The Bargaining Power of health Care Unions: Union Wage Premiums for Registered Nurses in Hospitals

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Nurses in Hospitals.

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Abstract

For the first time in its history, the National Sample Survey of Registered Nurses in 2008 includes a question involving union status. This study utilizes the data from this sample to estimate the union/non-union wage premium for registered nurses and among some of the occupational, workplace, and individual characteristics. The study finds that standard union wage premium estimates for registered nurses are relatively larger than what were revealed in other recent studies. Upon inspection of various characteristics of registered nurses, the study finds a positive wage gap for union nurses only as experience increases; and with respect to characteristics of the workplace, there is no statistical evidence in the sample that suggests a wage gap for registered nurses in the public or private sector. Finally, a positive wage gap is found for union nurses working in hospitals. The lattermost finding is particularly interesting given the recent change in labor law that may have influenced the bargaining power of health care unions.

I. *Introduction*

Some of the most diverse findings on the subject of the effects of unions on labor market outcomes are those with respect to the wage rates among unionized employees as compared to those of nonunion employees. Two of the fundamental pieces of literature on this issue are those by Lewis's (1963, 1986), which provide comprehensive reviews of estimates of the union-nonunion wage differential. Historically, estimates of the union-nonunion wage differential using micro-economic data have generally ranged from 10% to 25%. However, this *historical* union-nonunion wage differential notwithstanding, it can be surmised that as union membership in the U.S. has declined over the last several decades, a smaller proportion of the work-force has received such a wage advantage. Furthermore, a plausible contributing factor to the latter condition is that because there are fewer workers joining unions to begin with, there also are fewer workers moving from the union sector to the nonunion sector and therefore less of a "spillover" effect. Perhaps more importantly, another potential effect of unionization on the wages of nonunion workers is the "threat effect," which results from a desire by nonunion employers to avoid unionization by their employees by providing higher wages to their workers, thereby mitigating the wage advantage of union workers. The strength of this "threat effects" naturally declines as the percentage of the labor force that is unionized declines.

The customary procedure for measuring the threat of unionization is to include union density as an explanatory variable in a standard wage function estimated over a sample of union and nonunion workers. Rosen (1969) has observed a positive relationship between industry union density and the wages of both union and nonunion

workers. Further, Johannson and Coggins (2002) find a positive effect of union density on the wages of union and nonunion workers in the supermarket industry. Farber (2005) finds mixed evidence regarding the importance of the threat of union organization as a factor in determining the wages of nonunion workers, with more support found in the experience of deregulated industries. Finally, Waddoups (2005), has found that although the union-nonunion wage differential was increasing of union density at the turn of the 21st century, the correlation of the wage differential and union density no longer exists at the industry level. Of course, to the extent that the causal relationship runs in the other direction, a testable hypothesis is whether relatively high wage differentials have ultimately led to a decrease in union membership. Interestingly, allowing for lagged responses, Belman and Voos (2006) find no evidence that high union-nonunion wage differentials in the construction industry in the 1970s or 1980s resulted in lower union membership in 2000.

Focusing specifically within hospitals, Cain, *et al.* (1981) find small (about 3 percent) union-nonunion wage differentials among private sector registered nurses. The authors examine the possibility of union threat effects, finding evidence that unions increase the wages of both union and nonunion employees. Hirsch and Schumacher (1998) find lower union premium estimates among registered nurses as compared to other health care workers, non-health workers in the health care industry, and workers outside the health care industry. Moreover, they also find small, but statistically significant union threat effects in health care labor markets.

In part, motivating the focus of Hirsch and Schumacher (1998) on health care workers was a recent change in labor law that may have influenced the bargaining power

of health care unions. As a result of concern about work stoppages against the backdrop of a perceived shortage of nurses, the goal of Congress was to prevent unwarranted proliferation of bargaining units in the health care industry. Ultimately, in 1991, there was a Supreme Court decision which allowed the National Labor Relations Board's "rule-making" approach with respect to establishing bargaining units. As a result, the Board established eight bargaining units within the health care industry, one of which applied to registered nurses. One of the expected effects from the rulemaking approach to unit determination would be that union organization would increase. As Hirsch and Schumacher describe, "The more similar are employees' preferences within a bargaining unit, the lower the cost of organizing and the easier it is for a union to provide a mix of 'services' that can gain and maintain majority support (1998, p. 138)." As evidenced by a relatively constant ratio of health service to economy-wide representation elections, the authors find little evidence to suggest a significant impact of NLRB unit determination on union organizing strength. Finally, although there were no considerable changes in union density or union premiums among registered nurses at the time of their analysis, Hirsch and Schumacher (1998) were motivated also by the growth of managed care, which has a focused attention on staffing and labor costs, and by the fact that the AFL-CIO has indicated that it will make organizing within the health care industry a major priority.

