



THE STATE OF THE UNIONS 2015

A Profile of Unionization in Chicago, in Illinois, and in America

May 18, 2015

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Research Report

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EXECUTIVE SUMMARY

Since 2005, unionization has declined in Illinois, in the Chicago region, and in America. There are approximately 97,000 fewer union members in Illinois today than there were in 2005, contributing to the 1.12 million drop in union workers across the nation over that time. Declining union membership has primarily been the result of decreases in male unionization, Latino and Latina unionization, and private sector unionization.

Despite the long-term downward trends, however, there has been some good news for the Illinois labor movement.

- The unionization rate has improved from a 2012 low of 14.6 percent to 15.1 percent in 2014;
- Union members increased from 800,000 in 2012 to about 830,000 in 2014;
- From 2013 to 2014, unionization rates marginally increased for male workers, young workers under 25 years old, the construction industry, protective service occupations, and the public sector (including the public administration industry).

Well over half of all public sector workers are unionized in both Illinois and the Chicago metropolitan area (about two-thirds of public sector workers are unionized in the City of Chicago proper). Meanwhile, slightly more than a third of all public sector workers are unionized across the nation. In comparison, only nine percent of Illinois and Chicago area workers in the private sector are union members while less than seven percent of private sector workers are now unionized across America.

Union membership is influenced by a number of factors. Employment in construction, education, protective services (e.g., police officers, firefighters, etc.), transportation, installation and repair, and/or the public sector all raise the chances that a given worker is a union member. African-American workers are also statistically more likely to be union members than their racial or ethnic counterparts. On the other hand, high school dropouts, bachelor's degree holders, and those with professional or doctorate degrees are less likely to be unionized.

Labor unions increase individual incomes by lifting hourly wages and by raising the number of hours that employed persons work each week. In Illinois, the usual workweek of union workers is 2.3 hours longer on average than the usual workweek of nonunion employees. Additionally, unions raise worker wages by an average of 11.9 percent (and by a median of 12.1 percent) in Illinois. The state's union wage effect is the 20th-highest in the nation.

Recent developments have the potential to significantly reduce union membership going forward. An Executive Order issued by new Governor Bruce Rauner mirrors efforts by Wisconsin Governor Scott Walker to curb the collective bargaining rights of public sector workers. Since Wisconsin passed its law, the state employee union membership rate has declined by 15.6 percentage points. In addition, the proposal for local right-to-work zones in Illinois could reduce union membership by up to 200,000 workers.

Unions play a vital role in Illinois' economy, communities, and social life. The Illinois labor movement, however, will continue to face both short- and long-term challenges. Labor's response to these challenges could define its influence and effectiveness in the decades to come.

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INTRODUCTION

Organized labor has been the principal institution in fostering a middle-class society that protects the dignity of all work. Unions have fought on behalf of workers for better pay and fringe benefits, worked to increase 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 American families and communities.

The labor movement, however, has endured a gradual decline in both membership and influence. Almost one-in-four American workers (23.0 percent) were members of labor unions in 1980. Three and a half decades later, in 2014, only one-in-nine employed persons in America (11.1 percent) are unionized (Hirsch & Macpherson, 2015). Concurrently, as unionization rates have waned, income inequality has soared. Declining unionization and polarizing worker incomes are linked: The decline of organized labor accounts for between one-fifth and one-third of the growth in inequality (Western & Rosenfeld, 2011). Declining unionization has been found to be the main cause of income inequality among men (Gordon & Dew-Becker, 2008). Additionally, new research in January 2015 finds that the divergence between worker productivity and worker pay has been largest in states where collective bargaining coverage has declined the most. Even though productivity has improved, the erosion of union membership has meant that workers have not been proportionately rewarded for their increased efficiencies (Cooper & Mishel, 2015).

Illinois has not been immune to these trends. From 2009 to 2012, average real incomes grew by 6.5 percent in Illinois. Income growth, however, was uneven. Earnings for the Top 1 Percent increased by 34.5 percent during this time, while incomes grew by just 0.2 percent for the Bottom 99 Percent of workers. Thus, the rich captured nearly all (97.2 percent) of the total income gains across the state. Illinois is now the 8th-most unequal state in America (Sommeiller & Price, 2015). As this report will demonstrate, union membership during this time has also declined.

This report, conducted by researchers at the Illinois Economic Policy Institute, the University of Illinois Labor Education Program, and The University of Chicago School of Social Service Administration, analyzes the course of unionization in Illinois, in the Chicago metropolitan statistical area (MSA), and in the United States from 2005 to 2014. It is the second annual report of its kind for union members in the Chicago area and in Illinois, following the April 2014 release of *The State of the Unions 2014: A Profile of Unionization in Chicago, in Illinois, and in America* (Manzo et al., 2014). The report is modeled off of *The State of the Unions in 2014: A Profile of Union Membership in Greater Los Angeles, San Francisco, California, and the Nation* by the Institute for Research on Labor and Employment at the University of California, Los Angeles (Adler & Tilly, 2014) and *The State of the Unions 2014: A Profile of Organized Labor in New York City, New York State, and the United States* by the Joseph S. Murphy Institute for Worker Education and Labor Studies at the City University of New York Graduate Center (Milkman & Luce, 2014). The 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 Illinois, in the Chicago MSA, and in America. Finally, the report discusses recent developments in Illinois that particularly pertain to union members. The report concludes by recapping key findings.

DATA AND LIMITATIONS

This Research Report exclusively utilizes data from the Current Population Survey Outgoing Rotation Groups (CPS-ORG), which 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, 2015).

The 10-year dataset from 2005 to 2014 captures information on 3,188,823 individuals aged 16 to 85 in the United States. These observations include 1,932,491 persons with a job, of whom 203,874 were union members. Survey responses include information from 59,278 employed individuals in Illinois and 39,063 employed persons in the Chicago MSA since 2005. In 2014, respondents with at least one job totaled 5,794 in Illinois, 3,909 in the Chicago MSA, and 187,214 nationwide. “Chicago MSA” workers are defined as only those who live in the Illinois component of the Chicago-Naperville-Joliet Metropolitan Statistical Area (i.e., no Indiana or Wisconsin residents are included).

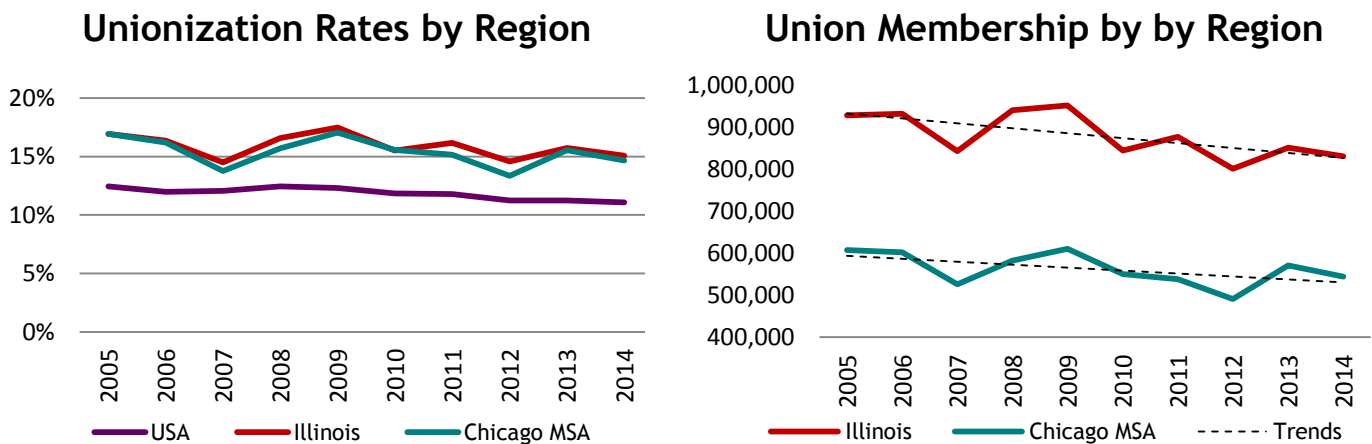
Analytic weights are provided by the Department of Labor to match the sample to the actual U.S. population 16 years of age or greater. These weights adjust the influence of an individual respondent’s answers on a particular outcome to compensate for demographic groups that are either underrepresented 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 Illinois but working in Missouri) 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 harder to reach by survey officials. Finally, every surveyed worker does not reply to the union membership question. For example, in 2014, union membership data was only available for 5,259 of the 5,794 surveyed workers (90.8 percent) in Illinois. While this does not impact unionization *rates*, estimates are underreported for both total union workers and total nonunion employees.

UNIONIZATION RATES AND TRENDS

Since 2005, unionization has declined in Illinois, the Chicago metropolitan area, and the United States (Figure 1). The total union membership rate was 16.9 percent in Illinois, 16.9 percent in the Chicago region, and 12.5 percent nationwide in 2005. Ten years later, all three rates have fallen to 15.1 percent, 14.7 percent, and 11.1 percent, respectively. The gradual decline in the unionization rate has translated into a decrease in union membership of about 97,000 workers in Illinois since 2005, contributing to the 1,115,000-member national decline in union workers over that time. (Figure 2).

FIGURE 1: UNIONIZATION RATES AND TOTAL UNION MEMBERSHIP BY REGION, 2005-2014



News for the Illinois labor movement has not been all bad, however. Despite the long-term downward trends, unionization rates and total membership were higher in 2014 than they were in 2012 for both Illinois and the Chicago region (Figure 1). The unionization rate has risen to 15.1 percent in Illinois, up from 14.6 percent in 2012. This upward movement was the result of an estimated 29,000 increase in union members throughout the state over the past two years. Additionally, the statewide increase was driven predominately by improvement in the Chicago metropolitan area, which saw a 53,000-member growth and a 1.7 percentage-point increase in the unionization rate to 14.7 percent. Finally, despite fluctuations in unionization, Illinois' union membership rate has consistently been above the national average. The 10-year combined Illinois unionization rate was 15.9 percent, 4.1 percentage points higher than the 11.8 percent national rate. On a year-by-year basis, Illinois' union membership rate has ranged from 2.4 to 5.2 percentage points higher than the national average (Figure 2).

FIGURE 2: TOTAL UNION MEMBERS AND OVERALL UNIONIZATION RATES BY REGION, 2005-2014

Year	Illinois		Chicago MSA		USA	
	Members	Rate	Members	Rate	Members	Rate
2005	926,805	16.94%	606,501	16.92%	15,685,387	12.46%
2006	931,165	16.38%	601,518	16.22%	15,359,108	11.98%
2007	842,189	14.51%	525,343	13.77%	15,670,352	12.08%
2008	939,212	16.59%	581,955	15.70%	16,097,535	12.44%
2009	950,586	17.49%	609,460	17.06%	15,327,280	12.31%
2010	843,807	15.53%	549,528	15.57%	14,715,061	11.86%
2011	875,891	16.19%	537,637	15.18%	14,754,673	11.78%
2012	800,434	14.58%	490,023	13.36%	14,349,358	11.25%
2013	850,557	15.74%	570,390	15.55%	14,515,755	11.24%
2014	829,757	15.09%	543,428	14.67%	14,569,936	11.08%
Totals	8,790,403	15.90%	5,615,783	15.39%	151,044,445	11.84%

UNIONIZATION BY DEMOGRAPHICS

Falling rates of unionization have reflected steep declines in union membership among men (Figure 4). An estimated 20.4 percent of employed men were unionized in 2005, but the 2014 male unionization rate in Illinois fell to 16.8 percent. The male unionization rate has also decreased in both the Chicago region and the nation as a whole. Since 2005, male union density has dropped by 3.3 percentage points in the Chicago area and by 1.8 percentage points in the United States.

In Illinois, a significant portion of the male drop in unionization has been offset by an increase in the female union membership rate (Figure 4). Female union density in both Illinois and Chicago was higher in 2013 than at any other point over the past decade, but declined slightly in 2014. As of 2014, the female unionization rate is 13.3 percent in Illinois and 13.1 percent in the Chicago area. Nationwide, female union membership has dipped slightly, from 11.3 percent in 2005 to 10.5 percent today.

