Minimum Wage Noncompliance in Illinois, 2014-2022

Report by Daniel J. Galvin, Jake Barnes, Janice Fine, and Jenn Round

September 2023

RUTGERS
School of Management and Labor Relations

workplace justice lab@RU

Contents

Introduction

Most workers in Illinois are entitled to a minimum hourly wage either through state law, federal law, or local ordinance. The state minimum wage is currently $13. In Chicago, it is $15.80 per hour and $15.00 at small businesses; for workers in Cook County outside Chicago, it is $13.70 per hour.

Nevertheless, many employers fail to pay workers the minimum wage they are owed for the hours they worked. Indeed, this report finds that tens of thousands of Illinoisans are illegally paid below the minimum wage each year.

To estimate the incidence of minimum wage violations in Illinois between 2014 and 2022, this memo uses Current Population Survey (CPS) Outgoing Rotation Group data, widely considered the best publicly available survey data on hours and earnings. CPS data enable us to identify minimum wage violations for all covered, nonexempt workers in Illinois. Estimates should be considered *conservative underestimates* due to data limitations and methods used.[1]

We find that wage theft is widespread and persistent in Illinois. Among our key findings:

- **About 360,000 workers per year—32% of eligible low-wage workers and 7% of all workers—suffered minimum wage violations between 2014-2022.**
- **Minimum wage violations cost individual workers in Illinois over $4,100 per year on average, totaling $1.5 billion each year and over $13.9 billion in the aggregate over the last nine years.**
- Violations disproportionately harm Black, Latinx, and Asian workers, immigrants, and women.
- Part-time workers, workers without a high school or college degree, service-sector workers, non-unionized workers, hourly workers, and those with less stable employment are also significantly more likely to experience violations, as are workers under 25 and over 65 and unmarried workers.
- The highest-violation industries included Private Households (27%), Food Services and Drinking Places (21%), Personal and Laundry Services (19%), Agriculture (14%), and Arts, Entertainment, and Recreation (13%).
- The highest-violation occupations included Food Preparation and Serving Related Workers (27%), Waiters and Waitresses (26%), Food Preparation Workers (24%), Combined Food Preparation and Serving Workers (22%), and Cashiers (22%).
- Violations are pervasive across the state of Illinois. Although the Chicago-Naperville-Joliet metro area had the largest share of violations, nearly 500,000 workers in "downstate" Illinois also suffered minimum wage violations between 2014-2022; downstate workers lost over $181 million each year and over $1.6 billion in the aggregate over the last nine years.

The following pages detail variation in minimum wage violations in Illinois by industry, occupation, and demographic characteristics.

[1] See Methodological Appendix for more information.

Estimated Wages Lost, 2014-2022

Using the most conservative calculations, we estimate that 32% of eligible low-wage workers (and 7% of all eligible workers) in Illinois experienced minimum wage violations between 2014-2022 – on average, 364,142 workers per year and roughly 3.2 million workers in aggregate.[2] These workers lost $2.54 per hour on average, or over $4,000 per year.

If victims of minimum wage violations worked 52 weeks a year at this "reduced rate," they would have lost an average of almost $1 million per hour; almost $30 million per week, and over $1.5 billion per year.

All told, those suffering minimum wage violations lost a total of $13.9 billion between 2014-2022.

Table 1: Lost Wages Per Year in Illinois

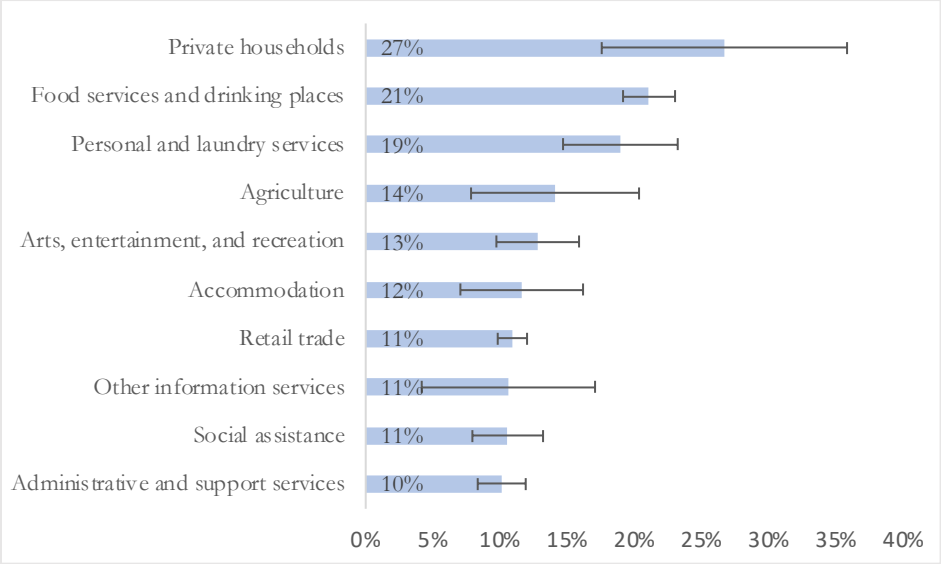
	Eligible low-wage workers experiencing minimum wage violations								
	Share of eligible low-wage workers	Number of workers experiencing violation	Average hourly wages lost	Share of income lost	Average lost per week	Average lost per year	Lost wages each hour (aggregate)	Lost wages each week (aggregate)	Lost wages each year (aggregate)
Average:	**32%**	**364,142**	**$2.54**	**23%**	**$79**	**$4,105**	**$962,817**	**$29,845,133**	**$1,551,946,900**
2014	24%	263,952	$1.40	17%	$45	$2,363	$370,687	$11,992,349	$623,602,159
2015	20%	226,236	$1.84	21%	$57	$2,957	$417,191	$12,866,622	$669,064,355
2016	24%	282,046	$2.20	22%	$72	$3,744	$619,753	$20,306,806	$1,055,953,911
2017	31%	345,524	$2.36	23%	$71	$3,688	$814,725	$24,504,906	$1,274,255,088
2018	35%	419,390	$2.30	21%	$70	$3,623	$966,457	$29,219,278	$1,519,402,450
2019	45%	502,991	$2.90	24%	$90	$4,691	$1,457,010	$45,378,576	$2,359,685,928
2020	40%	434,912	$3.29	25%	$97	$5,053	$1,429,462	$42,265,811	$2,197,822,149
2021	38%	490,944	$3.04	23%	$96	$4,991	$1,493,260	$47,123,782	$2,450,436,670
2022	31%	311,287	$3.52	26%	$112	$5,838	$1,096,805	$34,948,065	$1,817,299,390

