Wage-Setting Institutions and Pay Inequality in Advanced Industrial Societies

Michael Wallerstein

About the Occasional Paper Series

The Center for Labor Studies publishes two series of working papers. The Occasional Paper Series reproduces important lectures and scholarly papers sponsored by the Center during the academic year. The two inaugural papers in this series were originally presented at a conference entitled, "Harry Bridges and the Tradition of Dissent Among Waterfront Workers," at the University of Washington, January 28, 1994. A second series, listed on the opposite cover, publishes papers produced by faculty teaching in the Center's Summer Program in Comparative Labor History. Copies of papers in either series are available from the Center for Labor Studies at a cost of $5.00 per unit.


The Center for Labor Studies
University of Washington
Box 353530
Seattle WA 98195
pcls@u.washington.edu
http://weber.u.washington.edu/~pcls
Wage-Setting Institutions and Pay Inequality in Advanced Industrial Societies

by

Michael Wallerstein
Department of Political Science
Northwestern University
601 University Place
Evanston, IL 60208-1006
e-mail: m-wallerstein@nwu.edu

February 1998

This paper draws upon data that were collected as part of a project funded by the National Science Foundation entitled Union Centralization Among Advanced Industrial Societies directed by Peter Lange, Miriam Golden and Michael Wallerstein. Financial support came from the National Science Foundation, SES-9309391 and SES-9108485 to UCLA and SES-9110228 and SBR-9309414 to Duke University. I thank Jelle Visser and Duane Swank for allowing me to use unpublished data they collected and Lyle Scriggs for his help in putting the data set together. I thank Miriam Golden, Peter Lange, Karl Ove Moene, Matthew Rabin, John Stephens, Margaret Levi and David Olson for useful discussions and comments on earlier drafts.

Abstract

The distribution of wages and salaries differs significantly across countries and over time among advanced industrial societies. In this paper, institutional and political determinants of wage inequality are studied in sixteen countries from 1980 to 1992. The most important factor, by far, in explaining pay dispersion is the level of wage-setting, i.e. whether wages are set at the level of the individual, the plant, the industry or the national labor force. A second significant factor is the extent to which organized workers are concentrated in a small number of unions. Other variables, such as union density, coverage, the partisan composition of government, the size of government, international openness and year have little impact. Possible reasons for the close association of wage equality and centralized wage-setting institutions are discussed, and the costs of wage equality in terms of employment briefly assessed.
I. Introduction

The most important determinant of the distribution of income among the non-elderly in advanced industrial societies is the distribution of wages and salaries.\(^1\) The distribution of salaries and wages differs dramatically across countries and, in some countries within the recent past, over time. In the United States, the country with the most unequal distribution of pay among advanced industrial societies, the ratio of the earnings of the worker at the 90th percentile of the earnings distribution over the earnings of the worker at the 10th percentile of the earnings distribution rose from 4.8 in 1980 to 5.4 in 1992. At the other end of the spectrum, the 90/10 ratio in Norway fell during the same years from 2.06 to 1.98.\(^2\)

The purpose of this paper is to document and discuss a simple but striking fact: The more wages are determined collectively, whether the collective process is one of centralized collective bargaining or parliamentary action, the more equal the distribution of earnings. Conversely, the more wages are set in decentralized bargaining between unions and firms at the plant level or between individual workers and their employers, the more unequal the wage distribution.

The existence of an empirical relationship between wage-setting via collective bargaining and the compression of pay differentials has been widely noted. Freeman (1980) and Freeman and Medoff (1984) noted that unions in the United States reduce inequality both within unionized establishments and between unionized establishments. More recent studies by Card (1996), Freeman (1996), Dinardo, Fortin and Lemieux (1996) and Fortin and Lemieux (1997) converge in estimating that the decline in union density in the United States can account for about 20 per cent of the rise in wage inequality during the 1980s. In a comparison of wage dispersion in the United States with wage dispersion in nine other countries using micro-data sets, Blau and Kahn (1996) conclude that the greater wage inequality in the United States exists in spite of supply and demand conditions that would have produced the opposite result if wage-setting were equally decentralized everywhere.

In comparing wage inequality across countries, the share of the work force covered by collective bargaining may be less important than cross-national differences in bargaining institutions, in particular, cross-national differences in the centralization of collective bargaining. Hibbs and Locking (1995) document the dramatic impact of the egalitarian wage policy pursued by the Swedish unions through centralized bargaining on the distribution of wages in Sweden, as well as the rise in inequality after bargaining was decentralized in the early 1980s. Erickson and Ichino (1994) demonstrate a large compression of wages in Italy.
due to the combination of the cost of living index, the *scala mobile*, and significant levels of inflation between 1975 and 1983. Freeman (1988) considers the relationship between centralized wage-setting and wage equality to be so close that he uses measures of wage dispersion as a proxy for the centralization of bargaining.

In this paper, the determinants of the inequality of pay is studied using a new data set that includes much better information regarding cross-national and temporal differences in wage-setting institutions for 16 countries over the period 1950—1992. The central advantage of the new data set is the availability of multiple data series on wage-setting institutions covering the centralization of wage-setting, the participation of peak associations, government involvement, and the concentration of membership both within and between union confederations, on a yearly or five-yearly basis for most of the postwar period. With richer institutional data, one can determine which aspects of wage-setting institutions matter for wage equality and which do not to a greater degree than has been possible in previous studies. In addition, one can compare the impact of institutional differences in wage-setting with other possible determinants of wage inequality such as international openness, the partisan composition of government or the size of government.

The empirical results are presented in Section II. In Section III of the paper, I discuss some alternative possible explanations of the bias towards equality when market competition is replaced by a process of collective decision-making. Section IV contains a brief discussion of the possible costs of the greater pay equality in terms of unemployment. Section V concludes.

II. Empirical Results

Neither the equality of pay nor the variety of institutional differences in wage-setting are simple concepts to measure. Thus, before presenting the evidence, it is necessary to discuss how the dependent and independent variables are defined.