The gap between male and female union membership rates is shrinking (Figure 4). In 2014, male union membership exceeded its female equivalent by just 3.3 percentage points in Illinois. But as recently as 2005, the Illinois gap was an 8.3 percentage points. If current (linearized) trends in unionization continue in the state, the difference between male and female unionization rates will be eliminated by 2019, converging at 14.8 percent.

FIGURE 4: GRAPHS OF UNIONIZATION RATES BY GENDER, 2005-2014

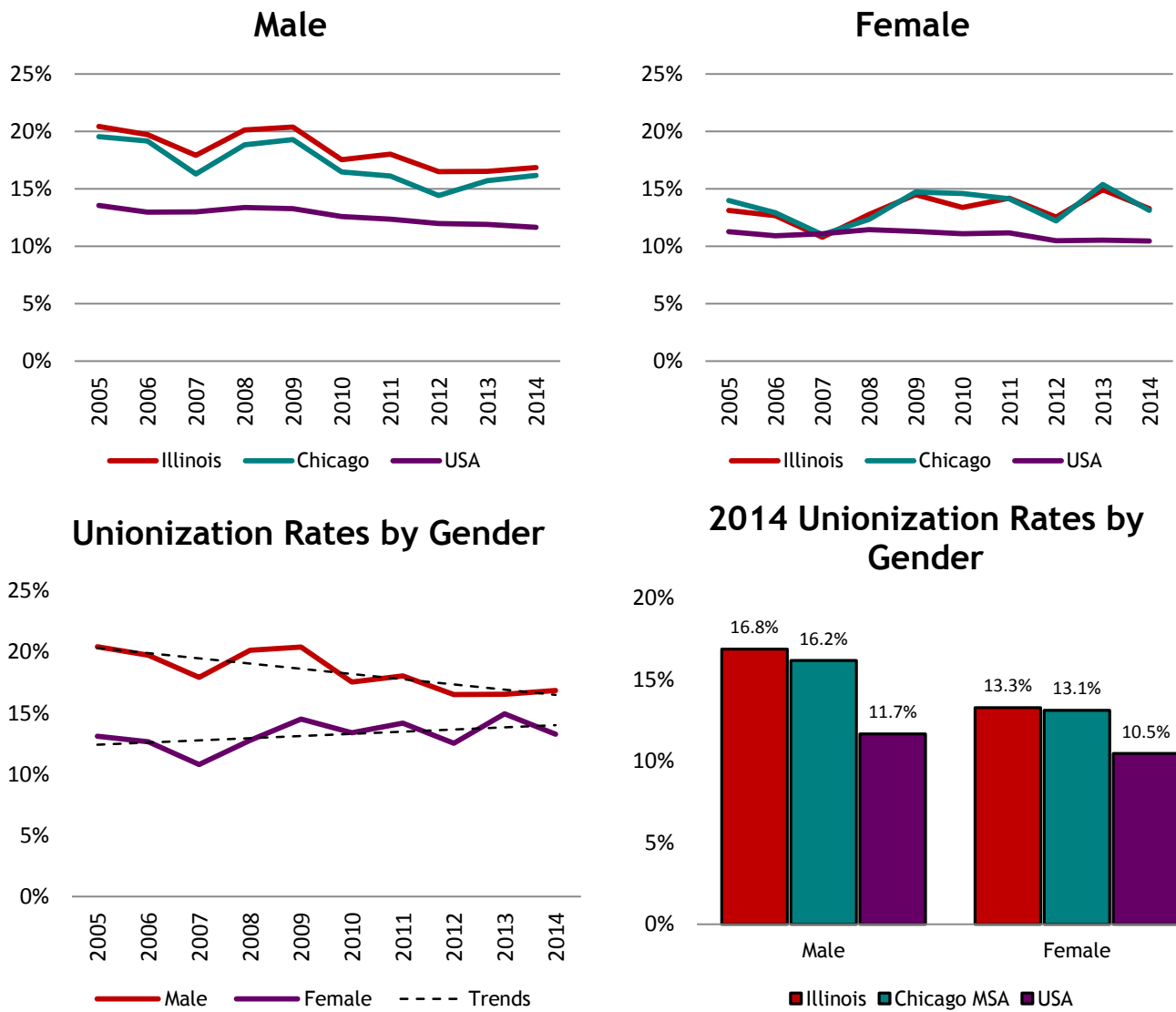
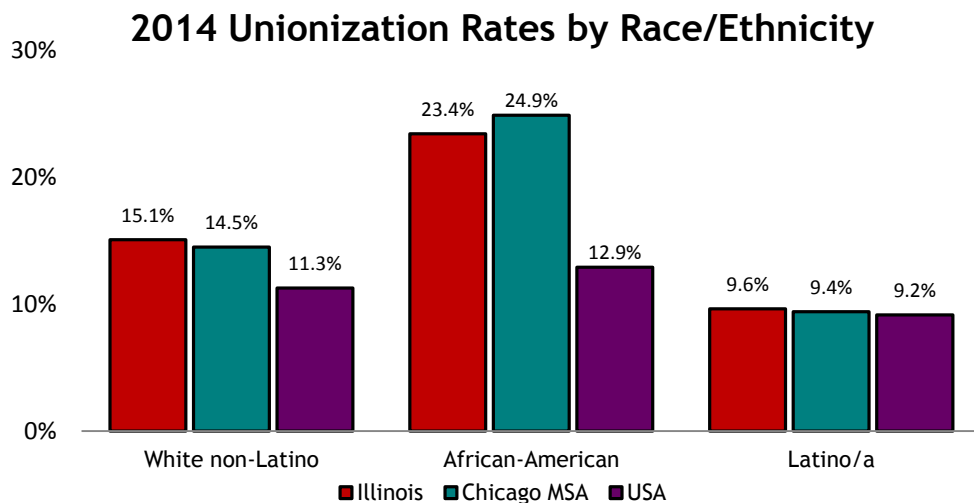
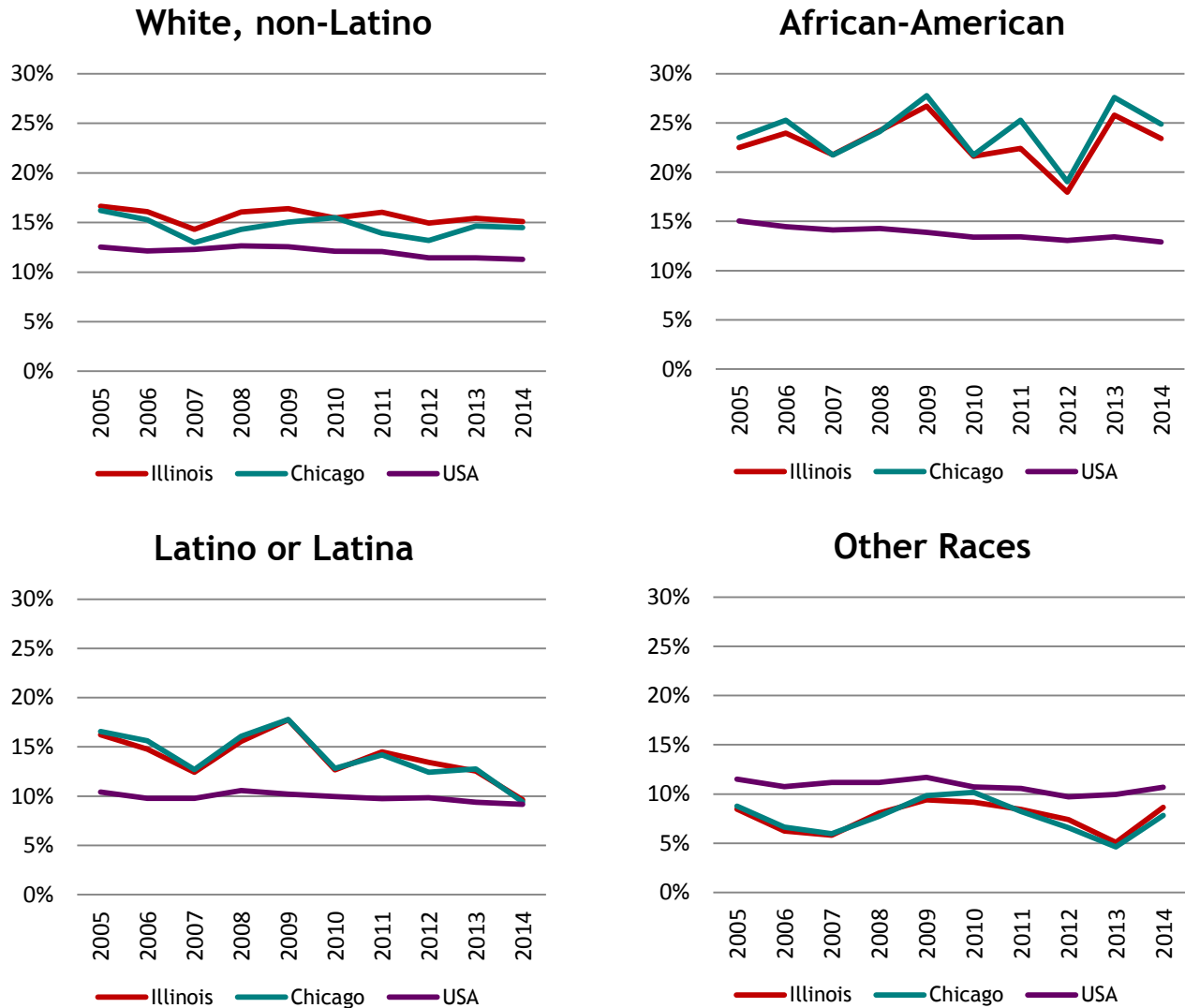


FIGURE 5: UNIONIZATION RATES BY RACIAL OR ETHNIC IDENTIFICATION BY REGION, 2014



African-Americans are the most unionized racial or ethnic identity group (Figure 5). The unionization rate for African-American workers is 23.4 percent in Illinois, 24.9 percent in the Chicago MSA, and 12.9 percent in the United States. In comparison, white non-Latino union density is 15.1 percent in the state, 14.5 percent in Illinois' largest metropolitan area, and 11.3 percent across the nation. Respective unionization rates for Latino and Latina workers are currently much lower, at 9.6 percent, 9.4 percent, and 9.2 percent.

FIGURE 6: GRAPHS OF UNIONIZATION RATES BY RACIAL OR ETHNIC IDENTIFICATION, 2005-2014



Over time, union membership has fallen for every racial or ethnic identity group except for African-Americans (Figure 6). From 2005 to 2014, unionization in Illinois fell by 1.6 percentage points for white workers and 6.6 percentage points for Latino/a workers. The African-American union membership rate, however, increased by 0.9 percentage points. In the Chicago area, trends have mirrored the overall state labor market. Over the 10-year period of analysis, the African-American union membership rate has generally been higher in the Chicago area than in the rest of the state, and it is 1.4 percentage points higher than a decade ago. It is worth noting, however, that *national* unionization rates have declined for all racial or ethnic groups, especially for African-Americans. For all groups, unionization has fallen by between 1.2 percentage points (Caucasian workers) and 2.1 percentage points (African-Americans) in the United States since 2005.

Unionization rates are much higher for middle-aged workers than young workers (Figure 7). Regardless of region studied, unionization rates are highest for workers between the ages of 45 and 64 years old. Specifically, the most unionized age groups are those aged 55 to 64 for the Chicago MSA (18.1 percent) and the United States (14.1 percent) and workers between the ages of 45 and 54 for Illinois (18.7 percent). For young workers aged 16-24, unionization rates are less than 7 percent for each of Illinois, the Chicago MSA, and the nation.

