined are customer-facing retail store employees, customer-facing food and drink service employees, hotel front desk/reception employees, and janitors/housekeepers. All models include indicator variables for missing values of each control variable. Detailed definition of each variable is reported in Appendix G. Standard errors are clustered by firm. z-stats are reported in parentheses. ***, **, and * indicate statistical significance at a two-sided 1%, 5% and 10% level, respectively.

| | <i>Retail</i> | | | <i>Food and Drink Serv.</i> | | | <i>Hotel</i> | | | <i>Janitors/Housekeepers</i> | | |
|---------------------------------------|---------------------|---------------------|---------------------|-----------------------------|--------------------|--------------------|----------------------|----------------------|----------------------|------------------------------|---------------------|---------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| <i>FPI</i> | 0.273*** (3.83) | | | 0.389*** (7.45) | | | 0.294** (2.41) | | | 0.560*** (5.07) | | |
| <i>WPRank</i> | | 0.027*** (4.54) | | | 0.039*** (7.70) | | | 0.020** (2.36) | | | 0.048*** (5.37) | |
| <i>RTW</i> | | | 0.468*** (3.59) | | | 0.658*** (5.43) | | | 0.604*** (3.05) | | | 1.273*** (5.31) |
| <i>WeeklyPay</i> | 0.055*** (17.41) | 0.055*** (17.17) | 0.055*** (17.19) | 0.068*** (9.32) | 0.069*** (9.49) | 0.067*** (9.50) | 0.056*** (13.02) | 0.057*** (13.08) | 0.057*** (12.98) | 0.053*** (12.05) | 0.054*** (11.46) | 0.054*** (12.38) |
| <i>Min_Experience</i> | 0.056 (0.43) | 0.073 (0.57) | 0.062 (0.47) | -0.150 (-1.03) | -0.143 (-0.99) | -0.135 (-0.92) | -0.387** (-2.55) | -0.371** (-2.36) | -0.382** (-2.54) | -0.216 (-0.92) | -0.252 (-0.90) | -0.180 (-0.89) |
| <i>Min_Education</i> | -0.309** (-2.27) | -0.313** (-2.31) | -0.306** (-2.28) | 0.350* (1.86) | 0.325* (1.86) | 0.338* (1.84) | -0.348*** (-2.86) | -0.378*** (-3.08) | -0.361*** (-3.02) | 0.685*** (-2.75) | 0.741*** (-2.91) | 0.622** (-2.57) |
| <i>Max_Experience</i> | 0.133 (1.02) | 0.116 (0.89) | 0.126 (0.95) | 0.162 (1.52) | 0.135 (1.23) | 0.136 (1.24) | 0.514*** (3.85) | 0.490*** (3.60) | 0.521*** (3.96) | 0.177** (2.07) | 0.152 (1.32) | 0.161* (1.85) |
| <i>Max_Education</i> | 0.264** (2.20) | 0.265** (2.26) | 0.260** (2.22) | -0.315* (-1.82) | -0.294* (-1.83) | -0.303* (-1.79) | 0.300*** (2.78) | 0.329*** (3.04) | 0.312*** (2.95) | 0.676*** (2.79) | 0.729*** (2.92) | 0.612*** (2.59) |
| <i>Industry F.E.</i> | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>Year F.E.</i> | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Obs. count | 14,218 | 14,218 | 14,218 | 12,354 | 12,354 | 12,354 | 6,967 | 6,967 | 6,967 | 8,202 | 8,202 | 8,202 |
| Marginal eff. w/o F.E. rel. to base. | 20.4% | 2.2% | 34.6% | 20.6% | 1.6% | 18.3% | 25.2% | 2.1% | 54.6% | 41.7% | 3.6% | 97.4% |
| Marginal eff. with F.E. rel. to base. | 18.8% | 1.8% | 32.3% | 16.8% | 1.7% | 28.6% | 25.2% | 1.7% | 51.6% | 48.0% | 4.1% | 108.8% |

TABLE 7: WITHIN FIRM VARIATION IN OVERTIME AVOIDING POSITIONS

This table presents estimates from conditional logistic regressions of *OTAvoided* on proxies for firms' power over employees and control variables. Estimates are reported for the full sample, which includes all job listings that satisfy data requirements, are in states where FLSA overtime non-exemption threshold (\$455 p/w) is binding and have a salary within \$50 of the threshold, and four subsamples of job listings from industries classified as low wage-high violation industries by the DOL. All models include indicator variables for missing values of each control variable. *OTAvoided* is an indicator variable equal to one for salaried positions with a managerial title that pay above the FLSA non-exemption threshold and zero for all other positions. *FPI* (ranges from 0 to 4), *WPRank* (ranges from 1 to 51), and *RTW* (ranges from 0 to 1) are state-level proxies for firms' power relative to employees, where higher values of each proxy indicate weaker employee protection and stronger firm power. All models include indicator variables for missing values of each control variable. Detailed definition of each variable is reported in Appendix G. Standard errors are clustered by firm. z-stats are reported in parentheses. ***, **, and * indicate statistical significance at a two-sided 1%, 5% and 10% level, respectively.

