The Value of Labor Unions

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1 Introduction and Historical Background

According to the U.S. Department of Labor's Worker Organizing Resource and Knowledge Center (WORK Center), a labor union is a group of workers who collectively advocate for their rights and shared interests. By acting together, unionized workers strengthen their ability and have a more powerful voice to negotiate with employers for improved wages, health insurance, paid vacation and sick leave, retirement benefits, flexible scheduling, safer working conditions, and protections against workplace harassment (WORK Center, U.S. Department of Labor, nd).

In the United States, labor unions have a long history of advocating for workers' rights and protections. The earliest recorded union was the Philadelphia Journeymen Cordwainers, which was established in 1792 in Philadelphia to protect wages (Grubbs, 2016). The first efforts to create a national labor organization emerged during the 1860s, amid the Industrial Revolution following the American Civil War. For instance, the National Labor Union (NLU) was founded in Baltimore, Maryland, on August 20, 1866, to call on Congress to mandate an eight-hour workday (Library of Congress, b). The Knights of Labor (KOL) was founded in Philadelphia, Pennsylvania, on December 28, 1869, to protect its members from employer retaliation (United Steelworkers Local 11-75, nd). Although the Knights of Labor eventually declined, its former members formed the Federation of Organized Trade and Labor Unions (FOTLU) on May 4, 1886. Later that year, FOTLU and other trade union leaders convened in Columbus, Ohio, and founded the American Federation of Labor (AFL) in December 1886 (Library of Congress, a). The AFL remained the largest labor union in the United States for decades after its formation. In 1955, the AFL merged with the Congress of Industrial Organizations (CIO) to form AFL-CIO, which continues to be the largest labor federation in the U.S. (Library of Congress, a). Nowadays, AFL-CIO is a voluntary federation of 63 national and international labor unions representing more than 15 million workers¹. According to AFL-CIO, they work to protect workers' rights and help people acquire skills and job readiness. Some of AFL-CIO-affiliated unions include:

- Brotherhood of Railroad Signalmen (BRS) (founded in 1901).
- United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry of the United States and Canada (UA) (founded in 1889).
- United Steel, Paper and Forestry, Rubber, Manufacturing, Energy, Allied Industrial & Service Workers International Union (USW) (founded in 1942).

Besides the AFL-CIO, there are other significant labor organizations that represent American workers. These organizations represent significant segments of the American labor force and play key roles in collective bargaining, worker training, and labor advocacy. For example:

¹For more information about AFL-CIO, please visit: https://aflcio.org/

- International Brotherhood of Teamsters (founded in 1903).
- United Farm Workers UFW (founded 1962).
- Service Employees International Union SEIU (founded 1921).
- The United Brotherhood of Carpenters and Joiners of America (founded in 1881).

While their structures and affiliations may vary, labor unions share a common purpose: to protect and advance workers' interests. They provide workers with a collective voice to negotiate for better wages, benefits, and working conditions while also advocating for job security and workplace safety. Historically, labor unions have played a crucial role in shaping key labor protections, including the establishment of the minimum wage and the 40-hour workweek (Grossman, 1978), the abolition of child labor (Grossman, 1978), and the advancement of unemployment insurance to support injured and laid-off workers (Social Security Administration, nd).

In addition to advocacy and collective bargaining, many labor unions play a critical role in workforce development through their training and apprenticeship programs. These programs are designed to equip workers with the technical skills and certifications needed in high-demand industries such as construction, manufacturing, transportation, and utilities. By investing in training, unions help workers adapt to evolving technologies and new labor market demands, promoting economic mobility and job security.

Given the long-standing role of labor unions in shaping labor conditions and advocating for workers' rights, it is important to assess their broader significance in today's labor market. This study presents a literature review to provide a comprehensive understanding of how labor unions continue to contribute to the U.S. economy, focusing on their economic and social impacts.

2 Theoretical Background

There are three well-established theoretical frameworks to explain the values of labor unions: Neoclassical Labor Economics, Institutional Economics, and Industrial Relations Theory.