FIGURE 7: UNIONIZATION RATES BY AGE GROUP BY REGION, 2014

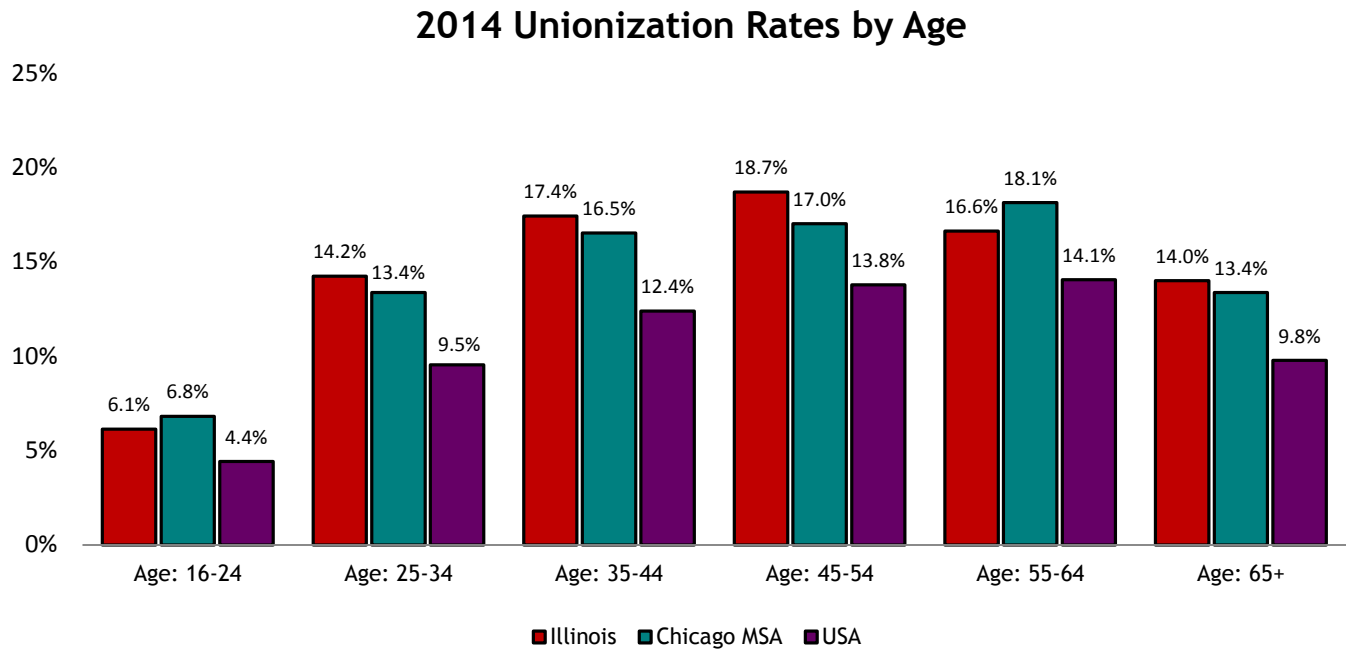


FIGURE 8: COMPOSITION OF UNION WORKFORCE AND NONUNION WORKFORCE BY AGE IN ILLINOIS, 2014

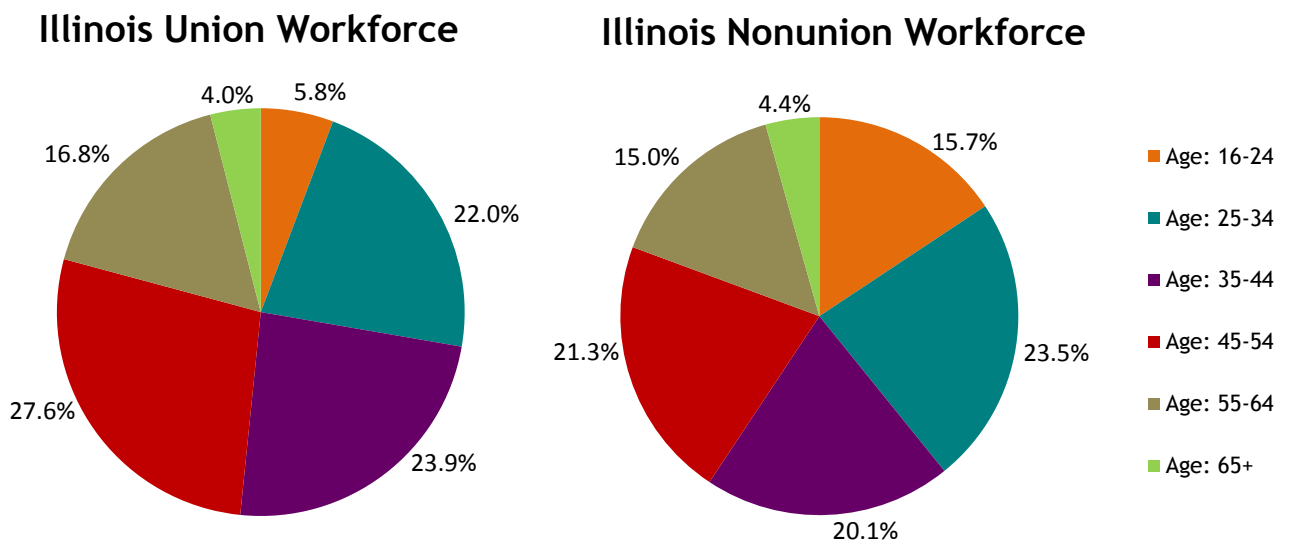


Figure 8 further explores the age disparity between the union workforce and the nonunion workforce in Illinois. As a share of the total union workforce, workers who are between 35 and 64 years old make up 68.3 percent of all union members in the state. By contrast, just 56.4 percent of the state’s nonunion workforce is 35 to 64 years old. Meanwhile, young workers under 35 years old comprise 27.8 percent of the union workforce but 39.2 percent of all nonunion workers in Illinois (Figure 8). In addition, the past

four years, unionization rates have decreased or remained constant for all age groups, except for workers aged 25 to 44. From 2013 to 2014, however, the only significant unionization rate increase (1.3 percentage points) was for workers who are 16 to 24 years old (Figure 9). If this growth among young workers continues next year, it could be a healthy sign for the future of the Illinois labor movement (Figure 9). Overall, the average age of union workers is about 44 years old and the average age of nonunion workers is 41 years old, regardless of region studied (Figure 10). The findings generally indicate that union organizing of new workers in the labor force has been limited.

FIGURE 9: ILLINOIS UNIONIZATION RATES BY AGE GROUP, 2011-2014

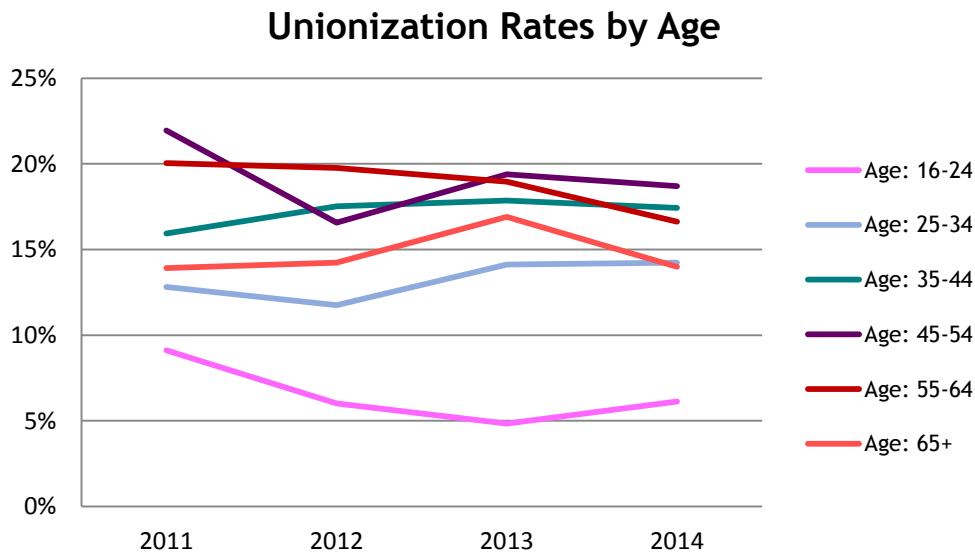


FIGURE 10: AVERAGE AGE OF UNION AND NONUNION WORKERS BY REGION, 2014

2014 Variable	Age (Years)	
	Nonunion	Union
Illinois	40.62	43.54
Chicago MSA	40.62	43.79
USA	40.92	44.47

Union membership varies across other demographic classifications as well (Figure 11). Among the most unionized socioeconomic groups are war veterans. Almost three-in-ten employed veterans are unionized in the Chicago area (27.3 percent) and over two-in-ten are in Illinois (21.9 percent). For the United States, approximately 15.2 percent of employed veterans are members of unions. The unionization rate for married workers is also above the overall average for each of the Chicago MSA, Illinois, and the United States. In addition, foreign-born immigrant workers experience lower union membership rates than their respective regional averages. Foreign-born workers across America are also more likely to be union members than those in the Chicago region, a new development in 2014. Native-born and naturalized citizens are more likely to be union members than foreign-born workers.

Figure 12 reveals that geographic distance from an urban core is a minor factor in union membership. In general, workers who reside in the central city of a metropolitan area are more likely to be unionized than those who live in suburbs and those who reside in rural communities. In Illinois, 16.4 percent of urban workers are members of unions, 14.0 percent of suburban workers are unionized, and 15.5 percent of rural workers belong to a union. The comparable figures for the United States are respectively 11.4 percent, 11.5 percent, and 9.3 percent.

FIGURE 11: UNIONIZATION RATES OF SELECT DEMOGRAPHIC VARIABLES BY REGION, 2014

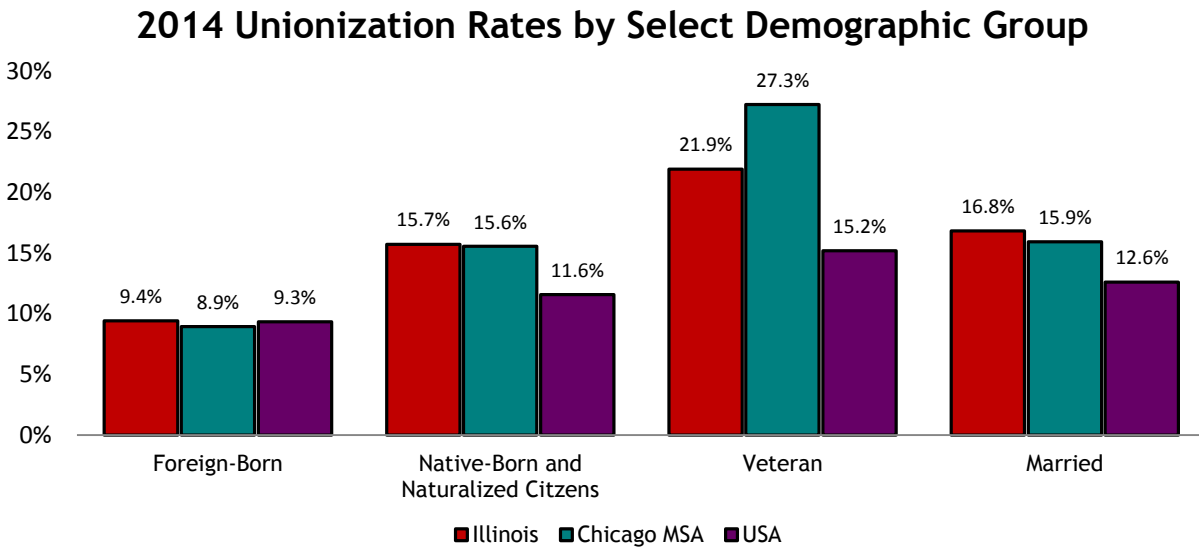
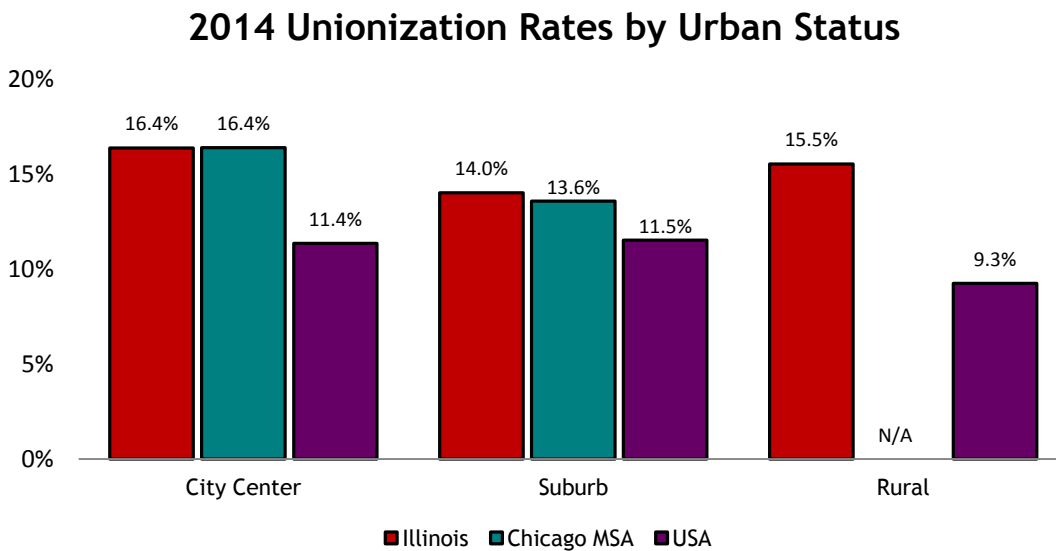


