



# THE STATE OF THE UNIONS 2018

*A Profile of Unionization in Wisconsin and in the United States*

**September 2018**

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Research Report

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## **EXECUTIVE SUMMARY**

In the most recent decade, unionization has declined in Wisconsin and in the United States. There are over 165,000 fewer union members in Wisconsin today than in 2008, accounting for 12.9 percent of the 1.3 million-member drop in union workers across the nation over that time. Consequently, the total number of labor unions and similar labor organizations has dropped over the past 10 years. More than 209 labor unions and similar organizations have merged or dissolved in Wisconsin over 10 years. There are also 1,836 fewer officers and staff for labor unions and similar organizations today than one decade ago.

Although overall Wisconsin union membership edged up from 2016 to 2017, union membership in the state has fallen below the national average. Wisconsin now has a unionization rate that is 2.4 percentage points lower than the national average.

As of 2017, the overall union membership rate is 8.3 percent in Wisconsin:

- Men are much more likely to be unionized (11.0 percent) than women (5.4 percent);
- Veterans are among the most unionized socioeconomic groups in Wisconsin (11.3 percent);
- By educational attainment, the most unionized workers in Wisconsin hold master's degrees (15.9 percent) and associate's degrees (12.7 percent);
- Public sector unionization (18.9 percent), which has plummeted since 2011 Wisconsin Act 10 was enacted, remains nearly three times as high as private sector unionization (6.7 percent).

Union membership is influenced by a number of factors. For example, employment in the public sector still raises the chances that a given worker is a union member. Native-born and naturalized citizens are also statistically more likely to be union members than their non-citizen counterparts. On the other hand, workers employed in the leisure and hospitality industry are all less likely to be union members than their counterparts in the production industry.

Labor unions continue to increase individual incomes by lifting hourly wages. In Wisconsin, unions worker wages are higher by an average of 12.0 percent. The state's union wage effect is the 7<sup>th</sup>-highest in the nation. The union wage differential is greatest for the lowest-earning workers, where hourly incomes are increased by 12.2 percent over similar non-union workers. Unions therefore continue to foster a middle-class lifestyle in Wisconsin and play a vital role in Wisconsin's economy and communities.

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## INTRODUCTION

Organized labor has been the country's principal institution in fostering a middle-class society that protects the dignity of all work. Workers that have organized into unions have advocated for better pay and fringe benefits, worked to improve health and safety conditions in U.S. workplaces, and provided workers with a voice in the direction of the economy and in the creation of public policy. Over the long run, the labor movement has contributed substantially to U.S. families and communities.

An annual assessment of the institutional footprint of organized labor in Wisconsin and the United States requires an acknowledgment that over the past seven years there has been a partisan assault on worker organizing rights in many states. For example, since 2010 there have been 16 states that have passed laws restricting public employees' collective bargaining rights (Lafer, 2013; Bruno, 2015). The most recent law passed in Iowa mirrors the damaging prohibitions enacted in Wisconsin in 2011 (Murphy, 2017). Another 19 states introduced so-called "right-to-work" (RTW) bills and five states (Indiana, Michigan, Wisconsin, West Virginia, and Kentucky) have passed RTW laws- with voters in Missouri overturning a RTW law by referendum (Bruno, 2015). In the Midwest states of Indiana, Michigan, and Wisconsin, "right-to-work" laws have statistically reduced the unionization rate by 2.1 percentage points and lowered hourly wages by 2.6 percent on average (Manzo & Bruno, 2017a).

The nature of a state's political environment directly corresponds to such changes in the law. In states where Democrats are a majority in one or more of the branches of government- such as in Illinois, Minnesota, California, and New York- unions have not faced these challenges. Where Republican governors and legislators are in power, organized labor has faced hostile legislative changes.

Wisconsin serves as a prime example. In 2010, Republican Scott Walker was elected governor of Wisconsin and the GOP won control of both legislative chambers. In February 2011, Governor Walker implemented his "Budget Repair Bill," Wisconsin Act 10, which revised the state's public sector collective bargaining laws and triggered weeks of demonstrations and rallies by hundreds of thousands of Wisconsinites. Upon passage, the bill curtailed the rights of thousands of public sector workers, cutting pay and benefits for more than four hundred thousand public employees (Taylor, 2015). Republicans subsequently passed a "right-to-work" law- which barred labor unions from including union security or "fair share" clauses in collective bargaining agreements- and cut government spending.

Prior to the Walker administration, 14.2 percent of Wisconsin's workforce belonged to a union. As of 2017, that figure has dropped to 8.3 percent, significantly below the national average (Caldwell, 2017). By contrast, Governor Mark Dayton in Minnesota enacted no labor law changes and instead implemented policies that raised the minimum wage and boosted investments in infrastructure and education. From 2010 to 2017, Minnesota has added more jobs, seen higher income growth, made more progress in reducing poverty, had greater economic growth, and added thousands of union members (Cooper, 2018).

Nationally, the U.S. labor movement is responding to the *Janus v. American Federation of State, County, and Municipal Employees, Council 31, et al.* Supreme Court decision which directly weakens public sector unions in 22 states and the District of Columbia. The case was decided in a vote against fair share fees in the public sector, allowing workers the ability to "free ride" and receive services, benefits, and representation from unions for free without paying for them in the form of agency fees or union dues. As a result, a recent report estimates that the *Janus* decision will reduce the public sector union membership rate by 8 percentage points, translating into a loss of 726,000 union members nationwide, and decrease the wages of state and local government employees by about 4 percent on average (Manzo & Bruno, 2018).

Union membership can fluctuate for many reasons, including economic restructuring, technological advancements, foreign trade deals, corporate policies, employer opposition, and the level of new labor organizing. Undeniably, however, union membership has also been negatively impacted by state-level policies and federal actions designed to weaken union rights and collective bargaining. While this report

does not chronicle or assign responsibility for shifts in unionized employment, readers should examine the findings with an awareness of the relationship between political power and union membership.

This report, conducted by researchers at the Midwest Economic Policy Institute, the School for Workers at the University of Wisconsin-Madison, the Illinois Economic Policy Institute, and the Project for Middle Class Renewal at the University of Illinois at Urbana-Champaign, is the third annual report analyzing the course of unionization in Wisconsin and in the United States. This report tracks unionization rates and investigates union membership across demographic, educational, sectoral, industry, and occupational classifications. The study subsequently evaluates the impact that labor union membership has on a worker's hourly wage in Wisconsin and in the United States. Additionally, data on labor unions and similar labor organizations are included and analyzed. The report concludes by recapping key findings.

## **DATA AND LIMITATIONS**

This Research Report exclusively utilizes from the *Current Population Survey Outgoing Rotation Groups* (CPS-ORG). The CPS-ORG is collected, analyzed, and released by the U.S. Department of Labor Bureau of Labor Statistics (BLS). CPS-ORG data reports individual-level information on 25,000 respondents nationwide each month. The records include data on wages, unionization, hours worked, sector, industry, and occupation, as well as other demographic, geographic, education, and work variables. The data was extracted from the user-friendly Center for Economic and Policy Research Uniform Data Extracts (CEPR, 2018).

The 10-year dataset from 2008 to 2017 captures information on 3,166,628 individuals aged 16 to 85 in the United States. These observations include 1,879,959 persons with a job, of whom 191,265 reported that they were union members. Analytic weights are provided by the Department of Labor to match the sample to the actual U.S. population 16 years of age or greater. These weights adjust the influence of an individual respondent's answers on a particular outcome to compensate for demographic groups that are either underrepresented or overrepresented compared to the total population. The weights are applied throughout the analysis.

There are limitations to the CPS-ORG dataset. First, the data reports a worker's state of residence rather than state of employment, so the results may be biased by workers who live in one state but work in another (e.g., living in Wisconsin but working in Illinois) and vice-versa. CPS-ORG data is also based on household survey responses, so the potential exists for respondents to be untruthful. Certain individuals such as undocumented workers may also be underreported if they are more difficult to reach by survey officials. Finally, every surveyed worker does not reply to the union membership question. For example, in 2017, union membership data was only available for 2,479 of the 2,765 surveyed workers (89.7 percent) in Wisconsin. While this does not impact unionization *rates*, estimates are underreported for both total union workers and total nonunion employees.

Economic data from the *County Business Patterns* (CBP) series from the U.S. Census Bureau is also used (Census, 2018). The CBP provides annual statistics for businesses with paid employees that are used to study economic activity and market trends. The data are published between 18 months and 24 months after the reference year, so there is a longer time lag compared to the release of CPS-ORG information.

## **UNIONIZATION RATES AND TRENDS**

Since 2008, unionization has declined significantly in Wisconsin and the United States (Figure 1). The total union membership rate was 15.0 percent in Wisconsin and 12.4 percent nationwide in 2008. Ten years later, both rates have fallen, to 8.3 percent in Wisconsin and 10.7 percent in the United States. The decline in Wisconsin's unionization rate has translated into a decrease of over 165,000 union members in

Wisconsin since 2008, accounting for 12.9 percent of the total 1.3 million-member national decline in union workers over that time (Figure 2).

Despite the long-term downward trends, unionization rates and total membership were higher than the national average earlier in the decade (Figure 1). The 10-year combined Wisconsin unionization rate was 11.7 percent, about 0.3 percentage point higher than the 11.4 percent average national rate. On a year-by-year basis, Wisconsin’s union membership rate ranged from 0.2 to 2.9 percentage points higher than the national average for most of the time from 2008 to 2014. However, by 2015, the state’s unionization rate plummeted to 8.3 percent, which was 2.8 percentage points lower than the national average. Today, unionization has remained relatively stable in Wisconsin since 2015, and the state’s unionization rate is currently 2.4 percentage points below the U.S. average (Figure 2).