2.1 Neoclassical Labor Economics

Neoclassical economics is generally considered a major school of thought in economics that explains how individuals and firms make decisions based on rational behavior, with the goal of maximizing utility or profit. In the traditional neoclassical economic model, labor markets are assumed to be *perfectly competitive*. In such markets, no single employer or worker has the power to set wages. Instead, wages are determined by overall supply and demand in the labor market. Employers must pay the going market wage to attract and retain workers, and workers

must accept that wage to find employment; both sides are considered "wage takers" because they accept the market wage rather than setting it.

Under this framework, workers are paid an equilibrium wage W^E (or market wage) that equals their marginal productivity, and employment reaches the optimal level (Q^E) (Figure 1, panel a). If an employer offers lower wages than the market, they risk losing their workers. Traditional neoclassical economists argue that labor unions, by negotiating wages above the market wage $(\overline{W} > W^E)$, would distort the natural equilibrium, lead to market inefficiency, decrease employment $(Q^D < Q^E)$, and increase unemployment $(Q^S > Q^D)$ (Figure 1, panel b) (Hutt, 1930; Hicks, 1932; Reder, 1965; Rocheteau and Tasci, 2007; Ehrenberg and Smith, 2009; Borjas, 2013).

Labor Supply

Unemployment $(Q^S > Q^D)$ \overline{W} Labor Demand $Q^E = Q^S = Q^D$ Q^D Q^D Q^E Q^S Q^S

Figure 1: Perfectly Competitive Labor Market

a. The perfectly competitive labor market at equilibrium

b. The perfectly competitive labor market when the minimum wage is set above the market equilibrium wage

However, modern neoclassical economists challenged the traditional neoclassical model of perfect competition by arguing that labor markets are not always perfectly competitive. For instance, large businesses in smaller regions that do not face significant competition (i.e., monopsonies) can exert significant control over wages. In such markets, employers have more power to negotiate wages than workers (monopsonistic power) and can set wages lower than workers' marginal productivity (Rocheteau and Tasci, 2007) (Figure 2). Employers' monopsonistic power may lead to market inefficiency ($Q^M < Q^E$) and reduced workers' welfare ($W^M < W^E$). In monopsonistic labor markets, the interventions of labor unions can help enhance wage fairness, increase workers' productivity, and improve market efficiency (Manning, 2003; Card and Krueger, 1995; Ashenfelter et al., 2010; Boal and Ransom, 1997; Dube et al., 2010; Flinn, 2006).

Furthermore, in a monopsonistic labor market, where dominant employers have greater bargaining power to suppress wages and capture most of the market surplus, workers have less incentive to participate in the labor force or engage in active job search, contributing to market allocative inefficiency and higher unemployment. In such markets, a higher binding minimum wage can motivate workers to search for jobs, thereby reducing unemployment (Rocheteau and Tasci, 2007). Labor unions play a corrective role in monopsonistic markets by using their collective bargaining to negotiate higher wages and improved working conditions, making employment more attractive to unemployed workers and helping restore efficiency and enhance worker welfare.

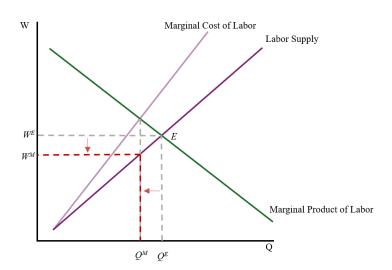


Figure 2: Monopsonistic Labor Market

2.2 Institutional Economics

While neoclassical economists view labor markets as governed by pure competition and shaped primarily by supply and demand, institutional economists emphasize the importance of institutions, social norms, and legal frameworks embedded within labor markets. From this perspective, labor markets are not solely driven by market forces but also shaped by institutions such as labor unions, policies such as minimum wage laws, and social relations and norms that define fairness and acceptable behaviors.

John R. Commons, a key figure in Institutional Economics, viewed labor unions not as disruptive forces but as essential institutions that promote justice, fairness, and stability in the labor market (Commons, 1919, 1921, 1934). Commons advocated for reforms to address labor issues, supported laws that protect union rights and promote collective bargaining, and contributed to major legislation such as unemployment insurance and workers' compensation (Perlman, 1989).

Modern researchers further argue that labor markets are socially constructed rather than naturally shaped by supply and demand (Hodgson, 2001). Within this framework, labor unions are essential institutions to enhance efficiency and equity (Chang, 2002, 2011; Lazonick, 2009,

2014). They also argue that labor unions contribute to better morale, higher productivity, and better employee retention by providing workers with formal mechanisms to voice their concerns (also known as institutionalized voice mechanisms) (Kaufman, 2008, 2012).

