Distributional, Employment, and Budgetary

Effects of Living Wage Ordinances

Robert P. Strauss[1]

A Research Report for the
Employment Policies Institute

September 4, 2006

To be Presented at a Seminar
Sponsored by

The Workforce and Family Program
at the New America Foundation

and

The Employment Policies Institute

September 22, 2006

12:30 AM-2:00 PM
7th Floor
1630 Connecticut Avenue, NW
Washington, DC.

[1] Professor of Economics and Public Policy, The H. John Heinz III. School of Public Policy and Management, Carnegie Mellon University, Pittsburgh Pennsylvania, 15213-3890. Email: rpstrauss@att.net; home page: www.andrew.cmu.edu/user/rs9f. The author wishes to thank Ms. Vee Burke of the Library of Congress, Congressional Research Service, Mr. Peter Germanis of the Office of Family Assistance, Administration of Children and Families, US. Department of Health and Human Services, Ms. Gretchen Rowe, Urban Institute and Ms. Lisa Williamson of the US Department of Labor, Bureau of Labor Statistics, for their assistance in understanding current major federal transfer programs for the working poor and local area employment statistics. The author benefited from comments of William B. Vogt and Peter J. Schmidt. This monograph, supported by the Employment Policy Institute, is a revised report originally prepared under contract with the US Department of Labor. The views, opinions, analyses and conclusions expressed herein are those of the author, and do not necessarily reflect the official position of the U.S. Department of Labor or the Employment Policies Institute.

Executive Summary

Since 1988, better than 90 communities have adopted ordinances that obligate those who do business with them to pay wage rates considerably higher than federal and state minimum wage rates. Several claims in the advocacy and research literature are examined that relate to whether or not such policies are successful in raising after-transfer incomes without disturbing employment patterns. Contrary to earlier literature, this study finds that living wage ordinances do not necessarily succeed in improving the economic position of small households composed of two children and one adult working fulltime. This finding is based on a careful review of federal and state eligibility rules and their application to a hypothetical family of three. In states where TANF and Medicaid are phased out at relatively low earnings levels, a single parent with two children can be actually better off with full time earnings from the minimum wage, the federal earned income tax credit, food stamps and Medicaid, compared to earning a living wage and obtaining medical coverage for her children through SCHIPS. In both cases, the household is typically well beyond the Federal Poverty Line, and, while the minimum wage household is better off at least ½ the time, the differences between the standard of living under the minimum wage plus transfers and under the living wage plus transfers are not extremely large.

This study also examined the administrative records of municipalities that adopted living wage ordinances to ascertain the impact of living wage ordinances on municipal and resident community employment, and to ascertain the fiscal effects of such ordinances. There have been relatively few studies of the employment effects of living wage ordinances, and none to date has examined the employment effect by examining directly the employment records of municipalities that have, over time, adopted living wage ordinances. Additionally, none to date has contrasted those estimated direct employment effects with general community employment in the same municipalities over time as measured by the US Bureau of Labor Statistics. The data analyzed in this study pertain directly to the municipalities that adopt living wage ordinances, and differs therefore from studies that have examined metropolitan-wide information through the analysis of labor market data on the Current Population Survey, which is not able to identify municipality of employment in many cases due to sample size fragmentation,

Annual data on municipal employment for more than 70 municipalities were collected from the Governments Division of the Census Bureau, and monthly data for the same geographic areas on resident community employment were collected from the Bureau of Labor Statistics. Fixed effects regressions on these data, that hold constant time and the municipalities, indicate that, overall, municipalities that adopted living wage ordinances, on average, reduced their own employment by about 10%. Holding constant time and municipality fixed effects, resident community employment in such areas was lower from .4 to 1% upon enactment of living wage ordinances. These are both very large estimated effects, and grow stronger when the geographic focus of the statistical analysis is increased.

Municipalities adopting living wage ordinances were also found to increase permanently their total own source revenues upon adoption by as much as 5%. These municipalities were also found to increase total revenues upon adoption of living wage ordinances; however, effects on taxation *per se* could not be determined.

Earlier efforts to ascertain the effect of living wage ordinances on municipal and community employment have generally used the date of adoption as the indicator when such ordinances take effect. Focusing on the date of implementation, which typically is after the date adopted, leads to somewhat larger estimates of municipal employment and payroll effects.

The estimated effects of living wage ordinances on local municipal employment and resident employment are surprisingly large, and should be viewed as upper bounds because of the unavailability of monthly data at the municipal level. However, in view of the fact that such ordinances now cover communities representing better than 18% of the US population, they deserve further investigation. While no doubt motivated by the desire of its advocates to improve the standard of living for all, it appears that such living wage ordinances may disrupt the orderly operation of local labor markets, cause higher taxes and fees at some levels of government, and yet may not necessarily or materially improve the standard of living for those receiving living wages as contrasted to earning a minimum wage and receiving the full complement of federal and state transfer payments.