FIGURE 1: UNIONIZATION RATES AND TOTAL UNION MEMBERSHIP, 2008-2017

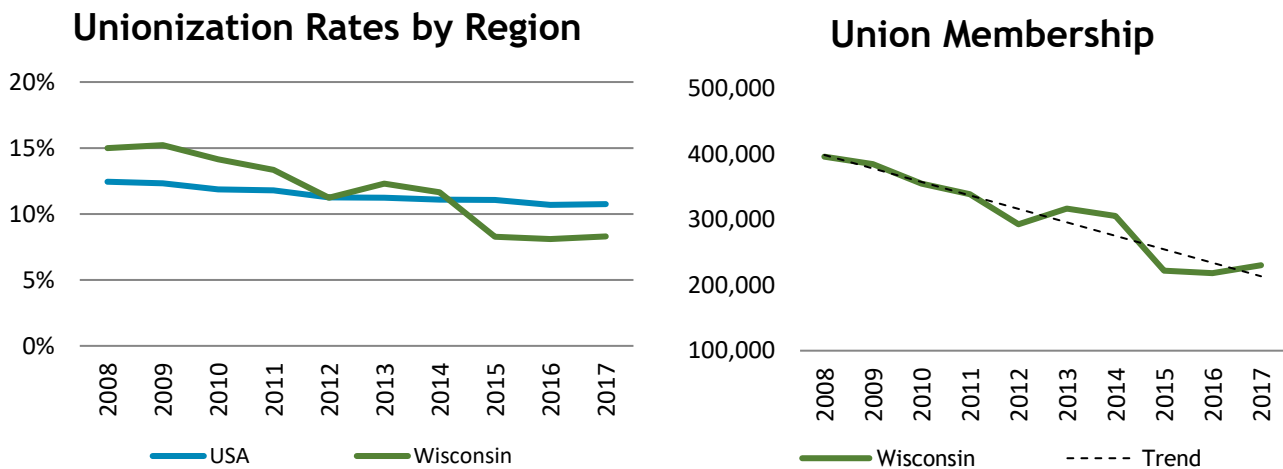


FIGURE 2: TOTAL UNION MEMBERS AND OVERALL UNIONIZATION RATES, 2008-2017

Year	Wisconsin		USA	
	Members	Rate	Members	Rate
2008	395,893	14.98%	16,097,535	12.44%
2009	384,698	15.22%	15,327,280	12.31%
2010	354,883	14.15%	14,715,061	11.86%
2011	338,656	13.34%	14,754,673	11.78%
2012	292,802	11.23%	14,349,358	11.25%
2013	316,596	12.31%	14,515,755	11.24%
2014	305,611	11.64%	14,569,936	11.08%
2015	222,118	8.28%	14,786,281	11.05%
2016	218,233	8.10%	14,549,640	10.69%
2017	230,561	8.29%	14,811,525	10.69%
<b>Average</b>	<b>306,005</b>	<b>11.69%</b>	<b>14,847,704</b>	<b>11.43%</b>

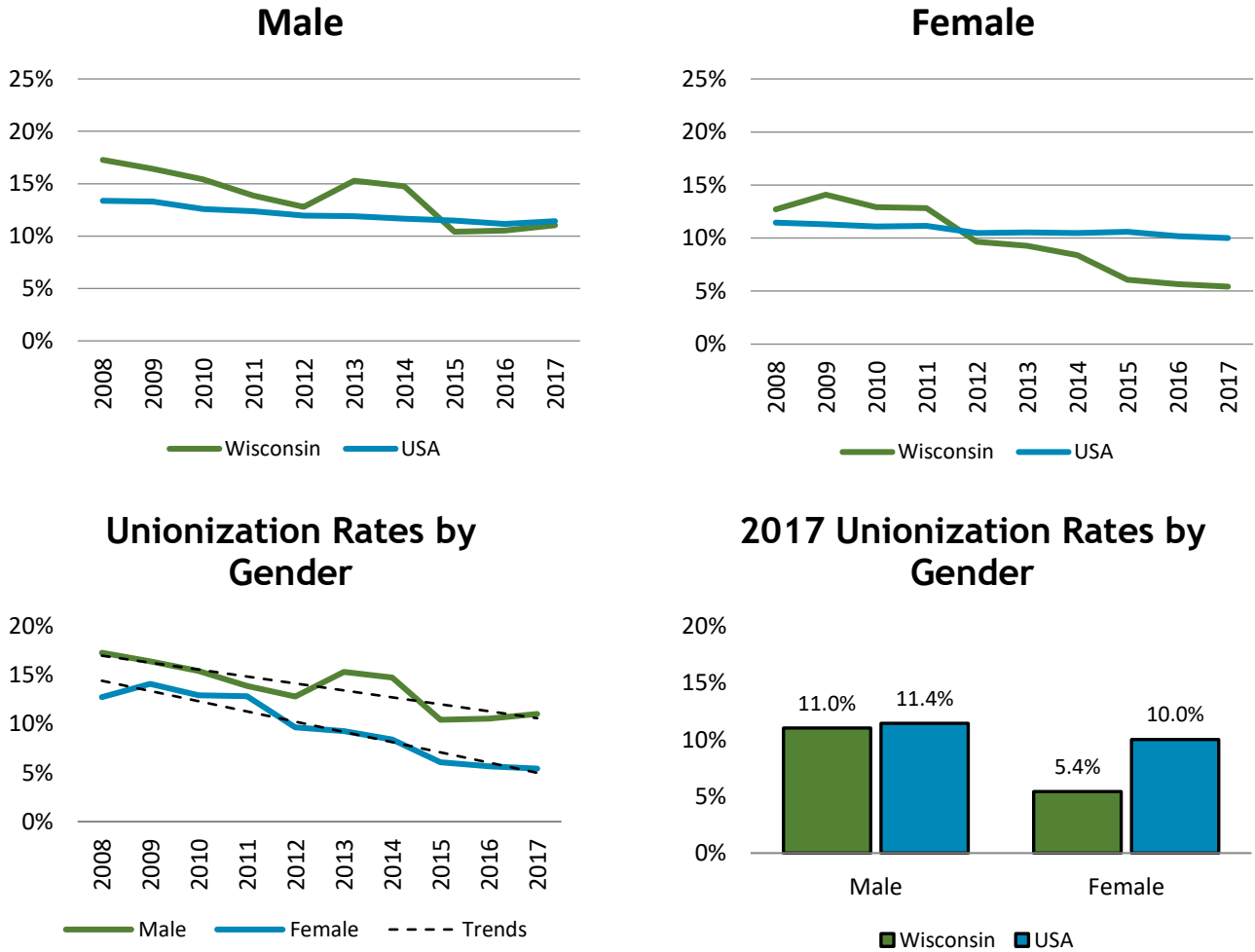
### UNIONIZATION BY DEMOGRAPHICS

Falling rates of unionization have reflected steep declines in union membership among both men and women (Figure 3). An estimated 17.3 percent of employed men were unionized in 2008, but the 2017 male unionization rate in Wisconsin fell to 11.0 percent. Since 2008, male union density has dropped by 6.3 percentage points in Wisconsin versus a 1.8 percentage-point decline in the United States.

The female union membership rate has fallen even more (Figure 3). Female unionization in Wisconsin has more than halved compared to 10 years ago. As of 2017, the female unionization rate is just 5.4 percent in Wisconsin and 10.2 percent nationwide. Since 2008, female union membership has decreased by 7.3 percentage points in Wisconsin and by 0.9 percentage point in the United States.

Both male and female unionization in Wisconsin have fallen below the national average in recent years (Figure 3). Female unionization fell below the comparable national average in 2011 and male unionization fell below the comparable national average in 2014.

FIGURE 3: GRAPHS OF UNIONIZATION RATES BY GENDER, 2008-2017



White workers and people of color are now nearly equally unionized in Wisconsin (Figure 4). In Wisconsin, the unionization rate for white (non-Latino) workers is 8.3 percent while the unionization rate for all people of color is 8.4 percent. The unionization rates by race are below the comparable national average of 11.1 percent for white (non-Latino) workers and 10.2 percent for all people of color.

Over time, union membership has fallen for both white workers and people of color (Figure 5). Unionization of white workers has gradually fallen by 7.3 percentage points from 2008 to 2017, with the largest year-over-year drop of 3.0 percentage points occurring from 2014 to 2015. In 2009, 18.6 percent non-white workers were unionized. However, that number has declined to just 8.4 percent in 2017. The unionization rates of white workers and people of color in Wisconsin have now fallen below their counterparts across the nation.