2.3 Industrial Relations Theory

Similar to institutional economics, Industrial Relations (IR) theory emphasizes the importance of institutions in the labor market. However, IR theory offers a more comprehensive framework for understanding the relations and interactions between institutions in labor markets. They emphasize that labor market outcomes (i.e., wages, benefits, and working conditions) emerge from interactions between employers, employees, and government institutions within institutional contexts such as technology, market constraints, and power dynamics (Dunlop, 1958; Chamberlain, 1951). In the IR framework, labor unions play a crucial role in balancing the power dynamic in the workplace and shaping employment relations (Chamberlain, 1951).

While the theoretical frameworks provide valuable insights into how labor unions could possibly affect labor market outcomes through rational behaviors, institutional, and political influences, they do not fully capture the real-life economic and social impacts of labor unions. Therefore, we need to rely on empirical evidence to fully understand the values of labor unions in the U.S. economy. The following section reviews studies investigating unions' actual effects on wages, employment, productivity, and inequality.

3 Empirical Evidence

3.1 Wages and Benefits

As mentioned in the theoretical frameworks, unions are able to negotiate higher wages and better benefits for their members through collective bargaining. The existing empirical literature has consistently demonstrated that labor unions have a significant positive effect on workers' compensation. Numerous studies using nationally representative datasets estimate the union wage premium to range between 10% and 20% on average, even after accounting for factors such as education, work experience, occupation, industry, and geographic region (Borjas, 1979; Parsley, 1980; Lewis, 1986; Walters and Mishel, 2003; Blanchflower and Bryson, 2004).

In addition to wages, unions also improve access to non-wage benefits. Unionized workers are significantly more likely to receive employer-sponsored health insurance, retirement plans, paid leave, and more generous severance or job protection clauses (U.S. Bureau of Labor Statistics, 2022; Walters and Mishel, 2003). Research shows that not only do union workers have higher benefit coverage rates, but they also tend to receive better terms of coverage, including lower out-of-pocket costs for health care and more secure pension arrangements (Hirsch and Macpherson,

2003; Walters and Mishel, 2003; Buchmueller et al., 2000; Kona, 2023; Budd, 2005). These advantages are often institutionalized in collective agreements, making them more resistant to unilateral employer changes and economic downturns.

There is also considerable evidence that unions positively influence the broader labor market, not only for members (spillover effects). Through unions' spill-over effects, non-union workers also benefit from higher wages in industries with the presence of labor unions (Green and Amah, 2024; Kahn, 1980).

3.2 Workplace Safety

Workplace-related diseases, injuries, and fatalities impose significant human and economic costs on workers, employers, and society as a whole. Globally, an estimated 2.9 million people die each year from work-related causes, resulting in an economic loss equivalent to 5.8% of the global gross domestic product (GDP) (Takala et al., 2024). In the United States, the burden is also substantial. According to U.S. Bureau of Labor Statistics (2024a), in 2023 alone, there were 5,283 fatal occupational injuries, with 40% of these deaths occurring among workers aged 45 to 64. The occupational fatal injury rate was 3.5 deaths per 100,000 full-time equivalent workers. Leading causes of these fatalities included transportation incidents, falls and slips, and exposure to harmful substances or environments. In addition to fatalities, approximately 3.2 million non-fatal occupational injuries and illnesses were reported across all industries in 2023 (U.S. Bureau of Labor Statistics, 2024b). The total economic cost of fatal and non-fatal occupational injuries that year was estimated at \$176.5 billion, accounting for approximately 14.1% of the total cost of all preventable injury-related incidents (National Safety Council, 2023).

A growing body of research highlights the factors that contribute to these workplace accidents and fatalities. Job insecurity, for instance, has been shown to undermine safety behavior. Employees experiencing chronic job insecurity show reduced safety compliance and experience higher injury rates (Probst and Brubaker, 2001). Similarly, workers with fixed-term or temporary contracts face greater risks, with accident rates 5% higher than those with permanent contracts (Guadalupe, 2003), often due to inferior working conditions (Amuedo-Dorantes, 2002; García-Serrano et al., 2010). Moreover, long working hours have been identified as a significant contributor to occupational illnesses such as cardiovascular disease (Sokejima and Kagamimori, 1998; Dinh et al., 2017; Artazcoz et al., 2007; Nakanishi et al., 2001), as well as sickness and injuries linked to exhaustion and burnout (Lusinyan and Bonato, 2007; Curington, 1986; Dembe et al., 2005).