A. The Dependent Variable

The measure of pay inequality is derived from the ratio of the wage received by the worker at the 90th percentile, $w_{90}$, to the wage received by the worker at the 10th decile, $w_{10}$, for both sexes reported in OECD (1996) for OECD countries from 1980 through 1992. It is inconvenient to investigate the determinants of $w_{90}/w_{10}$ directly, however, since the ratio cannot be less than one. Therefore, I applied the transformation

$$y = \ln \left( \frac{w_{90}}{w_{10}} \right)$$  \hspace{1cm} (1)

to obtain a measure of pay inequality that can take any value between negative infinity (indicating that the 90th percentile worker and the 10th percentile worker receive equal pay) and positive infinity (indicating that the worker at the 10th percentile receives a wage
of zero). A value of \( y = 0 \) indicates that \([(w_{90} - w_{10})/w_{10}] = 1 \) or that the wage differential between the 90th and 10th percentile workers is 100 per cent, roughly the level of wage dispersion found in Norway and Sweden. At the other extreme of our sample, \( y \approx 1.48 \) for the US in 1992, which corresponds to a wage differential of \( e^{1.48} \approx 4.4 \) or 440 per cent.

D. The Independent Variables

The set of independent variables contains measures of involvement of peak associations of unions and employers and governments in wage-setting, the level at which wages are predominantly set, concentration of union membership within and between union confederations, union density, union coverage, the partisan composition of government, international openness, government spending as a share of GDP and government employment as a share of total employment. We discuss each in turn. Additional details regarding the data and the list of data sources are contained in the appendix.

The Centralization of Wage-Setting

As noted in the introduction, there are a number of studies that suggest the existence of a close link between the centralization of the collective bargaining system and the degree of pay inequality. As scholars of industrial relations have long noted, there are large cross-national differences in the level at which wage agreements are negotiated and in the role of the peak associations of unions and employers in wage negotiations. First, there is the general distinction between systems of industrial relations in which wage contracts are largely negotiated at the plant level (the US, Canada, Great Britain, Japan prior to the initiation of industry-wide coordination of wage demands through the annual spring offensive or Shunto), or at the industry-level (most of the other countries in our sample). Among countries with industry-wide bargaining, there is a wide range with respect to the role played by the peak associations of unions and private-sector employers, ranging from none to the peak-level negotiation of a frame agreement with an industrial peace clause that prohibits strikes or lockouts at the industry-level once the frame agreement is signed,

Moreover, to focus on the collective bargaining system alone is too narrow. Wage-setting may also be centralized via parliamentary action. All governments have some impact on the distribution of pay due to their role as employer of a significant share of the work force. Our interest here, however, is with the government’s direct role in private sector wage-setting. Governments may do no more than legislate a minimum wage, extend the terms of collective agreements to nonunion workers or issue voluntary wage-guidelines. Governments may become even more directly involved in private-sector wage setting by participating in peak-level negotiations, setting wages through arbitration or mediation or imposing mandatory controls on part or all of the wage contract.

In other studies (Wallerstein, Golden and Lange 1996, Wallerstein and Golden 1997, and Golden, Wallerstein and Lange 1997) changes in the involvement of peak associations and government in private-sector wage-setting over the postwar period are discussed in
detail. Here, I adopt a much simpler measure of the centralization of wage-setting based upon a four-category scale indicating the level at which wages are predominantly set for each country for each year from 1950 through 1992. A score of three indicates centralized wage-setting with sanctions on industry-level bargaining whether by centralized collective bargaining or government action. The highest category includes mandatory wage controls imposed by parliament as well as bargaining rounds with a frame agreement that contains an industrial peace obligation. A score of two indicates centralized wage-setting without sanctions on subsequent industry-level bargaining. This category includes the negotiation of a frame agreement without an industrial peace obligation, the use of arbitration procedures to set pay as in Australia and government or confederal determination of a part of the pay package such as the cost-of-living adjustment. A score of one indicates industry-level wage-setting without significant constraints from above. A score of zero indicates the predominance of wage-setting at the level of the firm or the individual employee-employer pair. While the data set contains much finer distinctions, empirical results indicate that the simple four-category scale of the level of wage-setting is a good way to summarize the information in the data set regarding the role of government and peak-level associations in wage-setting for the purpose of explaining pay inequality.

Union Concentration

Centralization measures the extent to which wage-setting is explicitly coordinated among different groups of workers. However, there can be a substantial degree of implicit coordination that may achieve much the same outcomes in the absence of a centralized procedure. A particular union, for example the German metalworkers, may act as the wage leader. If the wage agreement signed in the leading industry is quickly adopted in other industries, and the wage negotiators in the leading industry understand that whatever they agree to will spread throughout the economy, the outcome may be a wage schedule that is not very different from what would be result of direct negotiation of a centralized agreement covering the private sector as a whole.

An important determinant of the ability of unions and employers to coordinate wage settlements implicitly in the absence of a formal centralized agreement may be the extent to which the union side is dominated by a small number of actors, or the degree of concentration of union membership (Golden 1993). In our data set, we measure concentration in two dimensions. The first is inter-confederal concentration, or the extent to which union members belong to a single confederation, or are divided among multiple confederations. Our measure is the Herfindahl index, denoted $BH$ where $B$ indicates we are measuring concentration between confederations:

$$BH_i(t) = \sum_{j=1}^{N} [S_j(t)]^2$$

(2)

In equation (2), $S_j(t)$ is the share of total union members who belong to confederation $j$ and $N$ is the total number of confederations. The between confederation Herfindahl index
is equal to the probability that two union members, picked at random, will belong to the same confederation.

Another dimension of concentration is the extent to which members of a single union confederation are concentrated into a small number of affiliated unions. To measure concentration within union confederations, we obtained the membership of the three largest affiliates and the total number of affiliates and constructed an approximate within-confederation Herfindahl index, defined to be:

\[
WH_i(t) = \sum_{j=1}^{3} [s_j(t)]^2 + \left[1 - \sum_{j}^{3} s_j(t) \right]^2 \frac{1}{n-3}
\]  

(3)

where \( s_j(t) \) is the share of the confederations' membership who belong to the \( j \)th largest union and \( n \) is the total number of affiliates in the confederation. \( WH \) represents an approximation of the probability that two members of confederation \( i \), picked at random, will belong to the same affiliate. The formulation in equation (3) implicitly assumes that the fourth through \( n \)th largest unions are all the same size. Thus, equation (3) is an underestimate of the true within confederation Herfindahl index, but the underestimate is not large in practice. We use the within-confederation Herfindahl index for the main blue-collar confederation, where there is a dominant blue-collar confederation.\(^4\) In countries with multiple blue-collar confederations in which none clearly dominate, such as Italy or the Netherlands, we used the average of \( WH \) for each blue-collar confederation, weighted by the confederation's size. Unfortunately, the measures of within-confederation concentration is only available for 15 of our countries, since we were unable to obtain membership by affiliate in France. Both measures of concentration were collected every five years from 1950 though 1990.

