



The Jerome Levy Economics Institute of Bard College

Public Policy Brief

Do Institutions Affect the Wage Structure?

Right-to-Work Laws, Unionization, and the Minimum Wage

Oren M. Levin-Waldman

No. 57, 1999

LEVY INSTITUTE

The Jerome Levy Economics Institute of Bard College, founded in 1986, is an autonomous, independently endowed research organization. It is nonpartisan, open to the examination of diverse points of view, and dedicated to public service.

The Jerome Levy Economics Institute is publishing this research with the conviction that it is a constructive and positive contribution to discussions and debates on relevant policy issues. Neither the Institute's Board of Governors nor its Advisory Board necessarily endorses any proposal made by the author.

The Levy Institute believes in the potential for the study of economics to improve the human condition. Through scholarship and economic forecasting it generates viable, effective public policy responses to important economic problems that profoundly affect the quality of life in the United States and abroad.

The present research agenda includes such issues as financial instability, poverty, employment, problems associated with the distribution of income and wealth, and international trade and competitiveness. In all its endeavors, the Levy Institute places heavy emphasis on the values of personal freedom and justice.

Editor: Karl Widerquist

The Public Policy Brief Series is a publication of The Jerome Levy Economics Institute of Bard College, Blithewood, Annandale-on-Hudson, NY 12504-5000. For information about the Levy Institute and to order Public Policy Briefs, call 914-758-7700 or 202-887-8464 (in Washington, D.C.), e-mail info@levy.org, or visit the Levy Institute web site at <http://www.levy.org>.

Copyright © 1999 by The Jerome Levy Economics Institute. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or any information-retrieval system, without permission in writing from the publisher.

ISSN 1063-5297
ISBN 0-941276-86-4

Contents

Preface <i>Dimitri B. Papadimitriou</i>	5
Do Institutions Affect the Wage Structure? <i>Oren M. Levin-Waldman</i>	7
About the Author	29

Preface

As the economy continues on its almost decade-long expansion, prosperity and poverty exist side by side, with an increasing gap between rich and poor. While the net worth of the wealthiest Americans soars with the stock market and income for the highly skilled climbs, the value of assets and income of families at the low end of the income scale have fallen or stagnated. It is true that the poverty rate has declined somewhat since 1993, but it has not fallen below the 12 percent level, as it did in previous expansions, and it is worse than in 1969, the year the previous record-setting expansion ended.

Economists blame the increasing inequality on a shift in demand from low-skill to high-skill labor, but the evidence for this hypothesis is mixed. Another explanation that warrants investigation is the weakening of labor market institutions that affect the wage structure and in the past have been capable of boosting wages. Over recent decades the strength of unions has declined and the minimum wage has fallen relative to purchasing power and to average wages. Any serious analysis of inequality should therefore include an examination of these institutions.

Resident Scholar Oren M. Levin-Waldman does just that, using census data on wage earners from 1940 to 1990. He finds that institutional setting, particularly unionization, has a significant impact on the percentage of heads of household earning close to the minimum wage. States with relatively high union density and no right-to-work laws have the lowest percentage of heads of household earning near the minimum wage; states with right-to-work laws have relatively higher percentages

earning at that level. Education and industry type are factors in the likelihood of earning the minimum wage, but among workers with the same low level of education and in a similar industry, those in right-to-work states have a greater probability of earning close to the minimum wage than those in states with relatively high union density.

The minimum wage and the earned income tax credit can be used to prop up wages at the low end of the scale and thereby improve the distribution of income. Levin-Waldman suggests that policymakers should look to institutional structure as a means to reduce inequality and that increases in the minimum wage would be the most effective policy to accomplish this goal.

I hope you find this research interesting, and I welcome your comments.

Dimitri B. Papadimitriou, *President*
December 1999

Do Institutions Affect the Wage Structure?

Debate about the minimum wage most often focuses narrowly on its possible effects on the small segment of the labor force (around 6 percent) that earns the minimum wage, most of whom are teenagers (age 16 to 19). But if such a small segment of the labor market is earning the minimum wage, why is it so significant in the public debate? The focus on the small portion of workers who earn the minimum wage has obscured the critical issue of the important effect the minimum wage has on the larger number of workers who earn around the minimum wage and, hence, on the distribution of income.

This brief expands the focus of the debate by discussing the effect the minimum wage can have on workers earning around the minimum wage and by demonstrating that institutions, such as the minimum wage, unionization, and right-to-work laws, can affect not just those workers directly earning the minimum wage or members of unions but the overall wage structure. This is demonstrated by showing that workers in states with a high level of unionization have a lower probability of earning the minimum than workers in states with right-to-work laws, even when market and educational factors are accounted for.

If differences in the institutional structure between states can have an impact on the distribution of income in a particular state, then the federal government can use the minimum wage to achieve a more equitable distribution of income. The minimum wage plays a crucial role for more than just those who earn the minimum wage; it helps all low-wage workers, especially those with only a high school education and those living

in rural areas. The closer a wage floor is to either the average or median wage of a particular community, the more of an impact it will have on the overall wage structure of that community. Also the more people earning around the wage floor in a community, the more politically charged the issue is likely to be. Therefore, in states with lower wages, the minimum wage elicits a degree of opposition far more intense than it would if it affected only a small segment of the population.

The Limitations of Existing Studies on Disemployment Effects

We can first look briefly at the findings that have emerged from the usual focus of the debate—disemployment effects on minimum wage earners. Empirical findings do not always support the theory of perfect competition in labor markets (the currently predominant theory), which predicts that a minimum wage causes unemployment if it is higher than the equilibrium wage. According to this theory, in the absence of a wage floor, the market price (the wage) naturally tends to an equilibrium defined as the level at which supply equals demand and the wage equals the value of the marginal product of labor. This theory is often used to support the idea that in an unregulated market all workers are paid what they are worth and all workers who want a job at that wage can find one. If the minimum wage is higher than the equilibrium wage, fewer workers will be hired at that wage than are willing to work for that wage. Employers will lay off workers whose value is less than the minimum or will hire fewer low-productivity workers (Stigler 1946; Ehrenberg and Smith 1997).

The effects of the minimum wage have been tested empirically by estimating whether increases in the minimum wage are correlated with increases in unemployment. The results are mixed. Some literature shows little or no disemployment effect, and much of the literature that does show a disemployment effect suggests that that effect is primarily in the teen labor market (Kosters and Welch 1972; Welch 1974, 1978; Meyer and Wise 1983; Neumark and Wascher 1992). Card and Krueger (1995, 1998) found no disemployment effect; quite the contrary, employment in the states they examined rose.