This pattern highlights the critical role of labor unions in fostering safer work environments. Theoretical frameworks suggest that unions enhance workplace safety by increasing worker training, advocating for improved working conditions, and negotiating protective measures through collective bargaining. Pouliakas and Theodossiou (2010) argue that unions strengthen oversight and regulatory compliance, which ultimately reduces both fatal and non-fatal incidents. Be-

yond the workplace level, unions also generate positive externalities across the labor market by raising overall safety standards (Donado and Wälde, 2012).

This view is also supported by empirical evidence, which shows that unionized workplaces tend to have lower rates of occupational fatalities. For example, Economou and Theodossiou (2015) analyze data from ten European countries and find that higher union density is significantly associated with reductions in both workplace fatalities and non-fatal injuries. In the U.S., Eisenberg-Guyot et al. (2021) find that declines in union membership are linked to increases in all-cause mortality, particularly among working-age adults. Morantz (2013) finds that the presence of unions in high-risk sectors such as coal mining is associated with a 14–32% reduction in injuries and a 29–83% reduction in fatalities.

3.3 Income Inequality

The density of union membership in the U.S. has varied significantly over time. There was a notable increase in union membership from the mid-1930s to the late 1940s. From 1973 to the early 2000s, union membership in the private sector declined steadily. Researchers have used the variation in union density to study the impact of unions on income inequality and consistently found that labor unions play a crucial role in reducing income inequality.

One of the most influential studies by Western and Rosenfeld (2011) use data from the Current Population Survey (CPS) to study the effects of labor unions on wage outcomes. They find that the decline in private sector union membership in the United States from 1973 to 2007 accounts for a fifth to a third of the increase in income inequality during this period. Western and Rosenfeld (2011) highlight that unions influence non-union wages by setting broader standards for fair pay and shaping wage expectations across industries. By doing that, unions not only raise wages for their members but also help reduce wage disparities within and across firms.

Similarly, Card et al. (2004) use data from the United States, the United Kingdom, and Canada to analyze how differences in unionization rates contribute to variations in wage inequality. Their findings suggest that the decline in unions between 1973 and the early 2000s accounts for the rise of income inequality in the U.S.

More recently, Rosenfeld et al. (2016) use advanced statistical techniques to isolate the effects of unionization from other factors like education and technological changes. Their findings further confirm that the decline in union membership from 1973 to the early 2000s increased income inequality across skill and education levels, especially in mid-level occupations.

In 2021, Farber et al. (2021) combined historical Gallup polls (1936–1986) with CPS data (1973–present) to develop one of the most comprehensive microdata sets on U.S. union membership over the twentieth century. They use the data to analyze the trends in union membership and their impacts on wage disparities and find that unions significantly reduce income inequality. According to Farber et al. (2021), the increase in union membership is associated

with a decrease in income inequality, particularly benefiting the bottom 60% of the income distribution.

Labor unions also play a significant role in reducing the gender wage gap. According to Gould and McNicholas (2017), on average, non-unionized women earn 78 cents for every dollar earned by non-unionized men, whereas unionized women earn 94 cents for every dollar earned by unionized men.

3.4 Productivity and Performance

The relationship between unions and productivity has been widely studied; however, the findings are mixed. While some research finds that unions contribute to higher productivity by reducing employee turnover, reducing conflicts, improving morale, and improving working conditions, others suggest that unions can hinder productivity due to rigid work rules and managerial inflexibility.

Byrnes et al. (1988) examine the difference in US surface coal mines and finds that unionized mines have significantly higher productivity compared to non-unionized mines due to better technical and scale efficiencies. Clark (1980) examines the impact of unionization on productivity in the U.S. cement industry using time-series data and interviews with union and management officials. They find that unions lead to productivity gains, primarily due to changes in management practices and workplace organization.

