# Working 9 to 5? Union Membership and Work Hours and Schedules

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**Abstract**

Millions of workers in the United States experience volatile weekly working hours and nonstandard shift work, particularly following the Great Recession. These aspects of work schedules bring greater economic insecurity and work-life conflict, particularly for low-wage workers. In the absence of strong and widespread policies regulating work hours in the United States, labor unions may significantly limit varying hours and nonstandard shifts. However, any benefits of union membership could depend on local unionization rates, which vary widely between states. This paper analyzes the relationship between union membership and varying weekly work hours and nonstandard schedules among hourly workers using data from the 2004-7 and 2008-12 Surveys of Income and Program Participation. The results show union members were significantly less likely to report varying numbers of hours from week to week, particularly in states with relatively high unionization rates. In contrast, union members were more likely to report nonstandard schedules. The earnings penalties for varying hours and nonstandard schedules are significantly weaker among union members than non-members. Altogether, the results demonstrate some of unions' continued benefits for workers, and some of their limitations.

Keywords: unionization, work scheduling, earnings

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Nonstandard schedules and unstable hours create significant costs in time and money for millions of workers and their families. Particularly for hourly workers, varying weekly hours lead to volatile incomes, complicating long-term budgeting and meeting basic expenses (Golden 2015; Lambert 2008; Western et al. 2012). Nonstandard work schedules also complicate caregiving responsibilities for families with young children or other dependents, sometimes requiring costly childcare arrangements (Enchautegui, Johnson, and Gelatt 2015; Henly and Lambert 2014; Presser 2005). Workers with varying hours or nonstandard schedules are also more likely to have "bad jobs" characterized by low pay and no benefits (Golden 2015; Kalleberg, Reskin, and Hudson 2000).

Work hours and schedules have become more insecure, reflecting fundamental changes in employment relationships (Golden 2001a; Kalleberg 2011; Lambert 2008; Presser 2005). Even among traditionally employed workers, management practices to reduce labor costs leave workers' hours highly variable and uncertain (Alexander and Haley-Lock 2015; Lambert 2008). Though businesses tout flexibility as a boon for work-life balance, employer demands most often drive scheduling among low-wage service workers (Golden 2009; Lambert, Fugiel, and Henly 2014).

If increasingly volatile schedules reflect a shift of power from workers to employers (Kalleberg 2011; Lambert 2008), it is also evident in the profound decline of labor unions. Ample evidence demonstrates the resulting economic damage of deunionization for workers, including higher working poverty and wage inequality (Brady, Baker, and Finnigan 2013; Rosenfeld 2014; Western and Rosenfeld 2011). However, the potential benefits of unions for workers' hours and schedules in recent years remains an open question.

This study examines work hours and schedules for union members and non-members, and how any difference may depend on state-level unionization rates. We analyze self-reported varying hours from week-to-week and nonstandard schedules (i.e., work outside regular day shifts) using data on hourly workers from the Survey of Income and Program Participation (SIPP), including the 2004-2007 ("2004 panel") and 2008-2013 ("2008 panel") panels. State-level data include unionization rates, economic conditions, and "Right to Work" laws.

Our results indicate mixed effectiveness of unionization for work scheduling. Union members are less likely than non-members to report varying hours from week to week,

particularly in highly unionized states. In contrast, union members are more likely than non-members to report nonstandard schedules. Despite mixed associations, we find the negative consequences of varying hours and nonstandard schedules for monthly earnings are significantly smaller among union members than non-members. We conclude by briefly discussing policies for improving work schedules despite deunionization.

**Theoretical Background**

This study examines two dimensions of work schedules that a growing literature identifies as burdensome for workers: varying numbers of hours from week to week (henceforth "varying hours"), and nonstandard work schedules (work outside of regular daytime shifts).[1] Varying hours leads to earnings volatility for hourly workers (Lambert et al. 2014; Schneider and Harknett 2016). Nonstandard schedules can create significant burdens for arranging personal obligations around work, particularly for families with children (Golden 2015; Presser 2005). We focus on hourly workers because they are generally subject to greater employment variability than salaried workers, have less control over their schedules, and suffer from reduced total earnings due to shortfalls in the availability of work hours (Golden 2015).

Varying hours are common for hourly workers, especially in low-wage service industries like retail, and for part-time workers in general (Golden 2001a). On average, early-career hourly workers in 2011 reported their weekly hours varied by a range of 10 hours/week in the last month (Lambert et al. 2014). In a recent sample of workers at large retailers and fast food establishments, hours per week in the last month varied by 33 percent (Schneider and Harknett 2016).

Varying hours can include either positive or negative fluctuations relative to expectations. Mandatory overtime would increase weekly hours; cutting workers' shifts short would decrease the number of hours. Though there are no nationally representative estimates to our knowledge, studies find being cut early from shifts is common for low-wage service workers (Alexander and Haley-Lock 2015; Halpin 2015; Henly and Lambert 2014).

When driven by hours cuts, varying hours reduce earnings for hourly workers. Many low-wage workers are more concerned about their numbers of hours than their hourly wage rates

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[1] We measure varying hours as workers responding "hours vary" when asked their usual number of hours per week in their primary job. Nonstandard schedules include responses other than "regular daytime schedule," including evening, night, rotating, split, irregular, or other shifts.

(Edin and Shaefer 2015; Halpin 2015). Even with relatively high hourly wage rates, workers with few hours struggle to make ends meet. For example, in a recent survey of workers at large retailers, 71% reported wanting more hours and 86% wanted more regular hours (Schneider and Harknett 2016). Varying hours thus translate to income volatility above and beyond employment disruptions like job loss (Western et al. 2012).

Varying weekly hours could be viewed as a positive outcome if they reflect employee-driven flexibility, like the ability to change the days or start/end times of work shifts. In the 1990s, 75 percent of workers expressed concern over schedule flexibility to manage familial responsibilities (Golden 2001b). Both white- and blue collar workers with greater input into their schedules report less work-life conflict (Henly, Shaefer, and Waxman 2006; Kelly, Moen, and Tranby 2011). However, worker-controlled scheduling is rare in the U.S. compared to other industrialized countries (Chung and Tijdens 2013), particularly among hourly workers (Golden 2009). Lambert et al. (2014:3) find, "variations in weekly work hours look more like desired flexibility at the top of the labor market, but more like unwanted instability at the other end." Employee-driven flexibility surely contributes to varying weekly hours, but many of these workers may trade-off desired stability for that flexibility (Golden 2001a). For the majority of hourly workers, varying weekly hours appear to be employer-driven.

Nonstandard work schedules represent potentially burdensome timing of work hours, rather than the number of hours. Presser (1999, 2005) showed more than one in five work outside of regular daytime shifts. Moreover, the vast majority of workers report a nonstandard work schedule at some point by age 40 (Presser and Ward 2011). Like varying hours, nonstandard schedules may sometimes reflect employee-driven flexibility (Golden 2001b). Particularly for couples with children, alternative work schedules can facilitate childcare arrangements (Clawson and Gerstel 2014; Presser 2005). However, many studies show the difficulties of nonstandard work schedules outweigh the potential benefits for most workers. Those with nonstandard work schedules experience greater family and marital strain (Presser 2005), particularly in low-wage jobs like retail (Henly and Lambert 2014). Specifically, nonstandard schedules complicate planning social and family obligations, like child care, scheduling doctor appointments, and social events (Enchautegui 2013; Henly and Lambert 2014; Presser 2005). Workers with nonstandard or changing weekly schedules report also greater work-related stress (Golden 2015).

Management practices to reduce firms' labor costs contribute to growth in varying hours or nonstandard schedules over time. Centralized management pressures front-line managers in industries like foodservice, retail, and hospitality to minimize employees' work hours (Bernhardt, Dresser, and Hatton 2003; Lambert 2008). Computerized scheduling systems predict the numbers of workers needed down to the hour, or less, based on previous patterns of sales or customer traffic. Meanwhile, managers shorten or completely cut employees' shifts on the spot when demand is lower than expected (Alexander and Haley-Lock 2015). Many managers even deliberately manipulate workers' supply and regularity of working hours as a punishment or reward (Halpin 2015).

Firms' attempts to reduce labor costs through variable scheduling are part of a much broader shift of risk from employers to employees (Kalleberg 2011; Lambert 2008). The mediation of employment relations by government policies or other labor market institutions has in many ways been replaced by the market. A range of scholarship focuses on the growth of corporate power and incentives to reduce labor costs, enabled by political deregulation (Appelbaum, Bernhardt, and Murnane 2003; Kalleberg 2011). This article focuses on labor unions as a key institution pushing back against this broader shift, with potential implications for work hours and schedules.

*Why Union Membership May Improve Work Schedules*

Particularly since the New Deal in the 1930s, labor unions have historically been a key labor market institution providing safety and stability for workers in the United States, and the most prominent manifestation of labor power (Freeman and Medoff 1984; Rosenfeld 2014). Among unions' many functions, a primary strategy for benefiting workers is collective bargaining with employers at various levels of centralization. Unions bargain for a variety of conditions, including higher wage rates and work safety. Unions also provide an institutional recourse for workers in disputes with management.