Union Density and Coverage

Studies of the influence of unions in the US almost always use union density as the measure of union influence. Here, \( DENSITY \) is defined as union members who work as employees divided by the total number of wage and salary earners. Thus, the definition of union density excludes workers who are retired, unemployed or self-employed from both the numerator and the denominator.

Another reasonable measure of the extent to which unions influence the aggregate wage distribution is \( COVERAGE \), defined to be the share of the work force covered by a collective agreement. In some countries, such as the US, Canada, Japan and Great Britain, there is a close correspondence between union density and union coverage. In other countries, coverage far exceeds density for a variety of reasons. In France and Belgium, coverage is extended by government decree. In Germany and Austria, a labor agreement signed by the employers association is binding for all affiliated firms regardless of the membership status of the firms employees, and most employers belong to the employers’ association. In Austria, membership of firms in the relevant employers’ association is mandated by law.
Not only is union coverage much higher than union density in continental Europe, but coverage has remained stable since 1980 in continental Europe, even in countries where union density has declined significantly. While union density figures are available for the entire postwar period, union coverage figures are available only for 1980 and 1990.

**Partisan Variables**

Given the extensive government involvement in private-sector wage-setting in many of the countries in our sample, the ideology or the constituency of the government might have an impact on wage equality. In particular, leftwing governments might push for greater wage equality than rightwing governments. Thus, I have included a variable LEFT, defined as the share of cabinet portfolios held by socialist, social democratic or labor parties as a proportion of all cabinet portfolios. In addition, it is sometimes argued that the severe political divide is not between the socialist camp and the rest, but between both social democratic and centrist parties, on the one side, and conservative parties on the other. Therefore, I also included a variable RIGHT, defined as the proportion of cabinet portfolios held by conservative parties, following the classification of Castles and Mair (1984), again as a share of total portfolios.

**International Openness**

Wood (1994, 1995) argues that increasing international trade is responsible for much of the rise in the inequality of pay in the US and, to the extent that the wage-setting system allows wages at the bottom to fall, in other advanced industrial societies as well. To check whether international openness has a direct effect on pay inequality, I included the variable OPEN, defined to be imports plus exports as a share of GDP.

**The Size of the Public Sector**

Finally, wage equality might be effected by the size of the public sector. Katz and Krueger (1991) show that public sector wages in the US are more compressed than private sector wages. I use two measures of the size of the public sector. The first is government outlays as a share of GDP or GOVOUT. The second measure is public sector employment as a share of total employment or GOVEMP.

**B. The Statistical Results**

If we examine a cross-section of our 16 countries at a single point in time, the impact of the centralization of wage-setting on the wage distribution is overwhelming. The strong association between the centralization of wage-setting and wage equality in the early 1990s is illustrated in Figure 1. On the vertical axis of Figure 1 I have plotted the measure of wage dispersion defined in equation (1). On the horizontal axis, I have plotted the cumulative score of the four point scale of the level of wage-setting, described above, where the score
for each country was cumulated from 1950 to 1992 according to the formula

\[ \text{LEVEL} = \sum_{t=1950}^{1992} \lambda^{1992-t} L(t) \]

where \( L(t) \) is the level of wage-setting in year \( t \) and \( \lambda = .95 \). Thus, we assume in Figure 1 that the wage distribution in 1992 is affected by the structure of bargaining in both the present and the past, with the influence of past years decaying at the rate of .95 per year.\(^9\)

See Figure 1 (p.23)

If one needed to predict the level of wage dispersion in an unknown advanced industrial society, Figure 1 indicates that knowing the level at which wages were set over the postwar period would go a long way. The OLS equation describing the regression line in Figure 1 is

\[
y = 1.19 - 0.025 \text{LEVEL}, \quad R^2 = .74.5 \\
(10.7) \quad (6.4)
\]

where the absolute value of the \( t \)-statistics are in the parentheses. Since data on wage dispersion is available for most of our 16 countries starting in 1980, however, we can extend our inquiry to encompass both cross-sectional and temporal variation for the twelve year period between 1980 and 1992.

The distribution of pay does not change dramatically within a single country from year to year. Workers’ relative wage in year \( t \) is strongly dependent on their relative wage in year \( t - 1 \). A reasonable specification of the evolution of wage dispersion in country \( i \) that incorporates the impact of the pre-existing wage distribution on the future wage distribution is the error-correction model. Let \( \bar{y}_i(t) \) be the equilibrium wage dispersion for country \( i \) at time \( t \). The equilibrium wage dispersion is the amount of wage dispersion that, once obtained, would not change provided there was no change in the exogenous variables. Different wage-setting institutions and other exogenous factors are assumed to affect the equilibrium wage distribution in a standard linear fashion

\[ \bar{y}_i(t) = X_i(t)\beta + \bar{v}_i(t) \]  \hspace{1cm} (4)

where \( X_i(t) \) is a vector of independent variables and \( \bar{v}_i \) is a random error term associated with the equilibrium wage distribution.

According to the error-correction model, the actual wage dispersion at time \( t \), denoted \( y_i(t) \), is equal to wage dispersion at time \( t - 1 \) plus an adjustment that depends on the difference between the actual wage dispersion at \( t - 1 \) and the equilibrium wage dispersion at \( t \), or

\[
y_i(t) = y_i(t - 1) + (1 - \lambda)[\bar{y}_i(t) - y_i(t - 1)] + v_i(t) \]  \hspace{1cm} (5)

7
where $\lambda$ is a parameter indicating the speed at which the distribution of wages adjust and $u_i$ is a random error term. Combining equations (4) and (5), we have

$$y_i(t) = \lambda y_i(t - 1) + (1 - \lambda)X_i(t)'\beta + u_i(t)$$  \hspace{1cm} (6)

where $u_i(t) = [v_i(t) + (1 - \lambda)\bar{v}_i(t)]$. Let $E[u_i(t)^2] = \sigma^2$ for all $i$ and all $t$. I assume that $E[u_i(t)u_j(s)] = 0$ if either $i \neq j$ or $t \neq s$.$^{10}$

Rather than work with annual data, I have chosen to work with three cross-sectional panels of data, one from around 1980, one from around 1986 and one from around 1992. Some of our independent institutional variables are only available every five years, as described above. In addition, cumulating the change in dependent and independent variables over approximately six years has the advantage of increasing the variance of the independent variables relative to $\sigma^2$.