There are also studies outside of the U.S. that confirm the positive impacts of labor unions on productivity. For example, Morikawa (2010) uses data from over 4,000 Japanese firms across manufacturing and non-manufacturing sectors to study the relationship between labor unions and firm performance. They also find that unionized firms have higher productivity compared to non-unionized firms. Additionally, Barth et al. (2017) use tax-induced exogenous variance to study the causal effects of union density on firm productivity and wages in Norwegian firms from 2001 to 2012. Their findings suggest that higher union density leads to substantial increases in firm productivity and wages.

In contrast, Addison and Hirsch (1989) suggest that unions have a small overall impact on productivity. They argue that any positive effects often stem from management's responses to union demands rather than direct influence from the unions. To explore the relationship between labor unions and firm performance, Hirsch (1991) develops a model that focuses on union rent-seeking behaviors, where unions bargain for a portion of the excess returns that firms earn from long-lived, sunk investments such as specialized machinery and research and development. The study from Hirsch (1991) reveals that unionized firms experience lower profitability due to wage premiums and constraints imposed by collective bargaining.

3.5 Employment

The impact of unions on employment is complex. Supporters of labor unions argue that unions help stabilize employment by negotiating for job protection clauses, improving workplace communication, and reducing employee turnover. On the other hand, critics argue that unions can raise labor costs, which may lead to a reduction in employment. Empirical studies on this topic also yield mixed results, with findings varying based on the country, sector, bargaining system, and time period analyzed.

Several studies provide evidence supporting the argument that unions can have positive effects on employment stability. For example, Bryson (2004) uses data from the Institute for the Study of Labor (IZA)² to examine the relationship between union membership and job security. The study finds that unions reduce job loss and that union members generally experience higher job security compared to nonunion workers. Their findings also reveal that unionized workplaces tend to have lower turnover rates. However, the effects vary by sector. Another study by Freeman and Medoff (1984) argue that there is little evidence to suggest that unions harm employment overall. They find that unions increase productivity, raise wages for members, and reduce firms' profits. However, the effects depend on industry structure and bargaining power.

Despite the evidence supporting the stabilizing role of unions in the labor market, other studies suggest that unionization can have negative consequences for employment. For example, Hirsch and Schumacher (2004) examine the impact of union wage premiums on employment growth in the U.S. healthcare sector and finds that unionized healthcare facilities may reduce hiring due to increased labor costs, leading to lower employment growth in certain healthcare occupations. Abowd (1989)'s study reveals that unexpected increases in union wages lead to declines in stock market value, and firms may cut back on employment or investment in response to higher labor costs. Addison and Teixeira (2003) explore the effects of employment protection laws in heavily unionized firms and finds that although rigid labor contracts make layoffs more difficult, they also reduce hiring.

4 Discussion

Labor unions have served as critical institutions in the U.S. labor market. They use collective bargaining to advocate for better working conditions and advancing workers' rights. In the past, labor unions fought for basic standards such as the eight-hour workday and the end of child labor. Today, unions continue to negotiate for fair wages, health benefits, and job security. In addition, many labor unions play a critical role in workforce development through their training and apprenticeship programs. These programs are designed to equip workers with the technical

²The Institute for the Study of Labor, commonly known by its German acronym IZA (from Institut zur Zukunft der Arbeit), is a major nonprofit economic research institute and global academic network focused on labor markets. For more information, please visit: https://www.iza.org/.

skills and certifications needed in high-demand industries such as construction, manufacturing, transportation, and utilities.

Empirical evidence overwhelmingly supports unions' contributions to higher wages, better benefits, and greater income equality. Unionized workers earn more and are better protected by job protection clauses. In addition to helping their workers earn higher incomes, unions also contribute to reducing income inequality for non-unionized workers.

The relationship between unions and productivity is more complex. While some studies show that unions promote productivity through improved communication, lower turnover, and increased worker morale, other studies find that unions reduce efficiency due to restrictive work rules and managerial inflexibility.

Similar to productivity, the evidence on the impact on employment is also mixed. Studies show that unions can stabilize employment through negotiated protections, but may also constrain hiring when labor costs increase. These effects vary across institutional settings, industries, and time periods, emphasizing the importance of policy context and bargaining structures.

In conclusion, labor unions have contributed to workers' economic advancement and the institutionalization of fair labor standards, workplace democracy, and social progress. As labor markets evolve, understanding the evolving role of unions remains a critical research priority.