[2] Some of these unpaid wages may have involved overtime violations as well. Data limitations prevent us from differentiating between unpaid wages due to overtime violations and unpaid wages due to minimum wage violations (despite the fact that each is treated differently by most labor standards enforcement agencies). However, only 7% of those whose hourly wage was less than their applicable statutory minimum wage worked over 40 hours per week and did not receive "overtime, tips, or commissions."

Industrial and Occupational Trends

The industries with the highest minimum wage violation rates are detailed in **Figure 1** below. The Private Households industry had the highest estimated violation rate (27%). Food Services and Drinking Places (21%) ranked second, followed by Personal and Laundry Services (19%), Agriculture (14%), and Arts, Entertainment, and Recreation (13%).

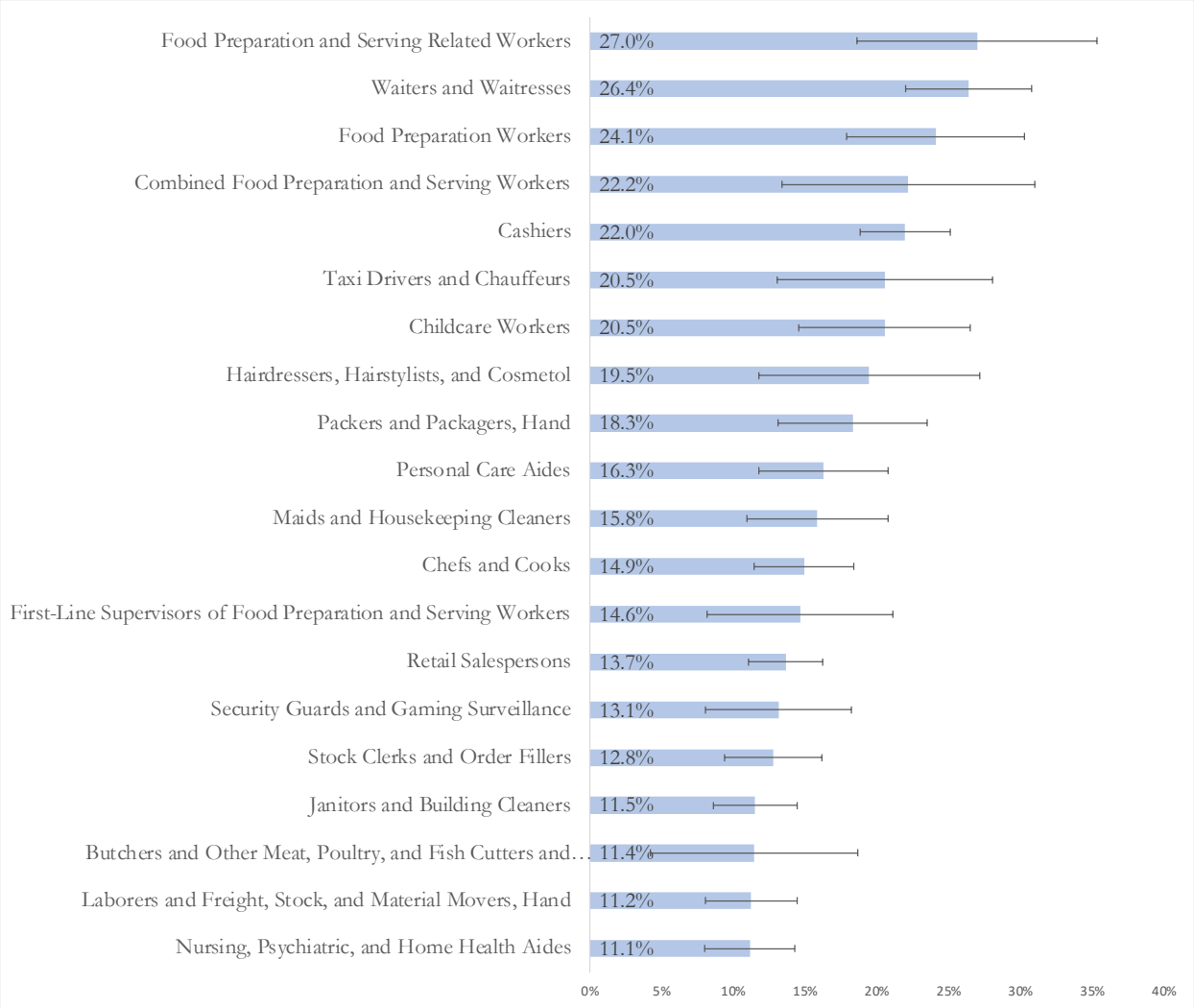
Figure 1: Highest Minimum Wage Violation Rates by Industry (All Eligible Workers, 2014-2022)



Note: Estimates represent predicted probabilities. 95% confidence intervals shown.
Average violation rate, all industries: 7 percent. Only includes industries with n>100.

The highest-violation occupations without respect to industry included: Food Preparation and Serving Related Workers (27%), Waiters and Waitresses (26%), Food Preparation Workers (24%), Combined Food Preparation and Serving Workers (22%), and Cashiers (22%).

Figure 2: Highest Minimum Wage Violation Rates by Occupation (All Eligible Workers, 2014-2022)



Note: Estimates represent predicted probabilities. 95% confidence intervals shown.
Average violation rate, all occupations: 9.4 percent. Only includes occupations with sample size greater than the mean (117).