Let $t_0$ be the first year for which we have wage dispersion data for country $i$. This is usually 1980, but in some countries it is 1981 or even, in the case of Germany, 1983. Let $t_1$ be 1986, unless 1986 data is missing for country $i$, in which case $t_1 = 1987$. Finally, let $t_2$ be the last year for which we have wage dispersion data. This is 1992 for most countries, but 1991 for Norway and Italy and 1990 for Denmark. Then, for country $i$, repeated substitution using equation (6) yields

$$y_i(t_1) = \lambda^{(t_1 - t_0)}y_i(t_0) + \sum_{k=0}^{t_1-t_0-1} \lambda^k[(1 - \lambda)X_i(t_1 - k)'\beta + u_i(t_1 - k)]$$  \hspace{1cm} (7)

for $y_i(t_1)$ and a similar expression for $y_i(t_2)$. For the first year for which we have data for $y_i$, repeated substitution using (6) yields

$$y_i(t_0) = \sum_{k=0}^{\infty} \lambda^k[(1 - \lambda)X_i(t_0 - k)'\beta + u_i(t_0 - k)]$$  \hspace{1cm} (8)

In practice, we only have data for our independent variables going back to 1950. Therefore, in estimating (8), I assumed that $X_i(1980 - k) = 0$ for $k > 30$ for all independent variables except the constant. Substantively, this is equivalent to assuming that the distribution of wages was determined in decentralized markets in all 16 countries prior to 1950. This assumption is clearly false, but to the extent the assumption matters, it biases our coefficients toward zero given the high correlation between the centralization of bargaining in the postwar period and the centralization of bargaining before 1950.

In sum, for each country $i$ I estimate the system of equations

$$y_i* = X_i*\beta + u_i^*$$  \hspace{1cm} (9)
where

\[ y_i^* = \begin{pmatrix} 
    y_i(t_0) \\
    y_i(t_1) - \lambda(t_1 - t_0) y_i(t_0) \\
    y_i(t_2) - \lambda(t_2 - t_1) y_i(t_1) 
\end{pmatrix} \]

\[ X_i^* = (1 - \lambda) \begin{pmatrix} 
    \sum_{k=0}^{t_0-t} \lambda^k X_i(t_0 - k) \\
    \sum_{k=0}^{t_1-t_0} \lambda^k X_i(t_1 - k) \\
    \sum_{k=0}^{t_2-t_1} \lambda^k X_i(t_2 - k) 
\end{pmatrix} \]

and

\[ u_i^* = \begin{pmatrix} 
    \sum_{k=0}^{t_0-t} \lambda^k u_i(t_0 - k) \\
    \sum_{k=0}^{t_1-t_0} \lambda^k u_i(t_1 - k) \\
    \sum_{k=0}^{t_2-t_1} \lambda^k u_i(t_2 - k) 
\end{pmatrix} \]

Stacking the set of equations for each country, the variance structure of the error term in (7) can be written succinctly as\textsuperscript{11}

\[ E(u^* u^{*\prime}) = I \otimes \Omega \]

where \( I \) is a 16x16 identity matrix and

\[
\Omega = \frac{\sigma^2}{1 - \lambda^2} \begin{pmatrix} 
    1 & 0 & 0 \\
    0 & 1 - \lambda^2(t_1 - t_0) & 0 \\
    0 & 0 & 1 - \lambda^2(t_2 - t_1) 
\end{pmatrix}
\]

Once \( \lambda \) is determined, the system of equations in (9) can be estimated by GLS. To estimate \( \lambda \), we assumed that the error terms \( u_i(t) \) are normally distributed and found the maximum likelihood value of \( \lambda \).\textsuperscript{12}

Table 1 presents the results with respect to the level of wage-setting (LEVEL), and the measure of within-confederal concentration (WH), both with and without a set of dummy variables for the three time periods. LEVEL is the four-point index of the level of wage-setting as described above. WH is the within-confederal Herfindahl index, described in equation (3). The value of \( \lambda \) used in the regressions in Table 1, \( \lambda = .95 \), is the value of \( \lambda \) that maximizes the likelihood function with LEVEL and WH as independent variables (equation 3 in Table 1). The maximum likelihood value of \( \lambda \) changes only slightly with the inclusion of fixed period effects or the exclusion of WH. Small changes in \( \lambda \) have small effects on the reported coefficients and t-statistics.\textsuperscript{13}

See Table 1 (p.24)

Given Figure 1, it is no surprise that the level of wage-setting has a strong impact on the degree of pay inequality. The level of wage-setting along explains over 70 per cent of the variance. The estimate of the long-term impact of a permanent change in the system of wage-setting from a system of plant or individual-level bargaining (as in Britain, Canada or the US), to a system of industry-level bargaining (as in Switzerland, Austria
or Germany), is to reduce the wage differential \((w_{90} - w_{10})/w_{10}\) by approximately a third, since \(\exp(-0.02/(1 - \lambda)) = \exp(-.4) \approx 0.67\). A decrease of two steps in the four step scale, as has occurred in Sweden since 1983 where a system of centralized bargaining has been replaced by industry-level bargaining, raises the predicted wage differential by 45 per cent \((\exp(-.8) \approx 0.45)\) in the long run.

Specifications (3)–(6) in Table 1 indicate that the concentration of union members among a small number affiliates within the union confederations also promotes greater pay equality. The union confederation with the highest Herfindahl index in our data set is the German DGB (Deutscher Gewerkschaftsbund), reflecting both the small number of unions affiliated with the DGB and the predominance of the metalworkers within the DGB. The estimate of the long-term impact of the difference between the Herfindahl index for the German DGB (about .16 in 1990) and the Herfindahl index of the Australian ACTU, the least concentrated union confederation in our data set (about .02 in 1990), on the 90/10 wage differential is \(\exp(-(.14)(.15)/(1 - \lambda)) = \exp(-.42) \approx 0.66\), which is the same magnitude as the estimated difference between local and industry-level bargaining. Inspection of the residuals, however, indicates that the within-concentration index for Germany is much greater than any other country in our sample, such that the German data points have a large impact on the estimates of the coefficient and standard error for \(WH\). Therefore, equations (3) and (4) were reestimated with Germany removed from the data set. The result is to reduce the absolute value of the point estimate of impact of within-confederal concentration on the 90/10 wage differential by about 12 per cent and to increase the standard error of the estimate. Nevertheless, the estimated regression coefficient on the within-confederal Herfindahl index remains negative at conventional significance levels.