Union membership could limit varying hours or nonstandard schedules through direct or indirect pathways. In the direct pathway, unions could effectively bargain with employers at the workplace, firm, or industry levels for stable hours and regular schedules. Work-hour protections are common in collective bargaining with employers, and prevent employers from sending workers home early or otherwise establish minimum guaranteed work hours (Alexander and Haley-Lock 2015; Ben-Ishai, Hammad, and Warden 2014). Unions often push employers to

convert part-time positions to full-time when demand increases, rather than hiring new part-time workers (Bernhardt et al. 2003; Rosenfeld and Kleykamp 2009). As one example, UNITE HERE, a collection of local unions representing various hospitality and other service workers, lists among their priorities: "consistent scheduling," "minimum shift lengths and hours per week," and "advance notice of shift changes" (UNITE HERE 2016a). Finally, many collective bargaining agreements, including in services, include 'reporting pay' clauses (Alexander and Haley-Lock 2015; Ben-Ishai et al. 2014). Reporting pay requires employers to pay workers for the length of their scheduled shifts, or at least some significant portion, in the event of last-minute cuts. Reporting pay clauses provide a disincentive for such cuts, potentially stabilizing weekly hours. Supporting this argument, Golden (2001a) found union members were less likely than non-members to report varying hours in 1997, net of education, occupation, schedule control, and other worker characteristics.

In the indirect pathway, unions may secure other job characteristics that make varying weekly hours or nonstandard schedules less likely. Past research finds varying hours and nonstandard schedules are most common for workers with low wages, part-time hours, and low seniority (Golden 2001b, 2015). Compared to non-members, union members are less likely to have those job characteristics. Despite declining unionization, union members still have significantly higher wage rates than non-members, are less likely to work part-time, and have greater job security and longer job tenure (Hirsch 2004; Rosenfeld 2014). Even in the absence of collective bargaining for stable or regular hours, these compositional differences due to union membership may protect members from varying hours and nonstandard schedules.

Union membership may also moderate other negative consequences of varying hours and nonstandard schedules. We examine whether the negative associations between varying weekly hours and earnings, and nonstandard schedules and earnings are weaker among union members than non-members. Unions' reporting pay agreements would compensate members, at least in part, for lost hours (Alexander and Haley-Lock 2015; Ben-Ishai et al. 2014). Similarly, unions may secure higher hourly wage rates for workers with nonstandard schedules, mitigating or even reversing any earnings disadvantage for nonstandard workers.

Unions' abilities to collectively bargain with employers depend upon their size, however. Local unionization rates may be associated with varying hours and nonstandard schedules beyond individual-level union membership. For example, local unionization rates are positively

associated with earnings, even for non-union members (Brady et al. 2013; Western and Rosenfeld 2011). Highly centralized bargaining between unions and employers covering large firms or whole industries covers both members and non-members. Non-members can also benefit from the "union threat effect." Employers of non-union workers must offer comparable pay in order to keep them from forming a union themselves, or leaving for unionized jobs (Freeman and Medoff 1984; Hirsch 2004). Finally, Western and Rosenfeld (2011) argue high union density traditionally maintained wage equality through spreading egalitarian cultural norms, political mobilization for redistributive policy, and through institutionally protecting workers in the labor market.

This study focuses on union density at the state level (Brady et al. 2013). States have become increasingly relevant for social and economic policy relative to the federal government (Cancian and Danziger 2009). As a result, states have become key battlegrounds for struggles between business and labor for shaping labor market regulation (Brady et al. 2013; Tope and Jacobs 2009).

We argue union membership at the individual level and higher unionization rates at the state level are both associated with lower rates of varying hours and nonstandard schedules. These relationships likely also interact. Union members may have more stable and standard schedules than non-members, and the difference may be larger in states with greater union density. Other research suggests interactive associations for other job outcomes. The union wage premium has declined in magnitude over time alongside national unionization rates, suggesting unions were more able to secure higher wage rates when they were larger and more powerful (Rosenfeld 2014). Similarly, Hipp and Givan (2015) find the association between union membership and job satisfaction varies cross-nationally with characteristics like union density, coverage, and level of bargaining. Perhaps most directly relevant, Bernhardt et al. (2003) found that hospitality workers' unions were able to secure more regular hours most effectively in cities with high union densities. The authors quote a pithy hotel executive to that effect, "In a union town, you pay if you're non-union. In a non-union town, you pay if you're union" (Bernhardt et al. 2003:57).

*Why Unionization May Fail to Improve Work Schedules*

Though extensive literature documents the benefits of labor unions for workers, a significant relationship between unionization and work schedules in recent years is by no means

certain. There are compelling reasons to be skeptical that unions improve work schedules for their members. First, regularity in hours and shifts may simply be outside the scope of many labor union negotiations. Many jobs include variable hours and nonstandard schedules as a fundamental requirement, particularly hourly jobs. Though strong unions can bargain for higher wage rates or more hospitable work conditions, work regularity may be non-negotiable. Higher wages and job security have traditionally been unions' primary goals, in part because they benefit all members (Bernhardt et al. 2003). Unions may even trade off hours stability and daytime work shift in exchange for these goals (Duncan and Stafford 1980).

In a recent example, members of the United Auto Workers (UAW) voted to reject a proposed deal with Fiat Chrysler Automobiles (FCA) partly over "alternative scheduling" (Gardner 2015). FCA schedules many of its manufacturing workers four 10-hour days per week, and rotating day/night shifts, similar to other major manufacturers. "Alternative schedules" allow factories to extend production hours from 16 to 20 per day. The UAW's proposed contract secured higher pay rates for Saturday shifts (Williams and Jewell 2015), but did not eliminate alternative schedules. UAW members reportedly rejected the initial proposal partly because they preferred to return to more traditional weekly schedules (Gardner 2015). The revised UAW contract won members' support by improving wages for entry-level workers, but still did not eliminate alternative schedules.

Second, unionization is relatively uncommon in service industries where varying hours and nonstandard scheduling are most common (Alexander and Haley-Lock 2015). Temporary workers and independent contractors, often considered the most precarious (Bernhardt 2014), are generally excluded from union membership (Kalleberg et al. 2000). UNITE HERE explicitly works for greater hours stability, but it represents only about 100,000 (UNITE HERE 2016b) of an estimated 4.7 million food service workers in the U.S. (Bureau of Labor Statistics 2015).

Third, unionization rates have declined profoundly over recent decades, particularly for private sector workers (Rosenfeld 2014). Only around one-quarter of workers is part of a labor union in even in the most heavily unionized states in recent years, and unions are almost non-existent in the least unionized states (Brady et al. 2013). Rosenfeld (2014), among others (Kalleberg 2011), argues the decline of labor unions is largely attributable to coordinated efforts by corporate employers and conservative lawmakers. These efforts undermined labor movements

and gave employers sufficient power to reshape employment relations to their benefit. As a result, unions may not be sufficiently powerful to regulate work schedules.

*Hypotheses*

The first set of hypotheses tests the relationships between union membership and varying weekly hours, and union membership and nonstandard schedules.

*Hypothesis 1a:* Union members experience varying weekly hours less than non-members.

*Hypothesis 1b:* Union members work nonstandard schedules less than non-members.

The second set of hypotheses test for associations with state-level unionization, beyond individual-level union membership.

*Hypothesis 2a:* Workers in states with higher levels of unionization experience varying weekly hours less than those in states with lower unionization.

*Hypothesis 2b:* Workers in states with higher levels of unionization have nonstandard schedules less than those in states with lower unionization.

The third set of hypotheses tests for interactions between individual-level union membership and state-level unionization rates.

*Hypothesis 3a*: The negative association between union membership and varying weekly hours is stronger in states with higher unionization rates.

*Hypothesis 3b*: The negative association between union membership and nonstandard schedules is stronger in states with higher unionization rates.

The corresponding null hypotheses, no significant association with union membership and state-level unionization, are by no means trivial. The lack of significant negative relationships between work hours/schedules and unionization would support the argument that unions have become too limited to regulate a crucial element of work life.

The fourth and fifth hypotheses test for relationships to total monthly earnings. The fourth tests the already well-supported hypothesis that varying weekly hours and nonstandard schedules are associated with significantly lower earnings (Golden 2015; Kalleberg et al. 2000).

*Hypothesis 4a:* Workers with varying weekly hours have lower earnings than those with steady hours.

*Hypothesis 4b:* Workers with nonstandard schedules have lower earnings than those with standard schedules.

The fourth hypothesis is a prerequisite for the fifth and final hypothesis, that union membership significantly moderates the negative relationship between varying hours and earnings, and nonstandard schedules and earnings.

*Hypothesis 5a:* The negative association between varying weekly hours and earnings is weaker among union members than non-members.

*Hypothesis 5b:* The negative association between nonstandard schedules and earnings is weaker among union members than non-members.