Table of Contents

List of Tables

List of Figures

1.0 Introduction

The policy of a municipality or county enacting a local labor law which subjects certain employers and contractors to a minimum wage well in excess of the current federal minimum wage, sometimes in conjunction with minimum health benefits, is receiving increased media attention. Such policies are motivated by the desire to ensure that a public employee or an employee in a company that does business with local government with a family is able to live above the poverty level. Such policies are typically described as *living wage* ordinances because they may enable anybody employed to work at a wage level, which, when annualized, appears to be at or above the poverty level, and therefore enables the family to live with adequate resources.

Such ordinances reflect the willingness of voters in a local community to instruct their municipal government to pay wages above the current federal minimum wage of $5.15 hour or above the minimum wage that some states enact above the federal minimum wage. This may also include forcing companies that do business with the community, or even non-profit organizations that receive funding from the community, to pay such wages to those involved in the contract for the obligating municipality.

Given that a working year typically entails 2,000 or 2,080 hours, and the minimum wage is $5.15/hour, the argument is made by proponents of the living wage that the resulting income of $10,300 or $10,712 per year for a family is below the poverty level, forcing such families to forego health insurance, and to live very frugally. According to the Census Bureau, the 2003 poverty threshold for a family of three with two children under 18 in the household was $14,824.[2] The argument typically is then made that were the wage rate raised to $12.00/hour, the family would have $24,000/year in gross income, and as a result be above the poverty line, able to afford health insurance, and afford better housing.

Recently, Neumark[3] reported data on 35 municipalities around the US that have some form of living wage ordinance, and suggested that his research allowed him to reach the conclusion that not only will imposing a living wage substantially improve the position of those immediately covered by such ordinances but also will have a much broader, beneficial impact on the lowest paid workers:

> "… (a) 50% increase in the living wage (over the minimum wage) would over the course of a year, raise average wages for workers in the bottom tenth of the wage distribution by 3.5 percent."[4]

Utilizing the same Current Population Survey methodology but for a broader group of municipalities and taking into account the different types of living wage ordinances enacted, Adams and Neumark (2005) report more modest efficacy effects on low income workers wages and for poverty alleviation, and quite modest adverse employment effects in these municipalities measured by the Current Population Survey:

---

[2] As stated in the Census Bureau's 2003 poverty statistics at: http://www.census.gov/hhes/poverty/threshld/thresh03.html
[3] David Neumark (2002). *How Living Wage Laws Affect Low-Wage Workers and Low-Income Families* (San Francisco, California: Public Policy Institute), Chapter 1; Tables 1.1-1.3.
[4] *Ibid,* p. viii.

"…for these broader living wage laws, for the bottom decile of the wage or skill distribution, the wage elasticity with respect to the mandated living wage is about .07 and the employment elasticity is about -.12. The elasticity of the overall poverty rate is about -.19"[5]

This paper examines distributional and labor market effects of living wage ordinances in several different ways than the extant literature which uses micro-panels of data by metropolitan area to see how adoption of living wage ordinances may affect the lowest portions of the wage distribution. First, the research reported below examines directly the potential for poverty alleviation of living wage ordinances by carefully comparing after-transfer income, state by state, that a household might obtain by working at the minimum wage, or by working at a living wage. Second, empirical employment and fiscal effects on municipalities that adopt living wage ordinances are ascertained through the examination of their administrative records, *per se*, over time. Broader effects of such living wage ordinances on resident employment in municipalities that adopt such ordinances are also examined through the use of US Bureau of Labor Statistics data for small geographic areas.

The remainder of this section provides general background material and the outline of the study.

1.1 Background and Evolution of Minimum Wage Legislation

National intervention in labor markets that affects the cost of employing labor began in earnest with the Fair Labor Standards Act of 1938. The 1938 Act applied federal wage rate standards to manufacturing employees engaged in interstate commerce or in the production of goods for interstate commerce, and banned child labor. Amendments in 1961 extended coverage to employees in large retail and service enterprises and to local transit, construction, and gasoline service station employees. The 1966 Amendments extended coverage to State and local hospital employees, nursing homes, and schools, and to laundries, drycleaners, and large hotels, motels, restaurants, and farms. Subsequent amendments extended coverage to the remaining Federal, State and local government employees not under the 1966 provisions, to additional workers in retail and service trades previously exempted, and to certain domestic workers in private household employment.