References

- Abowd, J. M. (1989). The effect of wage bargains on the stock market value of the firm. American Economic Review, 79(4):774–789.
- Addison, J. T. and Hirsch, B. T. (1989). Union effects on productivity, profits, and growth: has the long run arrived? *Journal of Labor Economics*, 7(1):72–105.
- Addison, J. T. and Teixeira, P. (2003). The economics of employment protection. *Journal of Labor Research*, 24(1):85–128.
- Amuedo-Dorantes, C. (2002). Work safety in the context of temporary employment: The Spanish experience. *ILR Review*, 55(2):262–284.
- Artazcoz, L., Borrell, C., Cortàs, I., Escribà-Agüir, V., and Cascant, L. (2007). Occupational epidemiology and work related inequalities in health: a gender perspective for two complementary approaches to work and health research. *Journal of Epidemiology & Community Health*, 61(Suppl 2):ii39–ii45.
- Ashenfelter, O., Farber, H. S., and Ransom, M. R. (2010). Labor market monopsony. *Journal of Labor Economics*, 28(2):203–210.
- Barth, E., Bryson, A., and Dale-Olsen, H. (2017). Union density, productivity and wages.
- Blanchflower, D. G. and Bryson, A. (2004). What effect do unions have on wages now and would Freeman and Medoff be surprised? *British Journal of Industrial Relations*, 42(4):651–675.
- Boal, W. M. and Ransom, M. R. (1997). Monopsony in the labor market. *Journal of Economic Literature*, 35(1):86–112.
- Borjas, G. J. (1979). Job satisfaction, wages, and unions. *The Journal of Human Resources*, 14(1):21-40. https://www.jstor.org/stable/145536.
- Borjas, G. J. (2013). Labor Economics. McGraw-Hill Education, New York, 6th edition.
- Bryson, A. (2004). Does union membership increase job security? IZA Discussion Paper 1395, Institute for the Study of Labor (IZA).
- Buchmueller, T. C., DiNardo, J., and Valletta, R. G. (2000). Union effects on health insurance provision and coverage in the United States. Technical Report Working Paper 2000-04, Federal Reserve Bank of San Francisco.
- Budd, J. W. (2005). The effect of unions on employee benefits: Recent results from the employer costs for employee compensation data. *Monthly Labor Review*.
- Byrnes, P., Färe, R., Grosskopf, S., and Lovell, C. A. K. (1988). The effect of unions on productivity: U.S. surface mining of coal. *Management Science*, 34(9):1037–1053.

- Card, D. and Krueger, A. B. (1995). Myth and Measurement: The New Economics of the Minimum Wage. Princeton University Press, Princeton, NJ.
- Card, D., Lemieux, T., and Riddell, W. C. (2004). Unions and wage inequality. *Journal of Labor Research*, 25(4):519–559.
- Chamberlain, N. W. (1951). Collective Bargaining. McGraw-Hill.
- Chang, H.-J. (2002). Kicking Away the Ladder: Development Strategy in Historical Perspective.

 Anthem Press, London.
- Chang, H.-J. (2011). 23 Things They Don't Tell You About Capitalism. Bloomsbury Press.
- Clark, K. B. (1980). The impact of unionization on productivity: A case study. *Industrial & Labor Relations Review*, 33(4):451–469.
- Commons, J. R. (1919). Industrial Goodwill. McGraw-Hill.
- Commons, J. R. (1921). Trade Unionism and Labor Problems. Ginn and Company, revised edition edition.
- Commons, J. R. (1934). Institutional Economics: Its Place in Political Economy. Macmillan.
- Curington, W. P. (1986). Safety regulation and workplace injuries. *Southern Economic Journal*, 53(1):51–72.
- Dembe, A. E., Erickson, J. B., Delbos, R. G., and Banks, S. M. (2005). The impact of overtime and long work hours on occupational injuries and illnesses: new evidence from the United States. *Occupational and environmental medicine*, 62(9):588–597.
- Dinh, H., Strazdins, L., and Welsh, J. (2017). Hour-glass ceilings: Work-hour thresholds, gendered health inequities. *Social Science & Medicine*, 176:42–51.
- Donado, A. and Wälde, K. (2012). Trade unions go global! Economica, 79(315):558–586.
- Dube, A., Lester, T. W., and Reich, M. (2010). Minimum wage effects across state borders: Estimates using contiguous counties. *Review of Economics and Statistics*, 92(4):945–964.
- Dunlop, J. T. (1958). Industrial Relations Systems. Holt.
- Economou, A. and Theodossiou, I. (2015). Join the union and be safe: The effects of unionization on occupational safety and health in the European Union. *Labour*, 29(2):127–140.
- Ehrenberg, R. G. and Smith, R. S. (2009). *Modern Labor Economics: Theory and Public Policy*. Pearson/Addison Wesley, Boston, MA, 10th edition.
- Eisenberg-Guyot, J., Mooney, S. J., Barrington, W. E., and Hajat, A. (2021). Union burying ground: Mortality, mortality inequities, and sinking labor union membership in the United States. *Epidemiology (Cambridge, Mass.)*, 32(5):721–730.