FIGURE 4: UNIONIZATION RATES BY RACIAL OR ETHNIC IDENTIFICATION, 2017

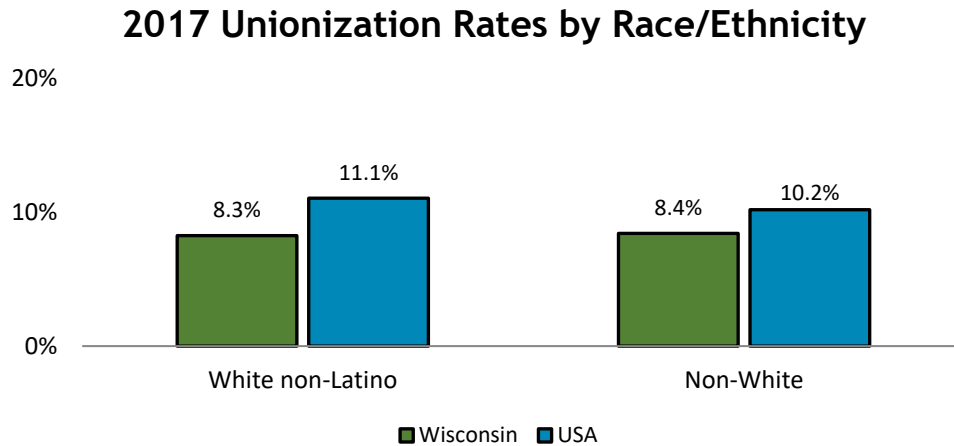
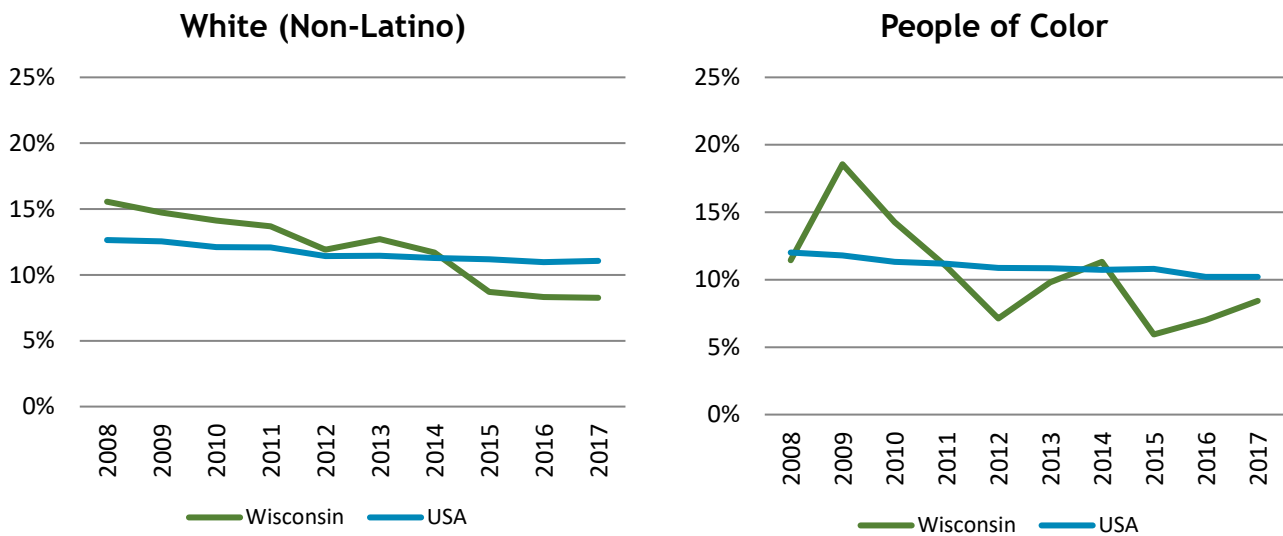


FIGURE 5: GRAPHS OF UNIONIZATION RATES BY RACIAL OR ETHNIC IDENTIFICATION, 2008-2017



The union membership rate is between 9 percent and 11 percent for all workers aged 35 to 64 in Wisconsin (Figure 6). While workers aged 16 to 24 are slightly more likely to be unionized (5.5 percent) than their peers across the nation (4.7 percent), workers of all other age cohorts are less likely to be unionized in Wisconsin than the United States as a whole.

Workers aged 35 to 44 and 55 to 64 are the most unionized age cohorts in Wisconsin, at 10.5 percent. For older workers aged 65 and older, only 7.4 percent are unionized in Wisconsin compared to the 9.5 percent national average. Overall, the average age of union workers is about 44 years old and the average age of nonunion workers is about 41 years old (Figure 7).

Union membership varies across other demographic classifications as well (Figure 8). Among the most unionized socioeconomic groups are military veterans and married workers. About one-in-nine employed veterans are unionized in Wisconsin (11.3 percent). For the United States, approximately 14.6 percent of employed veterans are members of unions. The unionization rates for married workers, foreign-born workers, native-born workers, and veteran workers are lower in Wisconsin than the national average.

FIGURE 6: UNIONIZATION RATES BY AGE GROUP, 2017

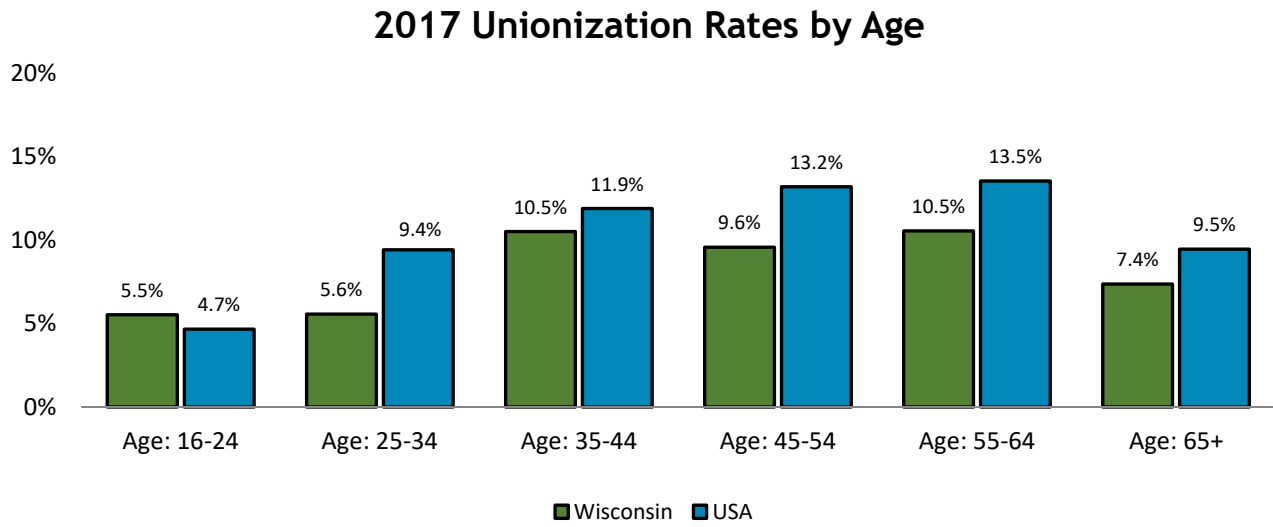


FIGURE 7: AVERAGE AGE OF UNION AND NONUNION WORKERS, 2017

2017 Variable	Age (Years)	
	Nonunion	Union
Wisconsin	40.7	43.8
USA	41.0	44.3

FIGURE 8: UNIONIZATION RATES OF SELECT DEMOGRAPHIC VARIABLES, 2017

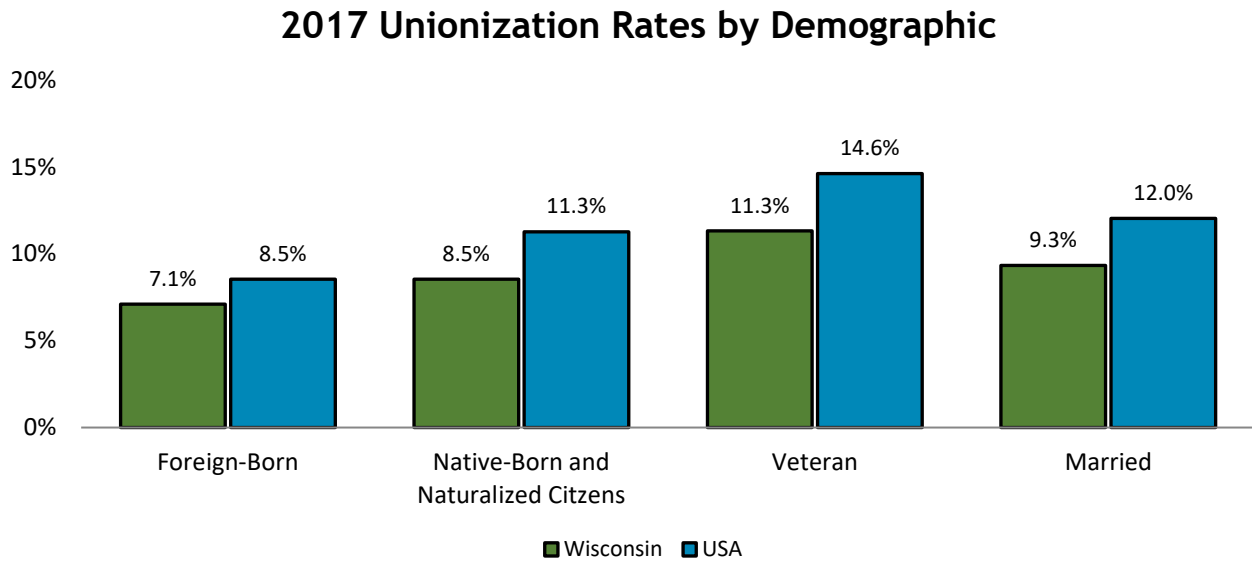
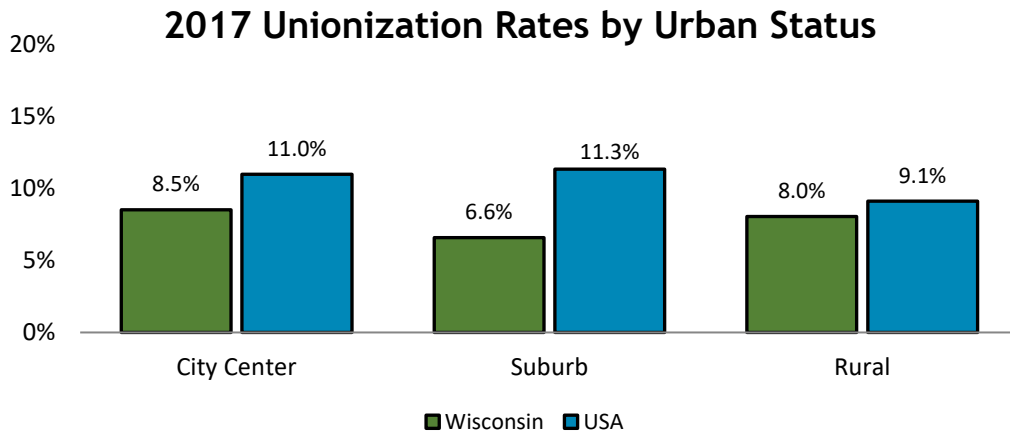


Figure 9 reveals that unionization is relatively weak in suburban Wisconsin. Only 6.6 percent of workers who reside in suburban Wisconsin are members of a union or labor organization. As of 2017, 8.0 percent of workers who reside in rural Wisconsin are union members and 8.5 percent of workers who reside in the city centers of Wisconsin are union members. Again, the national average for each urban status groups are higher than Wisconsin.