Other major federal legislation affecting labor markets include the Norris-LaGuardia Act of 1932 that outlawed various anti-union practices of employers, the National Labor Relations Act or Wagner Act of 1935 that obligated employers to bargain with unions representing a majority of employees, and the Taft-Hartley Act of 1947 which enabled the states to forbid union membership as a precondition for of employment, and the Landrum-Griffin Act of 1959 that supervises various aspects of union governance. Beyond these statutes that affect management-labor relations, national legislation has been enacted to define the length of the work week and provide for a definition of over-time. In 1958 an amendment to the Longshoremen's and Harbor Workers' Compensation Act authorized the Labor Department to set safety and health standards for certain dock workers; the Williams-Steiger Occupational Safety and Health Act of 1970 authorized the Federal Government to set and enforce safety and health standards for most of the country's workers. Other areas of federal supervision of aspects of the employment relation entail the qualification and supervision of retirement plans, and the collection and dissemination of labor market statistics.

---

[5] Adams and Neumark (2005), p. 165.

With respect to the federal minimum wage, *per se*, it is currently \$5.15/hour. However, 13 states[6] have minimum wages above the federal minimum, and better than 90 local governments[7] have enacted local ordinances that obligate themselves and/or those that they do business with to pay wage rates above the federal minimum.

1.2 Controversies Surrounding Estimated Effects of Living Wage Ordinances

Whether or not imposing a minimum hourly wage rate or "floor" on what employers pay their employees has effects on employer profitability, employee wages and the wages and employment levels of others in competing labor markets is a very old public policy issue. In many respects living wage ordinances are similar to state or national minimum wage laws in that they specify for an occupation and/or industrial group of employees what the minimum hourly wage rate should be. For those who continue to be employed under either a minimum wage or living wage labor market policy, wages will be likely to be higher than otherwise would be the case. Especially for relatively unskilled workers, this impact on wages, take-home pay and disposable income are generally not disputed. At issue, however, is what the costs of such a higher wage regime (e.g. compare the wage floor of wage rate W_L to the equilibrium wage rate, W_E) are to employers in terms of reduced profitability or reduction in budgetary discretion in the case of a government, and the employment effects in the impacted industry and related labor markets.

Classical micro-economics (and common sense) suggests that if one raises the price of labor above the price or wage rate that would be set by freely competing workers for the jobs and employers competing for employees, then there will likely be a reduction in employment, and a higher wage rate (W_L) than the market clearing wage rate (W_E). That is, what does employment level Q_L look like compared to Q_E? Advocates of higher minimum wages and higher living wages enquire, instead, about the resulting standard of living and movement out of poverty that occurs when W_L is paid.

As Bartik (2002) points out, however, imposing wage floors may not have major disruptive or discernible economic effects on labor markets if wages are generally rising and unemployment is essentially frictional. However, it is also the case, because labor market attachment for many of the poor is weak, that raising a wage floor may be relatively ineffective in eliminating poverty if the poor are not drawn into the labor market by now higher wage rates. Also, whether or not the higher wage floor actually disrupts an employer's employment decision depends not only on the employer's wage structure, but on other factors that impact the employment decision. That is, there are important, non-monetary components to the employer-employee relationship that provide slack in the wage bill and its consideration.

---

[6] Alaska, California, Connecticut, Delaware, District of Columbia, Hawaii, Illinois, Maine, Massachusetts, Oregon, Rhode Island, Vermont, and Washington had minimum wage statutes that exceed the federal minimum of \$5.15/hour in 2003. In the empirical research below, the base year will be 2003 in order to ensure that as much data as possible is available to analyze. As of the close of 2004, the highest minimum wage was \$7.15 in Alaska and the lowest minimum wage, still above the federal minimum wage was \$5.50 in Illinois.

[7] There are a number of organizations that track and publish current lists of living wage ordinances. See, for example, the Employment Policy Institute of Washington, D.C. and their web site, http://www.epionline.org/ , the Association of Community Organizations for Reform Now (ACORN) and their web site, http://www.acorn.org/ and the Living Wage Research Center and their web site, http://www.livingwagecampaign.org/index.php?id=1958.

While living wage ordinances are similar to state or federal minimum wage rules, they are different in several important respects. First, they typically are *substantially* higher than either state or federal minimum wages. The 11 states with minimum wages above the federal minimum wage of $5.15 ranged from 6.8% to 38.7% above the federal minimum. However, the 96 living wage ordinances in place at the close of 2003[8], that clearly specify the wage rate and were analyzed in this study, ranged from $7.60 to $12.55 as compared to the federal minimum wage of $5.15, e.g. they reflect premiums in percentage terms of 47.6% and 243% respectively. In states with minimum wage rates above the federal minimum wage rate, the median living wage ordinance was 86% above the operable state minimum wage, and was as high as 223% of the state minimum wage.

Below, we address four empirical, labor market questions that our review of the literature indicates have not been substantially examined, and are important in assessing the wisdom of further enactment of living wage ordinances:

- Do extant living wage ordinances do better in eliminating poverty than existing minimum wage laws and existing cash and in-kind transfer programs? Can they "work" when federal and state income transfer eligibility rules are closely examined?