The purpose of this study is to contribute to an assessment of the role of unions in health care labor markets, specifically with a focus on nursing. Using data from the National Sample Survey of Registered Nurses in 2008, we provide empirical evidence illustrating the magnitude of the union wage premium and the effect of union density on the wages of union and nonunion nurses. This analysis is to some extent unique in the

sense that 2008 is the first year of the NSSRN in which a question regarding union membership, i.e., regarding an RN's union status, was asked. In the spirit of Lewis (1986), we attempt to address some of the biases that may exist when estimating the union-nonunion wage differential. The present study should also be considered an updated analysis to that of Hirsch and Schumacher (1998) with respect to the role of unions in the nursing labor market, the potential effect that changes in labor law have had on the bargaining power of health care unions, and the possible influence of the AFL-CIO's attempt to increase organization in the nursing segment of the health care sector.

In section II of this study, we describe the data and provide cross-sectional evidence on union-nonunion wage differentials. Also in this section, we present evidence on the union wage premium across the nursing labor market according to characteristics of nurses and by sector of employment. In section III, we attempt to discern any possible effects of union density on union and nonunion wages among registered nurses. Section IV presents descriptive evidence on the potential effects from changes in labor law, the possible influence that the AFL-CIO may have had on union density, and the role of both of these factors in the determination of earnings in the nursing labor market. Finally, section V presents concluding remarks on the analysis.

II. *The Union-Nonunion Wage Differential*

Using various years of the NSSRN to analyze human capital theory has provided a wealth of information for researchers, and the 2008 survey is the first to include the question regarding an RN's union status. One of the potential shortcomings in using survey data is the possibility that a response bias exists. However, Lewis (1986) points out that the

union status questions commonly used in large sample surveys are rather simple ones, and therefore, there is good reason for expecting that only a small proportion of respondents were misclassified by union status. Another potential pitfall to using sample survey data is non-randomness in the data. To the extent that the data have not been drawn from a random sample, the potential effect is that the sample will tend not to be a representative sample. In this case, the correction would be to use the appropriate population weights. The NSSRN routinely provides population weights to address this issue, and we will provide results that also include the sample weights.[1]

Included in our sample are RNs with positive wages between $8 and $120 an hour in 2008 (and those without missing observations for key variables). As is the case in most empirical literature, there is the issue of omitted variable or selectivity bias. Lewis (1986) argues that in commonly used household surveys, the wage measures often exclude employer expenditures for fringe benefits that are not paid directly to employees and therefore are not at the appointed time revealed in the employees' paychecks. In addition, other potential omitted payroll items include overtime, shift differentials, and nonproduction bonuses. Although the NSSRN sample design is set up to control for the latter items, our data is limited in the sense that we cannot control for the potential upward bias that exists from not including fringe benefits. That is, to the extent that union

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[1] There is also the possibility of nonrandomness caused by excluding nurses with missing data. Although we cannot directly address this issue, we argue that the benefits of excluding observations with missing data (so that we can include important right-hand-side variables) outweigh the cost associated with the nonrandomness. Mellow's (1981) study on unions, firm size, and wages finds a 0.01 lower wage gap estimate when workers with missing data were excluded than when they were included. The difference in sample size is 3,987, or 18 percent. The difference in our sample size, due to missing observations, is 1809 (6 percent).

RNs receive a differential in terms of fringe benefits as compared to nonunion RNs, our estimated union-nonunion wage differential will be biased upward.[2]

The restrictions on RN wages previously stated result in a sample size of 26,682 observations for the analysis. The wage is calculated as the product of 2008 annual pre-tax earnings (inclusive of overtime and bonuses, but excluding sign-on bonuses) and estimated work hours per year. The latter is the product of the number of hours worked in the principal RN position during a normal workweek, including overtime, and the number of months normally worked per year converted to estimated weeks. The descriptive statistics for the variables used in the regressions are summarized in Table 1. The last column shows the results of *t*-tests that compare differences in means of the variables between union and nonunion RNs. Included in the descriptive data is the unadjusted union-nonunion log wage differential. In the 2008 sample, 15.3 percent of RNs reported being represented by a union or collective bargaining unit, with unionized RN wages 0.122 log points higher than the wages of nonunion RNs.