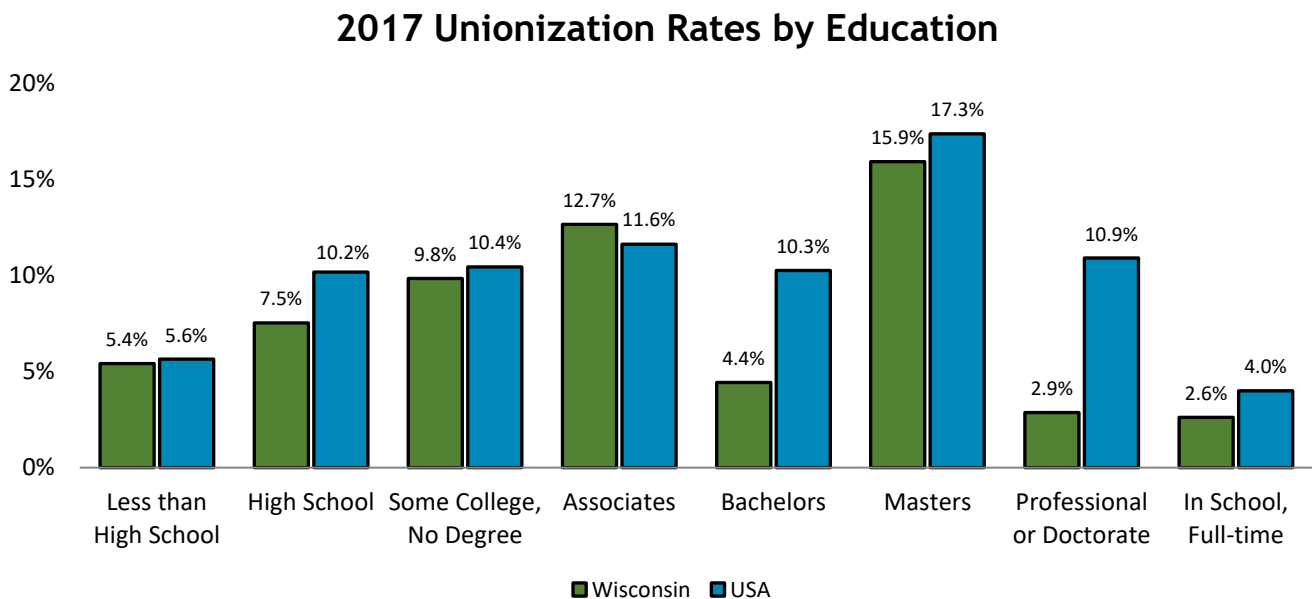
FIGURE 9: UNIONIZATION RATES BY URBAN STATUS, 2017



### UNIONIZATION BY EDUCATION

Workers with master’s degrees are the most unionized educational group in the United States overall (Figure 10). At 15.9 percent, unionization among master’s degree holders in Wisconsin is significantly higher than the rates of all other educational attainment groups studied. In Wisconsin and the United States, the second-most unionized employees by educational attainment are those with associate degrees. Those who are currently full-time students, those with professional or doctorate degrees, and those with bachelor’s degrees comprise the three least-unionized educational groups in Wisconsin and the United States. Those with associate degrees are more likely to be unionized in Wisconsin than in the nation as a whole. Unionization across all other educational attainment levels in Wisconsin falls short of the national unionization rates.

FIGURE 10: UNIONIZATION RATES BY EDUCATIONAL ATTAINMENT OR STATUS, 2017



Over the past six years, unionization rates have decreased for nearly all educational groups (Figure 11). To ensure statistical significance, Figure 11 compares the three-year averages of union membership rates of educational attainment groups in Wisconsin for 2012-2014 and 2015-2017. Across the seven educational classifications, the union membership rate has increased in only one case: Workers with professional or doctorate degrees (+0.3 percentage point). The largest declines in unionization were for individuals with

the highest levels of educational attainment; workers with master’s degrees experienced a 5.1 percentage-point decline and individuals with bachelor’s degree saws a 4.6 percentage-point reduction in unionization. This is at least partially due to the erosion of whitecollar professional public sector unions in Wisconsin.

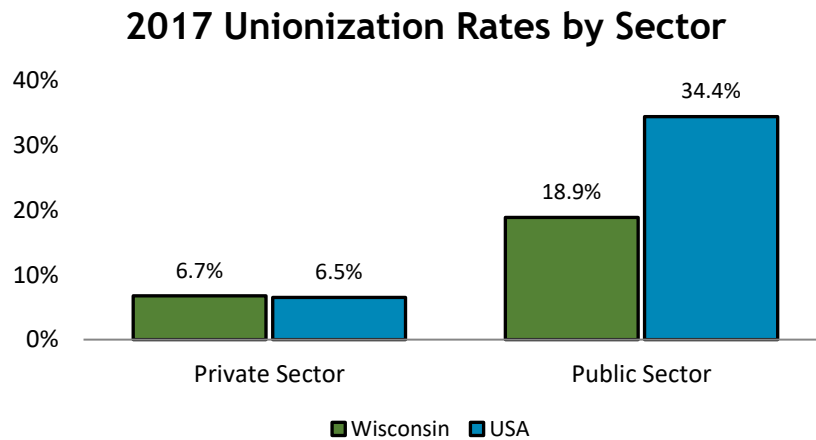
FIGURE 11: CHANGE IN UNIONIZATION RATES BY EDUCATION, THREE-YEAR AVERAGES, 2012-2017

Variable	Wisconsin		
	2012-14	2015-17	Change
Less than High School	7.2%	4.3%	-2.8%
High School	12.3%	8.1%	-4.2%
Some College, No Degree	9.1%	8.2%	-0.8%
Associate	15.2%	11.1%	-4.1%
Bachelors	10.4%	5.8%	-4.6%
Masters	21.2%	16.0%	-5.1%
Professional/Doctorate	3.1%	3.4%	+0.3%

### UNIONIZATION BY SECTOR, INDUSTRY, AND OCCUPATION

Unionization rates remain higher for public sector workers (Figure 12). About one-in-five public sector workers are unionized in Wisconsin (18.9 percent), as are more than one-third nationwide (34.4 percent). In comparison, close to one-in-15 private sector workers is now a union member in Wisconsin (6.7 percent) and the United States (6.5 percent).

FIGURE 12: UNIONIZATION RATES BY SECTOR OR LEVEL OF GOVERNMENT, 2017



Compared to the national average, Wisconsin had higher public sector unionization from 2008 to 2011 (Figure 13). Public sector unionization in Wisconsin peaked at 53.5 percent in 2009, fluctuated in 2010 and 2011, but has declined rapidly since 2012. In 2017, public sector unionization was just 18.9 percent, 15.6 percentage points lower than the comparable U.S. rate. Private sector unionization, which had been 2.0 percentage-points higher in Wisconsin than the United States in 2008, is now only 0.2 percentage point above the national rate as of 2017.

Union membership varies significantly by industry (Figure 14). The top five industries by unionization rates in Wisconsin are construction (28.4 percent); transportation and warehousing (22.5 percent); public administration (13.3 percent); information (11.8 percent); and manufacturing (11.8 percent). The manufacturing workforce, associated historically as a leader in industrial unionization, is more unionized

in Wisconsin (11.8 percent) than in the United States (9.1 percent). The least-unionized industries include professional and businesses services and leisure and hospitality.

FIGURE 13: UNIONIZATION RATES BY SECTOR BY REGION, 2008-2017

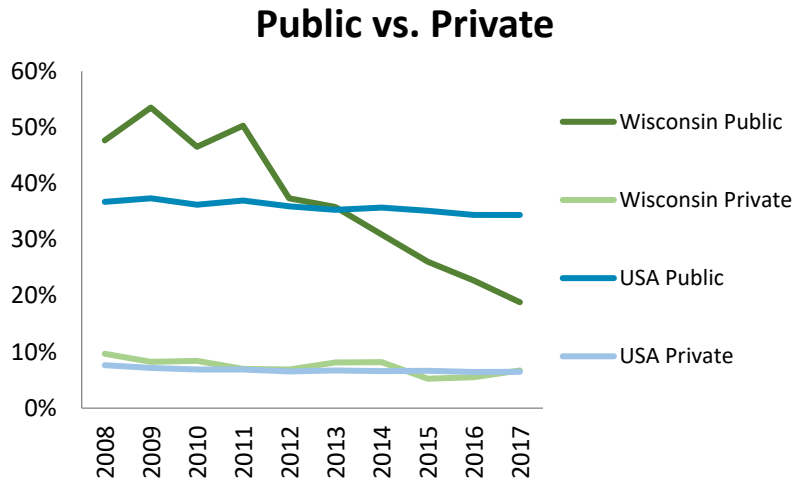
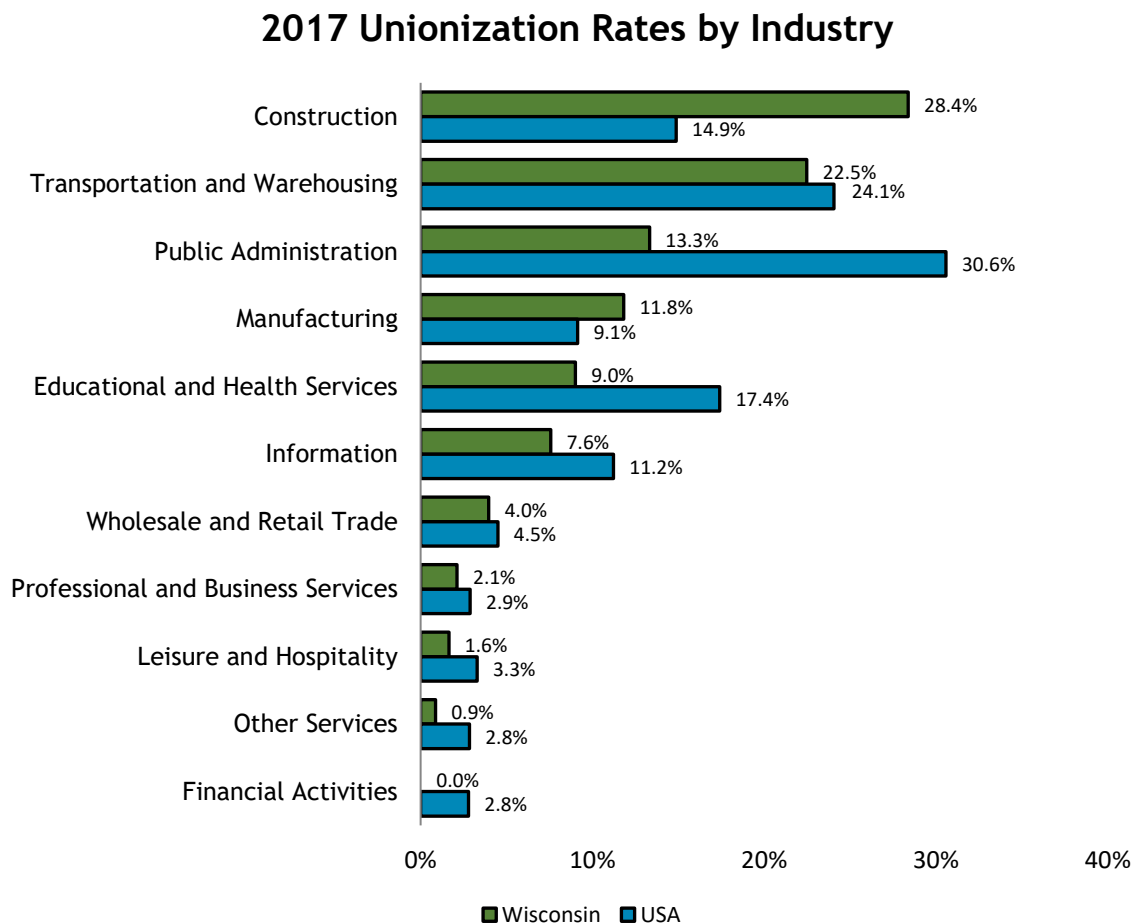