- What, if any, are the employment effects of living wage ordinances in the communities that enact them? What do the administrative employment and payroll records of municipalities that adopt living wage ordinances show? What are the resident employment effects of such living wage ordinances in municipalities that adopt them?

- Do inferences differ when the effects of living wage ordinances are measured in terms of actual effective date rather than date of legislative adoption?

- What are the budgetary effects and the municipal employment effects in communities that enact them when we examine the administrative records of affected municipalities?

1.3 Outline of Study

The study is organized as follows. Section 2 describes the nature and prevalence of living wage ordinances; Section 3 provides a social accounting framework for analyzing distributional questions and reviews the micro-economic effects of various limitations in the labor market; Section 4 reviews briefly prior empirical studies of the effects of minimum and living wage legislation and their implications for this study; Section 5 examines federal and state transfer programs and their implications for a household of three that might work at state-specific minimum or living wages; Section 6 reports econometric evidence on the employment and budgetary effects of living wage ordinances with fixed effects statistical models; and Section 7 concludes.

2.0 The Nature of Living Wage Ordinances

As noted above, living wage ordinances are *local* statutes passed to obligate entities that do business and/or benefit from considerations from municipal or county governments to pay

---

[8] See Table 4 below.

employees wage rates involved in the contracted project above state minimum wage rates. Such ordinances typically make the payment of such wage rates a condition for receiving tax concessions such as Tax Increment Financing or selling goods or services on a contractual basis to the municipality or county government. The stipulated wage rate is sometimes linked to the federal poverty line, which itself varies by family size, in effect for the year, and therefore is also implicitly indexed to the cost of living since federal poverty lines are annually increased to reflect increases in the cost of living.

Typically,[9] local living wage ordinances have minimum contract sizes stipulated in order to limit monitoring costs. The reach of such living wage ordinances can extend to non-profit entities that receive grants from local governments to perform social services. Sometimes the ordinances stipulate two wage rates: a lower wage rate that includes health and sometimes retirement benefits, and a higher wage rate that does not require the provision of benefits. In turn the requirement that benefits be provided may or may not specify that the benefits include health insurance or contributions to a qualified retirement plan. Table 4 and 5 displays the list of living wage communities examined in this study and the specifics of the living wage ordinances.[10]

2.1 Evolution and Prevalence of Living Wage Communities

The first living wage ordinance was enacted by Des Moines, Iowa on January 1, 1988. Through to 2003, 96 communities have enacted some form of a living wage ordinance, and at least as many others have considered but not enacted such an ordinance. As Table 1 shows, the pace of enactment of living wage ordinances accelerated so that in 1999, 15 communities enacted them. In 2001, 22 living wage ordinances were enacted; however, in 2002 and 2003, the pace of enactment slowed considerably. California (17) and Michigan (11) have the most ordinances enacted. Overall, 27 of the 50 states have at least one living wage ordinance in place. (See Table 2). Two thirds of the living wage ordinances enacted have been passed by city or municipal governments, and about 28% have been enacted by county governments. In a few cases these counties contain municipalities that had earlier enacted their own living wage ordinances (i.e. Los Angeles County, California), and in other cases the counties are city-county governments themselves (i.e. City of Baltimore, Maryland).[11]

---

[9] See Table 5.

[10] Actual scanned copies of living wage ordinances in PDF format can be viewed at http://www.livingwagecampaign.org/. Since 2004, the number of communities adopting living wage ordinances continues to grow. In the interests of tractability, the research analysis reported below is performed on data on or before December 31, 2004.

[11] Perhaps the most spectacular ordinance, passed after this study was completed, was the living wage aimed directly at large employers in the Chicago metropolitan area, or the so-called *Wal-Mart* ordinance.

Table 1
Adoptions of Living Wage
Ordinances by Year

Year	Count	%
1988	1	1.0
1991	1	1.0
1994	1	1.0
1995	2	2.1
1996	4	4.2
1997	7	7.3
1998	9	9.4
1999	15	15.6
2000	12	12.5
2001	22	22.9
2002	15	15.6
2003	7	7.3
	96	100.0

Source: Employment Policies Institute

Table 2
State of Living Wage Ordinance Adoptions: 1988-2003

State	Number Adoptions	% of Total	State	Number Adoptions	% of Total
Arizona	2	2.1%	New Jersey	4	4.2%
California	17	17.7%	New Mexico	1	1.0%
Colorado	1	1.0%	New York	7	7.3%
Connecticut	3	3.1%	N.C.	2	2.1%
Florida	6	6.3%	Ohio	4	4.2%
Illinois	2	2.1%	Oregon	4	4.2%
Indiana	1	1.0%	Pennsylvania	1	1.0%
Iowa	1	1.0%	Tennessee	1	1.0%
Kentucky	1	1.0%	Texas	4	4.2%
Maryland	3	3.1%	Vermont	1	1.0%
Massachusetts	3	3.1%	Virginia	4	4.2%
Michigan	11	11.5%	Washington	1	1.0%
Minnesota	2	2.1%	Wisconsin	7	7.3%
Montana	2	2.1%	**Total**	96	100.0%

Source: Employment Policies Institute

Table 3
Type of Local Government
Adopting Living Wage Ordinance

Type of Local Government	Number	%
County	27	28.1%
City	64	66.7%
Township	3	3.1%
School District	2	2.08%
Total	96	100.0%

Source: Employment Policies Institute, author's calculations.