| | <i>Full Sample</i> | | | <i>Low Wage-High Violation Industries</i> | | |
|-----------------------|---------------------|---------------------|---------------------|---|---------------------|---------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| <i>FPI</i> | 0.253*** (7.11) | | | 0.398*** (5.69) | | |
| <i>WPRank</i> | | 0.027*** (9.88) | | | 0.038*** (6.98) | |
| <i>RTW</i> | | | 0.439*** (6.96) | | | 0.670*** (5.97) |
| <i>WeeklyPay</i> | 0.064*** (29.05) | 0.064*** (29.33) | 0.064*** (29.05) | 0.091*** (15.78) | 0.091*** (16.27) | 0.091*** (15.99) |
| <i>Min_Experience</i> | 0.047 (0.82) | 0.049 (0.83) | 0.047 (0.79) | -0.136 (-0.77) | -0.099 (-0.59) | -0.127 (-0.68) |
| <i>Min_Education</i> | -0.075 (-1.18) | -0.079 (-1.25) | -0.075 (-1.17) | 0.245 (0.85) | 0.233 (0.82) | 0.253 (0.87) |
| <i>Max_Experience</i> | 0.056 (1.04) | 0.055 (0.99) | 0.056 (1.02) | 0.084 (0.59) | 0.042 (0.30) | 0.076 (0.50) |
| <i>Max_Education</i> | 0.105* (1.70) | 0.109* (1.78) | 0.105* (1.69) | -0.232 (-0.83) | -0.221 (-0.80) | -0.239 (-0.85) |
| <i>Firm-Year FE</i> | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Obs. count | 83,646 | 83,646 | 83,646 | 12,285 | 12,285 | 12,285 |
| Odds ratio | 1.29 | 1.03 | 1.55 | 1.49 | 1.04 | 1.95 |

TABLE 8: ENACTMENT OF RIGHT-TO-WORK LAWS AS A SHOCK TO FIRM POWER

This table presents estimates from logistic regressions of $OT_{Avoided}$ on RTW , an indicator variable that takes the value of one for years after a state enacts right-to-work laws, and zero for all other state-years. The samples consist of firms that posted job listings in a state that enacted right-to-work laws and at least one control state with no change in right-to-work status during the sample period. We require firms to have at least one job listing before and one listing after the laws are enacted in the treatment and control state(s). All models include indicator variables for missing values of each control variable. Detailed definition of each variable is reported in Appendix G. Standard errors are clustered by firm. z-stats are reported in parentheses. ***, **, and * indicate statistical significance at a two-sided 1%, 5% and 10% level, respectively.

| | <i>Full Sample</i> | <i>Low Wage-High Violation Industries</i> |
|-----------------------|--------------------|---|
| <i>RTW</i> | 0.853** (2.55) | 1.271** (1.97) |
| <i>WeeklyPay</i> | 0.065*** (9.33) | 0.103*** (7.98) |
| <i>Min_Experience</i> | 0.045 (0.58) | -0.460 (-1.32) |
| <i>Min_Education</i> | 0.154 (0.68) | 0.786** (2.00) |
| <i>Max_Experience</i> | 0.098 (1.38) | 0.524 (1.59) |
| <i>Max_Education</i> | -0.099 (-0.45) | -0.707* (-1.92) |
| <i>Firm F.E.</i> | ✓ | ✓ |
| <i>State F.E.</i> | ✓ | ✓ |
| <i>Year F.E.</i> | ✓ | ✓ |
| Obs. count | 65,424 | 6,189 |
| Odds Ratio | 2.34 | 3.57 |

TABLE 9: CROSS-SECTIONAL AND TIME SERIES ANALYSES

This table replicates the main analyses in Table 3 for subsamples based on commuting zone population size, minimum wage, anti-immigration laws, and period. For the commuting zone population, minimum wage, and anti-immigration scores, we split the sample from the median in each year. For the period, we split the sample from the end of 2016. For brevity's sake, results are tabulated using only *FPI* as a proxy for firm power. All inferences remain the same using *WPRank* and *RTW*. Detailed definition of each variable is reported in Appendix G. Standard errors are clustered by firm. z-stats are reported in parentheses. ***, **, and * indicate statistical significance at a two-sided 1%, 5% and 10% level, respectively.

| | <i>Population</i> | | <i>Minimum Wage</i> | | <i>Anti-Immigration Score</i> | | <i>Period</i> | |
|---------------------------------------|---------------------|---------------------|---------------------|---------------------|-------------------------------|---------------------|--------------------|----------------------|
| | >Median | <Median | >Median | <Median | >Median | <Median | <=2016 | >2016 |
| <i>FPI</i> | 0.108*** (3.54) | 0.199*** (3.51) | 0.111*** (3.78) | 0.147*** (2.62) | 0.288*** (5.08) | 0.132*** (3.55) | 0.109* (1.80) | 0.269*** (10.32) |
| <i>WeeklyPay</i> | 0.041*** (20.22) | 0.046*** (14.87) | 0.041*** (21.40) | 0.045*** (15.64) | 0.047*** (13.66) | 0.042*** (18.57) | 0.042*** (9.30) | 0.044*** (27.89) |
| <i>Min_Experience</i> | -0.021 (-0.59) | -0.044 (-0.72) | -0.047 (-1.12) | -0.002 (-0.04) | -0.029 (-0.44) | -0.020 (-0.46) | -0.058 (-0.94) | -0.106* (-1.80) |
| <i>Min_Education</i> | -0.141** (-2.21) | -0.177** (-2.26) | -0.133** (-2.25) | -0.178** (-2.32) | -0.152*** (-2.84) | -0.169** (-2.14) | 0.042 (0.36) | -0.149*** (-3.44) |
| <i>Max_Experience</i> | 0.049** (2.16) | 0.070* (1.91) | 0.098*** (3.99) | 0.009 (0.25) | 0.044 (0.91) | 0.049** (2.05) | -0.002 (-0.06) | 0.186*** (3.70) |
| <i>Max_Education</i> | 0.178*** (2.88) | 0.202*** (2.65) | 0.171*** (3.06) | 0.206*** (2.75) | 0.172*** (3.38) | 0.205*** (2.69) | 0.294*** (2.72) | 0.166*** (4.08) |
| <i>Industry F.E.</i> | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>Year F.E.</i> | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Obs. count | 218,096 | 225,735 | 184,136 | 265,889 | 114,398 | 335,627 | 207,820 | 242,205 |
| Marginal eff. w/o F.E. rel. to base. | 9.3% | 13.9% | 12.2% | 6.2% | 28.2% | 7.6% | 10.1% | 19.2% |
| Marginal eff. with F.E. rel. to base. | 10.0% | 17.0% | 10.1% | 12.7% | 24.9% | 11.9% | 9.2% | 24.4% |