FIGURE 14: UNIONIZATION RATES BY INDUSTRY BY REGION, 2017



Figures 15 and 16 present industry breakdowns of total union membership in Wisconsin compared to total employment in the state. In Figure 15, industries are organized in descending order by unionization rate

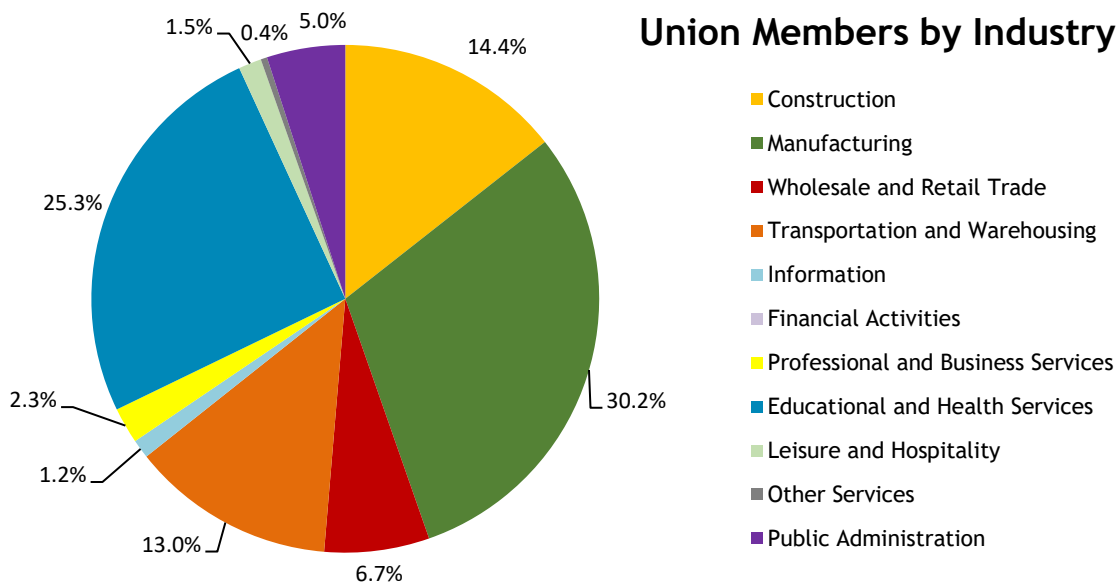
and weighted estimates are rounded to the nearest thousand. Note that the estimates include all *occupations* within an industry. The construction industry, for example, includes white-collar workers who typically are not union members, such as office support workers and architects. The top five industries with the most union members in Wisconsin are manufacturing (70,000 members), the combined educational and health services (58,000 members), construction (33,000 members), transportation and warehousing (30,000 members), and wholesale and retail trade (15,000 members) (Figure 15). Together, union members from these five industries account for 89.6 percent of all union workers in Wisconsin (Figure 16).

A cautionary note should be mentioned: Grouping the data by industry results in relatively small sample sizes. Nevertheless, they are informative in that they shed light on the state’s union membership and provide general parameters on the composition of the union workforce.

FIGURE 15: WISCONSIN INDUSTRY UNIONIZATION RATES, EMPLOYMENT, AND UNION MEMBERS, 2017

Wisconsin (2017)	Unionization Rate	Total Employment	Total Union Members	Total Sample
Construction	28.4%	117,000	33,000	103
Transportation & Warehousing	22.5%	133,000	30,000	121
Public Administration	13.3%	86,000	12,000	81
Manufacturing	11.8%	590,000	70,000	525
Educational & Health Services	9.0%	648,000	58,000	591
Information	7.6%	37,000	3,000	35
Wholesale & Retail Trade	4.0%	389,000	15,000	338
Professional & Business Services	2.1%	249,000	5,000	219
Leisure & Hospitality	1.6%	204,000	3,000	171
Other Services	0.9%	109,000	1,000	97

FIGURE 16: COMPOSITION OF WISCONSIN UNION WORKFORCE BY INDUSTRY, 2017



Lastly, Figure 17 depicts unionization rates by occupation. In Wisconsin, the most unionized occupation groups are construction and extraction occupations such as carpenters and operating engineers (34.6 percent); installation, maintenance, and repair occupations such as mechanics (15.8 percent), transportation and material moving occupations such as truck drivers (13.9 percent), and production

occupations such as machinists (13.9 percent). Union membership in construction and extraction is 15.3 percentage points higher in Wisconsin than the comparable national average. In production jobs, the unionization rate is higher in Wisconsin than the national average by 1.5 percentage points. The unionization rate of installation, maintenance, and repair occupations is also higher than the national average by 0.3 percentage point. However, every other major occupational group is less unionized in Wisconsin than the rest of the nation.

FIGURE 17: UNIONIZATION RATES BY OCCUPATION, 2017

Occupation (2017)	Wisconsin	USA
Management, Business, and Financial	0.6%	4.4%
Professional and Related	9.1%	16.0%
Service	4.0%	9.9%
Sales and Related	2.4%	3.2%
Office and Administrative Support	6.2%	8.7%
Construction and Extraction	34.6%	19.3%
Installation, Maintenance, and Repair	15.8%	15.5%
Production	13.9%	12.4%
Transportation and Material Moving	13.9%	14.7%

## PREDICTING UNION MEMBERSHIP IN WISCONSIN

An advanced analytic model is developed to predict the chances that any given worker is a union member in Wisconsin, using data from 2015 through 2017. The model, which is detailed in Table A of the Appendix, reports how statistically significant variables increase or decrease one's probability of being a union member. The analysis includes data on 6,671 Wisconsin workers, and weights are applied to match the sample to the actual Wisconsin population.

FIGURE 18: PROBABILITY OF BEING A UNION MEMBER IN WISCONSIN, LARGEST FACTORS, 2015-2017

Probability of Union Membership	Wisconsin Mean
<i>Predictor</i>	<i>Percentage Point Change</i>
Sector: Federal government	+15.91%
Sector: Local government	+14.03%
Sector: State government	+12.21%
Status: Citizen	+8.90%
Industry: Public administration	-7.23%
Industry: Leisure & hospitality	-10.05%
Industry: Financial activities	-10.80%
Occupation: Management, business, & financial	-15.73%
<i>Constant</i>	7.84%
<i>Observations</i>	6,671

Source: CPS-ORG, Center for Economic and Policy Research Uniform Data Extracts, 2015-2017. Only statistically significant variables with a coefficient over  $\pm 7.0$  percent are displayed in the figure. Occupation dummies are relative to "production" occupations and industry dummies are relative to "manufacturing." For more, see the Appendix.

Many factors increase the likelihood that an employed person is a union member in Wisconsin (Figure 18). Relative to workers in the private sector, employment in federal government, the largest contributor to an individual's chances of being a union member, raises the probability by 15.9 percentage points on average. Local and state government employment respectively increase the union probability by 14.0

percentage points and 12.2 percentage points. Generally, being a native-born or naturalized U.S. citizen also increases the probability that a given Wisconsin worker is a union member 8.9 percentage points compared to a non-citizen.

Many occupation and industry factors contribute negatively to the probability that a worker is in a union. Figure 18 pits occupations against “production” jobs and industries against the “manufacturing” sector. Compared to those in production occupations, workers in management, business, and financial occupations experience a 15.7 percentage-point decrease in the likelihood of being a union member. In addition, workers in the public administration, leisure, hospitality, and financial activities industries see a decline of between 7 to 11 percent. The decline unionization associated with working in public administration (due to 2011 Wisconsin Act 10) as an industry offsets much of the gain that is otherwise associated with being paid by a government sector (Figure 18).

## WORKER WAGES

Unionized workers earn more than their nonunion counterparts (Figure 19). Figure 19 graphically illustrates the difference between the average union wage and the average nonunion wage in Wisconsin and the United States by both percentage benefit and actual per-hour dollar benefit. The results *do not* control for other factors which may increase a worker’s wages (e.g., education, occupation, industry, age, etc.). The raw averages show that, regardless of geography and time, union membership has been positively correlated with increased worker wages. Nationwide, union membership continues to raise worker wages by more than \$4.00 per hour, or by about 17 percent. The gap between union and nonunion wages appears to be about the same in Wisconsin and in the United States as of 2017 - the wage difference is \$3.40 per hour in Wisconsin (Figure 20). Unions raise individual incomes by lifting wages per hour.