**Data & Methods**

We analyze data from the 2004 and 2008 panels of the SIPP, downloaded from the National Bureau for Economic Research (NBER).[2] Each SIPP panel interviewed members of approximately 50,000 households every four months over four to five years. Each wave included questions about the last four months. We analyze observations of prime-age (25-55) non-self-employed workers who report a primary job with non-zero earnings, and report being paid by the hour. We also removed a small number of individuals who were likely misidentified between waves, as described in Appendix I. Sample sizes vary between dependent variables.

Relative to other common surveys like the Current Population Survey (CPS) or the General Social Survey (GSS), only the SIPP measures both varying weekly hours and nonstandard schedules. The CPS and SIPP use similar question formats to measure varying hours, described below. But the SIPP's question arguably measures varying hours more accurately because it refers specifically to the last four-month survey wave. Sample sizes are much larger in the SIPP relative to the GSS, which also does not publicly provide the necessary state identifiers for testing associations with state-level unionization rates. Finally, the SIPP includes a fuller set of control variables, notably including hourly wage rates and job tenure.

*Varying Weekly Hours*

The SIPP asks employed respondents how many hours they usually work per week during the four months since their last interview. Rather than reporting a number of hours, respondents could also report "hours vary" the 2004 and 2008 panels. We code this option as a dichotomous variable equal to one, *Varying Hours*. The unit of analysis for this variable is the person-wave.

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[2] The data are available from: http://www.nber.org/data/survey-of-income-and-program-participation-sipp-data.html

**Table 1.** Means and (standard deviations) for key outcome and explanatory variables, and selected control variables.

| Variable | 2004 Panel Mean | (SD) | 2008 Panel Mean | (SD) |
|---|---|---|---|---|
| *Dependent Variables* | | | | |
| Hours Vary | 0.07 | | 0.10 | |
| Non-Standard Schedule | 0.31 | | 0.34 | |
| Monthly Earnings | 2875.91 | (2288.24) | 2704.37 | (2136.37) |
| ln(Earnings) | 7.74 | (0.73) | 7.66 | (0.76) |
| *Union Status* | | | | |
| Union Member | 0.15 | | 0.13 | |
| State Unionization | 12.19 | (5.98) | 11.61 | (5.82) |
| *Selected Controls* | | | | |
| GSP PC ($1,000s) | 53.09 | (8.60) | 51.93 | (9.13) |
| Economic Growth | 2.78 | (2.32) | 0.79 | (2.70) |
| Unemployment Rate | 4.99 | (0.92) | 8.47 | (1.95) |
| Minimum Wage | 7.02 | (1.04) | 7.83 | (0.72) |
| Right-to-Work | 0.38 | | 0.42 | |
| Population (mill.) | 12.62 | (10.53) | 13.28 | (11.04) |
| Age | 39.24 | (8.86) | 39.41 | (9.16) |
| Female | 0.50 | | 0.50 | |
| White | 0.62 | | 0.60 | |
| Black | 0.13 | | 0.13 | |
| Latino/a | 0.19 | | 0.20 | |
| Asian | 0.03 | | 0.04 | |
| Other Race | 0.03 | | 0.03 | |
| Married | 0.59 | | 0.55 | |
| HH Size | 3.33 | (1.59) | 3.33 | (1.67) |
| Children under 6 | 0.28 | | 0.31 | |
| Hourly Wage Rate | 16.66 | (7.35) | 16.26 | (7.66) |
| ln(Hourly Wages) | 2.72 | (0.44) | 2.69 | (0.46) |
| Job Tenure | 6.42 | | 6.57 | |
| Part-Time Some Weeks | 0.28 | | 0.31 | |
| Less than HS | 0.13 | | 0.11 | |

| | | |
|---|---|---|
| HS/GED | 0.32 | 0.30 |
| Some College | 0.41 | 0.41 |
| College | 0.12 | 0.14 |
| Postgrad | 0.03 | 0.03 |
| Private Sector | 0.89 | 0.89 |
| Public Sector | 0.11 | 0.11 |
| Persons | 30,020 | 30,458 |
| Person-Waves | 141,316 | 177,175 |

Notes: All means are calculated using SIPP cross-sectional weights. Schedule type was measured in only wave of the 2004 panel (persons = 14,374) and twice in the 2008 panel (person-waves = 22,954).

The CPS uses a very similar survey question to measure usual hours/week. Lambert et al. (2014) find much lower reports of varying hours in the CPS than with surveys using alternative question formats. We also find higher rates in the SIPP than the CPS, which consistently shows about six percent of hourly workers report varying hours between 2004 and 2013. The reference period for the CPS is undefined, while the SIPP asks about the previous four months specifically. Respondents may be more likely to "smooth" their hours for undefined reference periods than for a specific and recent period. Still, SIPP respondents may underreport varying weekly hours with this question format.

*Nonstandard Schedules*

A special topical module asks employed respondents about their usual work shift. The module was fielded once during the 2004 panel (wave 4 in January through April 2005) and twice during the 2008 panel (wave 5 in December 2009 through March 2010, and wave 8 in December 2010 through March 2011). Similar to the CPS and GSS (Golden 2015; Presser 2005), the SIPP includes the following categories for schedule: regular daytime shift, regular evening, regular night, rotating, split, irregular, and other. Following past work (Presser and Ward 2011), *Nonstandard Schedule* is a binary variable with anything other than regular daytime shifts equal to one. We also include those reporting varying weekly hours in the nonstandard schedule category, so that *Nonstandard Schedule* equals zero for workers with steady weekly hours and regular day shifts.

Table 1 presents means and standard deviations, when applicable, for the main variables of interest other selected characteristics. The proportions of observations reporting *Varying*

*Hours* and *Nonstandard Schedule* are in the top two rows. About 7.1 percent of person-waves in the 2004 panel reported varying hours, which increased to 10.4 percent in the 2008 panel. The percentage with nonstandard schedules increased from 31 to 34. Both increases are statistically significant (p<0.001) in a bivariate logit model, clustering standard errors within persons.

The panel nature of the SIPP also allows estimation of cumulative experiences of varying hours. In the four years (12 waves) of the 2004 panel, 25 percent of respondents ever report varying hours. This percentage increases to 32 percent in the first 12 waves of the 2008 panel. A cumulative measure for nonstandard schedules is unavailable in the 2004 panel because it was measured only once. In the 2008 panel, 21 percent of workers have a nonstandard schedule in both waves. About 46 percent have a nonstandard schedule in either wave.

*Earnings*

The dependent variable for testing hypotheses 4 and 5 is respondents' reported gross monthly earnings from their primary jobs. Earnings are converted to 2013 dollars using the Consumer Price Index (CPI), then logged to adjust for the skewed distribution.

*Union Membership and State Unionization*

Individual-level union membership, *Union Member*, is a binary variable equal to one for those reporting union membership in their primary job. State-level unionization, *State Unionization*, is the percentage of all workers in each state-year who are union members. The state-level measure comes from Hirsch and Macpherson's (2003) estimates based on the CPS.[3]

In Table 1, union membership in the sample declined from 14.9 percent in the 2004 panel to 13.0 percent in the 2008 panel. Union membership is also quite stable within persons. Less than one percent of observations change union membership since the previous wave, and the majority of these also change jobs. Average state unionization also declined slightly between panels.

*Analytic Strategy*

The first analyses test hypotheses 1 through 3. A series of regression models predicts varying hours or nonstandard schedules with union membership and state-level unionization, and next with their interaction. We fit these models both with and without control variables, described below. The models can be expressed as,

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[3] Hirsch and Macpherson's (2003) database is available at
http://unionstats.gsu.edu/MonthlyLaborReviewArticle.htm

$$Y_{ijt} = \beta_0 + \beta_1 Union\ Member_{ijt} + \beta_2 State\ Unionization_{jt}$$

$$+ \beta_3 Union\ Mem_{ijt} \times State\ Union_{jt} + \beta_X X_{ijt} + \beta_W W_{jt} + \beta_t Year_t$$

where $Y_{ijt}$ is either *Varying Hours* or *Nonstandard Schedule* for person *i* in state *j* and year *t*. The vectors $X_{ijt}$ and $W_{jt}$ are individual- and state-level control variables, respectively, and $Year_t$ represents year fixed effects. Control variables are defined below.

OLS models predict *Varying Hours* and *Nonstandard Schedule,* also called Linear Probability Models (LPM). LPMs closely approximate marginal effects from logistic regression, the difference in the probability of the dependent variable for a unit difference in the independent variable. Coefficients from LPMs are readily comparable between models and outcomes, unlike log-odds coefficients or odds ratios (Angrist and Pischke 2008; Mood 2010). Interaction terms in logistic regression can be misleading due to both non-linearity (Ai and Norton 2003; Mood 2010) and conflation with differences in residual variance between groups (Allison 1999). LPMs avoid these problems by assuming linearity in the model's coefficients, at least near the average predicted probability. LPM coefficient estimates are also unaffected by possible group differences in residual variance. Results from logistic regression models are consistent and available upon request.