TABLE 10: THE EFFECT OF FIRM INCENTIVES ON OVERTIME AVOIDANCE

This table presents estimates from logistic regressions of *OTAvoided* on proxies for firm incentives to avoid overtime payments. *ShaleBoom* is an inverse proxy for financial constraints a firm faces and is equal to the natural logarithm of one plus total shale wells discovered in a given FIPS code from 2003 until the year of observation. *LaborDemand* is a proxy for the extent of labor market competition a firm faces for a given position, and it is equal to the total number of job listings that are in the same commuting zone-soc code-year divided by the commuting zone's population (in hundred thousand). All inferences remain the same using *WPRank* and *RTW*. All models include indicator variables for missing values of each control variable. Detailed definition of each variable is reported in Appendix G. Standard errors are clustered by firm. z-stats are reported in parentheses. ***, **, and * indicate statistical significance at a two-sided 1%, 5% and 10% level, respectively.

| | <i>Financial Constraints</i> | <i>Labor Competition</i> | <i>Labor Mobility/ Legal Awareness</i> |
|--------------------------|------------------------------|--------------------------|--|
| <i>ShaleBoom</i> | -0.244*** (-4.34) | | |
| <i>LaborDemand</i> | | -0.082*** (-5.70) | |
| <i>EducAttain</i> | | | -0.045** (-2.05) |
| <i>WeeklyPay</i> | 0.045*** (24.87) | 0.044*** (21.98) | 0.044*** (24.10) |
| <i>Min_Experience</i> | -0.018 (-0.45) | -0.021 (-0.50) | -0.019 (-0.48) |
| <i>Min_Education</i> | -0.142** (-2.57) | -0.151** (-2.42) | -0.137** (-2.46) |
| <i>Max_Experience</i> | 0.057** (2.51) | 0.051** (2.19) | 0.059*** (2.58) |
| <i>Max_Education</i> | 0.173*** (3.23) | 0.185*** (3.06) | 0.167*** (3.10) |
| <i>Industry F.E.</i> | ✓ | ✓ | ✓ |
| <i>Year F.E.</i> | ✓ | ✓ | ✓ |
| <i>Commuting Zone FE</i> | - | ✓ | ✓ |
| <i>FIPS FE</i> | ✓ | - | - |
| Observations | 419,984 | 422,077 | 405,763 |
| Odds Ratio | 0.78 | 0.92 | 0.96 |

APPENDIX A: EXAMPLES OF POSITIONS WITH BLURRY LINES BETWEEN MANAGERIAL AND NON-MANAGERIAL TITLES

| Employee | Manager |
|-----------------------------|----------------------------------|
| Receptionist | Front Desk Manager |
| Front Desk Clerk | Director of First Impressions |
| Reservation Clerk | Lead Reservationist |
| Host/Hostess | Guest Experience Leader |
| Carpet Cleaner | Carpet Shampoo Manager (Trainee) |
| Asset Protection Specialist | Asset Protection Coordinator |
| Barber | Grooming Manager |
| Food Cart/Coffee Attendant | Food Cart/Coffee Cart Manager |

APPENDIX B: EXAMPLES OF EMPLOYEE MISCLASSIFICATION AND OVERTIME VIOLATION LAWSUITS

Panera franchisee must pay \$4.6M to settle overtime suit

(6/2/2020, Restaurant Business Magazine)

The country's largest Panera Bread franchisee, Covelli Enterprises, must pay \$4.6 million to settle a class-action case involving overtime pay, according to a deal that received final judicial approval late last week.

The lawsuit dates back to January 2018 when a group of Panera assistant managers in Ohio filed suit against the operator claiming that they were being forced to work without overtime pay after being wrongly classified as exempt from overtime protections.

Under the settlement, Covelli must pay \$4.62 million into a settlement fund for members of the protected class, made up of more than 900 assistant managers.

Collective Action Claims Publix Misclassified Certain Employees as 'Managers' to Avoid Paying Overtime (10/31/2019, Classaction.org)

Publix Super Markets, Inc. faces a proposed collective action over its alleged misclassification of certain department managers as overtime-exempt under the Fair Labor Standards Act (FLSA).