Table 2: Occupations with Highest Share of Violations by High-Violation Industry

Industry	Highest Share of Violations (Occupations)
Private Households (27%)	Childcare Workers Personal Care Aides Maids and Housekeeping Cleaners
Food Services and Drinking Places (21%)	Waiters and Waitresses Chefs and Cooks Cashiers Food Preparation Workers
Personal and Laundry Services(19%)	Personal Appearance Workers Hairdressers, Hairstylists, and Cosmetologists
Agriculture (14%)	Agricultural workers
Arts, Entertainment, and Recreation (13%)	Recreation and Fitness Workers Entertainment Attendants and Related Workers
Accommodation (12%)	Maids and Housekeeping Cleaners Recreation and Fitness Workers
Retail Trade (11%)	Cashiers Stock Clerks and Order Fillers Retail Salespersons

Demographic Factors

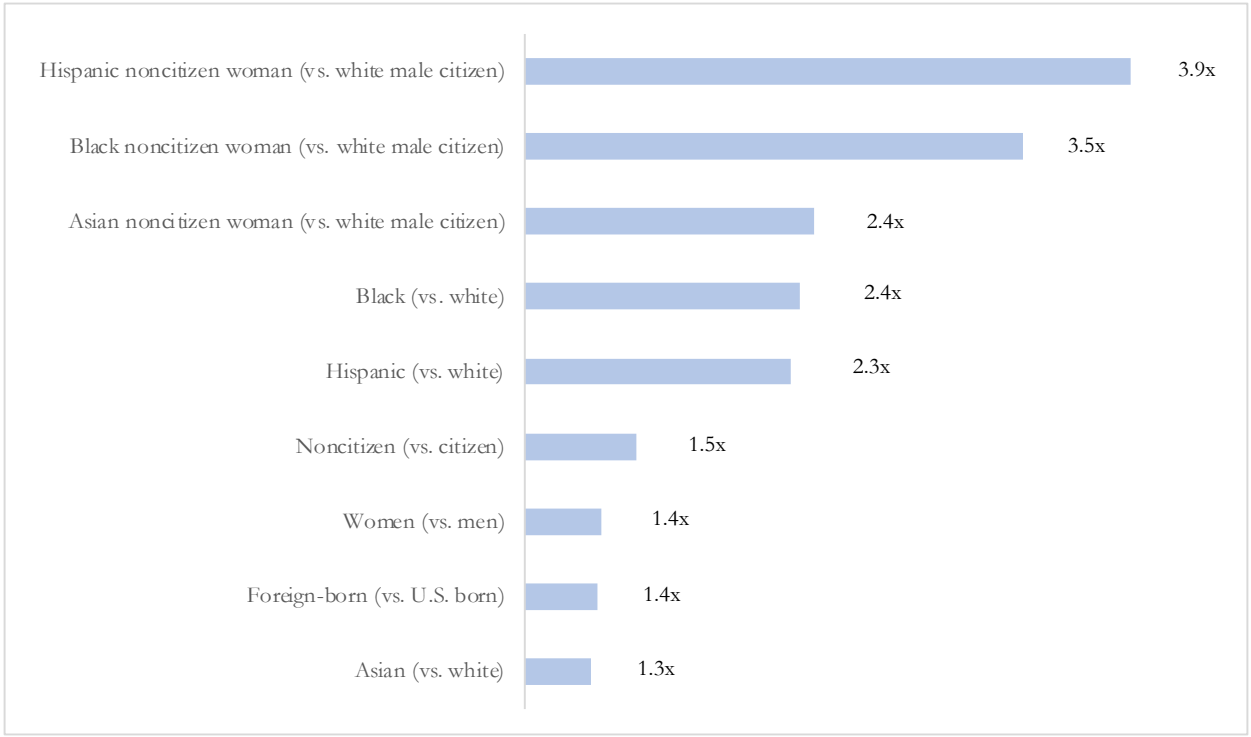
CPS data do not tell us *why* some industries and occupations have higher violation rates than others. However, it is worth noting that the industries with the highest estimated violation rates tend to employ greater numbers of women, people of color, and immigrants, while industries with lower violation rates tend to employ more white workers, men, and have historically been more unionized; these patterns point to discrimination and occupational segregation as potential explanations.

To assess the likelihood that any given worker would suffer a minimum wage violation, we generate and compare predicted probabilities across demographic groups (among all eligible workers). For people of color, the reference group is white workers; for women, it's men; for noncitizens, the reference group is citizens, and so on.

As shown in **Figure 3** below, Black workers were 2.4 times more likely than white workers to experience a minimum wage violation in Illinois; Latinx workers were 2.3 times more likely; and Asian workers were 1.3 times more likely. Noncitizens were 1.5 times more likely than U.S. Citizens, foreign-born workers were 1.4 times more likely than U.S.-born workers, and women were 1.4 times more likely to experience a minimum wage violation than men.

When the interaction of gender, race, and citizenship are taken into account, the effects of discrimination are compounded. Latina women who were not U.S. citizens, for example, were 3.9 times more likely than white male citizens to experience minimum wage violations in Illinois. Black and Asian women who were not citizens were 3.5 times and 2.4 times more likely, respectively.

Figure 3: Probability of Minimum Wage Violation by Group (vs Reference Group) 2014-2022