2.2 Growth in Living Wage Coverage

Over time, the total coverage of communities that have enacted living wage ordinances has grown. One way to measure this is to compare the overall employment level of living wage communities to total national employment over time. Figure 1 indicates that by this measure of size, living wage ordinances rose from less than 1% of total employment in the US in the early 1990's, and now are prevalent in 13% of the US labor market as of the close of 2002[12] Unfortunately, there are no econometric studies that explain the rapid growth in coverage of living wage ordinances; however, as is evident from an inspection of the list of communities below, much of the growth in coverage is the result of adoption in a few, very large urban counties (Los Angeles County, California, Cook County, Illinois, and New York City, New York. These three areas accounted for population of 23 million according to the 2000 Census. (See Table 4).

---

[12] Source: author's tabulations of US Department of Labor Small Area employment data. The employment count *excludes* double counting of overlapping counties and constituent municipalities by measuring county employment as total employment less community employment in communities that have adopted a living wage ordinance.

Figure 1
Living Wage Communities' Employment as
% of US Total Employment 1990-2002
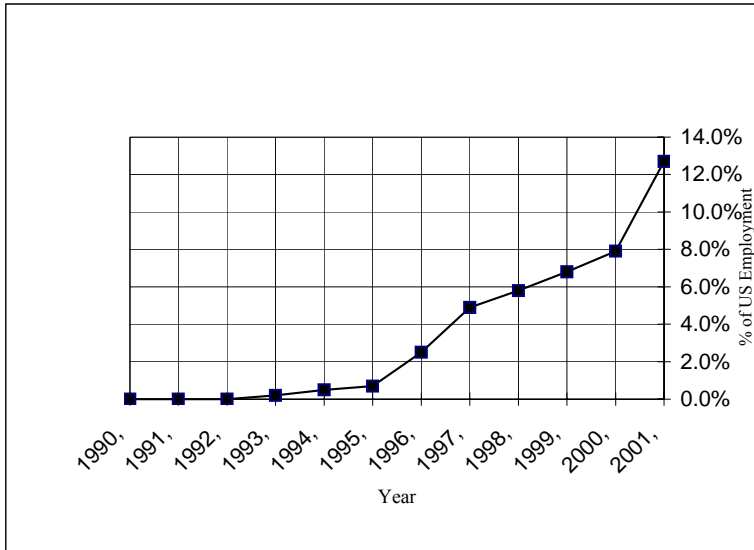
2.3 List of Living Wage Communities

Table 4 displays the list of living wage communities through December, 2003 and a few key characteristics. Note that the living wage rate listed is at time of adoption of the ordinance, and the population shown refers to the 2000 Census population of the municipality[13] that adopted the ordinance.[14] Table 5 indicates the types and prevalence of restrictions in the ordinances *per se* when such specificity could be inferred from reading the actual ordinance.[15]

Table 4
Communities that Adopted Living Wage Ordinances by
State, Year and Wage Rates With and Without Benefits at Time of Adoption