Models predicting *Varying Hours* use Cameron and Miller's (2015) multiway clustering method to account for correlated errors within both individuals and states.[4] Standard error estimates with multiway clustering are very similar to those clustering within states only using the standard "cluster" option in Stata.[5] Models predicting *Nonstandard Schedule* cluster errors within states only, as there are too few observations per person for the cluster algorithm to reliably estimate standard errors (Cameron and Miller 2015). Predicted probability figures from the regression models illustrate the scale of the differences between union members and non-members at different state unionization rates.

The next analysis tests hypotheses 4 and 5. OLS regressions predict earnings with union membership, and varying hours or nonstandard schedules. Next, the models include an interaction between union membership and *Varying Hours* or *Nonstandard Schedule*. The models including *Varying Hours* cluster standard errors within persons. These models estimate

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[4] Cameron and Miller's (2015) Stata command for multiway clustered errors is available from: http://faculty.econ.ucdavis.edu/faculty/dlmiller/statafiles/
[5] The main results below are similar with random effects at the person and/or state levels.

the earnings premium for union members, the earnings penalties for *Varying Hours* or *Nonstandard Schedule*, and the extent to which union membership ameliorates these penalties. Positive coefficients for the interaction term indicate the earnings penalty for *Varying Hours* or *Nonstandard Schedule* is smaller among union members than non-members.

*Control Variables*

Individual-level controls include a variety of factors that may be correlated with union membership, work hours or schedules, and total monthly earnings: age; sex (female = 1); race/ethnicity (White, Black, Latino/a, Asian, other race); marital status (married, separated, divorced, widowed, never married); household size; the presence of children under 6 years-old (yes = 1); metropolitan status (in a metro area, not in a metro area, not identified); logged hourly wage rates, adjusted for inflation with the CPI; job tenure, measured with years, months, and days between reported date of hire and the interview date; education (less than high school, high school, some college, college, postgraduate); working fewer than 35 hours/week at some point during the survey wave (yes = 1); public employment (yes = 1); 23 occupation categories; 13 industry categories.

State-level controls include: logged gross state product per capita, *ln(GSP PC)*, adjusted for inflation with the CPI; economic growth (percent change in GSP from the previous year); the unemployment rate; the inflation-adjusted state minimum wage (or federal if state is lower); "Right to Work" laws limiting unions' abilities to compel membership or dues payments; logged state population; Census-defined geographic region (Northeast, South, Midwest, West). All data are from the University of Kentucky's Center for Poverty Research National Welfare Data (2015) except for "Right to Work" laws from the Correlates of State Policy Project (Jordan and Grossmann 2016). Table 1 summarizes selected controls, and full summary statistics are available upon request.

*Additional Analyses*

We reproduce the main analyses in the two SIPP panels separately, before and during/after the Great Recession. Table 1 shows varying hours and nonstandard schedules were more common in the 2008 panel than 2004, and their relationship to unionization may also have changed. This robustness check assesses any such potential change. We also assess whether varying hours or nonstandard schedules likely reflect employee- or employer-driven scheduling. Appendix III examines workers' schedule control in both the SIPP with comparisons to other

measures in the GSS. Appendix IV shows varying weekly hours more commonly reflects hours cuts than hours gains. Finally, we reproduced all models controlling for the lagged value of the dependent variables, which control for unobserved characteristics of individuals prior to the current wave.

## Results

*Varying Weekly Hours*

Table 2 presents results from LPMs predicting *Varying Hours*. Models 1, 3, and 5 do not include control variables. Models 2, 4, and 6 include all controls, but do not display coefficients for brevity. Coefficients for the control variables from model 6 are presented in Appendix II. Varying weekly hours are significantly more probable for workers with lower hourly wages, shorter job tenure, part-time hours some weeks, private sector workers, and those in states with higher unemployment rates. Varying hours are also more likely for female workers than male workers, the never married compared to the married, those with larger households, those without young children, and workers outside metropolitan areas.

**Table 2.** Results from linear probability models predicting varying weekly hours, presented as percentage-point coefficients and (robust-clustered t-statistics).

|  | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
|---|---|---|---|---|---|---|
| Union Member | -0.018*** | 0.002 | -0.016*** | 0.000 | -0.013** | 0.004 |
|  | (-6.53) | (0.72) | (-3.56) | (0.10) | (-3.05) | (0.84) |
| State Unionization |  |  | -0.001 | -0.000 | -0.001 | 0.000 |
|  |  |  | (-1.02) | (-0.05) | (-0.70) | (0.34) |
| Union Member x State Unionization |  |  |  |  | -0.001+ | -0.002* |
|  |  |  |  |  | (-1.72) | (-2.39) |
| Controls |  | X |  | X |  | X |
| Persons | 60,478 | 60,478 | 60,478 | 60,478 | 60,478 | 60,478 |
| Person-Periods | 318,491 | 318,491 | 318,491 | 318,491 | 318,491 | 318,491 |

Notes: State-level unionization is centered at 12.6 percent in models 5 and 6. All models include year fixed effects, apply cross-sectional weights, and cluster standard errors at the person and state levels.

$+ p<0.10$, $* p<0.05$, $** p<0.01$, $*** p<0.001$

Models 1 and 2 in Table 2 test hypothesis 1a, that union members are less likely to experience varying weekly hours than non-members. The probability of varying hours is significantly lower for union members than non-members by 1.8 percentage points in model 1, supporting hypothesis 1a. The average probability for non-members is 9.2 percent, but for union members is only 7.4 percent. The union member coefficient is close to zero and not significant with all controls in model 2. The union member difference appears to be entirely indirect; union members have lower probabilities of varying hours due to their higher average wages, longer job tenures, and lower probabilities of working part-time hours.[6] Adding only logged hourly wages to model 1 is sufficient to yield a non-significant coefficient for union membership (available upon request).[7]

Models 3 and 4 test hypothesis 2a, that workers in more unionized states are less likely to experience varying hours. We find no support for the hypothesis with or without controls. The state-level unionization coefficient is also not significant when individual-level union membership is excluded.

Models 5 and 6 test hypothesis 3a, which predicts the union member coefficient is more negative in states with higher unionization rates. These models include an interaction term between union membership and state unionization. State unionization is centered around the sample median, 12.6 percent, so the 'main effect' of union membership is for states with a 12.6 percent unionization rate. The 'main effect' of state unionization is for non-members. The interaction term can be interpreted as the difference in the union member coefficient with greater state unionization compared to the median.

Without controls in model 5, union members have significantly lower probabilities of varying hours by 1.3 percentage points in states with median unionization rates. The union member coefficient is more negative by 0.1 percentage points for each additional one percent state unionization, but the interaction term is only marginally significant with $p<0.10$. With all individual- and state-level controls in model 6, the union member coefficient is close to zero and

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[6] In bivariate regression models, union members' logged hourly wages and job tenures are significantly greater, and probabilities of working part-time hours some weeks are significantly lower than non-members.
[7] Controls only for job tenure or part-time hours attenuate the union member coefficient, but it remains significant. Controls only for public sector employment or the occupation and industry categories only slightly attenuate the union member coefficient.

not significant at the median state unionization rate. However, the coefficient is significantly more negative by 0.2 percentage points for each one percent higher state-level unionization rates.
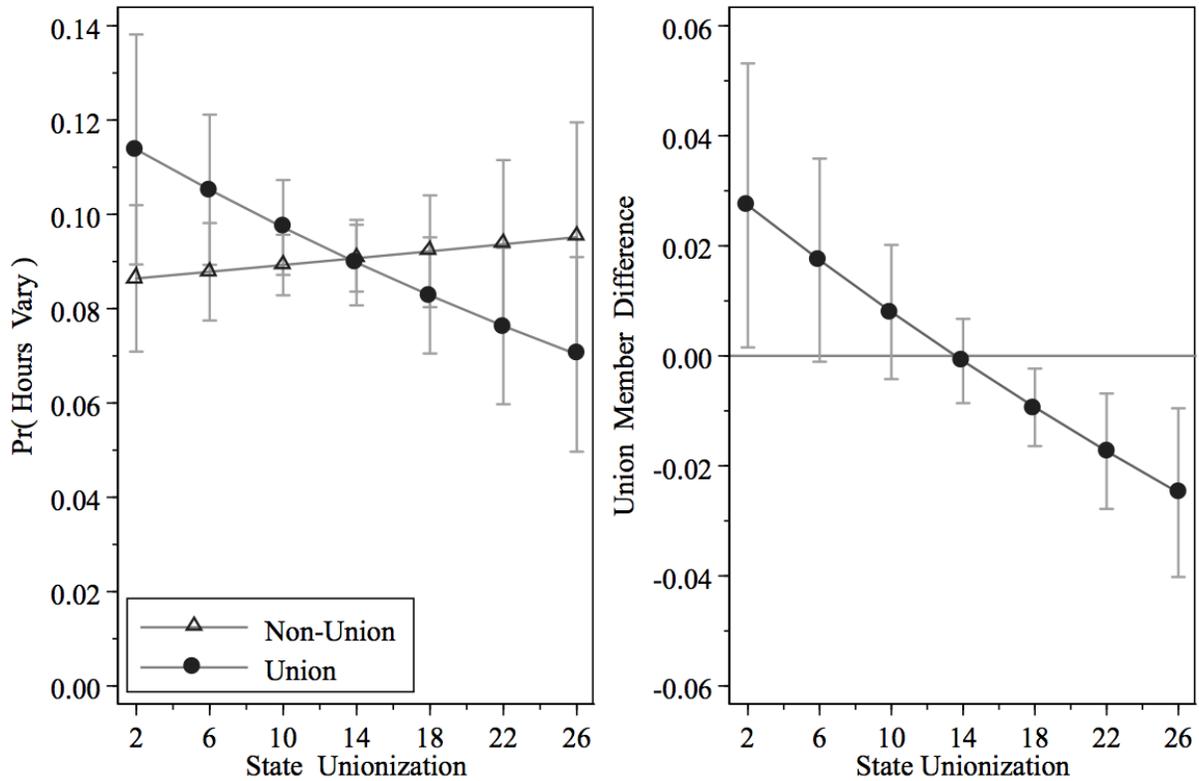


**Figure 1.** Predicted probabilities of varying weekly hours by union membership and state-level unionization (left), and difference in predicted probabilities between union members and non-members (right).