FIGURE 12: UNIONIZATION RATES BY URBAN STATUS BY REGION, 2014



UNIONIZATION BY EDUCATION

Workers with master’s degrees are the most unionized educational group in America (Figure 13). At 25.4 percent, unionization among master’s degree holders in Illinois towers over the rates of all other educational attainment groups in each region studied. In Illinois and the United States, the second most unionized employees by educational attainment are those with associate’s degrees. The second highest unionization rate in the Chicago region is for those with some college experience but no degree. The two least unionized groups are at the educational extremes: In Illinois, only 10.3 percent of workers without a high school degree and 8.8 percent of workers with professional (J.D., M.D., etc.) or doctorate degrees are union members. For professional and doctorate degree holders, the data disclose a rare occurrence in which employed workers nationwide have a higher union membership rate than

both Chicago and Illinois counterparts. Finally, among workers who are still in school full-time, the unionization rate is between 2 and 4 percent across regions.

FIGURE 13: UNIONIZATION RATES BY EDUCATIONAL ATTAINMENT OR STATUS BY REGION, 2014

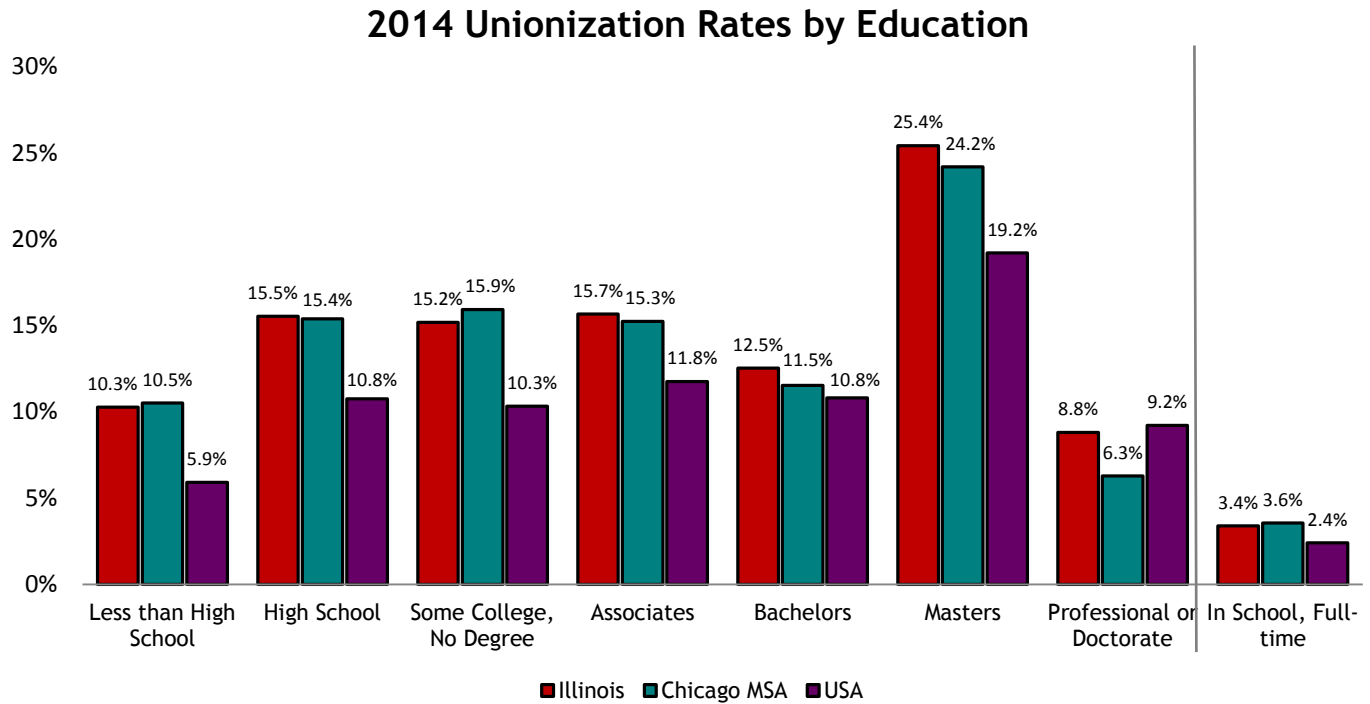


Figure 14 translates the data into breakdowns of the union workforce and nonunion workforce. Despite lower unionization rates, pluralities of both union and nonunion workers have either a high school degree equivalent or a bachelor’s degree. As expected, master’s degree holders comprise a larger share of the union workforce than the nonunion workforce; however, only 16.9 percent of Illinois and U.S. union workers and 18.4 percent of Chicago MSA union workers have a master’s degree.

FIGURE 14: COMPOSITION OF UNION AND NONUNION WORKFORCE BY EDUCATION BY REGION, 2014

Variable	Illinois		Chicago MSA		USA	
	Nonunion	Union	Nonunion	Union	Nonunion	Union
Less than High School	8.1%	5.2%	8.7%	6.0%	9.2%	4.6%
High School	24.2%	25.0%	21.8%	23.0%	27.1%	26.3%
Some College, No Degree	20.6%	20.8%	19.9%	21.9%	19.1%	17.7%
Associates	9.1%	9.5%	7.5%	7.9%	10.6%	11.3%
Bachelors	25.6%	20.7%	28.0%	21.2%	22.6%	22.0%
Masters	8.8%	16.9%	9.9%	18.4%	8.1%	15.5%
Professional or Doctorate	3.6%	1.4%	4.3%	1.7%	3.2%	2.6%
Observations	4,459	800	3,023	521	148,408	18,666
Employed Population	4,667,465	829,757	3,160,171	534,428	116,882,844	14,569,936

Over the past six years, unionization rates have fallen for almost all educational groups (Figure 15). To ensure statistical significance, Figure 15 compares the three-year averages of union membership rates of educational attainment groups by region for 2009-2011 and 2012-2014. Across the seven educational classifications in all three regions, the union membership rate has declined in all but three cases: Workers with some college but no degree (+0.3 percentage points) and with associate’s degrees (+1.0 percentage points) in the Chicago metropolitan area and employees with some college but no degree

across Illinois (+0.5 percentage points). Across regions, the largest declines in unionization were for individuals with advanced degrees. This is likely the result of cuts to government agencies, K-12 educational systems, and public universities, which disproportionately employ workers with master’s degrees and professional or doctorate degrees.

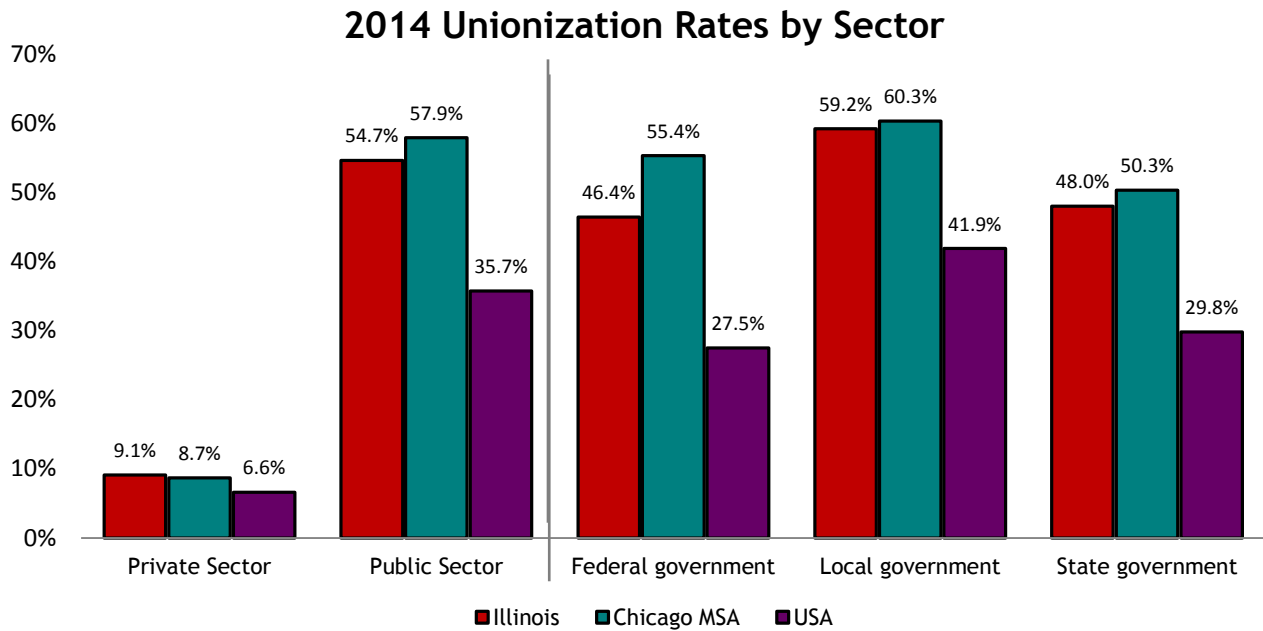
FIGURE 15: CHANGE IN UNIONIZATION RATES BY EDUCATION, TWO-YEAR MOVING AVERAGES, 2009-2014

Variable	Illinois			Chicago MSA			USA		
	2009-11	2012-14	Change	2009-11	2012-14	Change	2009-11	2012-14	Change
Less than High School	11.0%	8.8%	-2.2%	11.7%	9.8%	-1.9%	6.4%	5.8%	-0.5%
High School	17.6%	16.6%	-0.9%	17.8%	16.4%	-1.4%	11.5%	10.9%	-0.7%
Some College, No Degree	15.0%	15.3%	+0.3%	14.8%	15.3%	+0.5%	11.1%	10.3%	-0.8%
Associates	17.2%	16.8%	-0.5%	16.5%	17.5%	+1.0%	13.4%	12.3%	-1.1%
Bachelors	14.5%	12.5%	-2.0%	13.4%	11.0%	-2.4%	11.8%	10.9%	-0.9%
Masters	26.5%	23.1%	-3.5%	24.7%	21.9%	-2.8%	21.4%	19.3%	-2.1%
Professional/Doctorate	10.3%	8.1%	-2.3%	10.2%	6.3%	-3.9%	9.7%	9.3%	-0.4%

UNIONIZATION BY SECTOR, INDUSTRY, AND OCCUPATION

Unionization rates are significantly higher for public sector workers (Figure 16). Over half of all public sector workers are unionized in both Illinois (54.7 percent) and the Chicago region (57.9 percent), as are over one-third nationwide (35.7 percent). In comparison, fewer than one-in-ten private sector workers is now a union member in both Illinois (9.1 percent) and the Chicago MSA (8.7 percent) and 6.6 percent of the private sector is unionized in America.

FIGURE 16: UNIONIZATION RATES BY SECTOR OR LEVEL OF GOVERNMENT BY REGION, 2014



Across all regions studied, the most unionized public sector group is local government employees, with approximately six-in-ten workers belonging to a union in Illinois (59.2 percent) and the Chicago MSA (60.3 percent). State government generally commands the second-highest unionization rate among workers in the three levels of American government. Among public sector workers in Illinois, the

unionization rate is lowest for federal government employees. Federal government union membership rates are still over five times as high as the private sector workforce, however, at 46.4 percent in Illinois.