Card and Krueger's study may be limited because of its focus on the fast-food industry, in which the labor market operates essentially as a monopsony and, as such, is not representative of the labor market as a whole. In a monopsony, the employer (as the only buyer of labor) has sufficient market power to establish wage rates. The profit-maximizing wage and level of employment in a monopsonistic market are below the equilibrium wage and level of employment in a perfectly competitive market. Under these conditions, the effect of a minimum wage can be exactly opposite to its effect in a competitive labor market, namely, an increase in employment, because it raises wages to more attractive levels. As long as the minimum wage is not increased beyond the point at which the monopsonist would demand less labor, the minimum wage in the monopsony results in greater employment and efficiency (Houseman 1998).

In Levy Institute surveys of small businesses, only 6.2 percent of the 568 firms surveyed in 1998 reported that the recent increase in the minimum wage to \$5.15 per hour had affected their employment practices (Levin-Waldman and McCarthy 1998) and only 13.4 percent of the 536 firms surveyed in 1999 reported that they would be affected by an increase in the minimum wage to \$6.00 per hour (Levin-Waldman 1999b). Although the actual behavior of firms when faced with the reality of an increase may be different from their answers to hypothetical questions, the responses in the survey do provide an indication of preferences among small businesses.

One source of the discrepancy between the theoretical and empirical literature is problems with measurement practices and data sets. It is possible that we simply lack adequate data on the minimum wage and so cannot say whether it will have the disemployment effects predicted by models of perfectly competitive markets. To the extent that there are employment consequences, they are often considered to be relatively small (Brown, Gilroy, and Kohen 1982). Although studies such as Card and Krueger's show no disemployment effects following modest increases in the minimum, it cannot be assumed that there would not be such effects after larger increases. Critics of the minimum argue that the lack of employment effects is probably due only to the fact that the wage is still below market-clearing equilibrium. There is still a point at which

the minimum wage will bite into employment levels, but the data and measures currently available do not tell us exactly what point that might be (Freeman and Freeman 1991; Kennan 1995).

Who Earns the Minimum Wage?

Interpretation of studies of the characteristics of workers who earn the minimum wage is open to controversy. The 1981 report of the Minimum Wage Study Commission (MWSC), which forms the basis of the current consensus on the minimum wage's employment consequences, noted that most minimum wage workers (68 percent) were in families headed by married couples; 14 percent were the only earners in their families and 54 percent were in families with two or more earners. The report stated:

Although 17 percent of all families had minimum wage workers, that figure can be misleading. Minimum wage workers generally are not the primary earners in families with more than one earner, and those families constitute more than half of all U.S. families. When the wages of the workers in those families were weighted to reflect the lower number of hours generally worked by those at or below the minimum, the number of such families with both husband and wife earning an average wage below the minimum became quite small. (MWSC 1981, 13)

On the basis of these findings, it has come to be believed that most minimum wage earners are secondary earners and teenagers, and for this reason teenagers have become the focus of the empirical literature (Burkhauser and Finegan 1989; Kusters 1996).

Some researchers argue that the MWSC findings are misleading. Even if it is true that most minimum wage earners are secondary earners, it does not follow that their income is not necessary to the maintenance of the household in which they live. Moreover, they argue, most minimum wage workers are not teenagers. For the period October 1995 to September 1996, Mishel, Bernstein, and Schmitt (1999, 189–190) found that only 28.6 percent of the 9.9 million minimum wage workers were

teenagers. They interpret this to mean that most minimum wage workers are adults with economic responsibilities.

The Minimum Wage as a Reference Point:
Wage Contour Theory

A more crucial question than who earns the statutory minimum is who earns a wage close to the minimum wage. The claim that the level of the minimum wage is unimportant because most people earn a higher wage obscures the impact the minimum wage has on a range of wages above and below it. It could well be that the minimum wage elicits the opposition that it does not because so many workers earn it, but because it has an impact on the wages of workers earning around it, and especially above it (D. Gordon 1996). The impact is explicitly analyzed in wage contour theory, first developed by John Dunlop (1957). Dunlop suggested that the internal wage structure of a firm is affected as much by external forces as internal ones. An economy's overall wage structure can be thought of as a series of wage contours—defined as a range of wages earned by a group of workers with similar characteristics and working in similar industries. In each industry there is a key rate, changes in which affect the rates surrounding it, and that key rate varies from industry to industry. Dunlop did not define a key rate more specifically, but any rate serving as a reference point within an industry could constitute a key rate. Wage contour theory, in essence, holds that wage rates are not established by a natural marketplace (a perfectly competitive market) but by institutions (an imperfectly competitive market). For example, the minimum wage or a union wage may be the key rate in a particular wage contour. On this basis, a strong argument can be made for defining the minimum wage population as those earning around the statutory minimum wage, that is, those earning a range of wages from some point below to some point above it.

Spriggs and Klein's (1994) study of the minimum wage appears to reinforce Dunlop's wage contour theory. The study suggests that the minimum wage's importance lies in the role it serves in determining the wages around it. Spriggs and Klein found that firms maintain their internal wage structure despite changes in the minimum wage, whether it

rises because of legislation or falls in real terms because it is held constant in periods of inflation. Although minimum wage increases may have some employment consequences, for the most part those consequences are not significant. The important aspect of the minimum wage is less its actual level than the fact that firms view it as a reference point for what starting wages ought to be. If the minimum wage is, as Spriggs and Klein suggest, a socially defined reference point, the implication is enormous. Presumably, that reference point can be altered and once altered will have an impact on those wages around it. If the minimum wage can raise wages of all low-wage workers, any youth unemployment effects might be a small price to pay.

State Type and Regional Disparity in Income Distribution

Many studies that explore the effects of changes in the minimum wage cite wage and income data based on national averages. National averages, however, do not take into account regional differences in wages or cost of living. Congressional opposition to the minimum wage has tended to be stronger in southern and western states, which have lower average wages, lower standards of living, more workers earning around the minimum wage, and laws hostile to unions (Levin-Waldman 1999a). It has been assumed that wage rates are lower because of economic differences such as the presence of industries that are more labor intensive and inefficient (Coelho and Gladi 1971). Such an assumption no doubt accords with the theory of competitive markets, but it is not entirely supported by the evidence. In Lester's (1946, 1947) comparative studies of industries in the North and South, he found that southern industries were no less efficient than northern industries; he also found that after the federal minimum wage was introduced in 1938, North-South wage differentials, especially in textiles, were reduced. He concluded that wage differentials persisted because of the absence in the South of institutions such as labor unions. The question then is whether regional differences can be accounted for by economic differences between regions or whether cultural, demographic, political, and ideological factors (such as unionization and political opposition to it) need to be taken into consideration. If the latter, the effects of the minimum wage will vary depending on the characteristics of a particular state.