- Farber, H. S., Herbst, D., Kuziemko, I., and Naidu, S. (2021). Unions and inequality over the twentieth century: New evidence from survey data. *Quarterly Journal of Economics*, 136(3):1325–1385.
- Flinn, C. J. (2006). Minimum wage effects on labor market outcomes under search, matching, and endogenous contact rates. *Econometrica*, 74(4):1013–1062.
- Freeman, R. B. and Medoff, J. L. (1984). What Do Unions Do? Basic Books, New York.
- García-Serrano, C., Hernanz, V., and Toharia, L. (2010). Mind the gap, please! the effect of temporary help agencies on the consequences of work accidents. *Journal of Labor Research*, 31(2):162–182.
- Gould, E. and McNicholas, C. (2017). Unions help narrow the gender wage gap. Accessed May 20, 2025 from https://www.epi.org/blog/unions-help-narrow-the-gender-wage-gap/.
- Green, P. E. and Amah, E. (2024). The effects of labour unions on the wages of non-union workers. *International Journal of Social Sciences and Management Research*, 10(1):120–133.
- Grossman, J. (1978). Fair labor standards act of 1938: Maximum struggle for a minimum wage. Monthly Labor Review, 101(6):22–30.
- Grubbs, P. (2016). Cordwainers trial of 1806. In *The Encyclopedia of Greater Philadelphia*. Retrieved May 8, 2025, from https://philadelphiaencyclopedia.org/essays/cordwainers-trial-of-1806/.
- Guadalupe, M. (2003). The hidden costs of fixed term contracts: the impact on work accidents. $Labour\ Economics,\ 10(3):339-357.$
- Hicks, J. R. (1932). The Theory of Wages. Macmillan, London.
- Hirsch, B. T. (1991). Labor unions and the economic performance of firms. W.E. Upjohn Institute for Employment Research, Kalamazoo, MI.
- Hirsch, B. T. and Macpherson, D. A. (2003). Union Membership and Earnings Data Book: Compilations from the Current Population Survey. BNA Books, Washington, D.C.
- Hirsch, B. T. and Schumacher, E. J. (2004). Union wages and employment in the U.S. health care sector. *Industrial Relations*, 43(4):840–870.
- Hodgson, G. M. (2001). How Economics Forgot History: The Problem of Historical Specificity in Social Science. Routledge, London.
- Hutt, W. H. (1930). The Theory of Collective Bargaining. P.S. King Son, London.
- Kahn, L. M. (1980). Union spillover effects on organized labor markets. *The Journal of Human Resources*, 15(1):87–98.