Year Of Adoption	Community	State	2000 Census Population	Living Wage With Benefits	Living Wage Without Benefits	Year Of Adoption	Community	State	2000 Census Population	Living Wage With Benefits	Living Wage Without Benefits
2002	Pima County	AZ	843,746	$8.00	$9.00	2001	Washtenaw County	MI	322,895	$8.70	$10.20
2000	Tucson	AZ	486,699	$8.26	$9.30	1999	Ypsilanti	MI	22,362	$8.50	$10.00
2000	Berkeley	CA	102,743	$9.75	$11.37	1999	Ypsilanti Twp	MI	49,182	$8.50	$10.00
1999	Hayward	CA	140,030	$8.61	$9.95	1997	Minneapolis	MN	382,618	$8.83	.
1997	Los Angeles City	CA	3,694,820	$7.72	$8.97	1997	St. Paul	MN	287,151	$9.02	$9.92
1999	Los Angeles County	CA	9,519,338	$8.32	$9.46	2001	Bozeman	MT	27,509	$8.50	$9.50
2002	Marin County	CA	247,289	$9.00	$10.25	2001	Missoula	MT	57,053	$7.95	.
1998	Oakland	CA	399,484	$9.13	$10.50	1998	Durham	NC	187,035	$8.45	.
2002	Oxnard	CA	170,358	$9.00	$11.25	1998	Orange County	NC	118,227	$10.00	.
1996	Pasadena	CA	133,936	$7.25	$8.50	2002	Cumberland County	NJ	146,438	$8.50	$10.87
2001	Richmond	CA	99,216	$11.42	$12.92	2000	Gloucester County	NJ	254,673	$8.50	$10.77
2000	San Fernando	CA	23,564	$7.25	$8.50	1999	Hudson County	NJ	608,975	$7.73	.
1998	San Jose	CA	894,943	$10.10	$11.35	1996	Jersey City	NJ	240,055	$7.50	.
1995	Santa Clara County	CA	1,682,585	$10.00	.	2002	Santa Fe	NM	62,203	$8.50	.
2000	Santa Cruz City	CA	54,593	$11.00	$12.00	1999	Buffalo	NY	292,648	$7.25	.
2001	Santa Monica	CA	84,084	$10.50	$12.25	2003	Ithaca	NY	29,287	$8.68	.
2001	Ventura County	CA	753,197	$8.00	$10.00	2002	New York City	NY	8,008,278	$8.10	$9.60
2002	Watsonville	CA	44,265	$11.50	$12.55	2001	Oyster Bay	NY	293,925	$9.00	$10.25
1997	West Hollywood	CA	35,716	$7.25	$8.50	2001	Rochester	NY	219,773	$8.52	$9.52
2000	Denver	CO	554,636	$8.50	.	2001	Suffolk County	NY	1,419,369	$9.00	$10.25
1999	Hartford	CT	121,578	$9.02	.	2002	Westchester County	NY	923,459	$10.00	.
2000	Meridan	CT	58,244	$9.02	.	2002	Cincinnati	OH	331,285	$8.70	$10.20
1997	New Haven	CT	123,626	$9.75	.	2000	Cleveland	OH	478,403	$8.20	.

---

[13] Technically, the population shown is for the minor civil division or MCD, which is re-measured each census by the Geography Division of the Census Bureau in consultation with the Governments Division of the Census Bureau, which confirms the status of the municipal corporation, or a school district that is coterminous geographically with the municipality of the same name. In some instances, such as New York City, the municipal government is also the school district in question.

[14] It was not possible to measure living wage rates *subsequent* to adoption (or implementation), since many ordinances were unclear about indexing methods, if indexation was provided in the ordinance.

[15] It should be noted that a few zero cells in Table 5 become non-zero when the table includes more recent years. The time period of the table is restricted to the close of 2003 in the interests of consistency with other tables in this paper.

Year Of Adoption	Community	State	2000 Census Population	Living Wage With Benefits	Living Wage Without Benefits	Year Of Adoption	Community	State	2000 Census Population	Living Wage With Benefits	Living Wage Without Benefits
2002	Broward County	FL	1,623,018	$9.57	$10.82	2003	Dayton	OH	166,179	$8.50	.
2001	Gainesville	FL	95,447	$8.56	.	2001	Toledo	OH	313,619	$9.35	$11.02
2001	Miami Beach	FL	87,933	$8.56	$9.81	2001	Ashland	OR	19,522	$9.75	$10.75
1999	Miami-Dade County	FL	2,253,362	$8.81	$10.06	1999	Corvallis	OR	49,322	$9.00	.
2002	Orange County	FL	896,344	$7.98	.	1996	Multnomah County	OR	660,486	$9.00	.
2003	Palm Beach County	FL	1,131,184	$9.57	$10.82	1998	Portland	OR	529,121	$8.00	$9.00
1988	Des Moines	IA	42,351	$7.00	$9.00	2001	Pittsburgh	PA	334,563	$9.12	$10.62
1998	Chicago	IL	2,896,016	$9.05	.	1999	Memphis	TN	650,100	.	.
1998	Cook County	IL	5,376,741	$7.60	.	2001	Bexar County	TX	1,392,931	$8.25	.
1991	Gary	IN	102,746	Prevailing Wage	.	1999	Hidalgo County	TX	569,463	$6.75	.
2002	Louisville	KY	949,835	$8.50	.	1998	San Antonio	TX	1,144,646	$9.27	$10.13
1997	Boston	MA	589,141	$10.25	.	2000	Travis County	TX	812,280	$8.50	.
1999	Cambridge	MA	101,355	$10.68	.	2000	Alexandria	VA	128,283	$10.21	.
1999	Somerville	MA	77,478	$8.83	.	2001	Charlottesville	VA	45,049	$8.00	.
1994	Baltimore	MD	651,154	$8.20	.	2001	James City County	VA	48,102	$8.25	.
2002	Montgomery County	MD	873,341	$10.50	.	2001	Richmond School Board	VA	198,267	$8.50	$10.13
2003	Prince George's County	MD	801,515	$10.50	.	2003	Burlington	VT	38,889	$9.90	$11.68
2001	Ann Arbor	MI	114,024	$8.70	$10.20	2002	Bellingham	WA	67,171	$10.00	$11.50
1998	Detroit	MI	951,270	$8.83	$11.03	1999	Dane County	WI	426,526	$8.27	.
2001	Eastpointe	MI	34,077	$8.23	$10.00	2000	Eau Claire County	WI	93,142	$6.67	$7.40
2001	Ferndale	MI	22,105	$8.50	$9.75	2003	La Crosse	WI	51,818	$9.73	.
2003	Ingham County	MI	279,320	$9.20	$11.50	1999	Madison	WI	208,054	$8.83	.
2001	Pittsfield Twp	MI	30,167	$8.70	$10.20	1995	Milwaukee City	WI	596,974	$6.80	.
2002	Southfield	MI	78,296	$9.05	$11.31	1997	Milwaukee County	WI	940,164	$6.25	.
2000	Warren	MI	2,107	$8.83	$11.04	1996	Milwaukee School District	WI	590,503	$7.70	.