Recent studies have documented a growing inequality in the distribution of wealth and income in the United States since the early 1970s (Phillips 1990; Newman 1993; Hungerford 1993; Wolff 1994; Danziger and Gottschalk 1995). Human capital theory argues that structural changes in the economy have resulted in a mismatch between well-paid jobs and workers' skills; the labor market is divided into a primary market in which skilled workers (the demand for whom is increasing) receive a premium and a secondary market in which unskilled workers (the supply of whom is abundant) are trapped in low-wage jobs (primarily in the service sector). In other words, the growth in wage inequality between the primary and secondary labor markets has been caused by the increasing skills differential between the two (for example, Katz and Murphy 1992; Krueger 1993). However, individuals can pass from the secondary labor market into the primary market by upgrading their skills through education and training. Labor market institutions, such as the minimum wage and unions, are either irrelevant or counterproductive because they serve only to inflate wages beyond the equilibrium level.

In contrast, the theory of imperfectly competitive markets, from which wage contour theory flows, suggests that growing inequality is due to a shift in public policy and a corresponding decline in labor market institutions (Piore 1995; D. Gordon 1996; Galbraith 1998; Palley 1998). Fortin and Lemieux (1997), for instance, found that the decline in union membership contributed to increased wage inequality among men, and the decline in the real value of the minimum wage contributed to increased wage inequality among women.

The institutional structure (defined in terms of the minimum wage, union density, and the attitude of the legal structure toward unionization) varies by state. One can attempt to assess the impact of institutions on the wage structure by seeing whether wages vary with institutional structure. Are there some states in which wages tend to be more stagnant than in others? Do a greater portion of workers earn the minimum wage in some states? Are these trends observable over time? Can these trends be correlated with institutional factors? To estimate the probability that an individual worker will earn a wage around the minimum, we used demographic profiles drawn from the Integrated Public Use Microdata Series, or IPUMS (Ruggles and Sobek 1997), for 1940 (shortly after the federal minimum wage was introduced in the Fair Labor Standards Act of 1938)

to 1990 (the most recent census). Earnings “around the minimum wage” are defined as from 50 percent below the statutory minimum wage to 50 percent above.¹ The IPUMS sample sizes are different for each census year, ranging from 1.5 million to 3 million individuals. From the data sets, consisting of a household file and a personal file, we extracted data on heads of household who are employed and who work for wages (as opposed to salaries). Although this reduces the sample size, the number of observations still ranges from 225,000 in 1940 to over 660,000 in 1990.

To construct a model for analyzing differences in wage structure across states, states are divided into three categories (Table 1 and Figure 1).

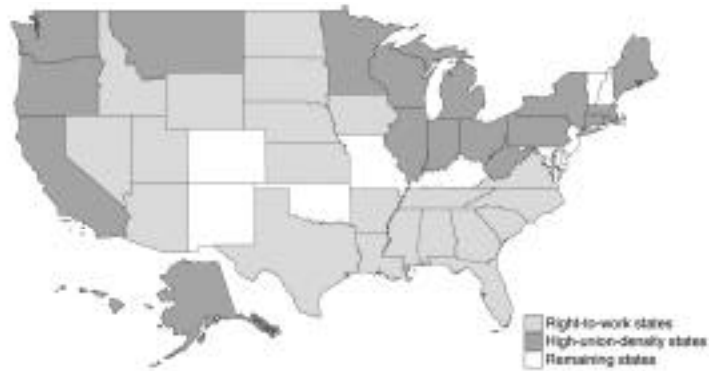
Table 1 **State Types and Union Density (Percentage of Unionized Workers)**

Right-to-Work States		High-Union-Density States		Remaining States *	
Alabama	13.6	Alaska	24.1	Colorado	9.9
Arizona	8.0	California	17.7	Delaware	13.0
Arkansas	7.8	Connecticut	20.2	Kentucky	12.6
Florida	7.3	District of Columbia	15.1	Maryland	14.9
Georgia	6.8	Hawaii	24.6	Missouri	14.6
Idaho	8.1	Illinois	20.2	New Hampshire	12.6
Iowa	12.1	Indiana	16.5	New Mexico	9.4
Kansas	10.2	Maine	15.6	Oklahoma	9.3
Louisiana	7.0	Massachusetts	16.2	Vermont	9.3
Mississippi	5.2	Michigan	23.7		
Nebraska	9.1	Minnesota	20.3		
Nevada	20.2	Montana	15.8		
North Carolina	4.2	New Jersey	21.9		
North Dakota	10.0	New York	27.7		
South Carolina	3.3	Ohio	18.5		
South Dakota	7.7	Oregon	20.1		
Tennessee	9.5	Pennsylvania	18.9		
Texas	6.5	Rhode Island	19.4		
Utah	9.0	Washington	21.0		
Virginia	6.7	West Virginia	16.3		
Wyoming	11.2	Wisconsin	17.7		

*Remaining states are neither right-to-work nor high-union-density states.

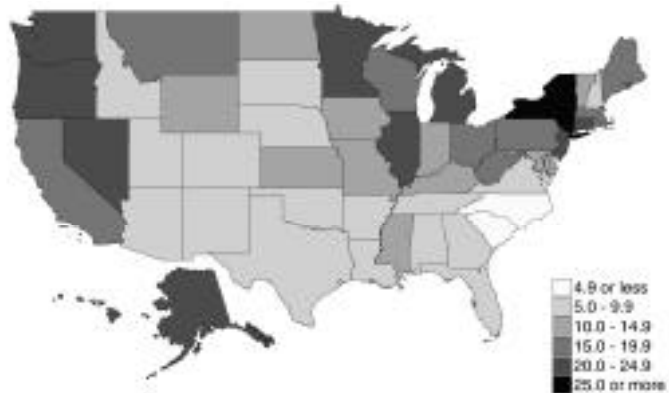
Source: Data from Barry T. Hirsch and David A. Macpherson, *Union Membership and Earnings Data Book: Compilations from the Current Population Survey 1996 Edition* (Washington, D.C.: Bureau of National Affairs, 1996), Table 8.

Figure 1 States by State Type



Source: Data from Barry T. Hirsch and David A. Macpherson, *Union Membership and Earnings Data Book: Compilations from the Current Population Survey 1996 Edition* (Washington, D.C.: Bureau of National Affairs, 1996), Table 8.

Figure 2 Union Density by State



Source: Data from Barry T. Hirsch and David A. Macpherson, *Union Membership and Earnings Data Book: Compilations from the Current Population Survey 1996 Edition* (Washington, D.C.: Bureau of National Affairs, 1996), Table 8.

“Right-to-work states” are those that have right-to-work laws. These laws are assumed to be an indication that the state has legislation that in general is favorable to businesses and hostile to unionization. “High-union-density states” have union densities over 15 percent and no right-to-work laws (union density is the percentage of the labor force belonging to

unions). A third category covers the remaining states, which are neither right-to-work nor high-union-density. In 1996 most of the right-to-work states had relatively low union density (15 out of 21 had union densities below 9.9 percent and 5 out of 21 had union densities between 10.0 and 13.6)—most likely because of a legal climate that makes unionization difficult. Only one right-to-work state had a union density over 13.6 percent (Nevada with 20.2 percent). Even in high-union-density states, density does not reach 30 percent; in 1996 the highest union density was about 28 percent (in New York). In the remaining states, union densities range from 9.3 to 14.9 percent. Figure 1 shows states by type. Notice that right-to-work states are concentrated in the South and in the West (excluding the Pacific states). Figure 2 shows states by union density. Comparing Figures 1 and 2 confirms that right-to-work legislation, with few exceptions, tends to coincide with low union density.