The case concerns Publix deli, bakery and meat managers given the title of "Department Manager" who were allegedly classified as overtime-exempt before April 2019. The lawsuit claims that the employees often worked over 40 hours in a week yet were not provided with time-and-a-half overtime pay due to their improper managerial exemption under FLSA standards. Moreover, the defendant also failed to keep accurate records of all hours worked, the case alleges.

According to the complaint, Publix department managers were not given the type of executive responsibilities that typically accompany overtime-exempt jobs, including tasks that require the "exercise of meaningful judgment and discretion." Department managers' duties consisted primarily of manual tasks typically reserved for non-exempt employees, such as preparing and stocking food, servicing customers and cleaning, the lawsuit says.

JPMorgan agrees to \$16.7 mln settlement in overtime lawsuit

(11/6/2017, Reuters)

JPMorgan Chase & Co has agreed to pay \$16.7 million to resolve a lawsuit accusing it of violating federal law by misclassifying assistant branch managers at its banks across the country and failing to pay them overtime.

The settlement, which was disclosed in a court filing on Friday, resolves two lawsuits filed in Manhattan federal court in 2014 and 2015 that were consolidated last year and certified as a nationwide collective action. The plaintiffs claimed that even though they had no management duties, Chase classified them as exempt from overtime in violation of the Fair Labor Standards Act and New York, Connecticut, and Illinois laws.

Facebook charged with misclassifying workers to avoid overtime pay

(11/1/2017, HRDive)

A new lawsuit accuses Facebook of deliberately misclassifying a segment of workers to avoid paying them overtime, reports Ars Technica. Susie Bigger, formerly a salaried client solutions manager at Facebook's Chicago office, brought the proposed collective-action suit, alleging that the social media company improperly classifies workers as managers to exempt them from overtime pay.

Bojangles' Assistant Managers Sue for Overtime

(7/10/2017, WaiterPay.com)

Two assistant managers who worked at a North Carolina Bojangles' restaurant are suing the famous southern food chain for failing to pay them overtime. The assistant managers argue that they were not actually managers and spent most of their time cleaning, taking orders, serving customers, and preparing, cooking, and packaging food. Although they worked approximately fifty hours per week, Bojangles' always paid the assistant managers the same set salary every week.

N.Y. Judge OKs \$7.8M Avis Shift Managers O.T. Deal

(4/28/2016, Law360.com)

Nearly 250 shift managers who sued Avis Budget Car Rental LLC over unpaid overtime wages scored final approval of a \$7.8 million settlement to end two long-running Fair Labor Standards Act collective actions, according to a New York federal court order made public Thursday.

The deal closes out a pair of long-running and hard-fought collective actions filed by 249 Avis shift managers and operations managers who alleged they were wrongfully classified as exempt employees under the FLSA and, accordingly, were not paid overtime for the time they worked in excess of 40 hours a week, according to court documents.

Court Approves Office Max Overtime Pay Settlement

(11/23/2015, overtimepaylaws.org)

A group of over 330 current and former assistant managers for OfficeMax Inc. who filed a class action overtime suit against their employer for violations of the Fair Labor Standards Act (FLSA) have entered into a settlement agreement with the company worth over \$3.5 million. Under the agreement, each member of the class who opted into the lawsuit would receive an amount from the settlement based on the number of weeks he or she worked during the time period covered by the settlement. Attorneys will be seeking up to one-third of the settlement fund, or around \$1.6 million.

The managers claimed that OfficeMax failed to pay overtime wages from its assistant managers because it believed they were exempt from overtime pay under FLSA. According to the plaintiffs, they worked more than 40 hours in a week and performed non-exempt duties. These duties did not differ significantly from those performed by non-exempt employees such as engaging in customer service, stocking shelves, down-stocking the binder wall, operating the cash register, unloading trucks, selling merchandise, setting up displays, counting inventory, and cleaning the store.

Verizon Accused Of Misclassifying Employees To Avoid O.T.

(7/16/2015, Law360.com)

Verizon Communications Inc.'s New York subsidiary was hit with a proposed wage and hour class action in New York federal court Tuesday from an employee who says the company misclassifies its logistics workers as supervisors to avoid paying overtime.

Plaintiff Thomas Dillon said that he's been classified as a supervisor in Verizon New York Inc.'s logistics services division since 1993 even though in all that time he's never overseen anyone but himself. Instead, Dillon alleged, he and others like him were classified as supervisors to make them exempt employees; workers Verizon didn't have to pay for dozens of hours of overtime each week accrued over the course of years or decades.

Lowe's Settles for \$9.5M in Class Action Wage Suit
(8/28/2014, Remodeling Magazine)

Nationwide retailer Lowe's struck a \$9.5 million deal on Aug. 22 to end a two-year class action lawsuit alleging the company "misclassified" up to 1,750 of its human resource managers in violation of the Fair Labor Standards Act (FLSA).

The original complaint—filed by former employee and plaintiff Lizeth Lytle on Aug. 15, 2012—claimed that Lowe's violated FLSA overtime wage provisions by hiring employees as "human resources managers" but giving them the clerical duties of "low-level" human resources workers without the eligibility for overtime pay. Though her job title was that of a manager, Lytle says she lacked the authority to fire or hire, promote, discipline, or give raises to workers. Additionally, Lytle says that she and other similarly-titled employees were required to work 55 hours of work per week, but received no overtime compensation as a result.