Ordinary least squares regression results on the natural log of hourly wages are presented in Table 2 and Table 3; the distinction between these two tables is that Table 2 is non-weighted whereas Table 3 utilizes the sample weights obtained from the NSSRN.[3] The union-nonunion wage differential is estimated from the log wage equation, with the coefficient on a membership dummy measuring the premium.[4] That is, the coefficient

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[2] Freeman (1981) analyzes the effect of trade union's on fringe benefits. When accounting for the difference between union and nonunion workers in manufacturing, with respect to insurance and pension plans, the estimated bias is 0.0221.

[3] All regressions utilize the White (1980) correction for heteroskedasticity. The absolute value of the robust standard errors are (in parentheses) reported in the tables.

[4] We do not consider the issue of endogeneity with respect to union membership. That is, if an omitted variable is correlated with union status, then the union coefficient will be a biased measure of the union premium. Hirsch and Schumacher (1998), when estimating the union-nonunion wage premium, also utilize panel data to determine if the union coefficient is a biased measure of the union premium. Although the

estimates approximately represent the percent change in wages that occurs together with a unit change in an independent variable (in this case, union). The regressions include various controls for RN and occupational characteristics. Specifically, included are dummy variables for gender, race, marital status, having no children, basic educational preparation in nursing, additional education, being a graduate from a U.S. nursing program, travel nursing, non-MSA employment, work state, and part-time status. The regressions also include controls for potential experience and the square thereof. The controls for characteristics of the RNs occupation include the primary setting and principal nursing position.

In general, the explanatory power (adjusted R^2) of the equations is fairly constant at about 30 percent. Column 1 in Table 2 reports that being in a union increased the wages of RNs by almost 8 percent, with the effect statistically significant at $p < .01$. Moreover, in Table 3, utilizing the sample weights the coefficient on union also exhibits an 8 percent union-nonunion wage differential which is statistically significant at $p < .01$. These results are higher than those estimated in Hirsch and Schumacher (1998) but are quite similar to those found in Feldman and Scheffler (1982). The former study examines the union-nonunion wage premium among RNs over a pooled sample period from 1973 – 1994, whereas the latter study utilizes data from 1977.

Table 2 and 3 also present regression estimates of the union-nonunion wage differentials across selected characteristics of RNs and their workplace. With respect to characteristics of RNs, only the coefficient on the interaction term between *Union* and *Experience* is statistically significant. This outcome indicates that union RNs earn a

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longitudinal samples are not as representative of the employed labor force as are the cross-sectional samples in their analysis, the authors obtain similar wage level equation results from the two samples, in particular among RNs.

higher wage relative to nonunion RNs as experience increases, everything else the same. The estimated return to experience in the equation for column 6 is 0.015 or 1.5 percent for nonunion RNs. For union RNs, it is about 1.6 percent. The difference is statistically significant; however, it is not economically large. With respect to the equation using sample weights, similar results are found in column 6 in Table 3. That is, the estimated return to experience is 1.5 percent for nonunion RNs, and for union RNs, it is about 1.7 percent.

As stated previously, none of the other interaction terms is statistically significant by conventional standards. Thus, although there is limited statistical evidence that female RNs earn a relatively lower wage, everything else the same, we cannot conclude that there is either a wage advantage or disadvantage for female RNs from union membership. These results are comparable to the overall conclusion by Lewis (1986) who reported that of the 41 studies analyzed from 1967 to 1979, the sign of the mean male-minus-female wage gap difference is ambiguous and the numerical magnitude of the difference is close to zero. Furthermore, not only do we fail to reject the hypothesis that race does not affect the wages of RNs, *ceteris paribus*, but because the interaction between *Race* and *Union* is not statistically significant, there also appears to be no wage gap difference for union members by race in our sample. These results are comparable to those found in Lewis (1986) for the studies that *utilize CPS data*. However, the present findings differ from those in Lewis (1986) using the Survey Research Center data and those in Lewis (1986) using the 1967 Survey of Economic Opportunity data, wherein a positive wage gap difference (about 5 percent, on average) between non-whites in unions relative to whites in unions is detected. Finally, although we do find wage premiums for RNs with a BSN

or higher, there is no statistical evidence from our sample that there is a union-nonunion wage gap for RNs with the relatively higher education levels.[5] Although Lewis (1986) only provides results for the studies in which schooling is treated as a continuous variable in the wage equations, the author does mention that nine studies not covered but which treated schooling as a discrete variable find a negative wage gap difference. In these studies, the wage gap difference was for workers with 12 or more years of schooling over that for workers with less than 12 years.