Table 2 presents the regression results for other explanatory variables controlling for bargaining level and within-confederal concentration. The variables that come closest to statistical significance, once the level of bargaining and concentration are controlled for, are the share of the work force that belong to unions (\(DENSITY\)) and the share of the work force covered by union contracts (\(COVERAGE\)). Both are negatively associated with wage dispersion, although the effect is modest. A sustained increase in union density from 15 per cent to 30 per cent, that is from roughly the US level of union density in 1990 to the US level of union density in 1950 or the Candadian level of union density in 1990, is associated with a five per cent decline in the 90/10 wage differential. There is a sense in which the coverage of union contracts must be important if the level of collective bargaining is important. Highly centralized bargaining that covered a vanishingly small fraction of the work force could not have a large impact on the aggregate wage distribution. In my sample, however, the countries with low rates of coverage also have relatively decentralized systems of wage-setting within the unionized sector.\(^{14}\)

See Table 2 (p.25)

The estimated effects of the other variables are all negligible. In contrast to the importance of concentration within confederations, the extent to which union members
are united in a single confederation or divided into multiple confederations as measured by the between confederation Herfindahl index ($BH$) is unimportant for wage dispersion. The partisan composition of government as measured by either the participation of Socialist, Social Democratic or Labor parties in government ($LEFT$) or by the participation of conservative parties in government ($RIGHT$) also fails to have a direct impact on wage dispersion. To the extent that left governments are more likely to encourage centralized bargaining by the unions or to intervene directly in wage-setting, however, the partisan composition of government may have an important indirect effect.

Countries with high levels of trade dependence ($OPEN$) tend to have relatively egalitarian wage distributions, but the correlation is almost entirely explained by the fact that countries with high levels of trade dependence also have relatively centralized systems of wage-setting. Even controlling for the level of wage-setting, however, Table 2 shows that the relationship between trade dependence and pay inequality is negative, albeit close to zero. The effect of the size of government as measured by government outlays as a share of GDP ($GOVOUT$) on wage dispersion is estimated to be close to zero. Given the importance of transfer payments in government expenditures and the lack of a clear reason why transfer payments would affect the distribution of wages, the lack of significance of $GOVOUT$ is not surprising. More surprising is the lack of significance of public sector employment as a share of total employment ($GOVEEMP$), controlling for bargaining level and within-confederal concentration, given the relatively compressed pay scale in the public sector. Finally, the simple inclusion of a time trend ($YEAR$) shows that pay inequality increased on average between 1980 and 1992, but the increase was modest (and not clearly different from zero) for the sample as a whole.

The equations of Table 2 were also run with fixed period effects, with only slight changes in the estimated coefficients and standard errors for the most part. In no case, with or without period dummy variables, does the additional variable significantly alter the estimated coefficients for $LEVEL$ and $WH$. In sum, most of the variation in wage dispersion can be explained by the centralization of wage-setting via collective bargaining or government intervention and by the extent to which members of the major union confederations are concentrated within a few affiliates. Once one has controlled for the level of bargaining and the within confederal concentration, it is hard to find any other institutional or political variables that matter.

III. Discussion

One can think of wage-setting institutions as varying along a continuum from bilateral negotiations between an individual employer and an individual employee to centralized negotiations covering the entire wage distribution conducted by elected representatives, whether the negotiators are officers of the union and employers' confederations or members of parliament. The data strongly suggests that the more the wage scheduled is determined collectively, whether the coordination is achieved by the explicit centralization of wage-setting or through the implicit cooperation of a small number of actors, the more egalitarian
the distribution of pay. Collective choice of wages leads to greater wage equality than labor market competition.

It might appear that a connection between collective pay-setting and greater wage equality must exist, almost by definition, since a wage agreement covering a work force of any size must specify a general rule rather than a list of individual pay levels. However, it is easy to write general rules for pay raises that do not compress relative wages. For example, a collective agreement or legislative act can state that all wages should increase by x per cent per year which preserves existing differentials. The strength of the relationship between collective pay-setting and relatively egalitarian outcomes should be seen as an important fact that begs for an explanation.

There may be multiple reasons for the strong association of collective wage-setting with relatively egalitarian wage distribution. In fact, three different types of explanation can be distinguished: ‘economic’ explanations that are based on considerations of economic efficiency, ‘political’ explanations that refer to the way wage-setting institutions affect the relative influence of different groups of workers and ‘ideological’ explanations that point to the impact of wage-setting institutions on the application of widespread norms.

The ‘economic’ explanations start from the premise that the wage differentials that emerge from decentralized interactions among employers and employees in the labor market are inefficient in some way. Consider, for example, an economy with decentralized wage-setting institutions in which strong unions exist in some industries but not in others, or in some plants but not in others in the same industry. Even equally strong unions will differ in terms of the trade-off they face between wage increases and employment that stem from differences among industries in the elasticity of demand for output. Among employers of non-union labor, some firms may have substantial monopsony power while other firms have very little. In such an economy, wages for equivalent workers in the unionized sector would differ according to workers’ share of the monopoly rents, which vary across both industries and individual firms, while wages in the nonunionized sector would differ according to the monopsony power of employers.

Both in markets where workers’ wages are higher than the competitive wage, due to monopoly power, and lower than the competitive wage, due to monopsony power, employment is inefficiently low and the relative price of output too high. There is both a misallocation of labor and a misalignment of prices. In this scenario, centralized wage-setting, by imposing a rule like equal pay for equal work, generates a wage distribution that may be closer to the textbook model of a perfectly competitive labor market than does decentralized wage-setting in actual markets. Although some workers and some firms would be worse off, aggregate income may be higher if local rents are reduced through a process of centralized wage-setting (Moene and Wallerstein 1997).