One might object that states could be more simply categorized as low or high union density without regard to right-to-work laws. It is certainly true that right-to-work states have, for the most part, low union densities, but low union density by itself does not capture the spirit of a political, legal, and economic structure that is hostile to unions. The object of this paper is to demonstrate that states that have laws that make unionization difficult tend to have lower wages than high-union-density states and that, because wages are lower, the minimum wage appears to have greater significance in determining wage structure in right-to-work states.

When the minimum wage is conceived as a range of wages, the population of workers that we are dealing with naturally increases. In 1940, 0.4 percent of employed heads of household earned exactly the statutory minimum wage; after 1940, no head of a household earned the statutory minimum. These statistics appear to support the view that the minimum wage is not an important issue because primary earners do not have minimum wage jobs. However, in 1940, 29.9 percent of employed heads of household earned around the minimum wage (see Table 2). This strengthens the argument that research and debate about the effects of the minimum wage have been too narrowly focused.

It is true that the percentage of workers earning around the minimum wage has been declining over time—in all states (from 29.9 in 1940 to

Table 2 Percentage of Employed Heads of Household Earning around the Minimum Wage, by State Type*

Year	All	RTW	Difference between RTW and All States (Percentage Points)		Difference between HUD and All States (Percentage Points)		Difference between HUD and RTW (Percentage Points)		Difference between RTW and HUD as a percentage of HUD	
			Points	HUD	Points	HUD	Points	HUD	Points	HUD
1940	29.9	37.0	7.1	26.7	-3.2		10.3			38.6
1950	28.4	36.2	7.8	24.6	-3.8		11.6			47.2
1960	19.3	26.5	7.2	15.7	-3.6		10.8			68.8
1970	17.0	22.8	5.8	13.8	-3.2		9.0			58.0
1980	19.7	23.7	4.0	17.3	-2.4		6.4			37.0
1990	14.2	16.8	2.6	12.4	-1.8		4.4			35.5

* RTW, right-to-work states; HUD, high-union-density states

Note: On the basis of chi-square tests, all differences are significant at the 95 percent confidence level. "Around the minimum wage" is defined as the minimum wage plus or minus 50 percent of the minimum.

Source: Author's calculations from census data from the IPUMS [Steven Ruggles and Matthew Sobek et al., *Integrated Public Use Microdata Series: Version 2.0* (Minneapolis: Historical Census Projects, University of Minnesota, 1997)].

14.2 in 1990) and within right-to-work and high-union-density states (see Figures 3 and 4).² It is also true, however, that in right-to-work states the percentage of workers who earn around the minimum wage is substantially higher than the national average and in high-union-density states the percentage is lower. Although the gap between state types has narrowed from 1940 to 1990, it was still significant in 1990. This fact is especially important because the 1980s was a period of intensive economic development, especially in the South, where every state has right-to-work laws. The efforts at development were designed to replace low-wage and low-skilled industries with higher-wage industries (Wright 1986; Schulman 1991). Development alone, however, was insufficient to bring the percentage of the labor force earning around the minimum wage down to the level prevailing in high-union-density states. After years of economic development the portion of heads of household earning around the minimum wage in 1990 was still 35.5 percent (4.4 percentage points) higher in right-to-work than in high-union-density states.

Table 3 shows that, among employed heads of household, the age group with the highest percentage earning around the minimum wage is the 25 to 34 group, and within that age group the percentage of those earning around

Figure 3 **Percentage of Employed Heads of Household Earning around the Minimum Wage, 1940**



Note: See table in note 2 for data by state (Hawaii and Alaska were not states in 1940).
Source: Data from the IPUMS [Steven Ruggles and Matthew Sobek et al., *Integrated Public Use Microdata Series: Version 2.0* (Minneapolis: Historical Census Projects, University of Minnesota, 1997)].

Figure 4 **Percentage of Employed Heads of Household Earning around the Minimum Wage, 1990**



Note: See table in note 2 for data by state.
Source: Data from the IPUMS [Steven Ruggles and Matthew Sobek et al., *Integrated Public Use Microdata Series: Version 2.0* (Minneapolis: Historical Census Projects, University of Minnesota, 1997)].

the minimum wage is higher in right-to-work states than in high-union-density states. The percentage of heads of household earning around the minimum wage in the 18 to 24 group increases over time, but most heads of household earning around the minimum wage are 25 years and older.

Table 3 Employed Heads of Household Earning around the Minimum Wage in Right-to-Work (RTW) States and High-Union-Density (HUD) States, by Age and Education

	1940		1950		1960		1970		1980		1990	
	RTW	HUD	RTW	HUD	RTW	HUD	RTW	HUD	RTW	HUD	RTW	HUD
Age												
0–17	0.1	0.1	0.2	0.1	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.1
18–24	12.0	11.5	15.8	12.5	19.7	18.6	24.4	25.4	24.5	23.5	18.4	19.2
25–34	33.2	25.0	26.7	23.1	22.1	18.3	19.0	16.9	27.8	27.9	25.3	23.7
35–44	25.6	23.9	25.3	20.1	19.2	16.3	15.4	12.9	14.1	13.9	18.0	17.4
45–54	17.6	23.2	17.2	19.5	19.6	18.0	17.4	18.9	13.2	12.4	12.7	11.7
55–64	8.8	14.8	10.9	17.4	13.9	17.8	4.6	7.0	13.3	14.1	13.3	13.3
65–72	2.3	3.6	3.3	6.2	4.1	8.3	1.5	2.7	5.4	6.1	8.4	10.2
73+	0.4	0.7	0.6	1.2	1.1	2.5	0.6	1.3	1.6	1.9	3.7	4.3
Education												
1st–11th grade	84.2	82.9	78.8	72.1	70.3	63.8	57.5	47.4	37.9	30.1	36.9	28.7
12th grade	10.0	11.4	13.5	18.5	19.3	21.9	25.9	30.1	36.7	38.8	45.4	47.9
Some college	3.7	3.5	4.7	5.7	6.8	8.7	10.9	13.8	16.4	18.8	5.4	7.0
4 years of college	1.6	1.4	2.1	2.4	2.4	2.9	3.7	4.6	5.3	6.6	8.8	11.0
More than 4 years of college	0.6	0.7	0.9	1.4	1.3	2.6	2.1	4.1	1.5	2.9	3.4	5.4

Source: Author's calculations from census data from the IPUMS [Steven Ruggles and Matthew Sobek et al., *Integrated Public Use Microdata Series: Version 2.0* (Minneapolis: Historical Census Projects, University of Minnesota, 1997)].