In columns 7 and 8 of both tables, we estimate wage equations for RNs where we include interaction terms for a potential union-nonunion wage gap for hospital RNs and the sector in which the RN works. In column 7 of both tables, we find that hospital RNs earn a wage premium relative to the other primary settings. Moreover, unionized RNs working in hospitals earn a larger wage premium as compared to nonunionized RNs working in the same setting. In particular, the estimated return for nonunion RNs in a hospital setting is 0.173, i.e., 17.3 percent (and 18.1 percent when sample weights are used); however, for union RNs, it is almost 24 percent (also 24 percent when sample weights are used). Interestingly, Feldman and Scheffler (1982) found that, compared to nonunion RNs in hospitals, union RNs in hospitals earned a positive wage gap equal to about 8 percent. Clearly, the results in the present study from the wage equation in column 7 indicate a wage gap equal to about 6.7 percent. When sample weights are included, the wage gap is similar (6.3 percent).

Finally, column 8 of both tables provides the results for the wage equation that includes variables for private versus public employment. The results indicate that there is no statistical evidence that RNs in the public sector, union *or* nonunion, earn a wage

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[5] The reference group for current RN education is the Diploma RN.

premium. Lewis (1986) summarizes the results of eight studies that show a larger wage gap for privately employed workers. Although the magnitude of the gap of one study was relatively small (2 percent), the other seven studies averaged about 13 percent. The most contemporary of all the studies summarized in Lewis (1986) utilizes data from 1976. The contrasting results between this study and those found in Lewis (1986) could reflect the fact that union membership has been increasing in the public sector (25.4 percent to 36.8 percent) and decreasing in the private sector (21.3 percent to 7.6 percent) between 1976 and 2008.[6]

III. *Union Threat Effects*

Although the union impact on nonunion wages can be negative, classified as labor spillover and demand effects, evidence typically reveals a positive impact of nonunion union density on wages, i.e., the existence of threat effects.[7] That is, nonunion employers increase wages to deter union organizing. Based on our initial findings, unionized RNs earn about 7-8 percent higher wages than similar nonunion RNs. Any conclusions as to what this finding implies with respect to the bargaining power of unions in the nursing labor market is premature, however, to the extent that nonunion wages are positively or negatively affected by the presence of unions. In this section, in order to examine the effect of unionization on the wages of nonunion RNs, we examine how wages vary according to state-level private and public sector union density. Using 2008 union membership data from Hirsch and Macpherson (2003), we assign each RN in the NSSRN

[6] Source: www.unionstats.com.
[7] See Hirsch and Addison (1986) and Neumark and Wachter (1995).

a state level union density based on the RNs work sector (private or public) in the reported state employed. Table 4 presents the individual union dummy and state union density coefficients (private or public) interacted with individual union (private or public) status. Moreover, consistent with our previous models, we include estimates with and without sample weights. Although the coefficients are positive and statistically significant, the size of each is economically small. Moreover, each *p*-value for the hypothesis that the coefficients on union density are equal for union and nonunion nurses is large enough that we cannot reject the hypothesis. By contrast, Hirsch and Schumacher (1998) found comparably larger union threat effects within the registered nurse labor market. The authors utilized union density data at the MSA level for 80 percent of their sample. For nurses in nonmetropolitan areas, they used state level union density data. It should be noted, therefore, that our results could differ from those in Hirsch and Schumacher (1998) in part if union threat effects exist *within* states but *not across* states.