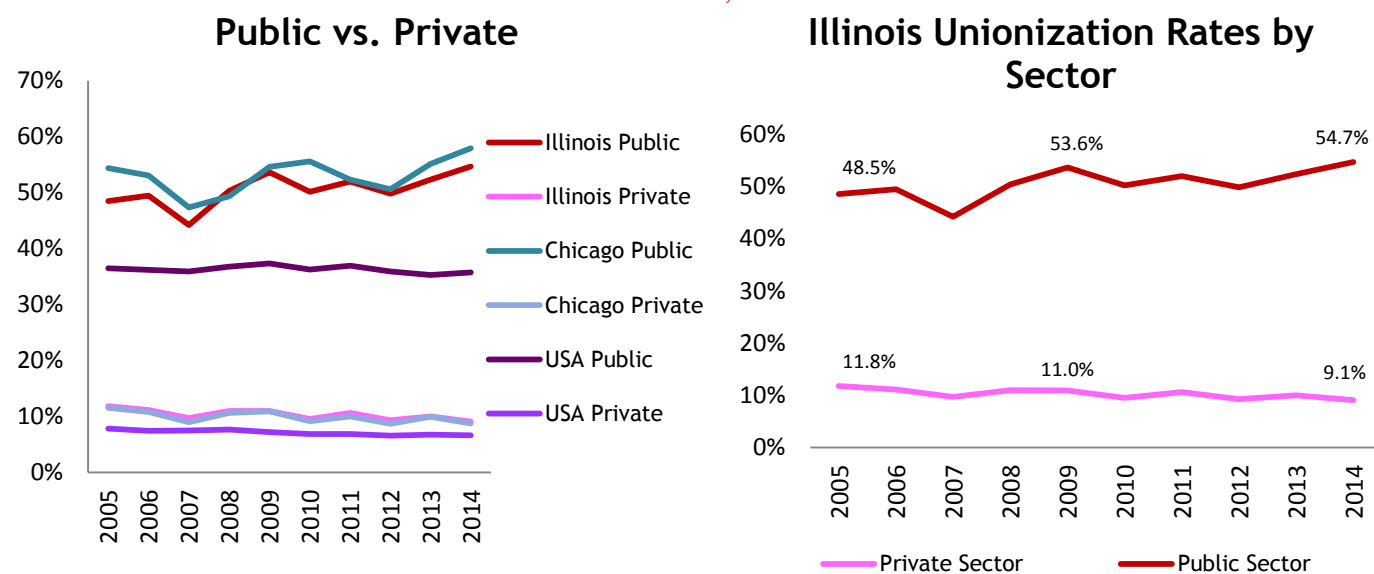
Overall, almost half of all union members now work in the public sector (Figure 17). Of the unionized workforce, public sector workers comprise 47.6 percent in Illinois, 47.8 percent in the Chicago area, and 49.5 percent in the United States. The largest component of the public sector workforce, unsurprisingly, is the local government bloc of employees.

FIGURE 17: PUBLIC SECTOR SHARE OF UNION AND NONUNION WORKFORCES BY REGION, 2014

Variable	Illinois		Chicago MSA		USA	
	Nonunion	Union	Nonunion	Union	Nonunion	Union
Public Sector	7.0%	47.6%	6.0%	47.8%	11.1%	49.5%
Private Sector	93.0%	52.4%	94.0%	52.2%	88.9%	50.5%

Public sector unionization in Illinois has actually increased over time (Figure 18). While private sector unionization has gradually decreased in Illinois, the Chicago metropolitan area, and the United States, public sector union membership has experienced gains in Illinois and in the Chicago area (nationwide, public sector unionization has marginally declined). In Illinois, 2005 union membership rates were 48.5 percent for public sector workers and 11.8 percent for private sector workers. The rates experienced a trough in 2007, at 44.2 percent and 9.7 percent, respectively, before rebounding in 2009. Today, the union membership rate for private sector workers is 2.7 percentage points lower than it was in 2005 but 2.5 percentage points higher for public sector workers.

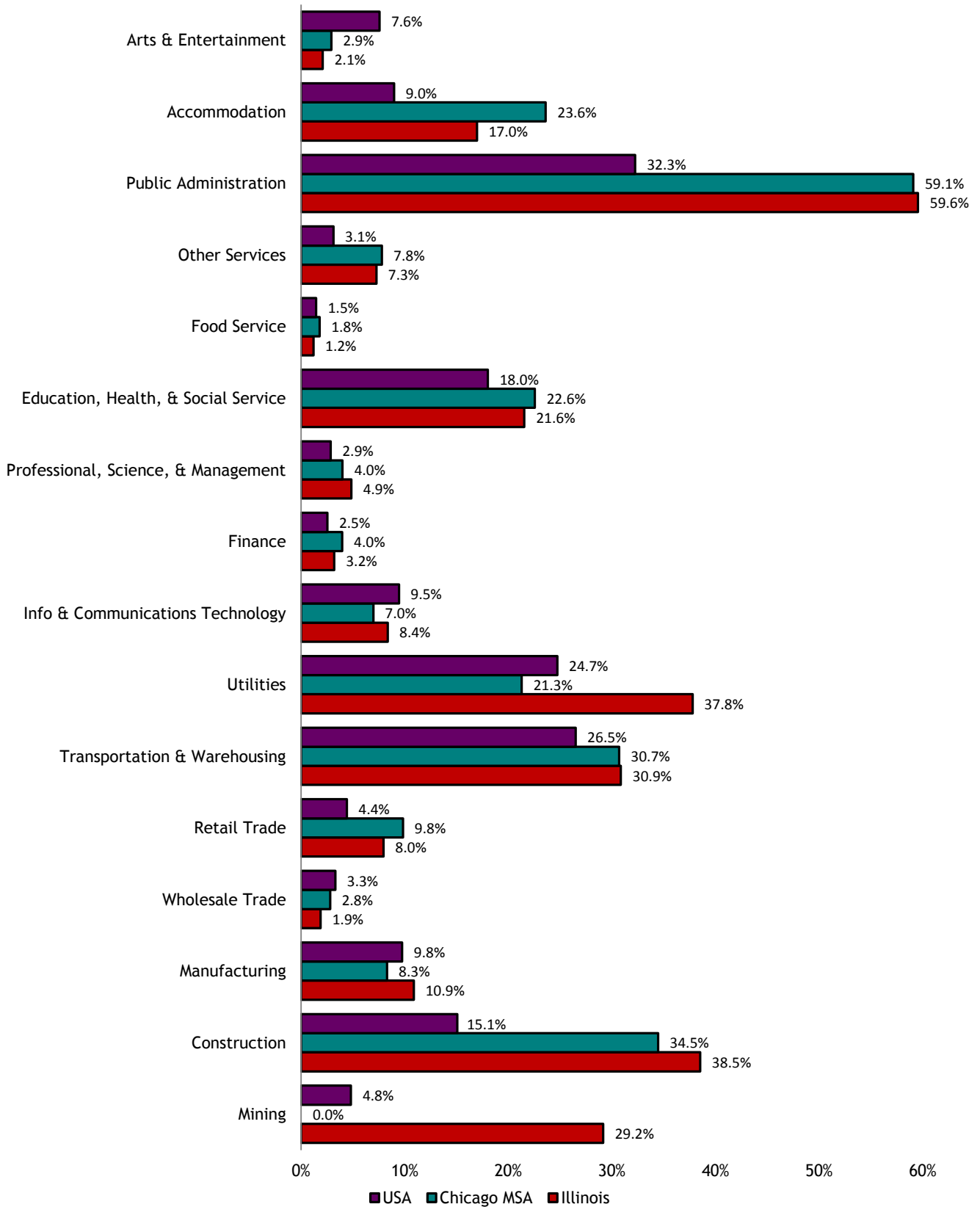
FIGURE 18: UNIONIZATION RATES BY SECTOR BY REGION, 2005 TO 2014



Union membership varies significantly by industry of employment (Figure 19). The top five industries by unionization rates are public administration; construction; utilities; transportation and warehousing; and the combined education, health, and social services industry. The national manufacturing workforce, associated historically as a leader in industrial unionization, is now only 9.8 percent organized, compared to 8.3 percent in the Chicago region and 10.9 percent across Illinois. The least-unionized industries generally are food service; the combined professional, science, and management industry; wholesale trade; finance; and the aggregated arts, entertainment, and recreation.

FIGURE 19: UNIONIZATION RATES BY INDUSTRY BY REGION, 2014

2014 Unionization Rates by Industry

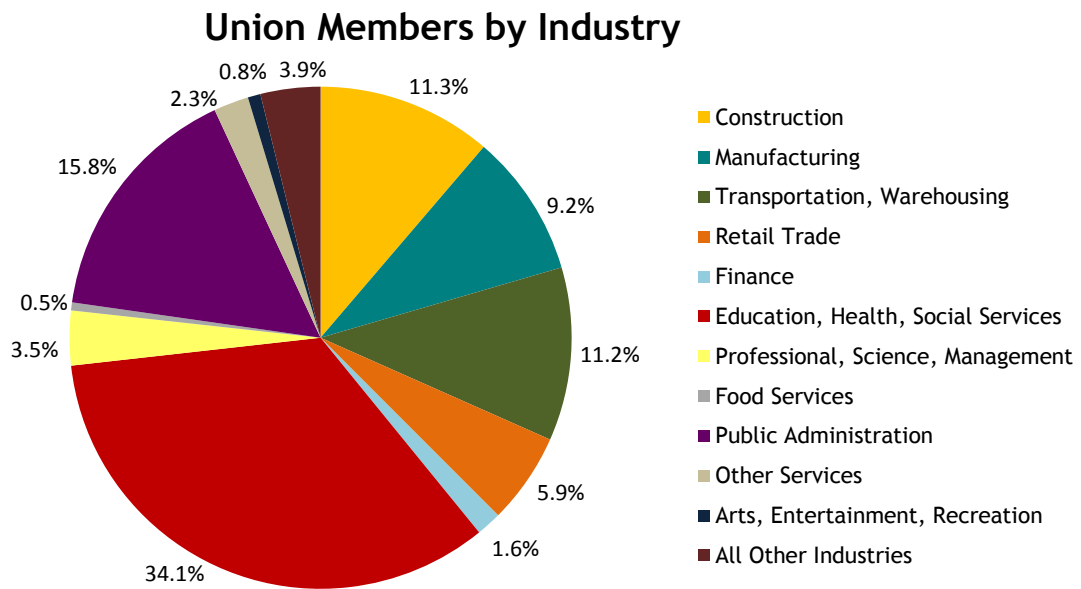


Figures 20 and 21 present industry breakdowns of total union membership in Illinois compared to total employment in the state. In Figure 20, industries are organized in descending order by unionization rate and weighted estimates are rounded to the nearest thousand. Note that the estimates include all *occupations* within an industry. The construction industry, for example, includes white-collar workers who typically are not union members, such as lawyers, owners of contractor firms, and architects. The top five industries with the most union members in Illinois are education-health-social services (283,000 members), public administration (131,000 members), construction (93,000 members), transportation and warehousing (93,000 members), and manufacturing (77,000 members) (Figure 20). Together, union members from these five industries account for 81.6 percent of all union workers in Illinois (Figure 21). For more information, the Appendix includes profiles of unionization for these five largest Illinois industries by union membership.

FIGURE 20: ILLINOIS INDUSTRY UNIONIZATION RATES, EMPLOYMENT, AND UNION MEMBERS, 2014

Illinois 2014	Unionization Rate	Total Employment	Total Union Members	Total Sample
Public Administration	59.6%	220,000	131,000	213
Construction	38.5%	243,000	93,000	233
Transportation and Warehousing	30.9%	300,000	93,000	279
Education, Health, & Social Services	21.6%	1,313,000	283,000	1,262
Accommodation Services	17.0%	40,000	7,000	35
Manufacturing	10.9%	703,000	77,000	647
Retail Trade	8.0%	610,000	49,000	570
Other Services	7.3%	257,000	19,000	244
Professional, Science, & Management	4.9%	600,000	29,000	578
Finance	3.2%	418,000	13,000	407
Food Service	1.2%	352,000	4,000	330
All Other Industries	7.2%	443,000	32,000	432

FIGURE 21: COMPOSITION OF ILLINOIS UNION WORKFORCE BY INDUSTRY, 2014



One cautionary note must be mentioned, however. While the total sample included 5,794 respondents of persons living in Illinois who were employed (5,259 of whom offered their union membership status), cutting the data into industry-level investigations results in relatively small sample sizes. Other than the

large education-health-social sciences industry, the statistics in Figure 20 are simply *estimates*. Nevertheless, they are informative in that they shed light on the state's union membership and provide, at the very least, general parameters on the composition of the union workforce.