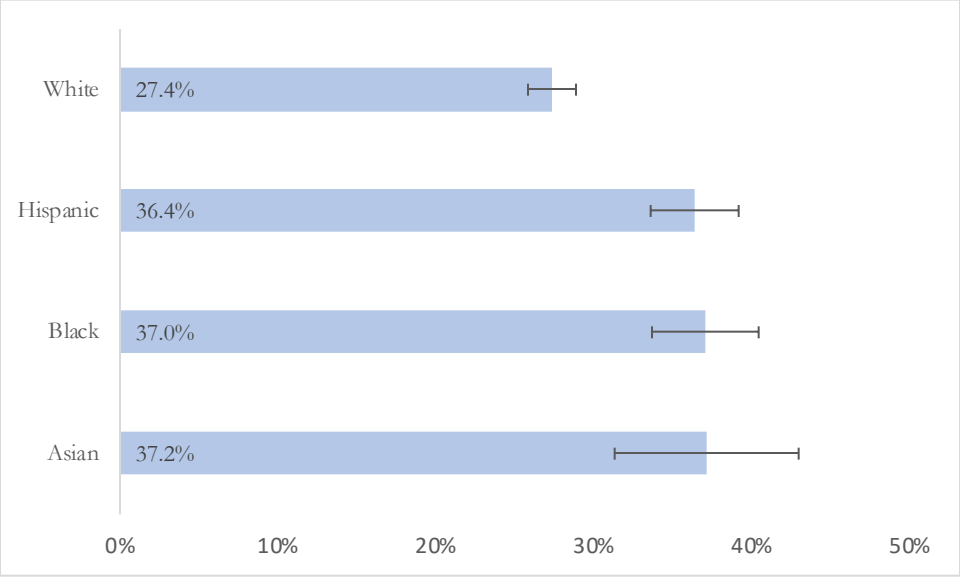


Note: Estimates are predicted probabilities. All relative differences are statistically significant.

As noted, the disparities in **Figure 3** likely reflect the greater likelihood that people of color, noncitizens, and women were working in jobs at the bottom of the wage distribution. When we look only at low-wage workers (rather than all workers, as above), violation rates appear more similar across demographic groups. This reflects the fact that wage theft is not limited to any particular group but affects low-wage workers of all races, ethnicities, genders, and immigration statuses.

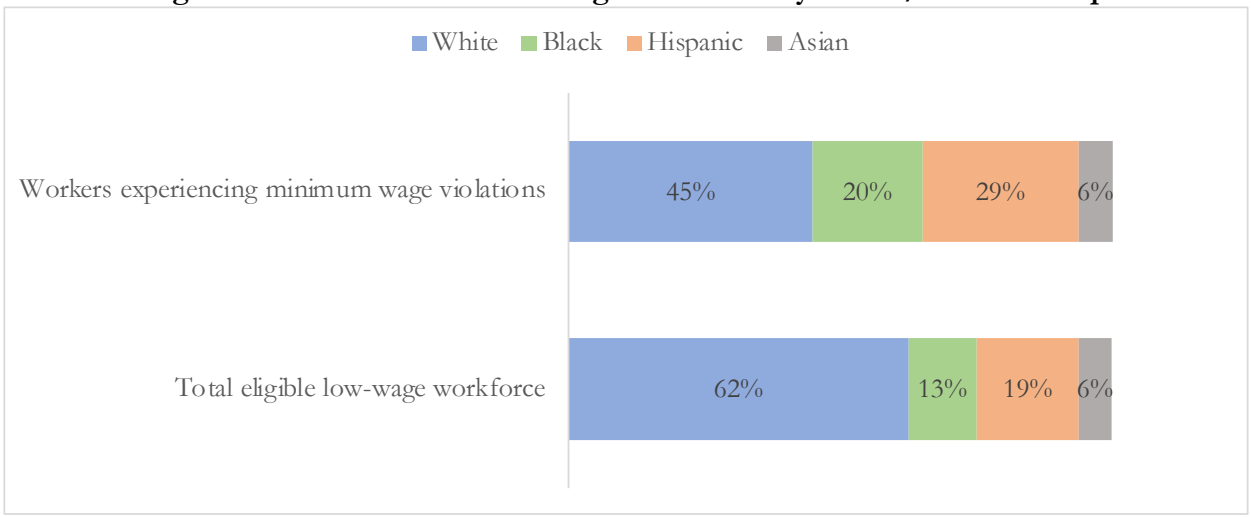
However, even within low-wage worker pool, white workers were significantly less likely to suffer minimum wage violations than people of color (27% for white low-wage workers vs. 36-37% for low-wage workers of color).

Figure 4: Probability of Minimum Wage Violation (low-wage workers only), 2014-2022



Overall, white workers experienced the largest share of minimum wage violations. But this was due to the fact that white workers constituted the largest demographic group in the minimum-wage-eligible workforce. Indeed, people of color experienced a disproportionate share of minimum wage violations, given their smaller share of the workforce. Specifically, while white workers constituted 62 percent of the minimum-wage-eligible workforce, they suffered only 45 percent of all minimum wage violations; Black workers, in contrast, made up only 13 percent of the workforce but suffered 20 percent of all violations; and Hispanic workers made up 19 percent of the workforce but suffered 29 percent of all violations. Asian workers' share of violations (6%) was proportionate to their share of the workforce (see **Figure 5**).

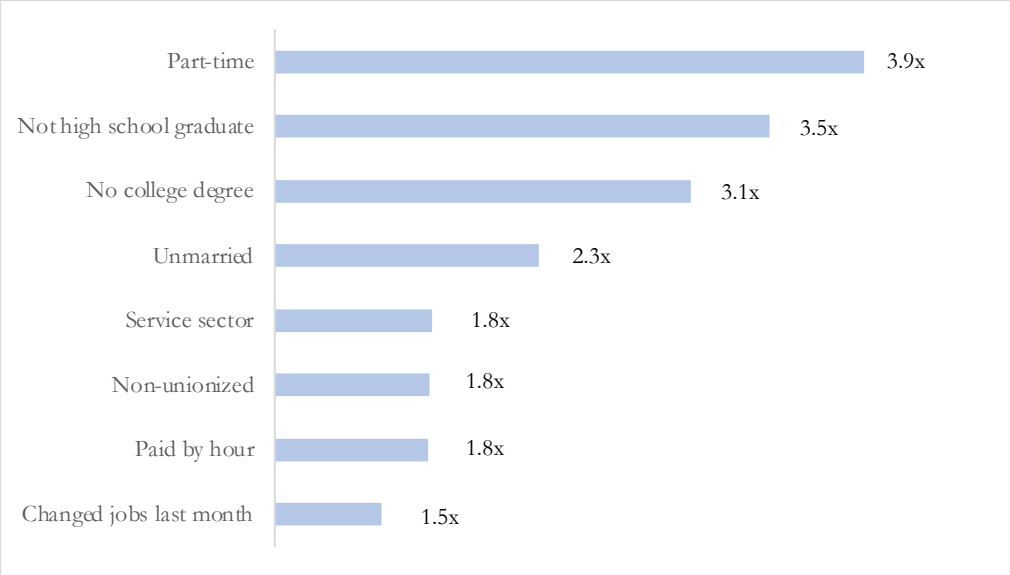
Figure 5: Shares of Minimum Wage Violations by Racial/Ethnic Group



Other Risk Factors

Figure 6 displays other "risk factors" for minimum wage violations in Illinois. Part-time workers, those without high school or college diplomas, unmarried workers, service-sector workers, nonunionized workers, those paid by the hour, and those who changed jobs in the past year (likely including many temporary workers) were all significantly more likely to suffer minimum wage violations than were their reference groups (full-time workers, those with degrees, married workers, non-service sector workers, unionized workers, those not paid by the hour (e.g. salary workers), and those with more stable employment histories).