IV. *Descriptive Evidence on Union Organizing in Health Care Labor Markets*

Utilizing data from the 2008 NSSRN, we have found evidence that unions have rather notable effects on the wages of registered nurses. This is particularly evident compared against the backdrop of the most recent findings from Hirsch and Schumacher (1998). As part of their exploration into the potential factors explaining the lack of union bargaining power in the form of higher wages for its members, the authors identify relatively recent changes in the legal structure surrounding union organizing in hospitals. Arguably, the most important incentive to union organizing was Public Law 93-360, passed in 1974, which brought voluntary nonprofit hospitals under coverage of the National Labor

Relations Act, joining federal hospitals and most private for-profit hospitals. This law enabled the National Labor Relations Board (NLRB) to conduct representation elections in hospitals and to mandate good faith bargaining. However, the potential for excessive and unnecessary proliferation of bargaining units in the health care industry was a concern to the extent that it would likely lead to an increase in work stoppages. After moving through several stages, the NLRB moved to a "rule-making" approach for bargaining unit determination. Eventually, in 1991, the Supreme Court affirmed the Seventh Circuit's decision in a unanimous opinion making the rule enforceable by the NLRB so that the current standard is the rulemaking approach. This approach lead to the establishment of eight bargaining units in the health care industry: physicians, registered nurses, professionals except physicians and registered nurses, technical employees, business office clerical employees, guards, and other nonprofessional employees.

The rulemaking approach to unit determination was expected to strengthen union organization because to the extent that employees' preferences (i.e., working conditions, promotions, work rules, and so forth) within a bargaining unit are homogeneous, the lower the cost of union organizing. Hirsch and Schumacher (1998), using organizing activity and union density as a measure of the bargaining power of unions, track the changes before and after Public Law 93-360 (1974) was passed and the 1991 Supreme Court decision on unit determination. Despite what is expected of unions given a change in incentives brought about by the change in labor law, the descriptive data presented by Hirsch and Schumacher (1998) does not bear this out. That is, using the total number of elections in the health service industry, the total number of elections in the health service industry as a proportion of the total elections in all industries, and union density as a

measure of union organizing strength, the authors find no observable "large" impact. This is especially true after 1991, although the series runs to 1994 only, for union density, and to 1993 for elections. The only obvious evidence is almost a 100 percent increase in the total number of elections in the health service industry in 1975, just one year after the passage of Public Law 93-360.

For comparison, we provide similar descriptive data in Figure 1, for years 1994-2009, and also include the years covered in Hirsch and Schumacher (1998). Upon inspection, it is rather clear that both measures of union organizing strength were relatively stable prior to 1994, except in 1975, as already pointed out above. In contrast, however, from the years 1994 to 1999, there appears to be a distinct increase in the number of elections in the health care industry as a proportion of elections in all industries. Furthermore, it also appears that after 2004, union density in the health care industry increased. Coupled with the relatively high absolute levels of the union-nonunion wage premiums for registered nurses, this study reveals that evidence exists that union power has increased in some areas of the health care sector.

V. *Concluding Remarks*

Utilizing contemporary data from the National Sample Survey of Registered Nurses, data that for the first time includes information on a nurse's union status, we find that standard union wage premium estimates for RNs are larger than revealed by the most recent studies. Upon inspection of some of the characteristics of RNs, we find only a positive wage gap for union RNs as experience increases, everything else the same. With respect

to characteristics of the RNs workplace, however, there is no statistical evidence in our sample that suggests a wage gap for RNs in the public or private sector.

We do, however, find a positive wage gap for union RNs working in hospitals. Hirsch and Schumacher (1998) estimated a premium for hospital-based RNs equal to about 5 percent over the 1992-1994 period, as compared to a premium of about 2-3 percent during years prior to 1992. These findings are novel when compared against the backdrop of the Supreme Court's 1991 decision. However, because the Hirsch and Schumacher (1998) estimates of the wage premiums for the groups (in particular RNs) included in their study were economically small, the authors were reluctant to conclude that the results were based on changes in NLRB rules on hospital organizing. Taken together with our contemporary evidence, however, we would argue that the bargaining power in health care labor markets, at least with respect to registered nurses, has indeed increased. That is, all evidence of greater bargaining power by unions in health care labor markets – significant wage gains for RNs, increases in election ratios, and increases in union density in the health care sector – has been observed. Over the last few years, since the most recent application of this issue, results suggest that the AFL-CIO's attempts to organize in the health care industry, specifically in nursing, have had relative success.