Source: Employment Policies Institute, US Bureau of the Census

Table 5
Types of Living Wage Ordinances Discernible from Actual Ordinances

		Minimum	Mean	Maximum	
Living Wage Including Benefits		$6.25	$8.78	$11.50	
Living Wage Excluding Benefits		$7.40	$10.33	$12.92	
Type of Provision in Ordinance	**Ordinance Covers?**	County	City	County	City
Businesses Receiving Aid	No	20	28	80.0%	59.6%
	Yes	5	19	20.0%	40.4%
	Total	25	47	100.0%	100.0%
Businesses Requiring A License	Ordinance Covers?	County	City	County	City
	No	25	46	100.0%	97.9%
	Yes	0	1	0.0%	2.1%
	Total	25	47	100.0%	100.0%
Contractors to Municipality	Ordinance Covers?	County	City	County	City
	No	17	6	68.0%	12.8%
	Yes	8	41	32.0%	87.2%
	Total	25	47	100.0%	100.0%
Companies Receiving Tax Abatements	Ordinance Covers?	County	City	County	City
	No	25	47	100.0%	100.0%
	Yes	0	0	0.0%	0.0%
	Total	25	47	100.0%	100.0%
County/Municipal Employees	Ordinance Covers?	County	City	County	City
	No	24	29	96.0%	61.7%
	Yes	1	18	4.0%	38.3%
	Total	25	47	100.0%	100.0%
Leaseholders	Ordinance Covers?	County	City	County	City
	No	24	42	96.0%	89.4%
	Yes	1	5	4.0%	10.6%
	Total	25	47	100.0%	100.0%
Property Owners	Ordinance Covers?	County	City	County	City
	No	25	47	100.0%	100.0%
	Yes	0	0	0.0%	0.0%
	Total	25	47	100.0%	100.0%

Source: Employment Policies Institute, EPIOnline.Org, author's calculations.

Figure 2
Unduplicated Population Share
Living Wage Communities as % of of US Population: 1988-2003
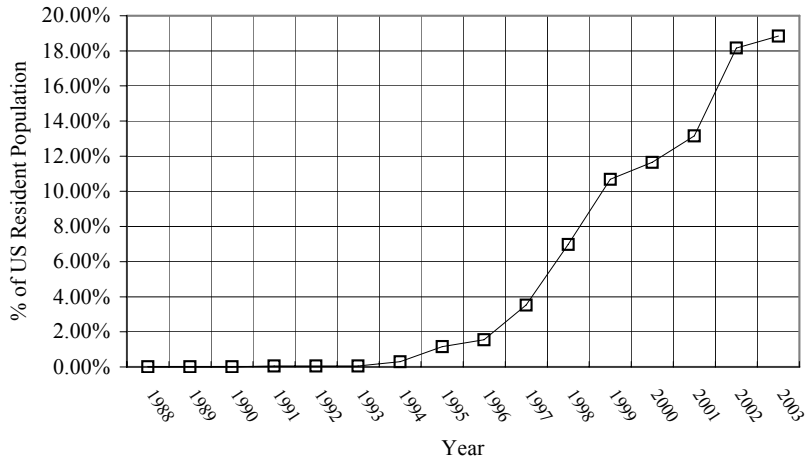
3.0 A Social Accounting Framework for Analyzing Minimum and Living Wage Rules[16]

3.1 Economic Efficiency and the Labor Market

It is helpful when analyzing government interventions in the labor market to first review some basics about what it means for an economy to be operating efficiently, in order to understand what tradeoffs there may be between raising wages for some and the effects of such actions on others in an economy. Economic theory typically defines economic efficiency as the full or complete utilization of existing resources to generate goods and services that can be used for consumption and investment purposes in a period of time. Operationally, government statisticians measure the extent to which labor and capital are utilized, represented by for by the employment rate and capacity utilization rate, as indicators of the extent to which an economy is producing its maximal domestic product. If possible, various unintended, negative effects on the standard of living such as pollution, congestion, and other socially undesired outcomes of economic activity should also be factored in when measuring the economic success or efficiency of an economy over a period of time. Including such additional considerations, such as the value of leisure, moves the analysis from one of economic efficiency to economic *welfare.*