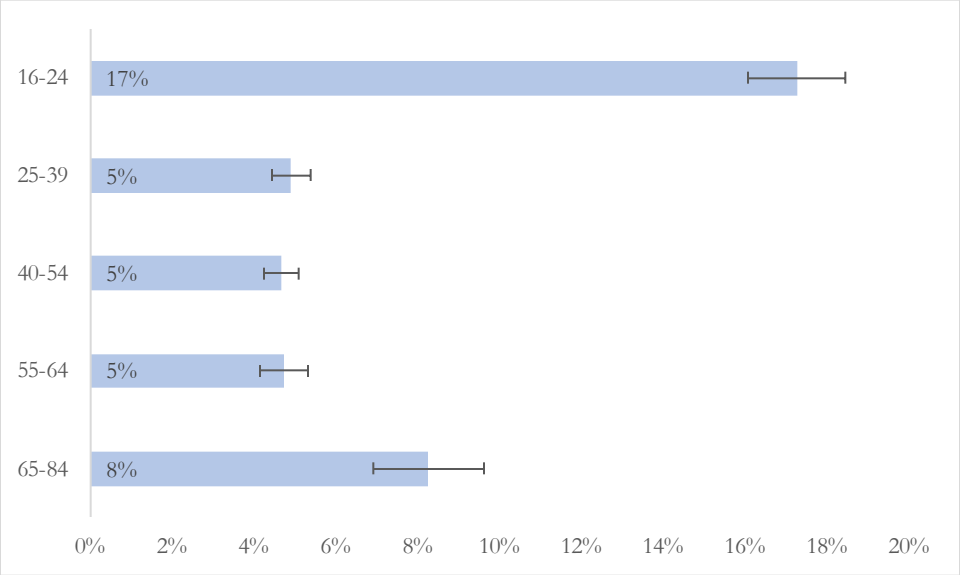
Figure 6: Probability of Minimum Wage Violation by Other Characteristics (Relative to Reference Group), 2014-2022



Note: Estimates are predicted probabilities. All relative differences are statistically significant.

Workers under 25 years were significantly more likely to experience a minimum wage violation than workers in any other age group. Those 65 years of age and older were also more likely to suffer violations than those aged 25-64.

Figure 7: Probability of Minimum Wage Violation by Age Group, 2014-2022



Note: Youths under the age of 16 are excluded from the sample

Violations in "Downstate" Illinois

The greatest share of minimum wage violations in Illinois occur in the greater Chicago Metropolitan Area. However, workers in "downstate" Illinois also suffer a large number of minimum wage violations each year at great cost to workers.

Looking only at workers outside the Chicago-Naperville-Joliet metro area, we find that over 57,000 workers in "downstate" Illinois per year on average also suffered minimum wage violations between 2014-2022, or roughly 500,000 workers in total. Downstate workers lost over $181 million each year and over $1.6 billion in the aggregate over the last nine years.

Table 3: Lost Wages Per Year in Downstate Illinois

	Eligible low-wage workers experiencing minimum wage violations in "downstate" Illinois								
	Share of eligible low-wage workers	Number of workers experiencing violation	Average hourly wages lost	Share of income lost	Average lost per week	Average lost per year	Lost wages each hour (aggregate)	Lost wages each week (aggregate)	Lost wages each year (aggregate)
Average:	**15%**	**57,982**	**$1.97**	**22%**	**$61**	**$3,176**	**$113,343**	**$3,487,147**	**$181,331,642**
2014	21%	86,885	$1.68	20%	$54	$2,818	$145,866	$4,707,735	$244,802,214
2015	14%	51,441	$1.73	21%	$56	$2,891	$89,078	$2,859,921	$148,715,917
2016	15%	57,427	$1.91	23%	$59	$3,071	$109,731	$3,391,741	$176,370,542
2017	11%	44,793	$1.34	16%	$37	$1,898	$60,111	$1,635,346	$85,037,969
2018	8%	31,088	$1.67	20%	$56	$2,890	$51,943	$1,728,022	$89,857,152
2019	11%	42,739	$2.76	33%	$92	$4,771	$117,899	$3,921,500	$203,918,009
2020	18%	73,900	$1.75	18%	$50	$2,608	$129,270	$3,706,086	$192,716,483
2021	19%	81,823	$2.16	20%	$61	$3,166	$176,460	$4,982,386	$259,084,047
2022	14%	51,744	$2.70	25%	$86	$4,474	$139,731	$4,451,585	$231,482,441

Conclusion

Minimum wage noncompliance is pervasive in Illinois. Between 2014-2022, this type of wage theft cost 3.2 million low-wage workers over $4,100 per year on average, totaling $1.55 billion each year and over $13.9 billion in total over nine years. Minimum wage violations disproportionately affect low-wage workers who can least afford to be underpaid and demographic groups that are already vulnerable to other forms of exploitation (e.g., noncitizens, people of color, women). The violations documented in this study increase the number of workers living in poverty while disadvantaging those businesses that comply with basic labor standards. In detailing which industries, occupations, and demographic groups are most susceptible to wage theft, it is our hope that this report will help the Illinois Department of Labor and local labor standards enforcement offices to craft targeted interventions and campaigns that achieve fair wages and working conditions for communities across Illinois.