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Table 1. Descriptive Statistics, Variable Means

Model Variable	Non-union	Union	t-Test	P-value
Demographics				
Hourly Wage U.S. Dollars (2008)	30.4328	34.386	-19.68	<0.0001
Wage (log)	3.351	3.4843	-22.32	<.0001
Married (%)	0.7414	0.7158	3.42	0.0006
Female (%)	0.9284	0.9195	2.02	0.0433
No Children (%)	0.4233	0.4047	2.23	0.026
Travel RN (%)	0.0172	0.0034	6.64	<.0001
Experience	18.5564	18.178	1.91	0.056
Experience Sq.	480.8	461.7	2.25	0.0242
Non-MSA Location (%)	0.2535	0.2392	1.95	0.0515
Part-time (%)	0.2414	0.27	-3.91	<.0001
Setting				
Nursing Home (%)	0.0647	0.0235	10.35	<.0001
Education (%)	0.0385	0.0468	-2.47	0.0135
Home Health (%)	0.0727	0.0225	12	<.0001
Public or Community Health (%)	0.0351	0.0663	-9.41	<.0001
School Health (%)	0.0229	0.0911	-22.56	<.0001
Occupational Health (%)	0.00982	0.0039	3.7	0.0002
Ambulatory Care (%)	0.115	0.0397	14.61	<.0001
Insurance Claims/Review (%)	0.0257	0.0047	8.37	<.0001
Other Setting (%)	0.0353	0.0147	6.87	<.0001
Hospital (%)	0.5803	0.6869	-12.82	<.0001
Position				
Management/Administration (%)	0.1478	0.035	19.84	<.0001
Instruction (%)	0.0387	0.0362	0.75	0.4532
Staff Nurse (%)	0.6048	0.8318	-28.22	<.0001
Nurse Practitioner (%)	0.0422	0.0245	5.36	<.0001
Nurse Midwife (%)	0.00288	0.0015	1.61	0.108
Clinical Nurse Specialist (%)	0.00987	0.0056	2.61	0.0091
Nurse Anesthetist (%)	0.0168	0.0032	6.66	<.0001
Researcher (%)	0.00699	0.0017	3.96	<.0001
Informatics (%)	0.00513	0.0005	4.12	<.0001
Surveyor/Auditor/Regulator (%)	0.00381	0.0073	-3.16	0.0016
Patient Coordinator (%)	0.0661	0.0343	7.81	<.0001
Patient Educator (%)	0.011	0.0022	5.29	<.0001
Other Title (%)	0.027	0.0098	6.56	<.0001
No Title (%)	0.00624	0.002	3.38	0.0007
Consultant (%)	0.0108	0.0044	3.79	0.0001

Education				
Diploma (%)	0.1286	0.1084	3.57	0.0004
Associate's (%)	0.3689	0.3459	2.81	0.0049
Bachelor's (%)	0.3572	0.4277	-8.6	<.0001
Master's or Doctorate (%)	0.1453	0.118	4.61	<.0001
Graduate of US School (%)	0.9611	0.9236	10.7	<.0001
Additional Education (%)	0.2606	0.2299	4.15	<.0001
Race				
White (%)	0.8874	0.811	13.67	<.0001
Asian (%)	0.0356	0.0884	-15.26	<.0001
Black (%)	0.0508	0.0636	-3.39	0.0007
Native American (%)	0.00792	0.012	-2.6	0.0092
Multi-racial (%)	0.0183	0.025	-2.84	0.0045

Table 2. OLS Estimates (without sample weights)

Explanatory Variable	Baseline	Gender	Race	Education	Experience	Setting	Sector	Threat
Union	0.077	0.052	0.074	0.072	0.052	0.103	0.078	0.076
	(0.006)	(0.017)	(0.013)	(0.016)	(0.01)	(0.01)	(0.006)	(0.008)
Female	-0.062	-0.067	-0.062	-0.062	-0.063	-0.062	-0.062	-0.062
	(0.007)	(0.008)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Female Interacted with Union		0.027						
		(0.018)						
ADN	0.001	0.001	0.001	0	0.001	0.001	0.001	0.001
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
BSN	0.039	0.039	0.039	0.04	0.039	0.039	0.039	0.039
	(0.007)	(0.007)	(0.007)	(0.008)	(0.007)	(0.007)	(0.007)	(0.007)
MSN or Doctorate	0.117	0.117	0.117	0.115	0.117	0.117	0.117	0.117
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
BSN Interacted with Union				0.001				
				(0.017)				
ADN Interacted with Union				0.009				
				(0.017)				
MSN or Doctorate Interacted with Union				0.015				
				(0.022)				
White	0.023	0.023	0.023	0.023	0.023	0.024	0.023	0.023
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
White Interacted with Union			0.003					
			(0.014)					
Experience	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Experience Interacted with Union					0.001			
					(0)			
Hospital Setting	0.169	0.169	0.169	0.169	0.17	0.173	0.169	0.169
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Hospital Setting Interacted with Union						-0.039		
						(0.011)		
Public Sector	0.003	0.003	0.003	0.003	0.002	0.003	0.005	0.005
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.01)	(0.015)
Public Sector Interacted with Union							-0.009	
							(0.014)	