Note: The predicted probabilities are from model 6 in Table 2, including all control variables and standard errors clustered within states and individuals.

To illustrate the scale of the associations, Figure 1 (left) presents the predicted probabilities of varying weekly hours by union membership across the approximate range of observed state unionization.[8] The probabilities are from model 6 in Table 2. The right side of the figure presents the difference in predicted probabilities between union members and non-members, with 95% confidence intervals.

The probability of varying weekly hours among union members is lower in states with higher unionization rates. The same is not true for non-members. Then consistent with hypothesis 3, union member difference is significantly more negative in more unionized states.

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[8] The highest unionization in the sample is 26.1 percent in New York in 2005, and the lowest is 2.3 percent in South Carolina in 2005.

In states with the highest rates, 26 percent, union members have a 7.0 percent probability of varying hours compared to 9.5 percent for non-members. However, union members have a significantly higher probability of varying hours than non-members in the least unionized states. In states with two percent unionization, union members have an 11.4 percent probability of varying hours compared to 8.6 percent among non-members. Union membership appears protective against varying hours in places where unions are strong but disadvantageous in places where unions are weak.

*Nonstandard Schedules*

Table 3 presents the results from LPMs predicting nonstandard schedules. Like Table 2, models 2, 4, and 6 include all controls, and display the coefficients in Table A1 in the appendix. Workers with lower hourly wages, shorter job tenure, and part-time hours some weeks are significantly more likely to have nonstandard schedules. Nonstandard schedules are also more common for private-sector workers than public, male workers than females, Latino workers than Whites, the non-married than the married, those with smaller households, those with graduate degrees, and in states with higher unemployment rates.

**Table 3.** Results from linear probability models predicting non-standard schedules, presented as percentage-point coefficients and (robust-clustered t-statistics)

| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
|---|---|---|---|---|---|---|
| Union Member | 0.024** | 0.076*** | 0.026** | 0.076*** | 0.029** | 0.079*** |
| | (2.97) | (8.79) | (3.11) | (9.89) | (3.15) | (8.68) |
| State Unionization | | | -0.001 | 0.000 | -0.001 | 0.000 |
| | | | (-0.93) | (0.18) | (-0.65) | (0.39) |
| Union Member x State Unionization | | | | | -0.001 | -0.001 |
| | | | | | (-0.74) | (-0.66) |
| Controls | | X | | X | | X |
| Persons | 30,032 | 30,032 | 30,032 | 30,032 | 30,032 | 30,032 |
| Person-Periods | 37,328 | 37,328 | 37,328 | 37,328 | 37,328 | 37,328 |

Notes: State-level unionization is centered at 12.6 percent in models 5 and 6. All models include year fixed effects, apply cross-sectional weights, and cluster standard errors within states.

+ $p<0.10$, * $p<0.05$, ** $p<0.01$, *** $p<0.001$

Models 1 and 2 test hypothesis 1b, that union members are less likely to work nonstandard schedules. Contrary to expectations, union members are 2.4 percentage points more likely to work nonstandard schedules than non-members in model 1. Including controls in model 2, the difference is 7.6 percentage points. Again, the majority of the difference in the union coefficient between models 1 and 2 is driven by the control for logged hourly wage rates.[9]

Models 3 and 4 test hypothesis 2b, that workers in more unionized states are less likely to have nonstandard schedules. Again, we find no strong support for the hypothesis with or without controls. The coefficient for state-level unionization is nearly zero and not statistically significant in any model.

Models 5 and 6 test hypothesis 3b, that the union member coefficient is more negative in states with higher unionization rates, with an interaction between individual-level union membership and state-level unionization rates. The interaction term is not statistically significant in either model, nor is the main effect of state unionization. The 'main effects' of individual union membership, which apply to states with median unionization rates, are similar to those in previous models.

Figure 2 presents the predicted probabilities of nonstandard schedules by union membership and state unionization (left). The probabilities are from model 6 in Table 3. The right side of the figure presents the union member difference with 95% confidence intervals. Union members have significantly higher probabilities of nonstandard schedules than non-members across the range of state unionization. The difference in states with the highest unionization is 6.4 percent, which is considerably smaller than the difference in states with low unionization, 9.5 percent. However, the wide confidence intervals warrant cautious interpretation.

In summary, the preceding results contradict hypothesis 1b, that union members work nonstandard schedules less often than non-members. There is no support for hypothesis 2b, that nonstandard schedules are less common in states with high unionization rates. Finally, there is some support, though not statistically significant, for hypothesis 3b, that the difference between union members and non-members is more negative in states with higher unionization.

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[9] A multinomial logistic regression model predicted the specific schedule types relative to regular day shifts, including all variables in model 2 of Table 3. Compared to non-members, union members are more likely to work evening, night, rotating, irregular, and other shifts.
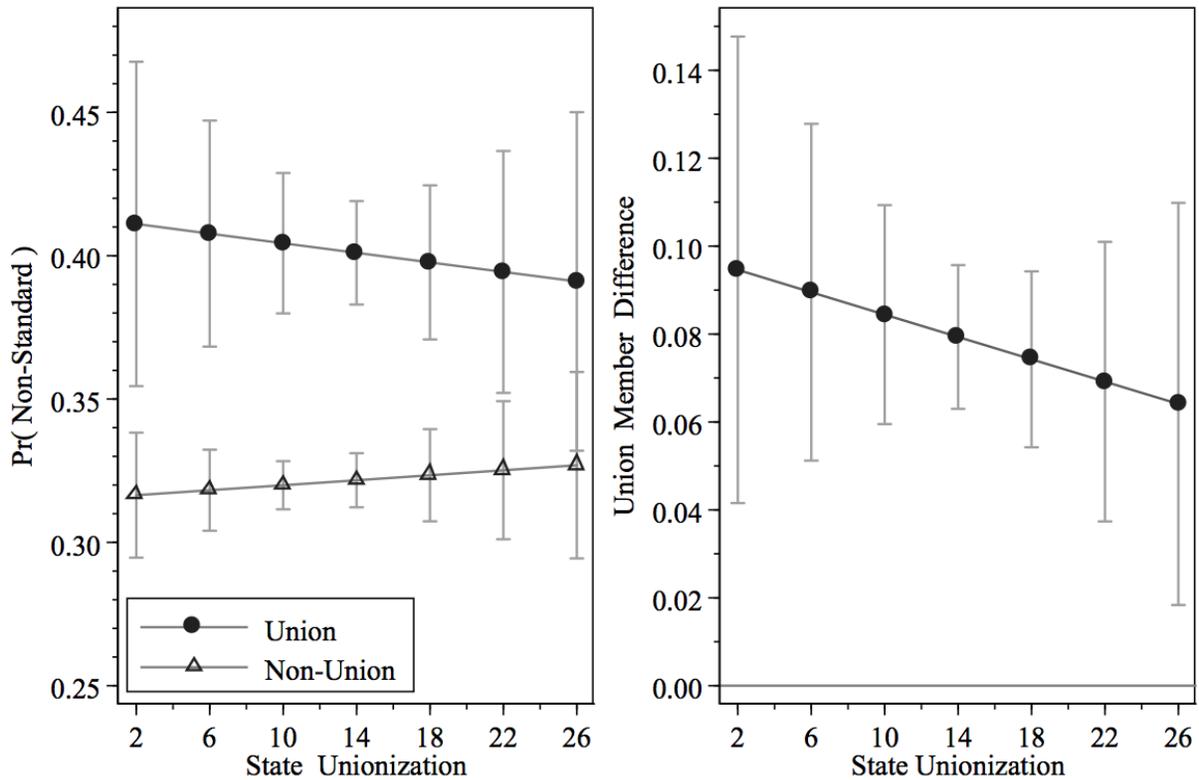
**Figure 2.** Predicted probabilities of non-standard schedules by union membership and state-level unionization (left), and difference in predicted probabilities between union members and non-members (right).
Note: The predicted probabilities are from model 6 in Table 3, including all control variables and standard errors clustered within states.