Lytle also alleged Lowe's failed to track the hours of most, if not all of the company's human resource managers, and that the act of paying those employees on a salary basis did not meet the requirements of an FLSA-exempt status.

This isn't the first time in recent history the company has settled for a big sum. In May of this year, the retailer agreed to pay \$6.5 million to settle a case alleging the company treated independent contractors like company employees without giving them any of the benefits.

Walmart Fined By Labor Department For Denying Workers Overtime Pay, Agrees To Pay \$4.8 Million In Back Wages (5/22/2012, HuffPost)

On Tuesday, the Department of Labor announced that Walmart had agreed to pay \$4.83 million in back wages and damages to employees it had illegally denied overtime, following an agency investigation. More than 4,000 workers, all vision center managers or asset protection coordinators, will receive money from the settlement.

While all U.S. workers are legally entitled to overtime when they work more than 40 hours a week, certain salaried managerial employees in "executive, administrative or professional" roles, are exempt from this provision under the Fair Labor Standards Act. Prior to 2007, Walmart considered its vision center managers and asset protection coordinators exempt, a policy the Department of Labor now calls a "misclassification."

Staples settles overtime lawsuits for \$42M
(1/29/2010, ChainStoreAge.com)

Staples said Friday that it has agreed to pay \$42 million to settle several class-action lawsuits related to overtime pay violations.

The retailer was accused of misclassifying assistant store managers as exempt from overtime compensation.

Staples will also drop its appeal of a verdict against the company last year in New Jersey; the \$42 million settlement amount includes those associated with the prior New Jersey verdict. "The global settlement involves no admission of wrongdoing in connection with the allegations, which claimed that assistant store managers were misclassified as exempt from overtime pay," Staples said in a statement.

APPENDIX C: LIST OF TOP 25 FIRMS WITH THE HIGHEST PERCENTAGE OF OVERTIME AVOIDING POSITIONS*

| NAME | INDUSTRY |
|------------------------------|---|
| BOJANGLES | Food Services and Drinking Places |
| 84LUMBER | Building Material and Garden Equipment/Supply Dealers |
| ARBY'S | Food Services and Drinking Places |
| SONIC DRIVE-IN | Food Services and Drinking Places |
| SPENCER'S | Miscellaneous Store Retailers |
| SPIRIT HALLOWEEN | General Merchandise Stores |
| WEIS MARKETS | Food and Beverage Stores |
| PIZZA HUT | Food Services and Drinking Places |
| DOMINO'S PIZZA | Food Services and Drinking Places |
| COMBINED INSURANCE | Insurance Carriers and Related Activities |
| JIFFY LUBE | Repair and Maintenance |
| POPEYES | Food Services and Drinking Places |
| BURGER KING | Food Services and Drinking Places |
| GNC | Health and Personal Care Stores |
| H&R BLOCK | Professional, Scientific, and Technical Services |
| LIFE TIME FITNESS | Amusement, Gambling, and Recreation |
| DAIRY QUEEN | Food Services and Drinking Places |
| BOSTON MARKET | Food Services and Drinking Places |
| MAINSOURCE BANK | Credit Intermediation and Related Activities |
| SUBWAY SANDWICHES | Food Services and Drinking Places |
| JIMMY JOHN'S | Food Services and Drinking Places |
| LITTLE CAESARS | Food Services and Drinking Places |
| CROSSMARK | Merchant Wholesalers, Nondurable Goods |
| OFFICEMAX | Miscellaneous Store Retailers |
| KFC - KENTUCKY FRIED CHICKEN | Food Services and Drinking Places |

*Includes firms with minimum 100 job postings with a weekly equivalent pay of \$455 +/- \$50 between 2010 and 2018. The sample includes positions in both firm-owned and franchised locations.

APPENDIX D: MODEL WITH ABUNDANT SUPPLY OF NEW EMPLOYEES

In section 2, we discuss a model in which the worker supply was limited, leading to the expected worker utility strictly exceeding the reservation level. In this appendix, we relax that assumption and consider now the case of abundant supply of new employees, allowing us to replace assumption (3) with

$$\theta(A/\beta) - G(A/\beta) = u_0. \quad (10)$$

We going to focus on the more interesting special case of a very costly overtime that violates (2). Specifically, we assume now that

$$\theta\alpha - g(\alpha) + \gamma\theta A - G(A) < u_0. \quad (11)$$

Given (5), the firm that wishes to assign overtime to the incumbent employee will optimally increase compensation by w_0 to satisfy the participation constraint with equality:

$$w_0 + \theta\alpha - g(\alpha) + \gamma\theta A - G(A) = u_0.$$

Now, an increase in θ (reduction in the firm's bargaining power, or perhaps a minimum wage law that increases the required per-unit employee compensation) would increase the cost of hiring a new employee, $\theta(A/\beta)$, causing reservation constraint (10) to no longer bind. However, the cost of assigning overtime to an incumbent employee would remain the same for small enough increases in θ . This is because when $\theta' - \theta > 0$ is small, the firm can choose $0 \leq w'_0 < w_0$ that satisfies

$$w_0 + \theta\alpha - g(\alpha) + \gamma\theta A - G(A) = w'_0 + \theta\alpha - g(\alpha) + \gamma\theta' A - G(A).$$

This, in this case, a reduction in the firm's bargaining power (or an increase in the minimum) makes overtime relatively more attractive.