Union Interacted with Union Density								0
								(0)
Non-Union Interacted with Union Density								0
								(0.001)
N	26682	26682	26682	26682	26682	26682	26682	26682
F	118.48	117.29	117.2	114.77	117.13	117.22	117.22	115.99
Adjusted R-square	0.2954	0.2955	0.2954	0.2955	0.2957	0.2957	0.2955	0.2954

Table 3. OLS Estimates (with sample weights)

Explanatory Variable	Baseline	Gender	Race	Education	Experience	Setting	Sector	Threat
Union	0.08	0.052	0.07	0.072	0.049	0.12	0.082	0.079
	(0.007)	(0.017)	(0.016)	(0.02)	(0.012)	(0.013)	(0.008)	(0.011)
Female	-0.055	-0.067	-0.055	-0.055	-0.055	-0.055	-0.055	-0.055
	(0.009)	(0.008)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Female Interacted with Union		0.027						
		(0.018)						
ADN	-0.002	0.001	-0.002	-0.004	-0.002	-0.002	-0.002	-0.002
	(0.008)	(0.007)	(0.008)	(0.009)	(0.008)	(0.008)	(0.008)	(0.008)
BSN	0.046	0.039	0.046	0.046	0.046	0.045	0.046	0.046
	(0.009)	(0.007)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
MSN or Doctorate	0.128	0.117	0.128	0.123	0.128	0.127	0.128	0.128
	(0.014)	(0.011)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
BSN Interacted with Union				-0.001				
				(0.022)				
ADN Interacted with Union				0.011				
				(0.022)				
MSN or Doctorate Interacted with Union				0.035				
				(0.029)				
White	0	0.023	-0.003	0	0	0	0	0
	(0.016)	(0.014)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
White Interacted with Union			0.012					
			(0.018)					
Experience	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Experience Interacted with Union					0.002			
					(0.001)			
Hospital Setting	0.175	0.169	0.175	0.175	0.175	0.181	0.175	0.175
	(0.011)	(0.009)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Hospital Setting Interacted with Union						-0.057		
						(0.015)		
Public Sector	0.009	0.003	0.009	0.009	0.009	0.008	0.014	0.026
	(0.012)	(0.009)	(0.012)	(0.012)	(0.012)	(0.012)	(0.014)	(0.02)

Public Sector Interacted with Union							-0.018	
							(0.019)	
Union Interacted with Union Density								-0.001
								(0.001)
Non-Union Interacted with Union Density								-0.001
								(0.001)
N	26682	26682	26682	26682	26682	26682	26682	26682
F	89.07	117.29	88.12	86.4	88.13	88.16	88.16	87.2
Adjusted R-square	0.2948	0.2955	0.2948	0.2949	0.2952	0.2954	0.2948	0.2948

Table 4. Union Threat Effects

Sample Weights	Private Sector RNs				Public Sector RNs		
	Union	Union * Density	Nonunion * Density	*p*- value	Union * Density	Nonunion * Density	*p*- value
No	0.0798	0.0115	0.012	0.732	0.0021	0.0023	0.720
	(0.014)	(0.003)	(0.003)		(0.001)	(0.001)	
Yes	0.0752	0.0151	0.0147	0.818	0.0027	0.0028	0.876
	(0.018)	(0.003)	(0.003)		(0.001)	(0.001)	

Notes: The *p*-value is for the hypothesis that the coefficients on union density are equal for union and nonunion RNs, within each sector. Other variables included in the regressions are consistent with the previous regressions.

Figure 1.

RN Union Density and Health Service to Economy-Wide Elections