Educational attainment among workers in the sample increases over time irrespective of state type. Those with fewer years of education appear to be more likely to earn around the minimum wage. The educational level of those earning around the minimum wage is lower in the right-to-work states than in the high-union-density states. It might be argued that overall educational attainment is lower in right-to-work states than in high-union-density states and that is sufficient explanation for why more people earn around the minimum wage in those states. However, although a low educational level is likely to predispose one to earning around the minimum wage, a statistical analysis suggests that other factors are involved.

In an earlier study, I used a logistical regression analysis to determine which factors—educational level, industry, or state type—yield a greater

likelihood of earning around the minimum wage (Levin-Waldman 1999a). Workers in manufacturing are less likely than those in other industries to earn around the minimum wage. The likelihood of earning around the minimum wage in other industries varies over time. For instance, retail workers were less likely to earn around the minimum wage in 1940 than they have been since 1960. Both wholesale trade and construction workers were more likely to earn around the minimum wage in 1940 than they have been since 1960. And workers in right-to-work states were more likely to earn around the minimum wage than those in high-union-density states throughout the period from 1940 to 1990.

Of course, if educational levels are generally lower in right-to-work states, it would follow that workers in those states are more likely to earn around the minimum wage. But when educational factors are controlled for, workers in right-to-work states still have a greater probability of earning around the minimum wage than workers in high-union-density states, and this pattern remains consistent throughout the period (Levin-Waldman 1999a). Although low educational attainment is likely to be the most important determinant of who earns around the minimum wage, workers with little education in right-to-work states are at least two to three times more likely to earn around the minimum wage than those with little education in high-union-density states.

Although workers in some industries are more likely to earn around the minimum wage than workers in other industries, the question remains as to whether the location of industries in certain types of states affects the likelihood of earning around the minimum wage. Industry demographics show there to be no real difference among industries in distribution between right-to-work and high-union-density states (Levin-Waldman 1999a). There is no evidence of a saturation of any specific industries that might result in the depression of wages.

Even in an industry such as manufacturing, in which there is a lower probability of earning around the minimum wage, there is a greater likelihood of earning around the minimum wage if the industry is located in a right-to-work state than if it is not. By 1990 manufacturing workers in right-to-work states still had a greater probability of earning around the minimum wage than manufacturing workers in high-union-density states, even though that difference was not as great as it was in 1940.

It might be argued that this is due to differences in types of manufacturing in high-union-density versus right-to-work states. The diminishing probability of earning around the minimum wage may be a testament to the growth of high-wage and high-technology industries in many right-to-work states, especially where much of the economic growth was due to huge defense spending. There were fewer low-wage industries in 1990 than in 1940, but this cannot fully explain the differences between right-to-work and high-union-density states. Despite capital flight from the northeastern and midwestern industrial belts, which greatly contributed to the decline in unionism, there was little change in the negative effects of manufacturing on the probability of earning around the minimum wage in high-union-density states from 1940 to 1990.

The Minimum Wage as a Means to Achieve a More Equitable Distribution of Income

Labor market institutions that affect wages, such as unions and the minimum wage, are likely to have important effects on wage structure, especially on the range of wages around the minimum and in communities where wages have traditionally been lower. Where unions are difficult to organize, that is, in right-to-work states, the minimum wage becomes, in effect, the only labor market institution that can prop up wages, especially for those at the bottom of the wage structure. As James K. Galbraith suggests, the minimum wage and unions give workers a degree of market power they otherwise would not have: “Minimum wage laws can move people en masse from the crowded first floor toward the second or third in our wage building” (1998, 61). That states passed laws to make unionization difficult implies that the legislatures in those states seek to maintain employers’ share of income at the expense of workers’ share and that they will resist minimum wage legislation. It should also be remembered that whereas right-to-work laws are promulgated from within the states, the federal minimum wage and its periodic adjustments are imposed from without and are viewed as an interference with states’ rights. It may be for this reason alone that the minimum wage is resisted in the public policy debate.

Nevertheless, issues of equity across states need to be addressed. The fact that wages are lower in right-to-work states implies that a wage floor

could have a greater impact there. One of the possible reasons that northern industrial states, most of which are high-union-density states, historically have favored increases in the minimum wage (Schulman 1991; Wright 1986) could be that they will force up wages in other parts of the country, which could make capital movement to other regions less attractive. Much of the initial debate over the establishment of a federal minimum wage focused on whether the minimum should take into account regional cost-of-living differentials. The Roosevelt administration, backed by organized labor and those business interests that were in favor of the wage floor, refused to incorporate differentials. Applying cost-of-living differentials to the minimum was opposed out of a belief that imposing a wage floor, which might have a disproportionately negative effect on some regions, would force those regions, such as the South, to modernize (Schulman 1991). Many of these states, rather than modernizing, passed right-to-work laws for the express purpose of hindering the development of unions in an effort to maintain lower wages. Today, there are still no regional differences in the minimum wage; states are free to establish a minimum wage above the federal wage floor, but not below.

Regional differences might suggest the need to think about how the minimum wage could be used to equalize wage disparities between the states. From a national perspective, there is no gain when one state lures industry away from another, especially if the federal government is required to bear the burden of providing assistance to regions that lose industry to low-wage states. One policy option would be to attempt to avoid exacerbating disparities by, for example, raising the minimum wage in high-union-density states, where the gap between the statutory minimum wage and the median hourly wage is considerably greater. Although this strategy might have the virtue of narrowing the earnings gap between workers in high-union-density states, it would widen wage disparities between state types and could also lead to the creation (or exacerbation) of high-road and low-road states. High-road states would have a higher minimum wage and would attract industries with more high-skilled jobs and higher wages, while low-road states would attract firms offering lower-paying, lower-skilled jobs. The opposite response to wage differentials between states could be taken by having an even higher minimum wage in those states where wage rates are lower so as to reduce whatever incentive may still

remain for firms to relocate from high-union-density states to right-to-work states in search of low wages. But such a policy is not likely to be politically feasible.

Neither of these options ought to be pursued; there should continue to be a uniform federal minimum wage, but it should be raised. The minimum wage should not be used to equalize disparities between states, but to create a more equitable distribution of income throughout the country. By demonstrating that labor market institutions like the minimum wage and unions can force wages up—through various contours—it is hoped to show that a minimum wage can help increase the income of a broad segment of low-wage workers. If a higher minimum wage can increase the incomes of a large segment of the low-income population, it will substantially help to create a more equal and more equitable distribution of income. To the extent that raising the minimum wage will increase incomes for those at the bottom of the wage scale and will exert upward pressure on incomes of those earning around it, the income gap between those at the top and the bottom will narrow. Because wages of those at the top of the distribution are substantially above the minimum wage, it is doubtful minimum wage increases would exert any upward pressure on them. The primary beneficiaries of minimum wage increases would be those at and near the bottom of the income distribution. This conjecture is consistent with literature suggesting that the declining value of the minimum wage in recent years has been a contributing factor to growing wage inequality (D. Gordon 1996; Palley 1998; Galbraith 1998; Fortin and Lemieux 1997).