To further understand the unexpected positive association between union membership and nonstandard schedules, we examined potential heterogeneity by industry. Despite controls for industry and occupation, particular scheduling arrangements within highly unionized industries may still drive the positive association. We fit model 2 from Table 3, predicting nonstandard schedules with all individual-level variables, and included interactions between union membership and the major industry categories. Figure A1 in Appendix VI presents the AME of union membership in each industry. Union members are significantly more likely to work nonstandard schedules than comparable non-members in six of the 14 industries: public administration, manufacturing, wholesale trade, retail trade, transportation and utilities, and financial activities.

Three of these industries account for relatively large fractions of union members, and may have establishment-specific dynamics affecting both nonstandard schedules and union

membership. Manufacturing includes about 17 percent of the union members in the analytic sample, and one-fifth of members with nonstandard schedules. Transportation and utilities includes 15 percent of union members, and over 18 percent of members with nonstandard schedules. In both industries, firms or establishments requiring nonstandard schedules (e.g., factories operating 20 hours/day) may also be more unionized. Union members would be more exposed to nonstandard schedules than non-members as a result. In public administration, two-thirds of union members with nonstandard schedules work in protective services occupations (i.e., police and firefighters). Again, larger departments requiring more nonstandard shifts may also be more unionized. Finally, wholesale trade, retail trade, and especially financial activities have low unionization rates, and include very small fractions of all union members. Similar firm or establishment dynamics may be at work, but these industries contribute less substantially to the overall union member difference. Taken together, nonstandard schedules may be more strongly driven by establishment-specific work requirements than varying numbers of hours. Unions could be less able to limit them as a result.

*Total Monthly Earnings*

We predict earnings are lower for those experiencing varying weekly hours or nonstandard schedules (hypothesis 4), but the difference is attenuated for union members (hypothesis 5). Table 5 presents results from regression models predicting logged monthly earnings from workers' primary jobs with union membership and varying weekly hours. Models 3 and 4 include but do not present all control variables (see coefficients in Table A1).

In model 1, union members have about 60 percent ($0.60 = e^{0.469} - 1$) higher monthly earnings than non-members. Those with varying weekly hours earn about 31 percent ($-0.31 = e^{-0.374} - 1$) less than those with steady hours, consistent with hypothesis 4a. These differences reflect both differences in numbers of hours worked and in hourly wage rates (i.e., union members have higher average hourly wages than non-members and work more hours). Model 2 includes the interaction term between union membership and varying hours. As predicted by hypothesis 5a, the negative association between varying weekly hours and total earnings is weaker among union members than non-members. Union members with varying hours actually

have higher predicted logged earnings ($\hat{y} = 8.12$) than non-members with steady hours ($\hat{y} = 7.90$).[10]

**Table 4.** Results from linear models predicting logged total monthly earnings with union membership and varying weekly hours, with (robust-clustered t-statistics).

|  | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---|---|---|---|
| Union Member | 0.469*** | 0.456*** | 0.087*** | 0.083*** |
|  | (51.46) | (50.60) | (14.23) | (13.97) |
| Hours Vary | -0.374*** | -0.394*** | -0.206*** | -0.212*** |
|  | (-35.13) | (-34.81) | (-25.75) | (-24.62) |
| Union x Hours Vary |  | 0.172*** |  | 0.050* |
|  |  | (5.33) |  | (2.16) |
| Controls |  |  | X | X |
| Persons | 60,478 | 60,478 | 60,478 | 60,478 |
| Person-Periods | 318,491 | 318,491 | 318,491 | 318,491 |

Notes: All models include year fixed effects, apply cross-sectional weights, and cluster standard errors at the person and/or state levels.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

The coefficients are considerably attenuated in models 3 and 4 with all individual-level control variables, including logged hourly wages. Holding hourly wage rates constant, monthly earnings differences by union membership or varying weekly hours must be due to differences in total numbers of hours worked. Union members have nine percent higher monthly earnings than comparable non-members in model 3. Then about one-fifth of the earnings advantage for union members is due to working more hours (0.19 = 0.087/0.469), and the other four-fifths to higher wage rates that are controlled for in model 3.

Those with varying weekly hours have 19 percent lower monthly earnings than comparable workers with steady hours. This difference is more than half of the difference without controls (0.55 = -0.206/-0.374). Consistent with hypothesis 4a, workers with varying weekly hours seem to experience large hours cuts on average, significantly reducing total monthly earnings.

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[10] Logged earnings are predicted with the "margins" command in Stata.

The interaction between union membership and varying weekly hours is again significantly positive in model 4, supporting hypothesis 5a. Holding all else constant, union members with varying weekly hours have 15 percent lower ($-0.15 = e^{-0.212+0.05} - 1$) monthly earnings than comparable union members with steady hours. Among non-members, those with varying weekly hours have 19 percent lower earnings.

Table 5 presents results from similar models predicting logged monthly earnings with union membership and nonstandard schedules. Again, models 1 and 2 omit controls. Models 3 and 4 include all individual-level controls (see coefficients in Table A1). The union member coefficients are similar to those in Table 4. As predicted by hypothesis 4b, logged earnings are 24 percent lower for those with nonstandard schedules relative to workers with steady hours and standard day shifts.

Consistent with hypothesis 5b, the interaction term between union membership and nonstandard schedules is positive and significant in model 2. Among non-members, workers with nonstandard schedules have 26 percent lower monthly earnings than those with regular day shifts. Among union members, the difference is only 10 percent. Moreover, union members with nonstandard schedules have 38 percent higher monthly earnings than non-members with regular day shifts.

**Table 5.** Results from linear models predicting logged total monthly earnings with union membership and non-standard schedules, with (robust-clustered t-statistics).

|  | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---|---|---|---|
| Union Member | 0.495*** | 0.428*** | 0.100*** | 0.078*** |
|  | (45.43) | (31.81) | (11.23) | (7.32) |
| Non-Standard Schedule | -0.274*** | -0.301*** | -0.105*** | -0.115*** |
|  | (-34.25) | (-34.91) | (-17.29) | (-17.48) |
| Union x Non-Standard |  | 0.192*** |  | 0.064*** |
|  |  | (8.39) |  | (3.81) |
| Controls |  |  | X | X |
| Persons | 30,032 | 30,032 | 30,032 | 30,032 |
| Person-Periods | 37,328 | 37,328 | 37,328 | 37,328 |

Notes: All models include year fixed effects and apply cross-sectional weights.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

The negative coefficients for union membership and nonstandard schedules are attenuated considerably with controls included in model 3. However, both are still significant and in the predicted directions. The interaction term is also significantly positive in model 4. For non-union workers, nonstandard schedules are associated with 11 percent lower earnings. For union members, the difference is only 5 percent. Again, predicted monthly earnings are higher for union members with nonstandard schedules than non-members without them.

Alternative analyses found union members with nonstandard schedules were not significantly different from members with standard schedules in terms of hourly wages or involuntary part-time work (i.e., unable to find full-time work or due to demand shortage). Nonstandard schedules were correlated with worse outcomes among non-members, however. Union members with nonstandard schedules have much higher probabilities of employer-provided health insurance than non-members with standard schedules. Despite union members' higher probabilities of nonstandard schedules than non-members on average, such schedules do not seem to accompany other undesirable job characteristics for union members. From a worker's perspective, a unionized job with a nonstandard schedule would still be more desirable in many ways than a non-unionized job with a standard schedule.

*Supplemental Analyses*

The Great Recession may have undermined unions' power over schedules, given the significant growth of varying hours (Table 1). We reproduced model 4 in Table 2 and Figure 1 for the 2004 and 2008 panels separately (available upon request). The interaction term between union membership and state-level unionization is negatively signed in both panels and slightly stronger in the 2008 panel. The interaction term is significant with $p<0.01$ in the 2008 panel, but only with $p<0.10$ in the 2004 panel. In pooled models, three-way interactions between union membership, state unionization, and an indicator for the 2008 panel were not significant. The predicted union member differences are similar to Figure 1, but the slopes are steeper in the 2008 panel.

Appendix III assesses whether workers' schedules are generally employee- or employer-decided. Consistent with past research (Golden 2009; Lambert et al. 2014; Presser 2005), only a minority of hourly workers have much schedule control. The SIPP asks workers the main reason for their type of schedule, and 80 percent report it is a requirement of the job. Similarly, more

than half of 2014 GSS respondents can rarely or never change the start or end times of their workdays.

Two analyses assess in Appendix IV whether reports of varying weekly hours reflect hours cuts or gains. First, workers transitioning from steady to varying hours between waves are more likely to transition from full- to part-time some weeks (Table A3). Second, person fixed-effects models predict logged monthly earnings with *Varying Hours*, controlling for hourly wage rates (Table A4). Total monthly earnings decline with transitions into varying weekly hours from steady hours. Holding constant hourly wage rates, the average drop in total earnings must be due to hours declines being larger and/or more common than increases.