Another example of a model in which the wage differentials associated with decentralized wage-setting are inefficiently large is provided by the winner-take-all reward structure
described by Rosen (1981) and Frank and Cook (1995). Winner-take-all markets are markets in which workers’ rewards depend, at least in part, on their performance relative to other workers. Thus, the best musicians earn much more money than musicians with only slightly less talent, since, with modern broadcasting technology, we can all listen to the best. The huge rewards that are obtained by the best musicians induce many to enter the competition, although logic dictates that almost all who compete to be best will fail. There is a social gain from recording the best musician rather than the second best, but the gain is only the possibly small difference in quality between the two. The private gain to being best, in contrast, may be huge. Thus, there is too much entry into winner-take-all markets with centralized wage-setting. If, by centralized agreement, the prize from winning in winner-take-all markets was reduced, there would be fewer entrants in winner-take-all contests which could increase the efficiency of the allocation of labor in the economy as a whole.

There are many other reasons why the reduction of wage differentials might lead to lower rather than higher efficiency. Moreover, even in circumstances where greater equality is more efficient, an explanation in terms of efficiency is insufficient in the sense that a change that increases total income but not everyone’s income may be blocked by those who would lose. Nevertheless, the possibility that wage compression within some range yields efficiency gains in some dimensions that offset efficiency losses in others is an important part of the explanation of why institutions matter so much for the distribution of pay.16 If there was a large, self-evident, economic cost from imposing changes in relative pay through collective processes of wage-setting, it is doubtful that wage-setting institutions could have the impact they do.

The ‘political’ explanation of the association of centralized wage-setting with egalitarian wage distributions is simply that centralization alters the influence of different groups in the wage-setting process. Freeman and Medoff (1984) argue that the wage structure in a nonunion labor market is shaped by the preferences and outside options of mobile workers who employers are trying to attract or retain while the structure of wages under collective bargaining reflects the preferences of the median voter in elections for union leadership or contract ratification. Precisely because their earnings are low, the interest of low-wage workers have greater weight when wages are set through a centralized, democratic political process. In a nonunion labor market, low-wage workers’ influence over wages depends on their contribution to output. In contrast, in elections for contract ratification or for union leadership, low-wage workers’ influence depends on their share of the electorate. When wage-setting is further centralized from the plant-level to the industry-level or to the economy as a whole, workers in firms or industries dominated by low-wage workers obtain a voice in the determination of wages for all.

Moreover, as Moene and Wallerstein (1997) show, employers as well as low-wage workers may benefit from a wage policy that raises the wages of low-wage workers and lowers the wages of high-wage workers even when wage compression is inefficient. Moene and Wallerstein examine a model with heterogeneous employers and heterogeneous workers in
which wage differentials arise from competition among employers to obtain the most skilled employees. It is demonstrated that the wage differentials associated with the decentralized equilibrium are both efficient, in the sense that social surplus is maximized, and unjust, in the sense that differences in pay exceed differences in workers’ abilities or efforts. In this model, reducing the wage differential between high and low-skilled workers increases both profits and the wages of low-wage workers as long as the average wage is kept low enough to clear the labor market. The possibility that employers can benefit from wage compression is important in understanding the history of centralized bargaining in Northern Europe. As Swenson’s (1989, 1991) research has documented, the centralized wage-setting procedures in Scandinavia were created with the active support of the employers’ associations.

The ‘ideological’ explanation starts from the premise, well documented in the experimental literature, that people care about fairness as well as about their own income (Thaler 1989, Rabin 1997). The fact that people care about fairness does not, by itself, separate decentralized from collective decision-making. Even with completely decentralized wage-setting, firms that disregard workers’ concern with fairness when designing their pay policies suffer the consequences in terms of the morale and efficiency of their work force.

Although concerns with fairness exist whatever the institutional environment, the centralization of wage-setting may have a large impact by altering how the norm of fairness is applied. In decentralized bargaining, the norm of equal sharing results in a wage that depends on the worker’s usefulness to the firm and his or her alternative opportunities. In centralized pay-setting, the same norm of equal sharing results in pay that may depend more on the importance of the work force as a whole and their outside opportunities as a group. The larger the fraction of workers who are considered as a group in the wage-setting process, the more egalitarian the potential impact of applications of equal sharing rules. The association of pay equality and collective or political processes of wage determination may be due to the way wage-setting institutions shape the application of norms of fairness as much as to the way wage-setting institutions affect the ability of different groups to pursue their self-interest.

IV. Wage Equality and Employment

Does wage equality have a cost in terms of employment? Although there are models that imply that the wage differentials associated with decentralized wage-setting are inefficiently large as discussed above, a number of scholars have argued that countries with centralized wage-setting institutions and greater wage equality pay a price in terms of employment of low-skilled workers.17 In the United States, it is claimed, declines in the demand for low-skilled workers has resulted in falling wages at the bottom of the pay scale, but employment for low-wage workers has remained steady. In Europe, in contrast, low wages are kept from falling by the more centralized European wage-setting institutions but low-wage employment has fallen. Thus, it is argued, centralized wage-setting institutions protect the earnings of low-wage workers who retain their jobs at the expense of low-wage
workers who fail to find work.

See Figure 2 (p. 26)

Figure 2 presents a scatterplot of average unemployment and average wage inequality from 1980 to 1992 for the 16 countries in my sample. If there is a relationship between wage compression and unemployment, it is not evident in Figure 2. The estimated slope of the regression line drawn in Figure 2 is positive (meaning the higher wage inequality is associated with higher unemployment), but the slope is not significantly different from zero. Before one can reject the claim that there are significant employment costs associated with greater wage equality, other determinants of unemployment must be controlled for. The question requires more careful analysis than is possible to include here. Nevertheless, the tentative conclusion suggested by Figure 2 is that there is little evidence of a trade-off between wage equality and aggregate unemployment.

V. Conclusion

The single most important institutional factor in explaining the extent of wage differentials in advanced industrial societies is whether wages are set locally, at the industry-level or at the level of the economy as a whole. An additional factor of some importance is the extent to which wage-setting is dominated by a few large unions who are able to coordinate informally even though they bargain separately. In sum, the more wages and salaries are set in a centralized or political manner, the more egalitarian the distribution of wages and salaries.