I have put forth several theoretical reasons why wages might be set not by perfectly competitive markets but by institutions. If we as a society would like to narrow the earnings gap and achieve a more equitable income distribution, labor market institutions, which historically have been used to stabilize wages, need to be revitalized. If policies such as right-to-work laws have the effect of maintaining low wages and widening the earnings gap, then other policies, such as the minimum wage, can have a counteracting effect and, perhaps, narrow that gap. Although the minimum wage has different effects in different states, which may be of concern to state and local policymakers, the national policymaker ought to remain region neutral (admittedly, a difficult task).

The discussion thus far suggests why the minimum wage engenders the type of antagonism it often does and why that antagonism is more intense in some regions of the country than others. The minimum wage itself is not as important as the effect it has on the wage contours around it, an effect that is greater in states with lower wages, such as right-to-work states. The fact that political opposition to the minimum wage and to increases in it has always been greater in the South and other right-to-work states, in which more workers earn around the minimum wage, suggests that the minimum wage has a greater impact on the distribution of income in those states and that there is a political interest in maintaining the existing wage structure. Moreover, the findings that the minimum wage has more impact in some states than others also suggests that the institutional structure within a state does affect wages. Therefore, the minimum wage can be conceived of in broader terms as an institution that can affect wage structure and therefore income distribution. The minimum wage must go beyond the narrow focus of employment consequences versus poverty benefits to those who earn the statutory minimum wage. That the debate has taken this narrow focus is perhaps less a statement of the weaknesses of the minimum wage as a policy than a testament to the strength of those interests that benefit from maintaining such a narrow focus.

The minimum wage should, therefore, be used to obtain a more equitable income distribution. The minimum wage would be a more effective tool for achieving a more equitable income distribution if it were tied to an automatic adjustment mechanism such as a productivity index (Levin-Waldman 1998b). An increase in the minimum wage to \$7.25 an hour may not have as detrimental an effect as predicted by competitive market theory, but it would have a profound effect on the wages of people at the low end of the distribution of income. A higher minimum wage is in line with many living wage movements around the country (Pollin and Luce 1998) and may not greatly affect employment in small businesses (Levin-Waldman and McCarthy 1998, Levin-Waldman 1999b). The minimum wage should be boosted to \$7.25 and then indexed to a productivity index thereafter. Although this would not completely reverse the pattern of growing wage inequality since the 1970s, it would be a positive step in that direction.

Acknowledgments

I am grateful for comments given at the 1999 annual meeting of the Eastern Economic Association and a program on institutionalism at The Jerome Levy Economics Institute. Along the way, I have received many words of encouragement and comments that have no doubt made this a better piece. I would particularly like to thank George McCarthy for his technical assistance and Heather Bousher and Karl Widerquist for their comments.

Notes

1. Exemptions to the minimum wage law allow workers in some occupations to earn less than the minimum. For example, workers who earn tips in the restaurant industry have a lower legislated minimum wage and certain industries (for example, some with sales below a certain threshold) are exempt from the minimum wage law.
2. The percentages of employed heads of household earning around the minimum wage by state are given in the following table.

State	1940	1990	State	1940	1990
Alabama	39.1	17.1	Louisiana	38.6	17.8
Alaska	—	13.1	Maine	41.2	15.5
Arizona	32.3	16.4	Maryland	31.4	9.3
Arkansas	36.9	20.5	Massachusetts	27.1	11.3
California	26.2	13.0	Michigan	23.1	12.0
Colorado	34.8	15.8	Minnesota	29.1	13.9
Connecticut	25.1	8.6	Mississippi	35.9	22.5
Delaware	27.1	14.7	Missouri	32.4	17.0
District of Columbia	22.8	12.6	Montana	31.6	19.4
Florida	40.8	17.0	Nebraska	36.5	17.3
Georgia	38.5	18.4	Nevada	25.8	13.7
Hawaii	—	13.4	New Hampshire	39.0	12.0
Idaho	38.7	19.6	New Jersey	22.4	9.2
Illinois	26.8	12.0	New Mexico	34.7	19.5
Indiana	31.1	13.3	New York	24.6	12.0
Iowa	33.9	16.8	North Carolina	45.2	17.2
Kansas	32.4	15.7	North Dakota	39.3	20.4
Kentucky	36.6	12.8	Ohio	26.3	12.4

(Table continues)

State	1940	1990	State	1940	1990
Oklahoma	29.2	17.3	Vermont	41.3	13.5
Oregon	30.0	15.6	Virginia	37.2	13.5
Pennsylvania	29.4	12.3	Washington	28.2	14.0
Rhode Island	32.4	13.3	West Virginia	31	17.3
South Carolina	43.4	18.0	Wisconsin	26.3	13.3
South Dakota	37.2	22.4	Wyoming	36.6	15.8
Tennessee	36.7	17.1	All states	29.9	14.2
Texas	31.8	16.7	Right-to-work states	37.0	16.8
Utah	27.4	15.1	High-union-density states	26.7	12.4

Source: Author's calculations from census data from the IPUMS [Steven Ruggles and Matthew Sobek et al., *Integrated Public Use Microdata Series: Version 2.0* (Minneapolis: Historical Census Projects, University of Minnesota, 1997)].

References

- Brown, Charles, Curtis Gilroy, and Andrew Kohen. 1982. "The Effect of the Minimum Wage on Employment and Unemployment." *Journal of Economic Literature* 20 (June): 487–528.
- Burkhauser, Richard V., and T. Aldrich Finegan. 1989. "The Minimum Wage and the Poor: The End of a Relationship." *Journal of Policy Analysis and Management* 8, no. 1: 53–71.
- Burtless, Gary. 1995. "Employment Prospects of Welfare Recipients." In Demetra Smith Nightingale and Robert H. Haveman, eds., *The Work Alternative: Welfare Reform and the Realities of the Job Market*. Washington, D.C.: Urban Institute Press.
- Card, David, and Alan B. Krueger. 1995. *Myth and Measurement: The New Economics of the Minimum Wage*. Princeton, N.J.: Princeton University Press.
- . 1998. "A Reanalysis of the Effect of the New Jersey Minimum Wage Increase on the Fast-Food Industry with Representative Payroll Data." Working Paper no. 6386. Cambridge, Mass.: National Bureau of Economic Research.
- Coelho, Philip R. P., and Moheb A. Gladi. 1971. "The End of the North-South Wage Differential." *American Economic Review* 61, no. 5 (December): 932–937.
- Danziger, Sheldon, and Peter Gottschalk. 1995. *America Unequal*. Cambridge, Mass.: Harvard University Press.
- Dunlop, John T. 1957. "The Task of Contemporary Wage Theory." In George W. Taylor and Frank C. Pierson, eds., *New Concepts in Wage Determination*. New York: McGraw-Hill.
- Ehrenberg, Ronald G., and Robert S. Smith. 1997. *Modern Labor Economics: Theory and Public Policy*. 6th ed. Reading, Mass.: Addison-Wesley.
- Fortin, Nicole M., and Thomas Lemieux. 1997. "Institutional Changes and Rising Wage Inequality: Is There a Linkage?" *Journal of Economic Perspectives* 11 (Spring): 75–96.