Finally, Appendix V replicates the main analyses controlling for lagged values of the dependent variable. Lagged dependent variables control for individual characteristics up to the previous wave. The results are similar with few exceptions. The negative interaction between union membership and state unionization in Table 2 is only marginally significant ($p<0.10$). The interaction between union membership and varying weekly hours in Table 4 is only statistically significant without controls, but is still positive.

**Discussion**

This article examined the relationship between union membership and two aspects of burdensome work schedules, varying numbers of weekly hours and nonstandard schedules. Varying weekly hours, often driven by hours cuts, can reduce total earnings and increase earnings volatility (Schneider and Harknett 2016). Nonstandard schedules can complicate workers' family lives and general social engagement (Golden 2015; Henly and Lambert 2014; Presser 2005). The study examines the 2004 and 2008 panels of the SIPP, finding that varying weekly hours and nonstandard schedules are fairly common, particularly after the Great Recession. About 32 percent of workers ever reported varying weekly hours between 2008 and 2012, and 46 percent reported a nonstandard schedule in either 2010 or 2011.

Based on prior studies (Bernhardt et al. 2003; Brady et al. 2013; Freeman and Medoff 1984; Rosenfeld 2014), we hypothesized that varying hours and nonstandard schedules are less common for union members and in more unionized states. We also hypothesized that the benefit of union membership is greater in more unionized states. The results yield mixed support for the hypotheses. Union members have significantly lower probabilities of varying hours than non-

members, largely due to union members' relatively higher wage rates, seniority, and full-time status. The benefit for union members is greatest in highly unionized states, but members have a disadvantage in states with very low unionization. The findings echo the observation by Bernhardt et al.'s (2003:57) interviewee, "In a union town, you pay if you're non-union. In a non-union town, you pay if you're union."

Our study also examined the potential for union membership to moderate any negative impact of varying weekly hours on total monthly earnings. Even controlling for hourly wage rates and other relevant characteristics, workers reporting varying weekly hours have 19 percent lower predicted monthly earnings. As hypothesized, union members experienced significantly smaller earnings penalties. In addition to protecting many members from varying hours, unions also help mitigate some of the economic consequences.

In contrast, union members have significantly higher probabilities of nonstandard schedules, regardless of state unionization. Additional analyses showed the difference was concentrated in a select set of industries in which firm and establishment dynamics may be especially salient (Chung and Tijdens 2013; Tomaskovic-Devey 2014). Many firms or establishments requiring nonstandard schedules, like car factories, may also be fully unionized. Then both unionization and nonstandard scheduling are related to the size or output of the establishment. In contrast, firms or establishments less likely to require nonstandard schedules may also lack unionization. The SIPP data unfortunately do not include union coverage at the firm or establishment level. The findings above are similar with controls for establishment size, but future research with more detailed firm- or establishment-level data could more rigorously test these dynamics. We describe efforts by UNITE HERE and the UAW as illustrative examples, and more detailed case studies (i.e., Appelbaum et al. 2003) could more fully explain the dynamics at work.

We also find little evidence that nonstandard schedules are associated with negative outcomes for those union members. Union members with nonstandard schedules still have higher total earnings than comparable non-members with standard schedules, and non-members with nonstandard schedules have the lowest earnings (Table 5). Union members with nonstandard schedules were similarly advantaged over non-members in hourly wages, involuntary part-time work, and employer-provided health insurance. These patterns suggest unions like the UAW have been successful in protecting their members from the penalties of nonstandard schedules,

even when they cannot reduce exposure to nonstandard shifts themselves (Williams and Jewell 2015). These patterns are consistent with previous work arguing a major portion of the earnings premium for union membership compensates for other job characteristics (Duncan and Stafford 1980), like nonstandard schedules in this case.

The present study is not without limitations. First, our focus on hourly workers likely excludes most instances of employee-driven flexibility in work schedules. Still, workers' abilities to create flexible schedules around their non-work lives, which need not necessarily conflict with employer demands, could represent a promising avenue for resolving increasingly common work-life conflicts (Chung and Tijdens 2013; Henly et al. 2006; Kalleberg 2011). Research could then focus on resolving significant gender differences in requests for flexible work arrangements (Clawson and Gerstel 2014) and negative evaluations of the requesting employees (Munsch 2016).

Employee-driven flexibility may also explain some portion of the positive association between union membership and nonstandard schedules. In which case, union membership's positive association with nonstandard schedules may reflect a benefit rather than burden. A model predicting nonstandard schedules found no significant interaction between union membership and the presence of young children, suggesting desirable nonstandard schedules for parents do not drive the positive association with union membership. Still, future research should incorporate measures of schedule control and desirability to understand the power dynamics more fully.

Second, our analysis cannot extend back to peak periods of unionization. Given the general decline of unions' size and strength (Rosenfeld 2014), it is possible that unions were once much more effective at regulating work hours/schedules than in recent years. The Great Recession and subsequent recovery were characterized by widespread unemployment, involuntary part-time work, and substantial growth of "bad jobs" replacing the "good jobs" that were lost (Golden 2015). If union membership and density have any significant association with work hours/schedules in such an inhospitable labor market, they were very likely more salient in earlier decades.

Third, causal inference is an inherent challenge for studies of this type. Fortunately our analyses have a rich set of controls, including hourly wage rates, job tenure, and state characteristics that may be correlated with unionization and work hours and schedules. Results

from lagged dependent variable models are also generally consistent with most key findings. Still, it is difficult to rule out potential unobserved endogeneity completely. Other common approaches to controlling for unobservables like fixed-effects models are not suitable for our study, as within-person variation in union membership and even state unionization is extremely limited. However, we are not aware of any compelling alternative explanation for our findings net of the controls we include.

Unions have traditionally been one of the most prominent labor market institutions protecting workers in a variety of capacities (Freeman and Medoff 1984). However, their decline in recent decades undermines the degree of their benefits (Rosenfeld 2014). Though unionization continued to demonstrate positive effects on earnings up to the Great Recession (Brady et al. 2013; Western and Rosenfeld 2011), we find its benefits for work schedules are mixed. Continued examination of unions' declines is crucial for understanding possible long-term trajectories of worker risk and precarity in the US labor market (Kalleberg 2011). Such examinations should consider additional consequences of unionization spilling beyond the workplace (e.g., Reynolds and Brady 2012).

Despite the decline of unionization, alternatives exist to limit burdensome work schedules. Many state and local governments have instituted labor regulations similar to conditions for which unions collectively bargain. For example, "reporting pay" laws require employers to pay workers for at least some portion of their scheduled shift in the event of last minute cuts (Alexander and Haley-Lock 2015). Similarly, the city of San Francisco passed multiple ordinances in 2014 through 2016 comprising what labor activists called the "Retail Workers Bill of Rights."[11] These ordinances require retail employers to provide their workers with estimates of their work hours when hired, schedules at least two weeks in advance, expanded "reporting pay" protections, and pay for "on-call" shifts. Though the decline of labor unions in the United States has limited workers' abilities to secure favorable working conditions, alternative forms of mobilization continue to push for comparable labor regulations at multiple levels of government and directly with employers (Alexander and Haley-Lock 2015; Ben-Ishai et al. 2014).

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[11] The San Francisco Office of Labor Standards Enforcement describes the ordinances here: http://sfgov.org/olse/formula-retail-employee-rights-ordinances

# References

Ai, Chunrong and Edward Norton. 2003. "Interaction Terms in Logit and Probit Models." *Economics Letters* 80:123–29.

Alexander, Charlotte and Anna Haley-Lock. 2015. "Underwork, Work-Hour Insecurity, and A New Approach to Wage and Hour Regulation." *Industrial Relations* 54(4):695–716.

Allison, Paul. 1999. "Comparing Logit and Probit Coefficients Across Groups." *Sociological Methods & Research* 28(2):186–208.

Angrist, Joshua and Jorn-Steffen Pischke. 2008. *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton, NJ: Princeton University Press.

Appelbaum, Eileen, Annette Bernhardt, and Richard Murnane, eds. 2003. *Low-Wage America: How Employers Are Reshaping Opportunity in the Workplace*. New York: Russell Sage Foundation.

Ben-Ishai, Liz, Sasha Hammad, and Christina Warden. 2014. *Tackling Unstable and Unpredictable Work-Schedules*. Center for Law and Social Policy. Retrieved (http://www.clasp.org/resources-and-publications/publication-1/Tackling-Unstable-and-Unpredictable-Work-Schedules-3-7-2014-FINAL-1.pdf).

Bernhardt, Annette. 2014. "Labor Standards and the Reorganization of Work: Gaps in Data and Research." *IRLE Working Paper* 100-14. Retrieved (http://escholarship.org/uc/item/3hc6t3d5.pdf).

Bernhardt, Annette, Laura Dresser, and Erin Hatton. 2003. "The Coffee Pot Wars: Unions and Firm Restructuring in the Hotel Industry." Pp. 33–76 in *Low-Wage America: How Employers Are Reshaping Opportunity in the Workplace*, edited by E. Appelbaum, A. Bernhardt, and R. Murnane. New York: Russell Sage Foundation.