Lastly, Figure 22 depicts unionization rates by occupation. Across all regions, the five most unionized occupation groups are protective service jobs such as police officers and firefighters (60.1 percent in Illinois); education, training, and library occupations such as teachers (48.8 percent in Illinois); construction occupations such as carpenters and operating engineers (44.5 percent in Illinois); transportation and moving jobs such as public transit workers and truck drivers (24.4 percent in Illinois); and installation, maintenance, and repair occupations such as mechanics (19.7 percent in Illinois). Nevertheless, compared to the nation, unionization rates in these five occupations are significantly higher in Illinois. Union membership in the construction and protective service occupations, as examples, are respectively 26.3 percentage points and 24.9 percentage points higher in Illinois than the United States average. The least-unionized occupations are computer and math; business and financial; food preparation and service; sales; and legal jobs in Illinois.

FIGURE 22: UNIONIZATION RATES BY OCCUPATION BY REGION, 2014

Occupation (2014)	Illinois	Chicago MSA	USA
Management	6.0%	5.7%	4.5%
Business & Financial	3.8%	3.4%	5.3%
Computer & Math	2.9%	1.6%	4.2%
Architecture & Engineering	7.2%	7.3%	6.1%
Life, Physical, & Social Sciences	8.9%	5.3%	9.9%
Community & Social Service	15.3%	17.7%	15.1%
Legal	5.7%	4.8%	6.0%
Education, Training, & Library	48.8%	48.1%	35.3%
Arts, Entertainment, Sports & Media	8.0%	8.3%	5.6%
Health Practitioner	9.0%	10.2%	12.3%
Health Support	11.7%	14.2%	9.2%
Protective Service	60.1%	63.9%	35.2%
Building & Grounds Maintenance	12.0%	10.2%	10.3%
Food Preparation & Service	4.1%	4.1%	4.2%
Personal Care	9.4%	7.2%	6.1%
Sales	4.9%	5.8%	3.1%
Office Administrative Support	10.9%	11.7%	9.2%
Construction	44.5%	42.1%	18.2%
Installation, Maintenance, & Repair	19.7%	19.6%	14.6%
Production	18.3%	13.6%	13.0%
Transportation and Moving	24.4%	24.2%	16.3%

PREDICTING UNION MEMBERSHIP IN ILLINOIS

An advanced analytic model is developed to predict the chances that any given worker is a union member in Illinois, using data from 2012 through 2014. The model, which is detailed in the Table A of the Appendix, reports how statistically significant variables increase or decrease one's probability of being a union member. The model does not allow the application of weights to match the sample to the actual Illinois population, but includes data on 13,304 Illinois workers. Given that Illinois averaged an

estimated 6.0 million workers over this time, the sample size would yield a normal 0.9 percent margin of error in a standard survey report.

Many factors increase the likelihood that an employed person is a union member in Illinois. Relative to workers in the private sector, employment in local government, the largest contributor to an individual's chances of being a union member, raises the probability by 18.9 percentage points on average. State and federal government employment respectively increase the union probability by 17.7 and 14.4 percentage points, respectively, relative to private sector workers. Employment in an education, training, and library occupation; a construction *occupation* (e.g., as a carpenter, an operating engineer, a pipefitter, an electrician, a painter, etc.); and a protective service job all lift the likelihood that a worker is a union member by 12 to 17 percentage points relative to all unlisted occupations. There is also evidence that working in the construction *industry* (which would include, for example, lawyers, architects, and administrative workers in contractor offices) adds 3.9 percentage points to the chances of being a union member, relative to all unlisted industries. Similarly, the utilities industry is statistically the most unionized *industry*, increasing a given worker's chance of being a union member by 7.6 percentage points. Note that the industry variables include both public and private sector workers, and the independent effects of public sector employment are captured in the local government, state government, and federal government variables. Ultimately, employment growth in the public sector or through infrastructure investment would likely increase unionization in Illinois.

FIGURE 23: PROBABILITY OF BEING A UNION MEMBER IN ILLINOIS, SIGNIFICANT FACTORS, 2012-2014

Probability of Union Membership	Illinois Mean
<i>Predictor</i>	<i>Percentage Point Change</i>
<i>Local government</i>	+18.92
<i>State government</i>	+17.73
<i>Occupation: Education, training, and library</i>	+16.59
<i>Occupation: Construction</i>	+15.58
<i>Federal government</i>	+14.38
<i>Occupation: Protective services</i>	+12.40
<i>Occupation: Transportation and materials moving</i>	+11.51
<i>Occupation: Installation, maintenance, and repair</i>	+10.89
<i>Industry: Utilities</i>	+7.61
<i>African-American</i>	+6.48
<i>Occupation: Healthcare practitioner</i>	+5.79
<i>Occupation: Building and grounds cleaning</i>	+5.79
<i>Industry: Construction</i>	+3.85
<i>Male</i>	+1.90
<i>Education: Bachelor's degree</i>	-2.28
<i>Education: Less than a high school degree</i>	-2.54
<i>Education: Professional or doctorate degree</i>	-4.75
<i>Industry: Information and communications</i>	-10.30
<i>Industry: Financial, banking, and real estate</i>	-10.46
<i>Industry: Professional, scientific, and management</i>	-11.42
<i>Industry: Wholesale trade</i>	-13.05
<i>Industry: Arts, entertainment, and recreation</i>	-13.06
<i>Industry: Food service</i>	-14.40
<i>Constant</i>	14.27
<i>Observations</i>	13,304

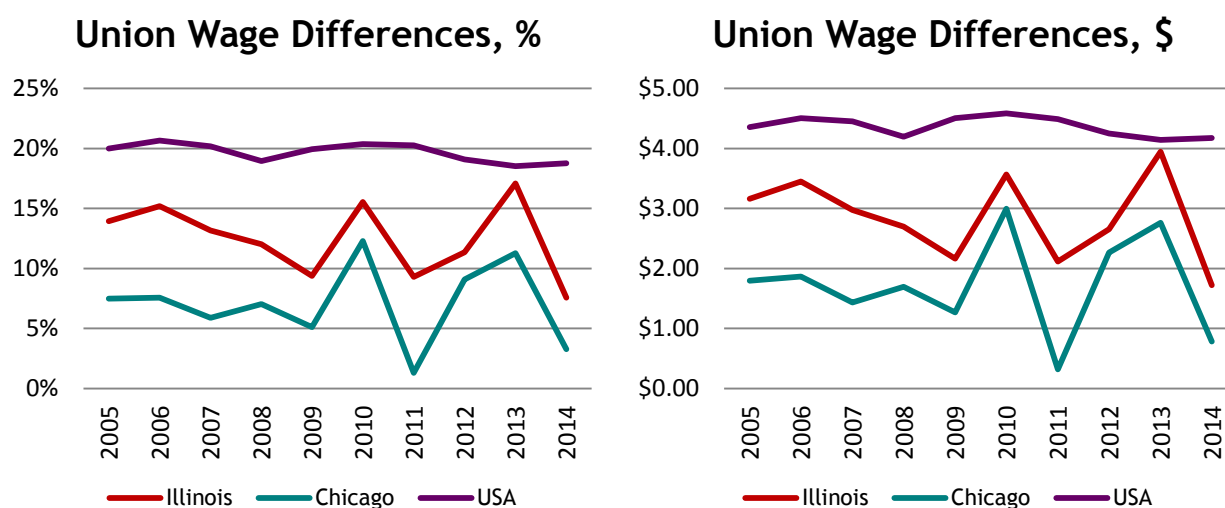
Source: CPS-ORG, Center for Economic and Policy Research Uniform Data Extracts, 2012-2014. Only statistically significant variables are displayed in the figure. For more, see the Appendix.

Beyond sector, industry, and occupation influencers, a few factors contribute positively toward the chances that a given worker in Illinois is unionized. First, African-American workers are statistically the most likely racial or ethnic group to be union members in Illinois. African-Americans are 6.5 percentage points more likely, on average, to be union members than all other racial or ethnic groups. In addition, male workers are 1.9 percentage points more likely than female employees to be union members. The only educational attainment variables which statistically significantly impact union membership are having less than a high school degree or having a bachelor’s degree or professional or advanced degree. These degrees reduce the probability that a given worker is a union member. Consequently, the converse is true: workers with a high school degree alone, with associate’s degrees, and with master’s degrees are the most likely workers by educational attainment to be unionized.

UNION WAGES

Unionized workers typically earn more than their nonunion counterparts (Figure 24). Figure 24 graphically illustrates the difference between the average union wage and the average nonunion wage in Illinois, the Chicago MSA, 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 over \$4.00 per hour, or by about 20 percent. The gap between union and nonunion wages appears to be smaller in Illinois and even less impactful in the Chicago metropolitan region. The differences declined in the past year: down from a \$3.95 hourly benefit in Illinois and a \$2.76 hourly benefit in the Chicago region in 2013. Today, the respective wage differences are \$1.72 per hour and \$0.79 per hour, though this year’s estimates could include sampling errors (Figure 24). The average union worker works more hours than the average nonunion worker. Union workers usually work an average of 40.1 hours each week in Illinois, 39.6 hours each week in the Chicago area, and 40.0 hours each week in America. By contrast, nonunion employees usually work an average of 37.8 hours in Illinois, 38.2 hours in the Chicago region, and 38.1 hours in the United States (Figure 25). Thus, unions raise individual incomes both by lifting wages *per hour* and by increasing the number of *hours* that employed persons actually work each week.

FIGURE 24: UNION WAGE DIFFERENCES BY REGION, PERCENTAGE AND DOLLAR VALUES, 2005 TO 2014



The data presented in Figure 25 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 of wages and report them in Figure 26. The national average further controls for an individual respondent’s state of residence. Data are for employed persons aged 16 and older from 2012 through 2014 and are based on the natural logarithm of hourly wages to “normalize the data” and analyze the results in percentage terms. For more on the union wage premium regressions, see Table B in the Appendix.

FIGURE 25: WAGES AND USUAL HOURS WORKED OF UNION AND NONUNION WORKERS BY REGION, 2014

Variable	Illinois		Chicago MSA		USA	
	Nonunion	Union	Nonunion	Union	Nonunion	Union
Wage	\$22.73	\$24.45	\$24.06	\$24.84	\$22.27	\$26.44
Union Difference, %		7.58%		3.26%		18.75%
Union Difference, \$		\$1.72		\$0.79		\$4.17
Usual hours worked	37.82	40.14	38.18	39.58	38.12	39.99

After controlling for education, demographics, and employment factors, the union wage premium is actually revealed to be stronger in Illinois than the differences reported in Figures 24 and 25 (Figure 26). On average, unions are found to increase a worker’s per-hour wage by 12.4 percent in the United States. In Illinois, the union wage premium is an estimated 11.9 percent on average, holding all else constant (including occupation and industry). Both results are statistically significant, even at the 1-percent level.

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 an 11.9 percent increase in the average Illinois worker’s wage, the benefit was actually higher for those in the middle of the state’s hourly income distribution (Figure 26). In fact, over the past three years, the union wage effects produced raises of 12.1 to 12.3 percent for workers between the 25th and 75th percentile, including the median worker. The average union wage premium for the bottom 10 percent of wage earners (11.1 percent) is greater than the comparable figure for the richest 10 percent of workers (8.9 percent). The data strongly indicate that unionization primarily benefits the middle class.