- Freeman, Alida Castillo, and Richard B. Freeman. 1991. "Minimum Wages in Puerto Rico: Textbook Case of a Wage Floor?" Working Paper no. 3759. Cambridge, Mass.: National Bureau of Economic Research.
- Galbraith, James K. 1998. *Created Unequal: The Crisis in American Pay*. New York: Free Press.
- Gordon, David M. 1996. *Fat and Mean: The Corporate Squeeze of Working Americans and the Myth of Managerial "Downsizing."* New York: Free Press.
- Gordon, Robert J. 1995. "Is There a Tradeoff Between Unemployment and Productivity Growth?" Working Paper no. 5081. Cambridge, Mass.: National Bureau of Economic Research.
- Hirsch, Barry T., and David A. Macpherson. 1996. *Union Membership and Earnings Data Book: Compilations from the Current Population Survey 1996 Edition*. Washington, D.C.: Bureau of National Affairs.
- Houseman, Susan N. 1998. "The Effects of Employer Mandates." In Richard B. Freeman and Peter Gottschalk, eds., *Generating Jobs: How to Increase Demand for Less-Skilled Workers*. New York: Russell Sage Foundation.
- Hungerford, Thomas L. 1993. "U.S. Income Mobility in the Seventies and Eighties." *Review of Income and Wealth* 39, no. 4: 403–417.
- Katz, Lawrence F., and Kevin M. Murphy. 1992. "Changes in Relative Wages, 1963–1987: Supply and Demand Factors." *Quarterly Journal of Economics* 107: 35–79.
- Kennan, John. 1995. "The Elusive Effects of Minimum Wages." *Journal of Economic Literature* 33 (December): 1950–1965.
- Kosters, Marvin, ed. 1996. *The Effects of the Minimum Wage on Employment*. Washington D.C.: American Enterprise Institute Press.
- Kosters, Marvin, and Finis Welch. 1972. "The Effects of Minimum Wages on the Distribution of Change in Aggregate Employment." *American Economic Review* 62, no. 3 (June): 323–332.
- Krueger, Alan B. 1993. "How Computers Changed the Wage Structure: Evidence from Microdata, 1984–1989." *Quarterly Journal of Economics* 108: 33–61.
- Lester, Richard A. 1946. "Shortcomings of Marginal Analysis for Wage-Employment Problems." *American Economic Review* 36, no. 1 (March): 63–82.
- . 1947. "Reflections on the 'Labor Monopoly' Issue." *Journal of Political Economy* 55, no. 6: 513–536.
- Levin-Waldman, Oren M. 1998a. "Exploring the Politics of the Minimum Wage." *Journal of Economic Issues* 32, no. 3 (September): 773–802.
- . 1998b. *Automatic Adjustment of the Minimum Wage*. Public Policy Brief no. 42. Annandale-on-Hudson, N.Y.: The Jerome Levy Economics Institute.
- . 1999a. "The Minimum Wage and Regional Wage Structure: Implications for Income Distribution." Working Paper no. 267. Annandale-on-Hudson, N.Y.: The Jerome Levy Economics Institute.
- . 1999b. *The Minimum Wage Can Be Raised: Lessons from the 1999 Levy Institute Survey of Small Business*. Policy Note 1999/6. Annandale-on-Hudson, N.Y.: The Jerome Levy Economics Institute.

- Levin-Waldman, Oren M., and George W. McCarthy. 1998. *Small Business and the Minimum Wage*. Policy Note 1998/3. Annandale-on-Hudson, N.Y.: The Jerome Levy Economics Institute.
- Levitan, Sar A., and Richard S. Belous. 1979. *More Than Subsistence: Minimum Wages for the Working Poor*. Baltimore: Johns Hopkins University Press.
- Meyer, Robert H., and David A. Wise. 1983. "The Effect of the Minimum Wage on the Employment Earnings of Youth." *Journal of Labor Economics* 1, no. 1: 66–100.
- Minimum Wage Study Commission. 1981. *Report of the Minimum Wage Study Commission. Vol. 1: Commission Findings and Recommendations*. Washington, D.C.: Government Printing Office.
- Mishel, Lawrence, Jared Bernstein, and John Schmitt. 1999. *The State of Working America: 1998–99*. Ithaca, N.Y.: ILR Press.
- Neumark, David, and William Wascher. 1992. "Employment Effects of Minimum and Subminimum Wages: Panel Data on State Minimum Wage Laws." *Industrial and Labor Relations Review* 46, no. 1 (October): 55–81.
- Newman, Katherine S. 1993. *Declining Fortunes: The Withering of the American Dream*. New York: Basic Books.
- Nordlund, Willis J. 1997. *The Quest for a Living Wage: The History of the Federal Minimum Wage Program*. Westport, Conn.: Greenwood Press.
- Palley, Thomas I. 1998. *Plenty of Nothing: The Downsizing of the American Dream and the Case for Structural Keynesianism*. Princeton, N.J.: Princeton University Press.
- Phillips, Kevin. 1990. *The Politics of Rich and Poor: Wealth and the American Electorate in the Reagan Aftermath*. New York: Random House.
- Piore, Michael J. 1995. *Beyond Individualism*. Cambridge, Mass.: Harvard University Press.
- Pollin, Robert, and Stephanie Luce. 1998. *The Living Wage: Building a Fair Economy*. New York: New Press.
- Ruggles, Steven, and Matthew Sobek et al. 1997. *Integrated Public Use Microdata Series: Version 2.0*. Minneapolis: Historical Census Projects, University of Minnesota.
- Schulman, Bruce J. 1991. *From Cotton Belt to Sunbelt: Federal Policy, Economic Development, and the Transformation of the South, 1938–1980*. New York: Oxford University Press.
- Spriggs, William E., and Bruce W. Klein. 1994. *Raising the Floor: The Effects of the Minimum Wage on Low-Wage Workers*. Washington, D.C.: Economic Policy Institute.
- Stigler, George J. 1946. "The Economics of Minimum Wage Legislation." *American Economic Review* 36 (June): 358–365.
- Welch, Finis. 1974. "Minimum Wage Legislation in the United States." *Economic Inquiry* 12, no. 3 (September): 285–318.
- . 1978. *Minimum Wages: Issues and Evidence*. Washington, D.C.: American Enterprise Institute for Public Policy Research.
- Wolff, Edward N. 1994. "Trends in Household Wealth in the United States, 1962–83 and 1983–89." *Review of Income and Wealth* 40, no. 2: 143–174.
- Wright, Gavin. 1986. *Old South, New South: Revolutions in the Southern Economy Since the Civil War*. New York: Basic Books.