Claim 2. *Under assumptions (10) and (11), the firm will strictly prefer to use overtime given marginal reduction in its bargaining power $(1 - \theta)$.*

Proof. The firm strictly prefers to rely on overtime rather than hire a new employee if and only if $\Delta\pi < 0$. The left hand side of this inequality is given by (1). The results follow from observing that (1) is decreasing in $(C-L)$ and increasing in β . Furthermore, it is negative when $\beta \leq 1/\gamma$, and when $\beta > 1/\gamma$, it is increasing in θ .

APPENDIX E: SAMPLE CONSTRUCTION

This table details the sample construction process for the job positions from the Burning Glass Technologies database.

| Exclusion criteria | Remaining observations |
|--|------------------------|
| Job postings between Jan. 2010 and Dec. 2018 with valid employer name, salary, pay frequency, and title data | 13,223,372 |
| - Positions in U.S. territories | 13,214,583 |
| - Positions at federal/state/local government organizations and armed forces | 10,015,398 |
| - Positions at nonprofit organizations | 9,566,105 |
| - Positions at elementary/middle/high schools, colleges, universities, and hospitals | 7,017,236 |
| - Positions exempt from FLSA (motor carriers, railways, airlines, credit intermediaries) | 5,437,135 |
| - Positions with commission, premium, or short-term incentive-based salaries | 5,077,147 |
| - Contractor and self-employment positions | 4,961,778 |
| - Internships and part-time positions | 4,271,773 |
| All private sector job postings with the necessary data | 4,271,773 |
| Positions with a salary in the range of \$455 +/- \$50 | 450,025 |

APPENDIX F: CLASSIFICATION OF JOB TITLES FROM LOW WAGE-HIGH VIOLATION VIOLATION INDUSTRIES

| Position Type (Search Terms*) | Managerial titles | Worker titles |
|--|---|--|
| Customer-facing Retail Store Employees (Retail, Shop, and Store) | Search Term + (Coordinator, Director, Head, Lead, Leader, Keyholder, Management, Manager, Supervisor) | Search Term + (Agent, Assistant, Associate, Attendant, Clerk, Crew, Employee, Labor, Member, People, Person, Personnel, Professional, Specialist, Sales Consultant, Sales Representative, Storekeeper, Staff, Teammate, Worker); Cashier |
| <i>Top 3 Most Common Titles:</i> | <i>Store Manager, Assistant Store Manager; Retail Sales Manager</i> | <i>Cashier; Retail Sales Associate; Store Associate</i> |
| Customer-facing Food and Drink Services Employees (Restaurant, Café, Bakery, Grill, Kitchen, and NAICS=722) | Search Term + (Captain, Coordinator, Director, Head, Lead, Leader, Management, Manager, Supervisor) | Search Term + (Assistant, Associate, Crew member Employee, Host, Hostess, Labor, Teammate, Team member, Staff, Waiter, Waitress, Worker) |
| <i>Top 3 Most Common Titles:</i> | <i>Assistant Manager; Restaurant Manager; Shift Manager</i> | <i>Host/Hostess; Team Member, Wait Staff</i> |
| Janitors/Housekeepers (Housekeep, Janitor, Custodia) | Search Term + (Coordinator, Director, Head, Lead, Leader, Management, Manager, Supervisor, Executive Housekeeper) | Search Term + (Agent, Assistant, Associate, Attendant, Cleaner, Custodian, Employee, Housekeeper, Janitor, Labor, Maid, Member, Personnel, Professional, Specialist, Staff, Worker) |
| <i>Top 3 Most Common Titles:</i> | <i>Housekeeping Supervisor; Housekeeping Manager, Custodial Supervisor</i> | <i>Housekeeper; Janitor; Custodian</i> |
| Hotel Receptionists (Front desk, Reception, Front Office, Guest Services, Hotel, Motel, Lodge, Resort, Inn) | Search Term + (Coordinator, Lead, Head, Manager, Supervisor) | Search Term + (Agent, Associate, Concierge, Night Auditor, Receptionist, Representative) |
| <i>Top 3 Most Common Titles:</i> | <i>Front Desk Supervisor; Front Desk Coordinator; Front Office Coordinator</i> | <i>Front Desk Agent; Night Auditor; Guest Services Agent</i> |

*We manually go through all search results to eliminate irrelevant titles.