About the Authors

Daniel J. Galvin is a Professor of Political Science and Faculty Fellow at the Institute for Policy Research at Northwestern University. He is also a Nonresident Senior Fellow at the Workplace Justice Lab@Rutgers University. He holds a Ph.D. from Yale University. He can be reached at: galvin@northwestern.edu.

Jake Barnes is a Ph.D. candidate at the Rutgers School of Management and Labor Relations (SMLR) and an Affiliated Scholar with the Workplace Justice Lab@Rutgers University. He holds a M.S. from SMLR and a B.S. from the Cornell University ILR School.

Janice Fine is the Director of the Workplace Justice Lab@Rutgers University. She holds a Ph.D. from MIT in political science and is Professor of Labor Studies and Employment Relations at Rutgers School of Management and Labor Relations.

Jenn Round is the Director of the labor standards enforcement program at the Workplace Justice Lab@Rutgers University. She holds a J.D. from George Washington University Law School and a LL.M. from the University of Washington School of Law.

About wjl@RU

The workplace justice lab@RU exists to address economic inequality through supporting and strengthening grassroots organizing and democratic governance. We do this through building dynamic communities of learning and practice, carrying out cutting edge research, and offering specialized training and in-depth one-on-one consultations.

At the lab, we go beyond talking about what government should do, to focusing on how government should do it. Through our strengthening labor standards enforcement program, we work to reimagine the public enforcement of workers' rights laws. By proactively targeting the sectors with the worst problems and involving those directly impacted in enforcement, we help agencies realize the intended impact of innovative labor standards legislation.

Workplace Justice Lab@Rutgers University

Methodological Appendix

Measuring the scope and depth of these forms of "wage theft" is difficult. No single data source systematically and reliably tracks the incidence of wage theft and records the precise amounts of money that are not being paid. Early studies of minimum wage compliance used data provided voluntarily by employers to the Bureau of Labor Statistics (e.g., Zucker 1973), but employer-reported data is not reliable, as employers who violate the law cannot be trusted to report that information to government agencies.

Workers can report wage theft by filing lawsuits and/or lodging complaints with federal, state, and local enforcement agencies. But lawsuits are often too expensive for minimum-wage workers and the costs of litigation frequently exceed the amounts of back pay owed. Complaints are also problematic measures because the workers who are more likely to be exploited are also more likely to be unaware of their right to complain (whether due to language barriers, lack of information and knowledge, or fear of retaliation, termination, or deportation). Lawsuits and the complaints government agencies receive thus provide inaccurate and unreliable portraits of the actual number of violations. We must therefore turn to alternative methods to more accurately detect and measure violations. Survey data on hours and earnings are invaluable in this regard, as they enable us to estimate the true underlying incidence wage violations indirectly.

Most useful is the Current Population Survey's Merged Outgoing Rotation Groups (CPS-MORG) data, which the U.S. Department of Labor's Wage and Hour Division uses to identify "priority industries" for investigations and which remains the top choice of every social scientist who has sought to develop national or industry-specific estimates of FLSA noncompliance since the 1970s.[3]

The CPS-MORG data has many advantages: it is gathered via extensive interviews with around 60,000 households per month; it is representative at the state and national levels (unlike other survey data, such as the Survey of Income and Program Participation [SIPP]); and its individual-level responses permit us to estimate earnings and minimum wage violations relatively easily. The biggest downside is measurement error, as with any survey.

The methodological approach employed here is consistent with previous research.[4] A few key points to keep in mind:

Wage variable
For hourly wages, we use variables that include wages earned from overtime, tips, and commissions (OTC) for both hourly and nonhourly workers.[5] Wage estimates are therefore conservative over-estimates that effectively downward-bias the estimated minimum wage violation rates. This is preferable to the alternative, however, which excludes OTC for hourly workers while including it for nonhourly workers (for whom different sources of wages are not distinguished). Efforts to estimate

[3] Ashenfelter and Smith 1979; Ehrenberg and Schumann 1982; Sellekaerts and Welch 1984; Trejo 1991, 1993; Fry and Lowell 1997; Weil and Pyles 2005; U.S. Department of Labor 2014; ERG 2014; Galvin 2016; Cooper and Kroeger 2017.
[4] In particular, Galvin 2016; U.S. Department of Labor 2014; Cooper and Kroeger 2017.
[5] http://ceprdata.org/cps-uniform-data-extracts/cps-outgoing-rotation-group/.
See also Cooper and Kroeger's 2017 preference for this method of estimating wages.

and subtract OTC from nonhourly workers adds unknown quantities of additional measurement error to this key variable, and is not recommended.[6]

To ensure our estimates of wage violations are conservative underestimates, we follow Cooper and Kroeger (2017) in taking the higher of the reported wage (hourly wage or weekly pay divided by hours worked) for hourly workers who reported both hourly and weekly earnings.

Calculating minimum wage violations
Minimum wage violations are dichotomous measures of whether an individual's estimated hourly wage was lower than the applicable legal minimum. We use the applicable statutory minimum wage rate for each respondent as of the date (month) effective. For workers in Chicago beginning in July 2015 and those in Cook County (but not Chicago) in July 2017, we use the higher applicable minimum wage ordinance; for all other Illinois residents we use the applicable state minimum wage rate.

Exemptions
We implement (and exclude from the analysis) all respondents who we can identify as exempt from the Illinois minimum wage, Cook County minimum wage ordinance, and Chicago minimum wage ordinance.

Illinois exemptions: Illinois exempts (820 ILCS 105/3) domestic workers (prior to January 1, 2017), outside salespersons, and members of religious organizations. All these employees are excluded from the analysis during the applicable dates prior to the establishment of Chicago's minimum wage ordinance. Illinois law also exempts employees working in small businesses with fewer than four employees; agricultural or aquacultural employees under certain circumstances; students working for the colleges or universities they attend; and motor carriers regulated by the US Department of Transportation; and minor league baseball players under 28. We were unable to identify those workers given limitations of CPS data (e.g., CPS does not indicate employer or firm size.)