FIGURE 19: UNION WAGE DIFFERENCES BY REGION, PERCENTAGE AND DOLLAR VALUES, 2008-2017

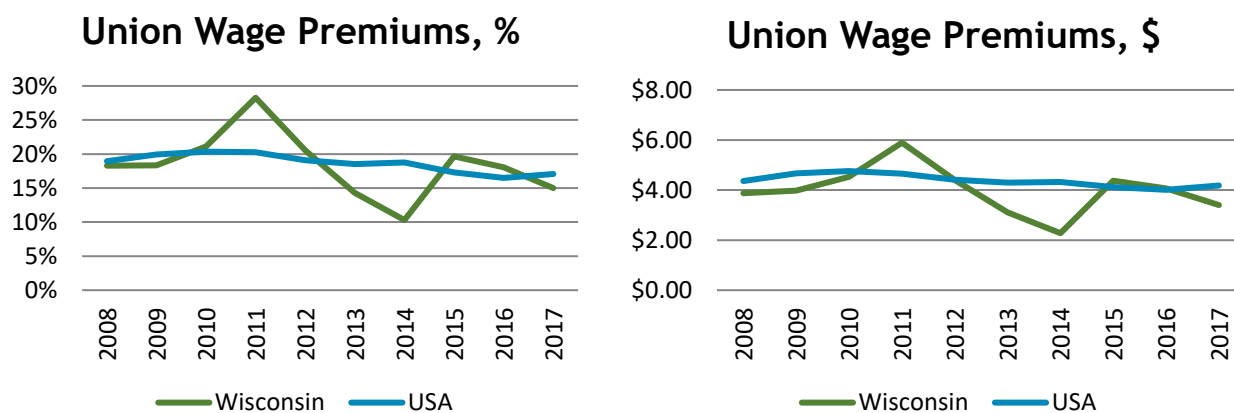


FIGURE 20: WAGES OF UNION AND NONUNION WORKERS IN WISCONSIN AND THE U.S., 2017

Variable	Wisconsin		USA	
	Nonunion	Union	Nonunion	Union
Wage	\$22.67	\$26.07	\$24.51	\$28.70
Union Difference, %		+15.00%		+17.09%
Union Difference, \$		+\$3.40		+\$4.19

The data presented in Figure 20 may overstate or understate the union wage effect because union members may be more or less likely to have characteristics associated with higher wages such as age, education, job experience, and geographic location. Regression analyses (OLS and quantile regressions) are utilized to control for these and similar factors in order to isolate the effect of unionization on wages and report them in Figure 21. The national average further controls for an individual respondent’s state of residence. Data are for employed persons aged 16 and older from 2015 through 2017 and are based on



the natural logarithm of hourly wages to “normalize the data” in percentage terms. For more on the union wage premium regressions, see Table B in the Appendix.

FIGURE 21: REGRESSIONS OF UNION WAGE PREMIUMS FOR THE U.S. AND WISCONSIN, 2015-2017

Union Wage Premium: Ordinary Least Squares (OLS) and Quantile Regressions, 2015-2017						
USA		USA				
Mean	Mean	Percentile: 10 <sup>th</sup>	Percentile: 25 <sup>th</sup>	Median	Percentile: 75 <sup>th</sup>	Percentile: 90 <sup>th</sup>
10.28%***	11.95%***	12.28%***	12.17%***	10.89%***	10.01%***	9.90%***
R <sup>2</sup> =0.447	R <sup>2</sup> =0.487	R <sup>2</sup> =0.241	R <sup>2</sup> =0.311	R <sup>2</sup> =0.338	R <sup>2</sup> =0.342	R <sup>2</sup> =0.329

Three asterisks (\*\*\*) indicate significance at the 1-percent level. Two asterisks (\*\*) indicates significance at the 5-percent level. Source: CPS-ORG, Center for Economic and Policy Research Uniform Data Extracts, 2015-2017. Statistics are adjusted by the outgoing rotation group earnings weight to match the total population 16 years of age or older. For more, see the Appendix.

FIGURE 22: UNION WAGE PREMIUMS BY STATE, OLS REGRESSIONS, 2015-2017

Rank	State	Union Premium	Rank	State	Union Premium
	<i>United States</i>	10.28%	26	Louisiana	7.95%
1	Nevada	16.88%	27	Rhode Island	7.82%
2	Indiana	16.11%	28	North Dakota	7.69%
3	South Carolina	14.76%	29	Vermont	7.69%
4	California	12.68%	30	Oklahoma	7.68%
5	New Jersey	12.65%	31	Virginia	7.67%
6	Arkansas	12.44%	32	West Virginia	7.29%
7	<b>Wisconsin</b>	<b>11.95%</b>	33	Kansas	7.15%
8	Idaho	11.87%	34	Alaska	7.09%
9	Mississippi	11.54%	35	South Dakota	6.99%
10	Montana	11.39%	36	Michigan	6.97%
11	Missouri	11.33%	37	Minnesota	6.96%
12	Tennessee	11.22%	38	Massachusetts	6.81%
13	Illinois	11.07%	39	New Mexico	6.55%
14	Georgia	10.30%	40	Colorado	6.27%
15	Pennsylvania	10.11%	41	Utah	6.17%
16	Hawaii	9.98%	42	New York	6.16%
17	Ohio	9.97%	43	Iowa	6.02%
18	Maryland	9.84%	44	District of Columbia	5.90%
19	Oregon	9.53%	45	Connecticut	5.70%
20	Arizona	9.32%	46	Maine	5.67%
21	Texas	9.17%	47	Nebraska	5.56%
22	Washington	9.03%	48	New Hampshire	5.36%
23	Kentucky	8.60%	49	Florida	5.34%
24	Delaware	8.42%	50	Alabama	5.29%
25	Wyoming	8.19%	51	North Carolina	1.45%

All estimates are significant at the 1-percent level except for the following: Oklahoma, South Dakota, New Mexico, Utah, Iowa, Connecticut, Maine, Nebraska, and New Hampshire (which are all significant at the 5-percent level) and North Carolina (which is not statistically significant). Source: CPS-ORG, Center for Economic and Policy Research Uniform Data Extracts, 2015-2017. Statistics are adjusted by the outgoing rotation group earnings weight to match the total population 16 years of age or older. For more, see the Appendix.

After controlling for education, demographics, and employment factors, the union wage premium is higher in Wisconsin than the national average (Figure 21). Overall, unions are found to increase a worker’s per-hour wage by 10.3 percent in the United States on average. In Wisconsin, the union wage premium is an

estimated 12.0 percent on average, holding all else constant (including occupation and industry). Both results are statistically significant with 99-percent confidence.

A unique analytical tool, called a quantile regression, permits evaluation of the union wage premium across the wage distribution. While union membership is statistically associated with a 12.0 percent increase in the *average* Wisconsin worker’s wage, the benefit is actually higher for those in the lower end of the state’s hourly income distribution (Figure 21). In fact, over the past three years, the union wage effects produced raises of between 12.2 percent and 12.3 percent for the bottom 10 to 25 percent of earners. The union wage difference was much smaller for the richest 10 percent of earners (9.9 percent) in Wisconsin. Thus, the data strongly indicate that unionization benefits low-income and middle-class workers most, helping to foster a strong middle class and reducing income inequality.

How does the average Wisconsin union wage premium of 12.0 percent compare to the union effect in other states? Similar 2015-2017 ordinary least squares regression models are run to assess each of the 49 other states plus the District of Columbia against Wisconsin. The results, reported in Figure 22, lead to the conclusion that the Wisconsin union wage premium is the 7<sup>th</sup>-highest in the nation. A total of 14 states have union wage premiums that are found to be higher than the national average of 10.3 percent. Importantly, a positive union wage premium exists in every state.

### UNION WAGE PREMIUM BY INDUSTRY AND OCCUPATION

Certain industries and occupations have higher union wage premiums than others. Figure 23 displays the top three union wage premium industries. Industries are defined as a group of establishments, firms, and occupations which produce similar products or provide similar services. Industries include all occupational classifications, from blue-collar workers to white-collar employees to CEOs. The construction industry has the highest union wage premium at 26.2 percent (Figure 23). Manufacturing has a union wage premium of 7.6 percent and the transportation and warehousing industry has a union wage premium of 5.4 percent.

FIGURE 23: UNION WAGE PREMIUM BY INDUSTRY IN WISCONSIN, 2015-2017

Industry	Union Wage Premium
Construction	26.16%
Manufacturing	7.61%
Transportation & Warehousing	5.43%

At the occupational level, workers in installation, maintenance, and repair careers experience the largest wage premium in Wisconsin (Figure 24). After controlling for other factors, installation, maintenance, and repair workers who belong to a union earn 29.9 percent more per hour than comparable nonunion workers. Construction and extraction workers also tend to earn a significantly higher wage when unionized, with a wage premium of 29.4 percent. Transportation and material moving workers rank third in the union wage premium, with an average hourly wage increase of 26.0 percent.

FIGURE 24: UNION WAGE PREMIUM BY OCCUPATION IN WISCONSIN, 2015-2017

Occupation	Wage Premium
Installation, Maintenance, & Repair	29.94%
Construction & Extraction	29.37%
Transportation & Material Moving	26.01%

## WAGE INEQUALITY SINCE 2014

The period from 2014 to 2017 has also coincided with a rise in wage inequality in Wisconsin (Figure 25). Average wages increased marginally by 2.0 percent in Wisconsin from 2014 to 2017, significantly lower than 5.0 percent wage growth in the rest of the United States. The wage of the median increased by 3.0 percent in Wisconsin, from \$18.66 to \$19.23. Meanwhile, across the rest of the United States, median wages increased by 3.2 percent. While middle-class workers in Wisconsin fell behind their counterparts in the rest of the nation, the top 1 percent in Wisconsin saw their hourly earnings rise by 8.7 percent from 2014 to 2017. Accordingly, the ratio between the hourly earnings of the top 1 percent and those of the median worker has grown by 5.5 percent in Wisconsin. This rise in income inequality exceeded the comparable increase in the rest of the country (0.3 percent).