This finding points to three lines of research, at least, that deserve further work. The first is to understand the source of the egalitarian bias of collective decision-making that is evident in wage determination. The second is to examine, more carefully than was possible in this paper, the economic costs and benefits of the reduction of wage differentials associated with centralized wage-setting. The third is to ascertain the generality of the egalitarian bias in democratic decision-making procedures. One would guess, for example, that public insurance programs are more egalitarian than private insurance, or that the earnings-related component of public pension systems is more egalitarian than private pensions. The egalitarian bias in collective decision-making appears to be widespread, substantively important, at least in the case of relative wages, and not well-understood.
Appendix: Data Sources

All data used in this paper is available from the author in an Excel file upon request.


Wage-setting institutions: Data on bargaining level and union concentration, both within and between confederations is from the Golden, Lange and Wallerstein data set on unions, employers’ associations and collective bargaining procedures for 16 countries from 1950–1992. Concentration data is available only at five-year intervals. A complete series was created by assuming no change between 1990 and 1992 and constant linear change in each five-year period. For a few countries, missing data at the beginning of the series was filled in by extending the first available value back to 1950. The Golden, Lange and Wallerstein data set is in the public domain and is available on the web at http://www.shelley.polisci.ucla.edu/data.

Union density: Data are from Visser (1996) for 1970–1992 and from Visser (1992) for 1950–1969. To make the two series compatible, Visser’s (1992) figures were adjusted to remove unemployment union members from the numerator and unemployed workers from the denominator.

Coverage: Data are unadjusted coverage figures from Traxler (1994). Data is only available for 1980 and 1990. To create a complete series, the 1990 value was extended forward through 1992, the 1980 value was extended backward to 1950 and the figures between 1980 and 1990 were filled in through linear extrapolation.


Trade dependence: Data is from the Summers and Heston data set, described in Summers and Heston (1991).

The size of the public sector: Data on government outlays (at all levels) as a share of GDP is from the OECD, Economic Outlook, various years. Government outlay data begins in 1960. Data on public employment as a share of the work force updated data originally published in from Cusack, Notermans and Rein (1989).

Unemployment: Data is standardized unemployment rates when available, unstandardized rates when the standardized rates are not available (Austria 1986–92, Switzerland 1986–92 and Denmark). Standardized unemployment rates are from OECD Economic Outlook, various years. Unstandardized unemployment rates are from OECD Labor Force Statistics, various years.
Endnotes

1 In the United States, the correlation between labor earnings and total income, defined to be revenue from all sources before taxes but after transfers, is .938 (Díaz-Giménez, Quadrini and Ríos-Rull 1997: 6).

2 The source for all data on wage differentials used in this paper is OECD (1996).

3 A complete description of the data set is not yet available. For partial descriptions of the data, see Wallerstein, Golden and Lange (1997) and Golden, Wallerstein and Lange (1998). The countries included in the data set are Australia, Austria, Belgium, Canada, Denmark, Finland, France, (West) Germany, Great Britain, Italy, Japan, Netherlands, Norway, Sweden, Switzerland and the United States. Pontusson and Rueda (1997) study the institutional determinants of pay equality among advanced industrial societies with many of the same variables as this paper but using a different method. Their study is discussed further below.

4 In Belgium, we were only able to obtain membership figures for the three largest affiliates of one of the two major blue-collar confederations, the CSC (Confédération des Syndicats Chrétiens/Algemeen Christelijk Vakverbond). Since the two confederations have close to the same number of affiliates, I assumed that both confederations are equally concentrated.

5 For the eleven countries in our sample in continental Europe in 1990, the unweighted average of union density was 46.8 per cent while the unweighted average of union coverage was 76 per cent.

6 For a debate over the importance of international trade in explaining the rise of pay inequality in the US, see Freeman (1995), Richardson (1995) and Wood (1995).

7 For most countries in Figure 1, the data refer to 1992. The exceptions are Italy and Norway, where the data refer to 1991, and Denmark, where the data refer to 1990.

8 Countries in Figure 1 are labeled as AUSTRL for Australia, AUS for Austria, BEL for Belgium, CAN for Canada, DNK for Denmark, FIN for Finland, FRA for France, GBR for Great Britain, GER for Germany, ITA for Italy, JPN for Japan, NLD for the Netherlands, NOR for Norway, SWE for Sweden, SWI for Switzerland and USA for the United States.

9 The choice of $\delta = .95$ is discussed below.

10 In the estimation below, I control for the possible presence of period effects by adding dummy variables in the regression equation.
The symbol $\otimes$ indicates the Kronecker product.

The dependent variable can take any value between negative and positive infinity. Thus, the assumption of normally distributed errors creates no logical problems. With normally distributed errors, the GLS estimates maximize the likelihood function for a fixed $\lambda$. The procedure would be identical to finding the maximum likelihood estimators for (7) if I recalculated the estimate of $\lambda$ for every specification of the exogenous variables.

The maximum likelihood values of $\lambda$ changes to .97 if intra-confederal concentration is dropped (equation 1 in Table 1) and to .98 if fixed period effects are added (equation 4 in Table 1).

I tried interaction terms with COVERAGE and LEVEL, COVERAGE and WH, DENSITY and LEVEL and DENSITY and WH, but the interaction terms fit the data less well than LEVEL and WH alone.

The biggest change with the addition of period dummy variables was in equation (6) of Table 2. Adding period dummies increases the absolute value of the coefficient on OPEN threefold, and raised the t-statistic to 2.19. Inspection of the residuals, however, reveals that the association of openness and pay equality is driven by Belgium, an outlier in terms of openness. With a dummy variable for Belgium, the coefficient on OPEN is close to zero with or without fixed period effects. Pontusson and Rueda (1997) use dummy variables for countries rather than for periods. Their procedure removes most of the cross-national variation from the analysis. Nevertheless, they find that the centralization of bargaining has a significant positive effect on wage equality.

As suggested by a study of the impact on productivity growth of wage compression in Sweden by Hibbs and Locking (1995), the reduction of wage differentials probably has multiple effects on economic performance, some beneficial and some not, such that the net effect varies over time and place. The effect of wage compression on unemployment is discussed briefly below.

See Krugman (1994) for a widely cited expression of this view.

The regression equation associated with the line in Figure 2 is

\[
\text{Ave. Unemployment} = 5.7 + 1.4 \ln(w_{90} - w_{10}/w_{10})
\]

(3.9) (.67)

with $n = 16$ and $R^2 = .03$.