Chicago exemptions: Amendments to the Chicago minimum wage ordinance in 2017 and 2019 altered the law's coverage. Today, it applies to almost all workers, save several exemptions. Some exemptions cannot be distinguished in CPS data. We are able to identify and exempt those marked with an asterisk.
Exclusions include those permitted to work:
- as a camp counselor employed at a day camp if the camp counselor is paid a stipend on a one time or periodic basis and, if the camp counselor is a minor, the minor's parent, guardian or other custodian has consented in writing to the terms of payment before the commencement of such employment;
- * for any governmental entity other than the City and its Sister Agencies;
- * as an outside salesman
- * as a member of a religious corporation or organization
- at, and employed by, an accredited Illinois college or university at which the individual is a student who is covered under the Fair Labor Standards Act, as amended;
- for a motor carrier and with respect to whom the U.S. Secretary of Transportation has the power to establish qualifications and maximum hours of service under the provisions of Title 49 U.S.C. or

[6] U.S. Department of Labor 2014.

the State of Illinois under Section 18b-105 (Title 92 of the Illinois Administrative Code, Part 395 - Hours of Service of Drivers) of the Illinois Vehicle Code
- for an Employer who has fewer than four Employees. (CPS respondents do not report the number of employees in their firm.)

Prior to 2019, additional exemptions included:
-Employees of an Employer who has attained a Section 5 special license issued under the Illinois Minimum Wage Law
- Certain individuals employed in agriculture or aquaculture as set out in 820 ILCS 105/3(d)(2);
- employed as a player who is 28 years old or younger, a manager, a coach, or an athletic trainer by a minor league professional baseball team not affiliated with a major league baseball club, if (A) the minor league professional baseball team does not operate for more than 7 months in any calendar year or (B) during the preceding calendar year, the minor league professional baseball team's average receipts for any 6-month period of the year were not more than 33 1/3% of its average receipts for the other 6 months of the year.
- Individual working for an employer employing fewer than four employees, exclusive of the employer's parent, spouse or child or other members of the immediate family;

Prior to 2017, additional exemptions included:
- Camp counselors subject to subsections 4(d) and 4(e) of the Illinois Minimum Wage Law;
- Employees licensed as "learners" by the Illinois Department of Labor, pursuant to Section 6 of the Illinois Minimum Wage Law. Generally speaking, the term "learner" refers to a person participating in a training program for an occupation in which he is employed, where the program involves either formal instruction or on-the-job training during a period when the Employee is entrusted with limited responsibility and is under supervision or guidance;

Youths under the age of 18 are excluded from the sample prior to July 2019, as it is impossible to distinguish covered and non-covered youth prior to that date. Starting in July 2019, the amendments to the minimum wage law extended coverage to all younger workers at a lower minimum wage, and we include them after that date.

Cook County exemptions are effectively redundant with those listed above.

Sample size restrictions
The following industries did not have a sufficient sample size to include in the estimates of industry violation rates:

- Beverage and tobacco products
- Electrical equipment, appliance manufacturing
- Forestry, logging, fishing, hunting, and trapping
- Furniture and fixtures manufacturing
- Internet publishing and broadcasting
- Internet service providers and data processing services
- Management of companies and enterprises
- Mining
- Motion picture and sound recording industries
- Nonmetallic mineral product manufacturing

- Petroleum and coal products manufacturing
- Rental and leasing services
- Textile, apparel, and leather manufacturing
- Wood products

Many three-digit occupation categories were of insufficient sample size as well (N<117) to include in the occupation violation rate estimates.

Survey weights and standard errors
All analyses, including population estimates, use the survey weights suggested by Davern et. al (2007), which are necessary given the sampling method of the CPS.

Measurement error
There is reason to believe that measurement error in the CPS may downward-bias the estimates of minimum wage violations.[7] First, despite going to great lengths to reach them, both Hispanics (Latinx) and undocumented immigrants are underrepresented in the CPS.[8] Because workers in these groups are at higher risk of experiencing minimum wage violations, the estimates of violations reported here should be considered conservative estimates.[9] Second, in Bollinger's study of measurement error in the CPS, he finds a "high over reporting of income for low-income men" driven by "about 10% of the reporters who grossly over report their income," thus potentially biasing estimates downward even further.[10] Third, CPS data have a shortage of low-wage workers and an excess of high-wage workers relative to comparable survey data like SIPP; one effect of this imbalance could be to underestimate minimum wage violations.[11] Roemer does find that the CPS reaches more "underground" workers than other large-scale surveys and is less biased than alternatives.[12] But given the high rates of violation discovered in the Bernhardt et al. 2009 innovative survey of hard-to-reach workers in the "informal" labor market—higher than the estimates presented here—there is reason to suspect that these findings underestimate the prevalence of minimum wage violations across the board.[13] These considerations notwithstanding, the fact that measurement error surely exists recommends using caution when working with the point estimates reported.

To address measurement error and conduct sensitivity tests, following ERG (2014), Galvin (2016), and Cooper and Kroeger (2017):

- Exclude unemployed and self-employed workers
- Exclude all observations of workers not specifying hourly/nonhourly status
- Exclude observations of nonhourly workers with weekly earnings less than $10

[7] For an excellent discussion of the advantages and limitations of using the CPS data to estimate minimum wage violations given the existence of measurement error and other issues, see U.S. Department of Labor 2014, Appendix B.
[8] McKay 1992. As Bernhardt et al. 2009 write: "standard surveying techniques—phone interviews or census-style door-to-door interviews—rarely are able to fully capture the population that we are most interested in: low- wage workers who may be hard to identify from official databases, who may be vulnerable because of their immigration status, or who are reluctant to take part in a survey because they fear retaliation from their employers. Trust is also an issue when asking for the details about a worker's job, the wages they receive, whether they are paid off the books or not, and their personal background" (56).
[9] McKay 1992; Bernhardt et al. 2009; U.S. Department of Labor 2014.
[10] Bollinger 1998.
[11] Roemer 2002; U.S. Department of Labor 2014.
[12] Roemer 2002.
[13] Bernhardt et al. 2009.