FIGURE 26: REGRESSIONS OF UNION WAGE PREMIUMS FOR THE UNITED STATES AND ILLINOIS, 2012-2014

Union Wage Premium: Ordinary Least Squares (OLS) and Quantile Regressions, 2012-2014						
United States	Illinois					
Mean	Mean	Percentile: 10 th	Percentile: 25 th	Median	Percentile: 75 th	Percentile: 90 th
12.35%***	11.92%***	11.06%***	12.33%***	12.10%***	12.29%***	8.68%***
R ² =0.464	R ² =0.469	R ² =0.175	R ² =0.275	R ² =0.324	R ² =0.332	R ² =0.318

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, 2012-2014. 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.

The estimates generally align with national findings from Schmitt (2008) in *The Union Wage Advantage for Low-Wage Workers*, except for the lowest-paid workers. This could vary due to a multitude of reasons. First, particularly high unemployment among lesser-educated Illinois workers could reduce the relative power of unions that organize low-wage workers in the state. Conversely, the comparative strength of high-skilled unions (such as teachers’ unions, public administration unions, and construction unions) in Illinois may contribute to a greater benefit of unionization to those workers at or slightly above the median. Finally, the estimates could be askew if unionization raises fringe benefits more for lower-wage workers than for higher-wage workers. It is conceivable that higher-skilled workers would be offered a generous fringe benefits package even without the union effect while lower-skilled workers would face a smaller likelihood of receiving fringe benefits without a union (Mishel & Walters, 2003). In this instance, the benefits of unionization in terms of increased compensation could be similar even while the form of compensation is different. Unionization, in any case, raises the wages of all Illinois workers, as the premium is positive across the wage distribution.

How does the average Illinois union wage premium of 11.9 percent compare to the union effect in other states? Similar 2012-2014 ordinary least squares regression models are run to assess each of the 49 other states plus the District of Columbia against Illinois. The results, reported in Figure 27, lead to the conclusion that the Illinois union wage premium is the 20th-highest in the nation. Interestingly, the union wage premium is actually highest for Louisiana (22.1 percent), Kansas (19.8 percent), and Wyoming (17.4 percent). A total of 16 states have union wage premiums that are found to be higher than the national average of 12.4 percent. Importantly, the positive union wage premium exists in every state.

The Illinois union wage premium (11.9 percent) is slightly lower than the national average (12.4 percent). This could be due to many reasons. As an example, because unionization is higher in Illinois relative to the nation, the “threat effect” could be stronger. That is, nonunion employers in Illinois may have raised wages to union standards to avert the threat of unionization, which benefits nonunion workers and closes the gap (Ozkan & Ozbeklik, 2014; Western & Rosenfeld, 2011). Regardless, estimates from 2012 through 2014 reveal that Illinois remains in the top half of states by union wage premium.

FIGURE 27: UNION WAGE PREMIUMS BY STATE, OLS REGRESSIONS, 2012-2014

Rank	State	Union Premium	Rank	State	Union Premium
	<i>United States</i>	12.35%	26	Oregon	11.12%
1	Louisiana	22.05%	27	Wisconsin	10.97%
2	Kansas	19.80%	28	Hawaii	10.96%
3	Wyoming	17.38%	29	New Jersey	10.96%
4	Missouri	16.89%	30	Montana	10.71%
5	Indiana	15.91%	31	Connecticut	10.67%
6	South Dakota	15.87%	32	New York	10.48%
7	Arkansas	15.00%	33	Iowa	10.40%
8	North Dakota	14.15%	34	Alaska	10.06%
9	Ohio	13.39%	35	West Virginia	10.02%
10	Minnesota	13.35%	36	Georgia	9.72%
11	North Carolina	13.34%	37	Texas	9.40%
12	Tennessee	13.13%	38	Utah	9.13%
13	Massachusetts	13.05%	39	Kentucky	9.11%
14	Nebraska	12.74%	40	Rhode Island	9.00%
15	California	12.66%	41	Vermont	8.89%
16	Nevada	12.51%	42	Florida	8.79%
17	New Hampshire	12.21%	43	Alabama	8.76%
18	Oklahoma	12.19%	44	South Carolina	7.18%
19	Michigan	11.94%	45	District of Columbia	7.17%
20	Illinois	11.92%	46	Washington	6.70%
21	Idaho	11.85%	47	Virginia [†]	4.79%
22	Pennsylvania	11.57%	48	Delaware	4.67%
23	Arizona	11.33%	49	Colorado	4.66%
24	Maryland	11.28%	50	Mississippi [†]	4.23%
25	Maine	11.22%	51	New Mexico [†]	2.35%

One cross (†) indicates that the estimate is not statistically significant. All other estimates are significant at least at the 5-percent level. Source: CPS-ORG, Center for Economic and Policy Research Uniform Data Extracts, 2012-2014. 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.

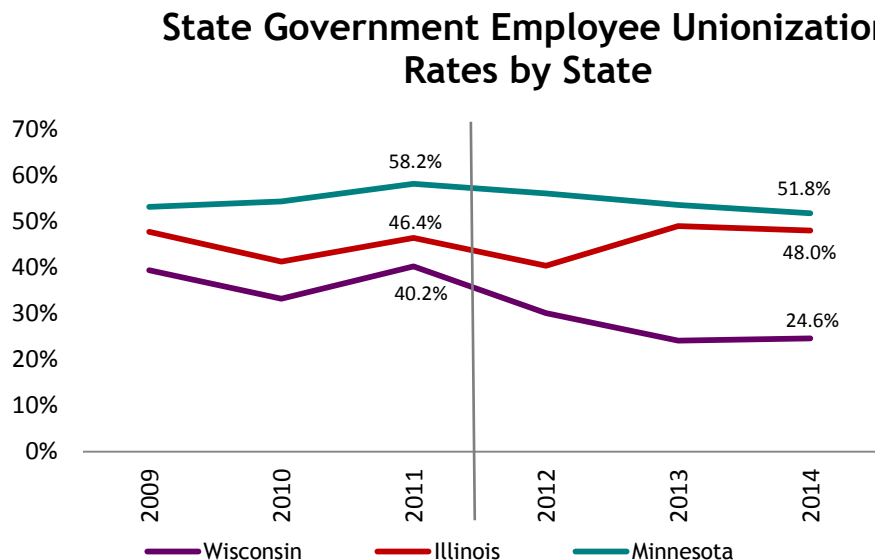
RECENT DEVELOPMENTS

Since *The State of the Unions 2014* was released in April 2014, Illinois’ economic and political landscapes have both undergone changes. First, economic data from the CPS-ORG indicates that the Illinois economy added 108,000 jobs in 2014, a growth of 1.8 percent over the year. Consequently, from February 2014 to February 2015, the state’s unemployment rate declined from 7.9 percent to 6.0 percent. This 1.9 percentage-point drop in unemployment was the third largest in the nation, behind Rhode Island and Kentucky (BLS, 2015a). The three major industries of employment that grew fastest in Illinois from February 2014 to February 2015 were construction (+6.7 percent), professional and business services (+2.4 percent), and leisure and hospitality (2.0 percent) (BLS, 2015b).

The Office of the Governor also changed political parties at the beginning of 2015. In his sixth Executive Order issued while in office, new Governor Bruce Rauner instructed state government agencies to cease enforcement of “fair share” contract provisions, allowing state workers to receive all of the benefits won by a union without paying their share of dues or fees toward bargaining activities (Rauner, 2015). The Executive Order applies only to workers employed directly by a state agency. Governor Rauner has also proposed permitting cities and counties to enact local right-to-work ordinances, which would similarly allow both private and public sector workers in a community to “free-ride” on the fair share contributions of union workers.

Figure 28 compares state government employee unionization rates in Illinois, Minnesota, and Wisconsin since 2009. On June 29, 2011, Wisconsin Governor Scott Walker’s “2011 Wisconsin Act 10” went into effect. The Act limited collective bargaining for employees in both state and local government agencies. The vertical line in Figure 27 indicates the date when “2011 Wisconsin Act 10” became effective. Since 2011, union membership among state government employees in Wisconsin has fallen from 40.2 percent to 24.6 percent, a decline of 15.6 percentage points. Meanwhile, the comparable rate for Minnesota’s state government employees declined by 6.4 percentage points, a smaller amount. The state government employee unionization rate in Illinois increased by 1.6 percentage points, from 46.4 percent in 2011 to 48.0 percent in 2014. The large decline in the union membership rate of Wisconsin’s state employees can be directly attributed to the new law. Illinois’ Executive Order, if it is constitutional, could have a similar effect on public sector unionization.

FIGURE 28: STATE GOVERNMENT EMPLOYEE UNIONIZATION RATES BY MIDWESTERN STATE, 2009-2014



Moreover, an April 2015 Research Report conducted jointly by the Illinois Economic Policy Institute and the University of Illinois Labor Education Program analyzed potential economic impacts if local right-to-work ordinances are allowed in the state. The report, *The Impact of Local "Right-to-Work" Zones: Predicting Outcomes for Workers, the Economy, and Tax Revenues in Illinois*, found that local right-to-work laws would have no discernible impact on employment growth, business establishment openings growth, average household income growth, and the unemployment rate. However, if enacted in half of Illinois' counties, excluding Cook County, the zones would reduce total labor income by \$1.3 billion and would result in a union membership decline of up to 200,000 members (Manzo & Bruno, 2015). By curbing collective bargaining rights for state government employees across Illinois and potentially doing so for all workers in some communities, both of these actions would limit union membership, reduce the influence of labor unions, and lower worker wages.

CONCLUSIONS

Unionization has declined in Illinois, in the Chicago region, and in America. Today, there are approximately 97,000 fewer union members in Illinois than there were in 2005, contributing to the reduction of 1.12 million union workers across the nation over the past ten years. Declining union membership has been driven primarily by decreases in male unionization, Latino and Latina unionization, and private sector unionization. Additionally, declining union membership rates have affected all workers regardless of educational attainment, although master's degree-holders (the most unionized educational group) have seen the steepest drop since 2009-2011.

Despite the long-term downward trends, both the unionization rate and total union membership have improved from their 2012 lows. Since 2012, the unionization rate increased from 14.6 percent to 15.1 percent, resulting in an estimated 29,000 new union members. These statewide increases were driven by increases in African-American unionization and public sector unionization. From 2013 to 2014, unionization rates marginally increased for male workers, young workers under 25 years old, the construction and public administration industries, and protective service occupations.

Sector, industry, and occupation of employment are important determinants of union membership. Unionization rates remain significantly higher for public sector workers than for private sector workers. Well over half of all public sector workers are unionized in both Illinois and the Chicago metropolitan area and slightly more than one-third are unionized nationwide. In comparison, fewer than one-in-ten Illinois and Chicago MSA workers in the private sector are union members while less than seven percent of private sector American workers are unionized. Additionally, just five industries (education-health-social services, public administration, construction, manufacturing, and transportation and warehousing) account for over eight-in-ten (81.6 percent) union workers in Illinois. Lastly, the five most unionized occupation groups are protective service jobs, education-training-library occupations, construction occupations, transportation and moving jobs, and installation-maintenance-repair occupations.

Union membership is influenced by a number of factors. Employment in educational, construction, protective services, transportation and materials moving, and installation, maintenance, and repair occupations each raise the chances that a given worker is a union member by 10 percentage points or more. Employment in a public sector job is also correlated with at least a 14 percentage point increase in the probability of being a union member. African-American workers are statistically more likely to be union members than their racial or ethnic counterparts. On the other hand, high school dropouts, bachelor's degree holders, and those with a professional or doctorate degree are less likely to be union members than workers at other levels of educational attainment.

Unions raise individual incomes by lifting per-hour wages and by increasing the number of hours worked each week. In Illinois, the average union worker earns \$1.72 more per hour (7.6 percent) than the average nonunion worker. Once education, demographics, and employment factors are controlled for,

Illinois' union wage premium is even stronger, at 11.9 percent on average (and a median of 12.1 percent). Illinois' union wage premium is the 20th-highest in the nation.

Recent developments have the potential to significantly reduce union membership going forward. An Executive Order issued by new Governor Bruce Rauner mirrors efforts by Wisconsin Governor Scott Walker to curb the collective bargaining rights of public sector workers. Since Wisconsin passed its law, the state employee union membership rate has declined by 15.6 percentage points while the comparable rate for Illinois increased by 1.6 percentage points. In addition, the proposal for local right-to-work zones in Illinois could reduce union membership by up to 200,000 workers.