Brady, David, Regina Baker, and Ryan Finnigan. 2013. "When Unionization Disappears: State-Level Unionization and Working Poverty in the United States." *American Sociological Review* 78(5):872–96.

Bureau of Labor Statistics. 2015. "Food and Beverage Serving and Related Workers." *Occupational Outlook Handbook*. Retrieved December 29, 2016 (https://www.bls.gov/ooh/food-preparation-and-serving/food-and-beverage-serving-and-related-workers.htm).

Cameron, Colin and Douglas Miller. 2015. "A Practitioner's Guide to Cluster-Robust Inference." *The Journal of Human Resources* 50(2):317–72.

Cancian, Maria and Sheldon Danziger. 2009. *Changing Poverty, Changing Policies*. New York: Russell Sage Foundation.

Chung, Heejung and Kea Tijdens. 2013. "Working Time Flexibility Components and Working

Time Regimes in Europe: Using Company-Level Data across 21 Countries." *The International Journal of Human Resource Management* 24(7):1418–34.

Clawson, Dan and Naomi Gerstel. 2014. *Unequal Time: Gender, Class, and Family in Employment Schedules*. New York: Russell Sage Foundation.

Duncan, Greg, and Frank Stafford. 1980. "Do Union Members Receive Compensating Wage Differentials?" *American Economic Review* 70(3):355–71.

Edin, Kathryn and Luke Shaefer. 2015. *$2.00 a Day: Living on Almost Nothing in America*. Boston, MA: Houghton Mifflin Harcourt.

Enchautegui, María. 2013. *Nonstandard Work Schedules and the Well-Being of Low-Income Families*. Urban Institute. Retrieved (http://www.urban.org/sites/default/files/publication/32696/412877-Nonstandard-Work-Schedules-and-the-Well-being-of-Low-Income-Families.PDF).

Enchautegui, María, Martha Johnson, and Julia Gelatt. 2015. *Who Minds the Kids When Mom Works a Nonstandard Schedule?* Urban Institute.

Freeman, Richard and James Medoff. 1984. *What Do Unions Do?* New York: Basic Books.

Gardner, Greg. 2015. "FCA Work Schedules Helped Kill Deal with UAW." *Detroit Free Press*. Retrieved December 29, 2016 (http://www.freep.com/story/money/cars/chrysler/2015/10/06/fca-work-schedules-helped-kill-uaw-deal/73389824/).

Golden, Lonnie. 2001a. "Flexible Work Schedules: What Are We Trading off to Get Them." *Monthly Labor Review / U.S. Department of Labor, Bureau of Labor Statistics* 124:50.

Golden, Lonnie. 2001b. "Flexible Work Time: Correlates and Consequences of Work Scheduling." *The American Behavioral Scientist* 44(7):1157–78.

Golden, Lonnie. 2009. "Flexible Daily Work Schedules in US Jobs: Formal Introductions Needed?" *Industrial Relations* 48(1):27–54.

Golden, Lonnie. 2015. "Irregular Work Scheduling and Its Consequences." *Economic Policy Institute Briefing Paper* 394. Retrieved (http://www.epi.org/files/pdf/82524.pdf).

Halpin, Brian. 2015. "Subject to Change Without Notice: Mock Schedules and Flexible Employment in the United States." *Social Problems* 62:419–38.

Henly, Julia and Susan Lambert. 2014. "Unpredictable Work Timing in Retail Jobs: Implications for Employee Work–Life Conflict." *Industrial & Labor Relations Review* 67(3):986–1016.

Henly, Julia, H. Luke Shaefer, and Elaine Waxman. 2006. "Nonstandard Work Schedules: Employer-and Employee-Driven Flexibility in Retail Jobs." *The Social Service Review* 80(4):609–34.

Hipp, Lena and Rebecca Kolins Givan. 2015. "What Do Unions Do? A Cross-National Reexamination of the Relationship between Unionization and Job Satisfaction." *Social Forces* 94(1):349–77.

Hirsch, Barry and David Macpherson. 2003. "Union Membership and Coverage Database from the Current Population Survey: Note." *Industrial & Labor Relations Review* 56(2):349–54.

Hirsch, Barry. 2004. "Reconsidering Union Wage Effects: Surveying New Evidence on an Old Topic." *Journal of Labor Research* 25(2):233–66.

Jordan, Marty, and Matt Grossmann. 2016. "The Correlates of State Policy Project v.1.5." Retrieved (https://www.ippsr.msu.edu/public-policy/correlates-state-policy).

Kalleberg, Arne. 2011. *Good Jobs, Bad Jobs: The Rise of Polarized and Precarious Employment Systems in the United States, 1970s to 2000s*. New York: Russell Sage Foundation.

Kalleberg, Arne, Barbara Reskin, and Ken Hudson. 2000. "Bad Jobs in America: Standard and Nonstandard Employment Relations and Job Quality in the United States." *American Sociological Review* 65(2):256–78.

Kelly, Erin, Phyllis Moen, and Eric Tranby. 2011. "Changing Workplaces to Reduce Work-Family Conflict: Schedule Control in a White-Collar Organization." *American Sociological Review* 76(2):265–90.

Lambert, Susan. 2008. "Passing the Buck: Labor Flexibility Practices That Transfer Risk onto Hourly Workers." *Human Relations* 61(9):1203–27.

Lambert, Susan, Peter Fugiel, and Julia Henly. 2014. *Precarious Work Schedules among Early-Career Employees in the US: A National Snapshot*. EINet, University of Chicago. Retrieved (https://ssascholars.uchicago.edu/sites/default/files/einet/files/lambert.fugiel.henly_.executive_summary.b_0.pdf).

Luce, Stephanie, Sasha Hammad, and Darrah Sipe. 2014. "Short-Shifted." *Murphy Institute, City University of New York and Retail Action Project*.

Mood, Carina. 2010. "Logistic Regression: Why We Cannot Do What We Think We Can, and What We Can Do about It." *European Sociological Review* 26(1):67–82.

Munsch, Christin. 2016. "Flexible Work, Flexible Penalties: The Effect of Gender, Childcare, and Type of Request on the Flexibility Bias." *Social Forces* 94(4):1567–91.

Presser, Harriet. 1999. "Toward a 24-Hour Economy." *Science* 284(5421):1778–79.

Presser, Harriet. 2005. *Working in a 24/7 Economy: Challenges for American Families*. New York: Russell Sage Foundation.

Presser, Harriet and Brian Ward. 2011. "Nonstandard Work Schedules over the Life Course: A First Look." *Monthly Labor Review* 34(7):1–16.

Reynolds, Megan and David Brady. 2012. "Bringing You More Than the Weekend: Union Membership and Self-Rated Health in the United States." *Social Forces* 90(3):1023–49.

Rosenfeld, Jake. 2014. *What Unions No Longer Do*. Cambridge, MA: Harvard University Press.

Rosenfeld, Jake and Meredith Kleykamp. 2009. "Hispanics and Organized Labor in the United States, 1973 to 2007." *American Sociological Review* 74(6):916–37.

Schneider, Daniel and Kristen Harknett. 2016. "Schedule Instability and Unpredictability and Worker and Family Health and Wellbeing." *Washington Center for Equitable Growth Working Paper Series*. Retrieved (http://cdn.equitablegrowth.org/wp-content/uploads/2016/09/12135618/091216-WP-Schedule-instability-and-unpredictability.pdf).

Tomaskovic-Devey, Donald. 2014. "The Relational Generation of Workplace Inequalities." *Social Currents* 1(1):51–73.

Tope, Daniel and David Jacobs. 2009. "The Politics of Union Decline: The Contingent Determinants of Union Recognition Elections and Victories." *American Sociological Review* 74:842–64.

UNITE HERE. 2016a. "Changed Lives." *UNITE HERE*. Retrieved December 29, 2016 (http://unitehere.org/changed-lives/).

UNITE HERE. 2016b. "Food Service." *UNITE HERE*. Retrieved December 29, 2016 (http://unitehere.org/who-we-are/industries/).

University of Kentucky Center for Poverty Research. 2015. "UKCPR National Welfare Data, 1980-2014." *Gatton College of Business & Economics, University of Kentucky, Lexington, KY*. Retrieved May 11, 2016 (http://www.ukcpr.org/data).

Western, Bruce, Deirdre Bloome, Benjamin Sosnaud, and Laura Tach. 2012. "Economic Insecurity and Social Stratification." *Annual Review of Sociology* 38:341–59.

Western, Bruce and Jake Rosenfeld. 2011. "Unions, Norms, and the Rise in U.S. Wage Inequality." *American Sociological Review* 76(4):513–37.

Williams, Dennis and Norwood Jewell. 2015. *UAW FCA Hourly Report*. United Auto Workers. Retrieved (https://uaw.org/app/uploads/2015/10/FCA-FINAL-HOURLY-100815-730-AM.pdf).