- Kaufman, B. E. (2008). Institutional economics and the theory of what unions do. *Industrial Relations Research Group Working Paper Series*.
- Kaufman, B. E. (2012). An institutional economic analysis of labor unions. *Industrial Relations:* A Journal of Economy and Society, 51(4):645–675.
- Kona, M. (2023). The impact of unions on employer-sponsored health insurance. Center on Health Insurance Reforms, Georgetown University.
- Lazonick, W. (2009). The sustainable prosperity of the United States in global perspective: How the new economy business model fails. The Business and Industry Review, 41(4):27–54.
- Lazonick, W. (2014). Profits without prosperity. Harvard Business Review, 92(9):46–55.
- Lewis, H. G. (1986). Union Relative Wage Effects: A Survey. University of Chicago Press.
- Library of Congress. American Federation of Labor (AFL). Retrieved May 8, 2025, from https://guides.loc.gov/this-month-in-business-history/december/american-fed eration-of-labor.
- Library of Congress. National labor union and the 8-hour workday. Retrieved May 8, 2025, from https://guides.loc.gov/this-month-in-business-history/august/national-labor-union-8-hour-work-day.
- Lusinyan, L. and Bonato, L. (2007). Work absence in Europe. IMF Staff Papers, 54(3):475–538.
- Manning, A. (2003). *Monopsony in Motion: Imperfect Competition in Labor Markets*. Princeton University Press, Princeton, NJ.
- Morantz, A. D. (2013). Coal mine safety: Do unions make a difference? *ILR Review*, 66(1):88–116.
- Morikawa, M. (2010). Labor unions and productivity: An empirical analysis using Japanese firm-level data. *Labour Economics*, 17(6):1030–1037.
- Nakanishi, T., Shimizu, H., Hosokawa, Y., and Matsuo, T. (2001). An immunohistological study on cyclooxygenase-2 in human dental pulp. *Journal of endodontics*, 27(6):385–388.
- National Safety Council (2023). The economic impact of preventable injuries. Accessed: 2025-07-14.
- Parsley, C. J. (1980). Labor union effects on wage gains: A survey of recent literature. *Journal of Economic Literature*, 18(1):1–31.
- Perlman, S. (1989). John R. Commons: Pioneer of Labor Economics. *Monthly Labor Review*, 112(5):44–47.
- Pouliakas, K. and Theodossiou, I. (2010). An inquiry into the theory, causes and consequences of monitoring indicators of health and safety at work. Technical report, IZA Discussion Papers.

- Probst, T. M. and Brubaker, T. L. (2001). The effects of job insecurity on employee safety outcomes: Cross-sectional and longitudinal explorations. *Journal of Occupational Health Psychology*, 6(2):139–159.
- Reder, M. W. (1965). The theory of union wage effects. *Journal of Political Economy*, 73(6):635–655.
- Rocheteau, G. and Tasci, M. (2007). The minimum wage and the labor market. *Economic Commentary*.
- Rosenfeld, J., Denice, P., and Laird, J. (2016). Union decline and rising us wage inequality. *American Economic Review*, 106(5):386–390.
- Social Security Administration (n.d.). Historical background and development of social security. Accessed: 2025-05-08 from https://www.ssa.gov/history/briefhistory3.html.
- Sokejima, S. and Kagamimori, S. (1998). Working hours as a risk factor for acute myocardial infarction in Japan: Case-control study. *BMJ (Clinical Research Ed.)*, 317(7161):775–780.
- Takala, J., Hämäläinen, P., Sauni, R., Nygård, C.-H., Gagliardi, D., and Neupane, S. (2024). Global-, regional- and country-level estimates of the work-related burden of diseases and accidents in 2019. Scandinavian Journal of Work, Environment & Health, 50(2):73–82.
- United Steelworkers Local 11-75 (n.d.). Noble knights of labor (1869). Retrieved May 8, 2025, from https://uswlocals.org/local-11-75/events/noble-knights-labor-1869.
- U.S. Bureau of Labor Statistics (2022). Employee benefits in the United States March 2022. USDL-22-1483.
- U.S. Bureau of Labor Statistics (2024a). Census of fatal occupational injuries summary, 2023. https://www.bls.gov/news.release/cfoi.t02.htm. Accessed: 2025-07-14.
- U.S. Bureau of Labor Statistics (2024b). Number of nonfatal occupational injuries and illnesses by industry, 2023. https://www.bls.gov/iif/nonfatal-injuries-and-illnesses-tables/table-2-injury-and-illness-counts-by-industry-2023-national.htm. Accessed: 2025-07-14.
- Walters, M. and Mishel, L. (2003). How unions help all workers. Technical Report Briefing Paper #143, Economic Policy Institute.
- Western, B. and Rosenfeld, J. (2011). Unions, norms, and the rise in us wage inequality. *American Sociological Review*, 76(4):513–537.
- WORK Center, U.S. Department of Labor (n.d.). What is a union? Retrieved May 8, 2025, from https://www.workcenter.gov/what-is-a-union.