Organized labor in Illinois has a strong impact on both the wages and hours of its members. Unions still play a vital role in Illinois' economy, communities, and social life. The Illinois labor movement, however, will continue to face both short- and long-term challenges. In the short term, there are political pressures to weaken unions through various legislative and executive measures. Over the long term, the trend of declining union membership rates will likely persist. Labor's response to these challenges could define its influence and effectiveness in the decades to come.

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APPENDIX

TABLE A: PROBIT REGRESSION ON PROBABILITY OF UNION MEMBERSHIP, AVERAGE MARGINAL EFFECTS, ILLINOIS WORKERS, 2012-2014

	Illinois	
Prob(Union Member)	Coefficient	(St. Err.)
Age	0.0064***	(0.0012)
Age ²	-0.0001***	(0.0000)
Female	-0.0190***	(0.0061)
Citizen	0.0228*	(0.0138)
African-American	0.0648***	(0.0155)
Center City	-0.0234**	(0.0114)
Federal government	0.1438***	(0.0166)
State government	0.1773***	(0.0116)
Local government	0.1892***	(0.0086)
Usual hours worked	0.0012***	(0.0003)
Less than high school	-0.0254**	(0.0119)
Bachelor's	-0.0228***	(0.0082)
Professional/Doctorate	-0.0934***	(0.0177)
<u>Industry/Occupation</u>		
Construction IND	0.0385**	(0.0173)
Utilities IND	0.0761***	(0.0253)
Financial-banking-real estate IND	-0.1046***	(0.0168)
Education-health-social serv. IND	-0.0475***	(0.0128)
Manufacturing IND	-0.0498***	(0.0124)
Wholesale trade IND	-0.1305***	(0.0235)
Retail trade IND	-0.0413***	(0.0136)
Professional-scientific-admin. IND	-0.1142***	(0.0150)
Information-communication IND	-0.1030***	(0.0244)
Food service IND	-0.1440***	(0.0276)
Other services IND	-0.1027***	(0.0186)
Arts-entertain.-recreation IND	-0.1306***	(0.0288)
Management OCC	-0.0576***	(0.0156)
Computer-math OCC	-0.0810***	(0.0294)
Education-training-library OCC	0.1659***	(0.0152)
Healthcare practitioner OCC	0.0579***	(0.0172)
Protective services OCC	0.1240***	(0.0193)
Building-grounds cleaning OCC	0.0579***	(0.0180)
Personal care OCC	0.0364*	(0.0209)
Construction OCC	0.1558***	(0.0194)
Install-maintenance-repair OCC	0.1089***	(0.0167)
Production OCC	0.1062***	(0.0153)
Transport-materials moving OCC	0.1151***	(0.0116)
Constant	0.1427***	(0.0026)
R ²	0.2943	
Observations	13,304	

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. Analytic weights to match the sample size to the actual population are not allowed in probit models. A logitistic (or logit) model would likely yield similar results.

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, 2012-2014. The total number of observations of employed persons was 13,304 in Illinois. Probit models do not allow for the application of analytic weights.

TABLE B: OLS AND QUANTILE REGRESSIONS OF THE IMPACT OF UNION MEMBERSHIP ON THE NATURAL LOG OF REAL HOURLY WAGES, 2012-2014

Ln(Real Wage)	(1) USA Mean		(1) Illinois Mean		(2) Illinois Median, Q(.5)		(3) Indiana Mean	
	Coefficient	(St. Err.)	Coefficient	(St. Err.)	Coefficient	(St. Err.)	Coefficient	(St. Err.)
Union member	0.1235***	(0.0026)	0.1192***	(0.0134)	0.1210***	(0.0159)	0.1591***	(0.0208)
Age	0.0382***	(0.0003)	0.0388***	(0.0019)	0.0332***	(0.0022)	0.0367***	(0.0025)
Age ²	-0.0004***	(0.0000)	-0.0004***	(0.0000)	-0.0003***	(0.0000)	-0.0004***	(0.0000)
Female	-0.1420***	(0.0017)	-0.1246***	(0.0092)	-0.1105***	(0.0109)	-0.1777***	(0.0131)
Veteran	0.0120***	(0.0032)	0.0477**	(0.0199)	0.0590**	(0.0236)	0.0636	(0.0239)
Married	0.0675***	(0.0016)	0.0606***	(0.0092)	0.0663***	(0.0109)	0.0712***	(0.0125)
Citizen	0.0753***	(0.0036)	0.0393*	(0.0203)	0.0633***	(0.0240)	0.2264***	(0.0484)
Immigrant	-0.0457***	(0.0030)	-0.0880***	(0.0170)	-0.0755***	(0.0202)	0.0025	(0.0407)
White	0.0197***	(0.0032)	0.0061	(0.0187)	0.0037	(0.0221)	0.0636	(0.0428)
African-American	-0.0839***	(0.0037)	-0.1171***	(0.0216)	-0.1094***	(0.0257)	-0.0335	(0.0469)
Latino	-0.0574***	(0.0034)	-0.0678***	(0.0205)	-0.0740***	(0.0243)	0.0416	(0.0460)
Chicago MSA			0.0781***	(0.0136)	0.0805***	(0.0161)		
Center City	0.0476***	(0.0025)	0.0003	(0.0187)	-0.0040	(0.0222)	0.0408**	(0.0187)
Suburb	0.0558***	(0.0023)	0.0001	(0.0173)	-0.0045	(0.0205)	0.0873***	(0.0166)
Rural	-0.0268***	(0.0028)	-0.0752***	(0.0175)	-0.0781***	(0.0205)	-0.0182	(0.0176)
Federal government	0.1056***	(0.0052)	0.0517	(0.0350)	0.1287***	(0.0415)	0.1923***	(0.0463)
State government	-0.0548***	(0.0038)	-0.0478*	(0.0251)	-0.0312	(0.0298)	-0.0412	(0.0331)
Local government	-0.0433***	(0.0033)	-0.0224	(0.0193)	-0.0080	(0.0220)	-0.0438	(0.0272)
Usual hours worked	0.0043***	(0.0001)	0.0049***	(0.0004)	0.0069***	(0.0005)	0.0039***	(0.0006)
Involuntarily part-time	-0.1377***	(0.0034)	-0.1577***	(0.0186)	-0.1364***	(0.0220)	-0.1388***	(0.0264)
Less than high school	-0.1398***	(0.0030)	-0.1357***	(0.0177)	-0.1329***	(0.0210)	-0.0923***	(0.0233)
Some college	0.0463***	(0.0022)	0.0607***	(0.0125)	0.0373**	(0.0148)	0.0225	(0.0160)
Associate's	0.0929***	(0.0027)	0.0583***	(0.0161)	0.0503***	(0.0190)	0.0995***	(0.0199)
Bachelor's	0.3304***	(0.0023)	0.3337***	(0.0128)	0.3170***	(0.0151)	0.2952***	(0.0177)
Master's	0.4747***	(0.0031)	0.4900***	(0.0168)	0.5096***	(0.0199)	0.4533***	(0.0265)
Professional/Doctorate	0.5941***	(0.0047)	0.6503***	(0.0255)	0.6870***	(0.0302)	0.5920***	(0.0398)
Industry Dummies	Y		Y		Y		Y	
Occupation Dummies	Y		Y		Y		Y	
State Dummies	Y		N		N		N	
Constant	1.6776***	(0.0094)	1.6749***	(0.0482)	1.6711***	(0.0571)	1.4681***	(0.0846)
R ²	0.4638		0.4691		0.3235		0.4452	
Observations	409,959		13,323		13,323		6,399	
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, 2012-2014. The total number of observations of employed persons was 5,675 in Illinois and 186,115 nationwide. 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 Illinois compared to the nation from OLS analyses, regression (2) provides the median regression as an example of outputs from the quartile regressions for Illinois from Figure 26, and regression (3) uses Indiana as an example of OLS results from other states as in Figure 27. Note that, while the union wage premium is higher in Indiana, the effects of other variables (e.g., higher education) are stronger in Illinois. For full (2) and (3) regression outputs in a .txt format, please contact author Frank Manzo IV at fmanzo@illinoisepi.org.

Industry Profiles: Union and Nonunion Workers in Illinois, 2012-2014

2012-2014	Construction		Manufacturing		Transportation and Warehousing		Education, Health, and Social Services		Public Administration	
Variable	State Labor Market		State Labor Market		State Labor Market		State Labor Market		State Labor Market	
Employed	82.5%		90.9%		88.9%		92.2%		92.3%	
In Labor Force	96.9%		97.9%		96.0%		96.9%		95.7%	
Unemployment Rate	14.9%		7.2%		7.4%		4.9%		3.5%	
Unionization Rate	38.9%		12.3%		30.0%		23.6%		53.8%	
Share of Union Workforce	10.1%		9.1%		9.9%		32.6%		12.8%	
Total Observations	987		1,988		767		3,797		617	
Standard Margin of Error	±3.1%		±2.2%		±3.2%		±1.6%		±3.9%	
Variable	Nonunion	Union	Nonunion	Union	Nonunion	Union	Nonunion	Union	Nonunion	Union
Observations	368	240	1,558	213	540	227	2,525	796	266	305
<u>Employment</u>										
Average Workers Per Year	130,801	83,137	535,779	75,457	189,735	81,642	872,604	269,226	90,783	105,578
Hourly Wage	\$23.28	\$32.75	\$24.72	\$20.97	\$20.33	\$25.52	\$23.84	\$25.76	\$26.23	\$28.42
Union Wage Difference, %	--	+40.7%	--	-15.2%	--	+25.5%	--	+8.1%	--	+8.3%
Usual Hours Worked	39.4	39.8	40.9	40.3	40.9	40.1	36.3	39.7	38.6	40.9
<u>Education</u>										
Less than High School	18.0%	7.4%	12.2%	12.0%	8.0%	2.3%	2.8%	1.9%	1.3%	2.7%
High School	35.2%	50.2%	33.1%	48.0%	38.9%	31.3%	14.9%	12.2%	14.2%	16.3%
Some College, No Degree	15.9%	21.7%	15.7%	19.6%	21.6%	33.7%	18.1%	9.0%	21.2%	25.8%
Associates	10.3%	12.9%	7.6%	11.4%	7.6%	12.9%	12.1%	8.0%	12.5%	13.2%
Bachelors	18.6%	6.2%	20.3%	7.6%	18.9%	18.4%	28.8%	29.0%	32.3%	28.9%
Masters	1.8%	1.2%	9.3%	0.4%	4.8%	1.3%	14.4%	36.3%	12.4%	10.5%
Professional or Doctorate	0.2%	0.4%	1.9%	0.9%	0.3%	0.1%	8.9%	3.6%	6.2%	2.7%
<u>Gender</u>										
Male	87.1%	97.5%	64.5%	81.3%	71.6%	68.9%	25.5%	25.2%	47.8%	65.3%
Female	12.9%	2.5%	35.5%	18.7%	28.4%	31.1%	74.5%	74.8%	52.2%	34.7%
<u>Race/Ethnicity</u>										
White, non-Latino	70.8%	81.6%	64.3%	57.7%	63.4%	57.8%	69.0%	68.9%	68.9%	68.0%
African-American	3.0%	4.1%	6.5%	14.1%	20.1%	30.8%	15.5%	18.9%	18.6%	21.0%
Latino or Latina	24.0%	14.2%	22.3%	25.0%	13.0%	7.8%	8.1%	8.8%	7.0%	8.2%
<u>Other Information</u>										
Average Age	39.6	42.3	44.2	45.0	42.2	45.9	41.4	44.0	46.7	43.9
Lives in the Chicago MSA	67.6%	58.3%	66.6%	45.3%	74.2%	73.9%	63.9%	66.9%	64.9%	62.4%

Union workers in these five industries accounted for three-quarters (74.4 percent) of all union members in Illinois in 2012, 2013, and 2014, according to the data from the Bureau of Labor Statistics. Data from three years are used to increase statistical significance. Standard margins of error are reported as equivalents if data were obtained from a simple survey, based on total observations and estimated average population using the earnings weight provided. Note that all industry profiles are *estimates* and serve as general parameters, not exact figures.