APPENDIX G: VARIABLE DEFINITIONS

| Variable name | Description | Data source (Source variable) |
|----------------------------|--|---|
| <i>OTAvoided</i> | Indicator variable equal to one if the job listing is for a salaried position with a managerial title that pays just above the overtime payment avoidance threshold (between \$455 and \$505 per week), and zero if it pays just below the threshold (between \$405 and \$455 per week). | Burning Glass (Minsalary, PayFreq, and CleanTitle) |
| <i>FPI</i> | A state-level index of firms' power over employees that takes a value between 0 (Weak firms) and 4 (Powerful firms). The index is a sum of four indicator variables that indicate whether: <ul style="list-style-type: none"> - the average union membership in the state is below the median state in the same year - the state's annual average unemployment rate is above the median state in the same year - the job opening rate as of the year end in the state is below the median state in the same year - the state has right-to-work laws in place | Authors' calculations using data from the National Conference of State Legislatures, UnionStats, Bureau of Labor Statistics |
| <i>WPRank</i> | A state's annual ranking among all 51 states based on the strength of its worker protection laws as of 2019 | OXFAM America (Worker Rights Protection Rankings) |
| <i>RTW</i> | Indicator variable equal to one if a state has right-to-work laws in place in a given year, and zero otherwise | National Conference of State Legislatures |
| <i>WeeklyPay</i> | Weekly equivalent of the salary for a position | Burning Glass (Minsalary) |
| <i>Min(Max)_Education</i> | The lower (upper) end of the range for years of education required for the position as provided in the job listing. When missing it is set equal to zero. | Burning Glass (Minedu/Maxedu) |
| <i>Min(Max)_Experience</i> | The lower (upper) end of the range for years of experience required for the position as provided in the job listing. When missing it is set equal to zero. | Burning Glass (Minexp/Maxexp) |
| <i>ShaleBoom</i> | Natural logarithm of one plus total shale wells discovered in the FIPS code from 2003 until the year of observation. | Gilje (2019) |
| <i>LaborDemand</i> | The total number of in-sample job listings in the same commuting zone-soc code-year divided by the commuting zone population (in 00000), using both the full sample and subsamples of job listings that satisfy data requirements | Authors' calculations using data from Burning Glass and Census |
| <i>EducAttain</i> | Percentage of people over the age of 25 with a bachelors degree or higher in the commuting zone | Authors' calculations using data from Census and U.S. Department of Agriculture |

APPENDIX H: ROBUSTNESS TESTS

TABLE A1: RELATION BETWEEN OVERTIME AVOIDING POSITIONS AND FIRM POWER (WITH OLS)

This table presents estimates from OLS regressions of *OTAvoided* on proxies for firms' power over employees and control variables using all job listings that satisfy data requirements, are in states where FLSA overtime non-exemption threshold (\$455 p/w) is binding, and have a salary within \$50 of the threshold. *OTAvoided* is an indicator variable equal to one for salaried positions with a managerial title that pay above the FLSA non-exemption threshold and zero for all other positions. *FPI* (ranges from 0 to 4), *WPRank* (ranges from 1 to 51), and *RTW* (ranges from 0 to 1) are state-level proxies for firms' power relative to employees, where higher values of each proxy indicate weaker employee protection, and stronger firm power. All models include indicator variables for missing values of each control variable. Detailed definition of each variable is reported in Appendix G. Standard errors are clustered by firm. t-stats are reported in parentheses. ***, **, and * indicate statistical significance at a two-sided 1%, 5% and 10% level, respectively.

| | (1) | (2) | (3) |
|-----------------------|---------------------|---------------------|---------------------|
| <i>FPI</i> | 0.005*** (3.42) | | |
| <i>WPRank</i> | | 0.001*** (5.62) | |
| <i>RTW</i> | | | 0.007*** (3.60) |
| <i>WeeklyPay</i> | 0.001*** (10.18) | 0.001*** (10.18) | 0.001*** (10.16) |
| <i>Min_Experience</i> | -0.001 (-0.30) | -0.000 (-0.22) | -0.000 (-0.24) |
| <i>Min_Education</i> | -0.008 (-1.42) | -0.008 (-1.42) | -0.008 (-1.42) |
| <i>Max_Experience</i> | 0.002 (1.31) | 0.001 (1.20) | 0.001 (1.24) |
| <i>Max_Education</i> | 0.009 (1.62) | 0.009 (1.62) | 0.009 (1.62) |
| <i>Industry F.E.</i> | ✓ | ✓ | ✓ |
| <i>Year F.E.</i> | ✓ | ✓ | ✓ |
| R ² | 4.6% | 4.7% | 4.6% |
| Obs. count | 450,025 | 450,025 | 450,025 |

TABLE A2: RELATION BETWEEN OVERTIME AVOIDING POSITIONS AND FIRM POWER IN LOW WAGE-HIGH VIOLATION INDUSTRIES
(WITH OLS)

This table presents estimates from OLS regressions of *OTAvoided* on proxies for firm power over employees using four subsamples of job listings from industries classified as low wage-high violation industries by the DOL. The subsamples examined are customer-facing retail store employees, customer-facing food and drink service employees, hotel front desk/reception employees, and janitors/housekeepers. All models include indicator variables for missing values of each control variable. Detailed definition of each variable is reported in Appendix G. Standard errors are clustered by firm. z-stats are reported in parentheses. ***, **, and * indicate statistical significance at a two-sided 1%, 5% and 10% level, respectively.