- Exclude observations of workers with hourly wages less than $1
- Exclude respondents with imputed hours
- Exclude proxy respondents (sensitivity test)
- Violation only if less than applicable minimum wage minus $0.25 (sensitivity test)

The relative violation rates remain extremely similar in all sensitivity tests.

Low-wage workers
Low-wage workers are operationalized as all eligible workers in the bottom quintile of the wage distribution each year.

Race variable
Racial and ethnic categories are mutually exclusive. We follow CEPR and EPI in the construction of the race variable. "Black" includes those who identify as Black-white; Black-American Indian; Black-Asian; Black-Hawaiian/Pacific Islander; white-Black-American Indian; white-Black-Asian; white-Black-Hawaiian/Pacific Islander; Black-American Indian-Asian; and white-Black-American Indian-Asian. "Asian" includes those who identify as Asian & Hawaiian/Pacific Islander; white-Asian; white-Hawaiian/Pacific Islander; American Indian-Asian; American Indian-Hawaiian/Pacific Islander; Asian-Hawaiian/Pacific Islander; white-American Indian-Asian; white-American Indian-Hawaiian/Pacific Islander; white-Asian-Hawaiian/Pacific Islander; white-American Indian-Asian-Hawaiian/Pacific Islander. "Other" includes American Indian (only); white-American Indian; other 3 races; other 4 and 5 races. "Hispanic" includes those who identify as Mexican, Mexican-American, Mexicano/Mexicana, Chicano/Chicana, Mexican (Mexicano), Mexicano/Chicano, Puerto Rican, Cuban, Dominican, Salvadoran, Other Hispanic, Central/South American, Central American, (excluding Salvadoran), South American, and any of these categories *and* white, Black, Asian, or Other. See: https://microdata.epi.org/variables/demographics/wbhao/

Data
We use the IPUMS CPS-MORG abstracts generated by Flood et al. 2020.

Works Cited
Ashenfelter, Orley, and Robert S Smith. 1979. "Compliance with the Minimum Wage Law." *The Journal of Political Economy*:333-50.

Bernhardt, Annette, Ruth Milkman, Nik Theodore, Douglas Heckathorn, Mirabai Auer, James Defilippis, Ana Luz González, Victor Narro, Jason Perelshteyn, and Diana Polson. 2009. "Broken Laws, Unprotected Workers: Violations of Employment and Labor Laws in America's Cities." *National Employment Law Project. New York: NELP*.

Bollinger, Christopher R. 1998. "Measurement Error in the Current Population Survey: A Nonparametric Look." *Journal of Labor Economics* 16 (3):576-94.

Burnham, Linda, and Nikolas Theodore. 2012. *Home economics: The invisible and unregulated world of domestic work*. National Domestic Workers Alliance.

Clemens, Jeffrey, and Michael R. Strain. Understanding "Wage Theft": Evasion and Avoidance Responses to Minimum Wage Increases. No. w26969. National Bureau of Economic Research, 2020.

Cooper, David and Teresa Kroeger, "Employers steal billions from workers' paychecks each year." *EPI* May 10, 2017. https://www.epi.org/publication/employers-steal-billions-from-workers-paychecks-each-year/

Davern, Michael, et al, "Estimating Regression Standard Errors with Data from the Current Population Survey's Public Use File," *Inquiry* 44: 211-224 (Summer 2007).

Driscoll, John C. and Aart C. Kraay, "Consistent Covariance Matrix Estimation with Spatially Dependent Panel Data," *Review of Economics and Statistics* 80 (1998): 549-60.

Ehrenberg, R. G., and P. L. Schumann. 1982. "Compliance with the Overtime Pay Provisions of the Fair Labor Standards Act." *Journal of Law & Economics* 25 (1):159-81.

Flood, Sarah, Miriam King, Renae Rodgers, Steven Ruggles, J. Robert Warren and Michael Westberry. Integrated Public Use Microdata Series, Current Population Survey: Version 10.0 [dataset]. Minneapolis, MN: IPUMS, 2022. https://doi.org/10.18128/D030.V10.0

Fry, Richard, and B Lindsay Lowell. 1997. "The Incidence of Subminimum Pay among Native and Immigrant Workers." *Population Research and Policy Review* 16 (4):363-81.

Galvin, Daniel J. 2016. "Deterring Wage Theft: Alt-Labor, State Politics, and the Policy Determinants of Minimum Wage Compliance." *Perspectives on Politics* 14 (2):324-50.

Kroeger, David Cooper and Teresa. 2017. "Employers Steal Billions from Workers' Paychecks Each Year." *Economic Policy Institute*, May 10, 2017.

Mckay, Ruth B. 1992. "Cultural Factors Affecting within Household Coverage and Proxy Reporting in Hispanic (Salvadoran) Households. A Pilot Study." In *Proceedings of the Section on Survey Research Methods, American Statistical Association*.

Roemer, Marc. 2002. "Using Administrative Earnings Records to Assess Wage Data Quality in the March Current Population Survey and the Survey of Income and Program Participation." U.S. Bureau of the Census.

Sellekaerts, Brigitte H, and Stephen W Welch. 1984. "An Econometric Analysis of Minimum Wage Noncompliance." *Industrial Relations: A Journal of Economy and Society* 23 (2):244-59.

Trejo, Stephen J. 1991. "The Effects of Overtime Pay Regulation on Worker Compensation." *The American Economic Review*:719-40.

———. 1993. "Overtime Pay, Overtime Hours, and Labor Unions." *Journal of Labor Economics*:253-78.

U.S. Department of Labor, Prepared by Eastern Research Group, Inc. 2014. "The Social and Economic Effects of Wage Violations: Estimates for California and New York." Washington, D.C.

Weil, David, and Amanda Pyles. 2005. "Why Complain?: Complaints, Compliance, and the Problem of Enforcement in the Us Workplace." *Comp. Lab. L. & Pol'y. J.* 27:59.

Zucker, Albert. 1973. "Minimum wages and the long-run elasticity of demand for low-wage labor." *The Quarterly Journal of Economics*: 267-277.