Similarly, Card, Kramarz and Lemieux (1995) find no relationship between the relative wage of low-wage workers and the relative unemployment faced by low-wage workers in a comparison of the US, Canada and France.
References


Rabin, Matthew. 1997. Psychology and Economics. University of California, Berkeley:
unpublished paper, forthcoming in the *Journal of Economic Literature*.


Figure 1: Wage Differentials and the Level of Wage-Setting in 16 Countries, 1990-92

Log of the 90/10 Wage Differential

Level of Wage-Setting (Cumulative Score)
Table 1:
The Level of Wage-Setting, Concentration and Pay Inequality

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Const.</td>
<td>1.2</td>
<td>1.0</td>
<td>1.3</td>
<td>1.4</td>
<td>1.3</td>
<td>1.3</td>
</tr>
<tr>
<td></td>
<td>(17.5)</td>
<td>(6.8)</td>
<td>(17.1)</td>
<td>(8.2)</td>
<td>(17.0)</td>
<td>(6.7)</td>
</tr>
<tr>
<td>LEVEL</td>
<td>-.023</td>
<td>-.024</td>
<td>-.022</td>
<td>-.022</td>
<td>-.022</td>
<td>-.023</td>
</tr>
<tr>
<td></td>
<td>(10.2)</td>
<td>(10.8)</td>
<td>(10.1)</td>
<td>(10.9)</td>
<td>(10.2)</td>
<td>(10.8)</td>
</tr>
<tr>
<td>WH</td>
<td>-.14</td>
<td>-.16</td>
<td>-.11</td>
<td>-.11</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(3.6)</td>
<td>(3.7)</td>
<td>(2.6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed Period Effects</td>
<td>no</td>
<td>yes</td>
<td>no</td>
<td>yes</td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td>Exclusions</td>
<td>none</td>
<td>none</td>
<td>France</td>
<td>France</td>
<td>France</td>
<td>France</td>
</tr>
<tr>
<td>Number of Observations</td>
<td>44</td>
<td>44</td>
<td>41</td>
<td>41</td>
<td>38</td>
<td>38</td>
</tr>
<tr>
<td>Buse $R^2$</td>
<td>71.4</td>
<td>75.7</td>
<td>78.3</td>
<td>82.6</td>
<td>79.6</td>
<td>84.2</td>
</tr>
</tbody>
</table>

Notes:

The dependent variable is $\ln[(w_{90} - w_{10})/w_{10}]$. GLS estimation with $\lambda = .95$. The absolute value of the t-statistics are reported in the parentheses. “Const” refers to the weighted constant given by setting $x_0(t) = 1$ in equation (7). The Buse $R^2$ is equal to $1 - (SS_{res}/SS_{const})$ where $SS_{res}$ is the sum of squares of the residuals of the regression and $SS_{const}$ is the sum of squares of the residual when the weighted constant is the only independent variable (Buse 1973). Because of missing data, there is only one data point for Switzerland (1992) and two data points for Belgium and the Netherlands (1986 and 1992). Data on within-confederal concentration is missing for France.
Table 2:
Pay Inequality and Other Explanatory Variables

<table>
<thead>
<tr>
<th>Additional Variable</th>
<th>Coefficient for the Additional Variable</th>
<th>Coefficient for LEVEL</th>
<th>Coefficient for WH</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) DENSITY</td>
<td>-.016</td>
<td>-.020</td>
<td>-.14 (3.5)</td>
</tr>
<tr>
<td></td>
<td>(1.07)</td>
<td>(7.6)</td>
<td></td>
</tr>
<tr>
<td>(2) COVERAGE</td>
<td>-.015</td>
<td>-.019</td>
<td>-.13 (3.5)</td>
</tr>
<tr>
<td></td>
<td>(1.45)</td>
<td>(6.9)</td>
<td></td>
</tr>
<tr>
<td>(3) BH</td>
<td>.0053</td>
<td>-.022</td>
<td>-.13 (3.4)</td>
</tr>
<tr>
<td></td>
<td>(0.64)</td>
<td>(10.0)</td>
<td></td>
</tr>
<tr>
<td>(4) LEFT</td>
<td>-.0022</td>
<td>-.021</td>
<td>-.14 (3.5)</td>
</tr>
<tr>
<td></td>
<td>(0.27)</td>
<td>(8.1)</td>
<td></td>
</tr>
<tr>
<td>(5) RIGHT</td>
<td>-.0031</td>
<td>-.022</td>
<td>-.14 (3.6)</td>
</tr>
<tr>
<td></td>
<td>(0.51)</td>
<td>(9.1)</td>
<td></td>
</tr>
<tr>
<td>(6) OPEN</td>
<td>-.0053</td>
<td>-.021</td>
<td>-.12 (2.8)</td>
</tr>
<tr>
<td></td>
<td>(0.67)</td>
<td>(9.4)</td>
<td></td>
</tr>
<tr>
<td>(7) GOVOUT</td>
<td>.0009</td>
<td>-.022</td>
<td>-.15 (3.5)</td>
</tr>
<tr>
<td></td>
<td>(0.52)</td>
<td>(9.9)</td>
<td></td>
</tr>
<tr>
<td>(8) GOVEMP</td>
<td>-.0010</td>
<td>-.021</td>
<td>-.12 (3.6)</td>
</tr>
<tr>
<td></td>
<td>(0.33)</td>
<td>(9.6)</td>
<td></td>
</tr>
<tr>
<td>(9) YEAR</td>
<td>.0077</td>
<td>-.022</td>
<td>-.14 (3.6)</td>
</tr>
<tr>
<td></td>
<td>(0.60)</td>
<td>(10.0)</td>
<td></td>
</tr>
</tbody>
</table>

Notes:

The dependent variable is ln[(w90 - w10)/w10]. GLS estimation with λ = .95 and n = 41. All equations include a weighted constant as described in Table 1. The absolute values of the t-statistics are reported in the parentheses. France is excluded due to missing data for WH. Variables are defined in the text.
Figure 2:
Unemployment and Wage Equality, 1980-1992

Log of the 90/10 Wage Differential
Average 1980-1992
About the Comparative Labor History Series

Papers in this series are produced by faculty teaching in the intensive Summer Program in Comparative Labor History offered through the Department of History at the University of Washington. The program is co-sponsored by the Center for Labor Studies, created in 1992 with the establishment of the Harry Bridges Chair in Labor Studies.

Titles in the Series