FIGURE 25: REAL WAGES AND WAGE INEQUALITY, WISCONSIN VS. THE REST OF THE U.S., 2014-2017

Real Hourly Wage Variable	Wisconsin			Rest of the U.S.		
	2014	2017	Growth	2014	2017	Growth
<i>Average Wage</i>	\$22.79	\$23.24	+2.0%	\$23.88	\$25.08	+5.0%
<i>Median Wage</i>	\$18.66	\$19.23	+3.0%	\$18.66	\$19.25	+3.2%
<i>Top 1 Percent Hourly Earnings</i>	\$82.86	\$90.04	+8.7%	\$97.95	\$101.30	+3.4%
<i>Top 1 Percent to Median Inequality Ratio</i>	4.44	4.68	+5.5%	5.25	5.26	+0.3%

## RECENT DATA ON LABOR UNION ESTABLISHMENTS

As a result of the decline in union membership, the total number of labor unions and similar labor organizations has declined over the past 10 years. Figure 26 presents *County Business Patterns* data on the number of establishments and paid employees as well as officers in these organizations. An establishment is a single physical location where business is conducted or where services or operations are performed. Establishments include all the union halls, employees' associations, worker centers, and similar offices of local or national labor unions, collective-bargaining units, and similar organizations.

FIGURE 26: UNIONS AND SIMILAR ORGANIZATIONS, ESTABLISHMENTS AND EMPLOYMENT, 2007-2016

Wisconsin	NAICS Code: 81393 - Labor Unions and Similar Labor Organizations	
<i>Year</i>	<i>Establishments</i>	<i>Paid Employees</i>
2007	688	6,775
2008	669	6,989
2009	657	6,927
2010	642	6,707
2011	627	6,417
2012	598	5,927
2013	551	5,467
2014	532	5,160
2015	511	5,165
2016	479	4,939
<b>2007-2016 Change</b>	<b>-209</b>	<b>-1,836</b>

The total number of independent organizations in 2016, the latest year for which data are available, was 479. This is down considerably from the 688 establishments of labor unions and similar labor organizations in Wisconsin back in 2007. Over the past 10 years, there has been a 209-establishment decline (-30.4

percent) in labor unions and similar labor organizations in Wisconsin. Consequently, the number of officers and paid employees working directly for labor unions and similar labor organizations has fallen from 6,775 workers in 2007 to 4,939 workers in 2016 (-27.1 percent). There are thus 1,836 fewer labor union officers and staff now than in 2007. As unionization has decreased, the number of certified bargaining units and independent local unions have decreased (Figure 26).

## **CONCLUSIONS**

Since 2008, unionization has declined in Wisconsin and in the United States. There are over 165,000 fewer union members in Wisconsin today than there were in 2008, accounting for 12.9 percent of the 1.3 million-member drop in union workers across the nation over that time. Consequently, the total number of labor unions and similar labor organizations has dropped over the past 10 years. More than 209 labor unions and similar organizations have merged or dissolved in Wisconsin over 10 years. There are also 1,836 fewer staff and officers working in labor unions and similar organizations today than one decade ago.

Union membership in Wisconsin remains 2.4 percentage points below the national average. The decline of over the last decade can be attributed to a number of factors, most notably the public sector union membership losses resulting from 2011 Wisconsin Act 10. It will be important to monitor the situation as private sector union contracts continue expiring post-2015 Wisconsin Act 1 and the “right-to-work” law begins to be fully implemented. Despite these factors, union membership edged up from 2016 to 2017 in Wisconsin.

As of 2017, the overall union membership rate is 8.3 percent in Wisconsin. Men are more likely to be unionized than women and veterans are among the most unionized socioeconomic groups in Wisconsin. By educational attainment, the most unionized workers in Wisconsin hold master’s degrees and associate degrees. Public sector unionization, which has plummeted since 2011 Wisconsin Act 10 was enacted, remains higher than private sector unionization.

Union membership is influenced by a number of factors. For example, employment in the public sector still raises the chances that a given worker is a union member. Native-born and naturalized citizens are also statistically more likely to be union members than their non-citizen counterparts. On the other hand, workers employed in the leisure and hospitality industry are all less likely to be union members than their counterparts in the manufacturing sector.

Labor unions still increase individual incomes by lifting hourly wages. In Wisconsin, unions raise worker wages by an average of 12.0 percent. The state’s union wage effect is the 7<sup>th</sup>-highest in the nation. The union wage differential is greatest for the lowest-earning workers, where hourly incomes are increased by 12.2 percent due to unionization.

Unions foster a middle-class lifestyle and continue to play a vital role in Wisconsin’s economy and communities. Wisconsin’s labor movement, like the rest of the United States, continues to face both short- and long-term challenges due to the political environment, the makeup of the United States Supreme Court, and broader economic trends. Labor’s response to these challenges will define its influence and effectiveness in the years to come and will be critical to building and promoting Wisconsin’s middle class.

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## REFERENCES

- Barry T. Hirsch and David A. Macpherson. (2016). "Union Membership, Coverage, Density, and Employment Among All Wage and Salary Workers, 1973-2015." *Unionstats.com*. Georgia State University and Trinity University, Database from the Current Population Survey, available at [www.unionstats.com](http://www.unionstats.com).
- Bruno, Robert. (2015). "The Changing Landscape and future of Labor Relations: A View from Organized Labor." *Illinois Public Employee Relations Report*, 32, 3, available at <https://www.kentlaw.iit.edu/institutes-centers/institute-for-law-and-the-workplace/publications/illinois-public-employee-relations-report>.
- Caldwell, Patrick. (2017) "Who Moved My Teachers?" *Mother Jones*, available at <http://www.motherjones.com/politics/2017/03/scott-walker-trump-wisconsin-teacher-union>.
- Census. (2018). *Business Patterns*. 2007-2016. American FactFinder, available at [factfinder.census.gov](http://factfinder.census.gov).
- Center for Economic and Policy Research (CEPR). (2018). 2008-2017 CPS ORG Uniform Extracts, Version 2.3. Washington, DC.
- Cooper. David. (2018). *As Wisconsin's and Minnesota's Lawmakers Took Divergent Paths, So Did Their Economies*. Economic Policy Institute, available at <https://www.epi.org/publication/as-wisconsin-and-minnesotas-lawmakers-took-divergent-paths-so-did-their-economies-since-2010-minnesotas-economy-has-performed-far-better-for-working-families-than-wisconsin/>.
- Cooper, David and Lawrence Mishel. (2015). *The Erosion of Collective Bargaining Has Widened the Gap Between Productivity and Pay*. Economic Policy Institute, available at <http://www.epi.org/publication/collective-bargainings-erosion-expanded-the-productivity-pay-gap/>.
- Eren, Ozkan and I. Serkan Ozbeklik. (2014). "Union Threat and Nonunion Wages: Evidence from the Case Study of Oklahoma." Louisiana State University Working Paper, Submitted to *Economic Inquiry*, available at [http://faculty.unlv.edu/oeren/eren\\_ozbeklik\\_paper3.pdf](http://faculty.unlv.edu/oeren/eren_ozbeklik_paper3.pdf).
- Gordon, Lafer. (2013). "The Legislative Attack on American Wages and Labor Standards, 2011-2012." *Economic Policy Institute Briefing Paper #364*, available at <http://www.epi.org/publication/attack-on-american-labor-standards/>.
- Hirsch, Barry T. and David A. Macpherson. (2017). "Union Membership, Coverage, Density, and Employment Among All Wage and Salary Workers, 1973-2016." *Unionstats.com*. Georgia State University and Trinity University. Database from the Current Population Survey, available at [www.unionstats.com](http://www.unionstats.com).
- International Association of Machinists v. State of Wisconsin*. (2016). State of Wisconsin. Circuit Court Case, available at, <http://www.will-law.org/wp-content/uploads/2016/04/RTW-SJ-Dec.pdf>.
- Manzo IV, Frank and Robert Bruno. (2018). *After Janus: The Impending Effects on Public Sector Workers from a Decision Against Fair Share*. Illinois Economic Policy Institute; Project for Middle Class Renewal, University of Illinois at Urbana-Champaign, available at <https://illinoisepi.org/site/wp-content/themes/hollow/docs/wages-labor-standards/pmcr-ilepi-rtw-in-the-midwest-2010-to-2016.pdf>.
- Manzo IV, Frank and Robert Bruno. (2017) (a). *The Impact of "Right-to-Work" Laws on Labor Market Outcomes in Three Midwest States: Evidence from Indiana, Michigan, and Wisconsin (2010-2016)*. Illinois Economic Policy Institute; Project for Middle Class Renewal, University of Illinois at Urbana-Champaign, available at <https://illinoisepi.org/site/wp-content/themes/hollow/docs/wages-labor-standards/ilepi-pmcr-union-decline-and-economic-redistribution-midwest-final.pdf>.

- Manzo IV, Frank and Robert Bruno. (2017) (b). *Union Decline and Economic Redistribution: A Report on Twelve Midwest States*. Illinois Economic Policy Institute; Project for Middle Class Renewal, University of Illinois at Urbana-Champaign, available at <https://illinoisepi.files.wordpress.com/2018/05/ilepi-pmcr-after-janus-final.pdf>.
- Manzo IV, Frank and Robert Bruno. (2016). *The Application and Impact of Labor Union Dues in Illinois: An Organizational and Individual-Level Analysis*. Illinois Economic Policy Institute; Project for Middle Class Renewal, University of Illinois at Urbana-Champaign, available at <http://illinoisepi.org/countrysidenonprofit/wp-content/uploads/2013/10/ILEPI-PMCR-Application-and-Impact-of-Union-Dues-in-Illinois-FINAL.pdf>.
- Murphy, Erin. (2017). "Iowa's Public-Sector Unions Brace for Impact of New Collective Bargaining Law." *The Gazette*. Available at <http://www.thegazette.com/subject/news/iowas-public-sector-unions-brace-for-impact-of-new-collective-bargaining-law-20170220>.
- NH Labor News. (2016). "Wisconsin Loses 10,000 Jobs After Passing Right to Work." Available at <http://nhlabornews.com/2016/01/50635/>.
- Schmitt, John. (2008). *The Union Wage Advantage for Low-Wage Workers*. Center for Economic and Policy Research, available at [http://www.cepr.net/documents/publications/quantile\\_2008\\_05.pdf](http://www.cepr.net/documents/publications/quantile_2008_05.pdf).
- Sommeiller, Estelle and Mark Price. (2015). *The Increasingly Unequal States of America: Income Inequality by State, 1917 to 2012*. Economic Analysis and Research Network, available at <http://www.epi.org/publication/income-inequality-by-state-1917-to-2012/>.
- Taylor, Don. (2015). "Can Renewal Emerge from Destruction? Crisis and Opportunity in Wisconsin." *Labor Studies Journal*. 50(4): 419-422.
- Western, Bruce and Jake Rosenfeld. (2011). "Unions, Norms, and the Rise in U.S. Wage Inequality." *American Sociological Review*, 76(4). 513-537, available at <http://www.asanet.org/images/journals/docs/pdf/asr/WesternandRosenfeld.pdf>.