| | <i>Retail</i> | | | <i>Food and Drink Serv.</i> | | | <i>Hotel</i> | | | <i>Janitors/Housekeepers</i> | | |
|-----------------------|---------------------|---------------------|---------------------|-----------------------------|--------------------|--------------------|---------------------|---------------------|---------------------|------------------------------|---------------------|---------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| <i>FPI</i> | 0.015*** (2.80) | | | 0.044*** (5.54) | | | 0.005** (2.35) | | | 0.009*** (4.34) | | |
| <i>WPRank</i> | | 0.002*** (2.87) | | | 0.004*** (5.92) | | | 0.000** (2.14) | | | 0.001*** (4.00) | |
| <i>RTW</i> | | | 0.029** (2.30) | | | 0.080*** (5.00) | | | 0.012*** (2.91) | | | 0.020*** (5.19) |
| <i>WeeklyPay</i> | 0.003*** (4.97) | 0.003*** (4.96) | 0.003*** (4.92) | 0.007*** (9.88) | 0.007*** (9.72) | 0.007*** (9.80) | 0.001*** (6.70) | 0.001*** (6.69) | 0.001*** (6.63) | 0.001*** (6.81) | 0.001*** (6.84) | 0.001*** (6.87) |
| <i>Min_Experience</i> | -0.002 (-0.12) | -0.001 (-0.08) | -0.002 (-0.11) | -0.018 (-0.73) | -0.017 (-0.73) | -0.016 (-0.69) | -0.014 (-1.19) | -0.015 (-1.20) | -0.014 (-1.19) | -0.006 (-1.11) | -0.006 (-1.23) | -0.005 (-1.13) |
| <i>Min_Education</i> | -0.036** (-2.18) | -0.036** (-2.17) | -0.035** (-2.16) | 0.053* (1.78) | 0.050* (1.80) | 0.051* (1.77) | -0.012** (-2.42) | -0.012** (-2.44) | -0.012** (-2.45) | -0.066** (-2.17) | -0.067** (-2.19) | -0.065** (-2.12) |
| <i>Max_Experience</i> | 0.018 (1.09) | 0.017 (1.04) | 0.018 (1.08) | 0.013 (0.77) | 0.011 (0.62) | 0.011 (0.63) | 0.022* (1.95) | 0.022* (1.93) | 0.022** (1.98) | 0.004 (1.19) | 0.004 (1.25) | 0.004 (1.20) |
| <i>Max_Education</i> | 0.033** (2.08) | 0.033** (2.07) | 0.032** (2.06) | -0.049* (-1.80) | -0.047* (-1.82) | -0.047* (-1.78) | 0.011** (2.29) | 0.011** (2.31) | 0.011** (2.31) | 0.066** (2.17) | 0.067** (2.19) | 0.065** (2.12) |
| <i>Industry F.E.</i> | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>Year F.E.</i> | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| R ² | 16.7% | 17.0% | 16.7% | 37.1% | 37.2% | 37.0% | 6.9% | 6.9% | 6.9% | 5.9% | 5.9% | 6.0% |
| Obs. count | 14,218 | 14,218 | 14,218 | 12,354 | 12,354 | 12,354 | 6,967 | 6,967 | 6,967 | 8,202 | 8,202 | 8,202 |

TABLE A3: RELATION BETWEEN OVERTIME AVOIDING POSITIONS AND FIRM POWER

This table presents estimates from OLS regressions of *OTAvoided* on proxies for firms' power over employees and control variables. Estimates are reported for the full sample, which includes all job listings that satisfy data requirements, are in states where FLSA overtime non-exemption threshold (\$455 p/w) is binding and have a salary within \$50 of the threshold, and four subsamples of job listings from industries classified as low wage-high violation industries by the DOL. All models include indicator variables for missing values of each control variable. *OTAvoided* is an indicator variable equal to one for salaried positions with a managerial title that pay above the FLSA non-exemption threshold and zero for all other positions. *FPI* (ranges from 0 to 4), *WPRank* (ranges from 1 to 51), and *RTW* (ranges from 0 to 1) are state-level proxies for firms' power relative to employees, where higher values of each proxy indicate weaker employee protection and stronger firm power. All models include indicator variables for missing values of each control variable. Detailed definition of each variable is reported in Appendix G. Standard errors are clustered by firm. t-stats are reported in parentheses. ***, **, and * indicate statistical significance at a two-sided 1%, 5% and 10% level, respectively.

| | <i>Full Sample</i> | | | <i>Low Wage-High Violation Industries</i> | | |
|-----------------------|--------------------|--------------------|--------------------|---|--------------------|--------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| <i>FPI</i> | 0.003*** (5.23) | | | 0.015*** (4.28) | | |
| <i>WPRank</i> | | 0.000*** (6.82) | | | 0.002*** (5.84) | |
| <i>RTW</i> | | | 0.007*** (5.17) | | | 0.026*** (3.91) |
| <i>WeeklyPay</i> | 0.001*** (9.75) | 0.001*** (9.74) | 0.001*** (9.75) | 0.003*** (7.13) | 0.003*** (7.19) | 0.003*** (7.07) |
| <i>Min_Experience</i> | 0.001 (1.05) | 0.001 (1.03) | 0.001 (1.06) | -0.018* (-1.65) | -0.017 (-1.59) | -0.018 (-1.62) |
| <i>Min_Education</i> | -0.002 (-0.97) | -0.002 (-0.99) | -0.002 (-0.99) | -0.000 (-0.01) | -0.000 (-0.02) | -0.000 (-0.00) |
| <i>Max_Experience</i> | 0.001 (1.53) | 0.001 (1.51) | 0.001 (1.51) | 0.016* (1.75) | 0.015* (1.66) | 0.016* (1.73) |
| <i>Max_Education</i> | 0.003 (1.51) | 0.003 (1.54) | 0.003 (1.54) | 0.002 (0.12) | 0.002 (0.12) | 0.002 (0.11) |
| <i>Firm-Year FE</i> | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| R ² | 53.9% | 54.0% | 53.9% | 68.6% | 68.7% | 68.6% |
| Obs. count | 83,646 | 83,646 | 83,646 | 12,285 | 12,285 | 12,285 |