About the Author

Oren M. Levin-Waldman is a resident scholar at the Levy Institute. His projects focus on achieving greater efficiency, equity, and effectiveness in the welfare and unemployment insurance systems and on developing a methodology for analyzing public policy that relies on the application of political philosophy as well as cost-benefit analysis. He has been examining adjustment mechanisms for the minimum wage, welfare reform and the potential for workforce development, and political realignment in the electorate. Levin-Waldman is the author of *Plant Closure, Regulation, and Liberalism: The Limits to Liberal Public Philosophy* (University Press of America, 1992) and *Reconceiving Liberalism: Dilemmas of Contemporary Liberal Public Policy* (University of Pittsburgh Press, 1996). His Levy Institute publications include several Public Policy Briefs: *The Consolidated Assistance Program* (No. 21), *Making Unemployment Insurance Work* (No. 26), *A New Path from Welfare to Work* (No. 31), *Automatic Adjustment of the Minimum Wage* (No. 42), and *Small Business and Welfare Reform* (No. 51). Levin-Waldman received a B.A. in history, an M.A. in urban studies, and a Ph.D. in political science from Temple University.

Public Policy Brief Series

To order, call 914-758-7700 or 202-887-8464 (in Washington, D.C.), fax 914-758-1149, e-mail info@levy.org, or write The Jerome Levy Economics Institute of Bard College, Blithewood, PO Box 5000, Annandale-on-Hudson, NY 12504-5000.

For a complete list and short summaries of all the titles in the Public Policy Brief series, see the Levy Institute web site at www.levy.org.

No. 25, 1996, **Capital Gains Taxes and Economic Growth**
Effects of a Capital Gains Tax Cut on the Investment Behavior of Firms
Steven M. Fazzari and Benjamin Herzon

No. 26, 1996, **Making Unemployment Insurance Work**
Reforming Unemployment Insurance: Toward Greater Employment
Oren M. Levin-Waldman

No. 27, 1996, **Targeting Inflation**
The Effects of Monetary Policy on the CPI and Its Housing Component
Dimitri B. Papadimitriou and L. Randall Wray

No. 28, 1996, **Making Work Pay**
Wage Insurance for the Working Poor
Barry Bluestone and Teresa Ghilarducci

No. 29, 1997, **Institutional Failure and the American Worker**
The Collapse of Low-Skill Wages
David R. Howell

No. 30, 1997, **Prescription for Health Care Policy**
The Case for Retargeting Tax Subsidies to Health Care
Walter M. Cadette

No. 31, 1997, **A New Path from Welfare to Work**
The New Welfare and the Potential for Workforce Development
Oren M. Levin-Waldman

No. 32, 1997, **What's Missing from the Capital Gains Debate?**
Real Estate and Capital Gains Taxation
Michael Hudson and Kris Feder

No. 33, 1997, **Is There a Trade-off between Unemployment and Inequality?**
No Easy Answers: Labor Market Problems in the United States versus Europe
Rebecca M. Blank

No. 34, 1997, **Safeguarding Social Security**
The Challenge of Financing the Baby Boom's Retirement
Walter M. Cadette

No. 35, 1997, **Reflecting the Changing Face of America**
Multiracials, Racial Classification, and American Inter-marriage
Joel Perlmann

No. 36, 1997, **Dangerous Metaphor: The Fiction of the Labor Market**
Unemployment, Inflation, and the Job Structure
James K. Galbraith

No. 37, 1997, **Investment in Innovation**
Corporate Governance and Employment: Is Prosperity Sustainable in the United States?
William Lazonick and Mary O'Sullivan

No. 38, 1997, **Who Pays for Disinflation?**
Disinflationary Monetary Policy and the Distribution of Income
Willem Thorbecke

No. 39, 1998, **The Unmeasured Labor Force**
The Growth in Work Hours
Barry Bluestone and Stephen Rose

No. 40, 1998, **Overcoming America's Infrastructure Deficit**
A Fiscally Responsible Plan for Public Capital Investment
S Jay Levy and Walter M. Cadette

No. 41, 1998, **Side Effects of Progress**
How Technological Change Increases the Duration of Unemployment
William J. Baumol and Edward N. Wolff

No. 42, 1998, **Automatic Adjustment of the Minimum Wage**
Linking the Minimum Wage to Productivity
Oren M. Levin-Waldman

No. 43, 1998, **How Big Should the Public Capital Stock Be?**
The Relationship between Public Capital and Economic Growth
David Alan Aschauer

No. 44, 1998, **The Asian Disease: Plausible Diagnoses, Possible Remedies**
Regulation of Cross-Border Interbank Lending and Derivatives Trade
Martin Mayer

No. 45, 1998, **Did the Clinton Rising Tide Raise All Boats?**
Job Opportunity for the Less Skilled
Marc-André Pigeon and L. Randall Wray

No. 46, 1998, **Self-reliance and Poverty**
Net Earnings Capacity versus Income for Measuring Poverty
Robert Haveman and Andrew Bershader

No. 47, 1998, **Regulating HMOs**
An Ethical Framework for Cost-Effective Medicine
Walter M. Cadette

No. 48, 1998, **Japanese Corporate Governance and Strategy**
Adapting to Financial Pressures for Change
William Lazonick

No. 49, 1998, **Corporate Governance in Germany**
Productive and Financial Challenges
Mary O'Sullivan

No. 50, 1999, **Public Employment and Economic Flexibility**
The Job Opportunity Approach to Full Employment
Mathew Forstater

No. 51, 1999, **Small Business and Welfare Reform**
Levy Institute Survey of Hiring and Employment Practices
Oren M. Levin-Waldman

No. 52, 1999, **Government Spending in a Growing Economy**
Fiscal Policy and Growth Cycles
Jamee K. Moudud

No. 53, 1999, **Full Employment Has Not Been Achieved**
Full Employment Policy: Theory and Practice
Dimitri B. Papadimitriou

No. 54, 1999, **Down and Out in the United States**
An Inside Look at the Out of the Labor Force Population
Marc-André Pigeon and L. Randall Wray

No. 55, 1999, **Does Social Security Need Saving?**
Providing for Retirees throughout the Twenty-first Century
Dimitri B. Papadimitriou and L. Randall Wray

No. 56, 1999, **Risk Reduction in the New Financial Architecture**
Realities and Fallacies in International Financial Reform
Martin Mayer

No. 57, 1999, **Do Institutions Affect the Wage Structure?**
Right-to-Work Laws, Unionization, and the Minimum Wage
Oren M. Levin-Waldman