## **COVER PHOTO CREDITS**

- Caldwell, Patrick. (2017). "his Is Just How Badly Scott Walker Has Decimated Public Schools in Wisconsin." *Mother Jones*. Available at <https://www.motherjones.com/politics/2017/11/this-is-just-how-badly-scott-walker-has-decimated-public-schools-in-wisconsin/>.
- Beck, Molly. (2017). "Fewer than Half of Wisconsin School Districts have Certified Teachers Unions." *Wisconsin State Journal*. Available at [http://host.madison.com/wsj/news/local/govt-and-politics/fewer-than-half-of-wisconsin-school-districts-have-certified-teachers/article\\_44e4b2e4-3ee5-5dc2-89c4-5219f53e720e.html](http://host.madison.com/wsj/news/local/govt-and-politics/fewer-than-half-of-wisconsin-school-districts-have-certified-teachers/article_44e4b2e4-3ee5-5dc2-89c4-5219f53e720e.html).
- Hauer, Sarah. (2018). "Wisconsin Labor Unions File Lawsuit Over Act 10, Saying it Violates Free Speech." *Journal Sentinel*. Available at <https://www.jsonline.com/story/news/education/2018/02/24/wisconsin-labor-unions-file-lawsuit-act-10/370280002/>
- Washington Post. (2015). "Laws that Decimate Unions May be Inevitable. Here's How Labor can Survive." Available at [goo.gl/AHtAE8](http://goo.gl/AHtAE8).

**APPENDIX**

TABLE A: PROBIT REGRESSION ON PROBABILITY OF UNION MEMBERSHIP, AVERAGE MARGINAL EFFECTS, WISCONSIN WORKERS, 2015-2017

Prob(Union Member)	Wisconsin	
	Coefficient	(St. Err.)
Age	0.0053***	(0.0015)
Age <sup>2</sup>	-0.0001***	(0.0000)
Female	-0.0095	(0.0077)
Citizen	0.0810***	(0.0288)
White, non-Latino	0.0060	(0.0192)
African American	0.0181	(0.0240)
Latino or Latina	0.0094	(0.0230)
Center City	0.0144	(0.0091)
Suburb	-0.0031	(0.0073)
Federal government	0.1591***	(0.0192)
State government	0.1221***	(0.0121)
Local government	0.1403***	(0.0115)
Usual hours worked	0.0013***	(0.0003)
Less than high school	0.0183	(0.0177)
Some college, no degree	0.0276***	(0.0093)
Associate's	0.0246***	(0.0099)
Bachelor's	0.0014	(0.0103)
Master's	0.0495***	(0.0126)
Professional/Doctorate	-0.0597**	(0.0262)
Industry/Occupation Dummies	Y	
Constant	0.0784***	(0.0031)
R <sup>2</sup>	0.2385	
Observations	6,671	

A probit regression model allows for analysis of the probability of a “binary” yes-or-no variable occurring. In this case, the model reports the (positive or negative) direction of the effect that a factor has on the probability of being a union member and whether the output is statistically significant. To determine the magnitude of statistically significant factors, average marginal effects (AMEs) are generated and reported using the *dydx, margins* command in STATA. Sampling weights to match the sample size to the actual population are applied.

Three asterisks (\*\*\*) indicate significance at the 1% level, two asterisks (\*\*) indicates significance at the 5% level, and one asterisk (\*) indicates significance at the 10% level. Source: CPS-ORG, Center for Economic and Policy Research Uniform Data Extracts, 2015-2017. The total number of observations of employed persons was 6,671 in Wisconsin. Sampling weights are applied to the probit model.

TABLE B: OLS AND QUANTILE REGRESSIONS OF THE IMPACT OF UNION MEMBERSHIP ON THE NATURAL LOG OF REAL HOURLY WAGES, 2015-2017

Ln(Real Wage)	(1) USA Mean		(1) Wisconsin Mean		(2) Wisconsin Median		(3) Minnesota Mean	
	Coefficient	(St. Err.)	Coefficient	(St. Err.)	Coefficient	(St. Err.)	Coefficient	(St. Err.)
Union member	0.1058***	(0.0002)	0.1195***	(0.0186)	0.1089***	(0.0212)	0.0696***	(0.0177)
Age	0.0395***	(0.0000)	0.0361***	(0.0027)	0.0357***	(0.0025)	0.0403***	(0.0026)
Age <sup>2</sup>	-0.0004***	(0.0000)	-0.0004***	(0.0000)	-0.0003***	(0.0000)	-0.0004***	(0.0000)
Female	-0.1593***	(0.0001)	-0.1409***	(0.0128)	-0.1256***	(0.0126)	-0.1335***	(0.0136)
Veteran	0.0058***	(0.0002)	0.0055	(0.0266)	0.0094	(0.0251)	-0.0364	(0.0292)
Citizen	0.0687***	(0.0002)	0.1594***	(0.0448)	0.1346***	(0.0436)	-0.0079	(0.0338)
Immigrant	-0.0218***	(0.0002)	-0.0242	(0.0345)	-0.0720**	(0.0336)	-0.0651**	(0.0285)
White	0.0056***	(0.0002)	0.0087	(0.0285)	0.0086	(0.0285)	0.0392	(0.0293)
African American	-0.1093***	(0.0002)	-0.0588	(0.0360)	-0.0944***	(0.0361)	-0.0916***	(0.0335)
Latino	-0.0707***	(0.0002)	-0.0120	(0.0325)	-0.0406	(0.0334)	-0.0607**	(0.0341)
Center City	0.0487***	(0.0025)	0.0142	(0.0153)	0.0102	(0.0157)	0.0966***	(0.0177)
Suburb	0.0665***	(0.0022)	0.0781***	(0.0122)	0.0715***	(0.0127)	0.1264***	(0.0126)
Federal government	0.0376***	(0.0061)	-0.0700	(0.0549)	-0.0050	(0.0523)	-0.0269	(0.0604)
State government	-0.1085***	(0.0043)	-0.0962***	(0.0233)	-0.0974***	(0.0261)	-0.1168***	(0.0302)
Local government	-0.0915***	(0.0038)	-0.0788***	(0.0259)	-0.0945***	(0.0260)	-0.0923***	(0.0239)
Usual hours worked	0.0045***	(0.0001)	0.0058***	(0.0008)	0.0073***	(0.0006)	0.0059***	(0.0007)
Involuntarily part-time	-0.1425***	(0.0045)	-0.1310***	(0.0278)	-0.1712***	(0.0310)	-0.1749***	(0.0353)
Less than high school	-0.1358***	(0.0032)	-0.1299***	(0.0243)	-0.0644***	(0.0249)	-0.0907***	(0.0353)
Some college	0.0339***	(0.0024)	0.0216	(0.0146)	0.0269*	(0.0163)	0.0239	(0.0163)
Associate's	0.0853***	(0.0030)	0.0910***	(0.0162)	0.1063***	(0.0183)	0.0820***	(0.0181)
Bachelor's	0.3043***	(0.0028)	0.2839***	(0.0175)	0.2792***	(0.0173)	0.3198***	(0.0196)
Master's	0.4135***	(0.0038)	0.3364***	(0.0270)	0.3376***	(0.0253)	0.3964***	(0.0258)
Professional/Doctorate	0.5431***	(0.0062)	0.5793***	(0.0470)	0.6070***	(0.0376)	0.5898***	(0.0429)
Industry Dummies	Y		Y		Y		Y	
Occupation Dummies	Y		Y		Y		Y	
State Dummies	Y		N		N		N	
Constant	1.4586***	(0.0139)	1.3161***	(0.0989)	1.3378***	(0.0880)	1.6071***	(0.0816)
R <sup>2</sup>	0.4474		0.4870		0.3381		0.4683	
Observations	406,975		6,604		6,604		6,539	
Weighted	Y		Y		Y		Y	

Three asterisks (\*\*\*) indicate significance at the 1% level, two asterisks (\*\*) indicates significance at the 5% level, and one asterisk (\*) indicates significance at the 10% level. Source: CPS-ORG, Center for Economic and Policy Research Uniform Data Extracts, 2015-2017. The total number of observations of employed persons was 6,671 in Wisconsin. The data are adjusted by the outgoing rotation group earnings weight to match the total population 16 years of age or older.

Ordinary least squares and quantile regression models account for other variables to parse out the actual and unique causal effect that union membership has on hourly wages on average. The analyses control for a host of demographic, work, sector, industry, occupation, and education variables that could also have an impact a worker's wages. In the U.S. model, state indicator variables are included to factor in unmeasured state-specific characteristics. The sample, in all cases, is weighted to match the actual population. Regression (1) compares the impact of union membership on wages for Wisconsin compared to the nation from OLS analyses, regression (2) provides the median regression as an example of outputs from the quartile regressions for Wisconsin, and regression (3) uses Minnesota as an example of OLS results from other states. For full (2) and (3) regression outputs in a .txt format, please contact author Frank Manzo IV at [fmanzo@illinoisepi.org](mailto:fmanzo@illinoisepi.org).