Economic efficiency and likely economic welfare can unambiguously be improved when markets operate more efficiently. In the context of local, regional, and national labor markets, it follows that were an economy to move from an employment rate of 90% to 95%, at the same wage rate, that economic efficiency and economic welfare would have improved because more goods and services have been produced, which is mirrored by greater wages and profits (income) being paid out that are in turn used to consume goods and services and purchase investment goods.[17]

Interventions by government can positively and negatively affect the level of efficiency and economic welfare in an economy. Consider an economy whose labor and capital are utilized at 90%, and imagine that the underutilization is due to the inability of employers and those looking for work (the unemployed) to find each other. That is, suppose that information about work opportunities is not readily available so that unemployment at a rate of 10%, the complement of the employment rate, occurs. Now, suppose that government obtains information about job opportunities from employers and makes that information freely available with the result that the ½ of the unemployed locate employers and get hired; the employment rate rises to 95%, i.e.. the unemployment rate falls to 5%. More goods and services will be produced as a consequence of more people working in the economy, wages and hours worked will be greater, the produced goods and services will be consumed, and the balance used for investment. Economic efficiency has been enhanced.

---

[16] This section is largely a review of what economics has to say about the effects of various kinds of labor market interventions and imperfections that may occur when government intervenes through the imposition of a minimum wage, and are presented so that this study is self-contained for the reader.

[17] This point does not take into account the valuation of the *distribution* of the original and new resources. As long as nobody is worse off at 95% employment rate than at 90% employment rate, the Pareto efficiency criteria has been satisfied.

The analysis is not complete, however, because the financing or funding of the governmental activity, the creation of job information through employer surveys that are in turn made freely available for anybody to use when searching for a job (both unemployed and employed who are seeking to improve their employment situation), has not been accounted for. Financing of a new government activity requires imposition and collection of a fee or a tax which in turn reduces the amount of income available for private consumption and investment. In this example, it is likely that the combined public and private expense of job surveying and free provision of employment opportunity information is small in relation to the value of economic gain of the additional employment and value that occurs to employers (ultimately greater profits from selling more goods and services) and employees (the standard of living for the unemployed has risen because they are now garnering income from work that can be spent on goods and services). It is likely in this example that financial imposition of a tax to finance the governmental activity will be quite minor when compared to the raised employment rate from 90 to 95%. Were the activity financed by a new employment fee of, say, $5 collected from the newly employed worker, who was previously unemployed, then all would be better off and economic efficiency has been positively enhanced by the government activity *and its financing.*

Suppose, instead, that such an employment survey and the distribution of information about it is very costly to perform, and that a 40% income tax must be imposed on those working. Now, the reduction in economic well being is quite profound in comparison to the improvement in well being for the 5% of the labor force whose employment prospects have now improved. Consumption and investment/savings by the employed will likely fall as after-tax income has fallen, and it is imaginable that the overall level of economic activity might be lower from this turn of affairs. Here, government intervention has lowered the overall efficiency in the economy. Of course, it is unlikely that such numerical relationships would occur in a practice, but this example illustrates the point that the details of government intervention, e.g. *how much*, matter in drawing conclusions about whether or not the financing of such interventions will cause subsequent economic distortions.

Another form of intervention by government that may or may not positively impact on the overall efficiency of an economy and the level of economic welfare entails the pure redistribution of resources by government through taxation and transfers. Imagine that the economy is operating at capacity with 99% of the labor force employed and 99% of capital being utilized for 3 shifts per day. Now imagine that the government imposes a progressive income tax on rates from 60 to 90%, and takes the resulting tax revenues and transfers them in inverse fashion to the lowest paid workers in society through a refundable credit. It is likely that the taxed will reduce their work and investment/savings efforts as the result of the discouragement effect of very high marginal tax rates, and those receiving the subsidies will also likely reduce their work effort, choosing greater leisure with the transfers as a result of the very generous refundable credits. The result would then be that the overall production of goods and services will decline in the economy. Here there is *deadweight loss* to the economy of the government intervention above and beyond the amount of taxes collected and transfers paid because decisions to work have been altered by the package of tax and subsidies.

The same examples of beneficial and destructive effects of government on the level of economic efficiency in an economy can be given when the intervention of government is through regulation rather than the direct imposition of taxation and the provision of transfers. When government uses its authority to mandate minimum levels of wages or a wage floor that is above what might occur were

employers and employees able to freely bargain, some of those willing to work at the market wage will be denied work opportunity and employers will find themselves paying higher wage rates for fewer hours, with the result that their ability to produce goods and services at a given cost level will decline. Idled resources, in terms of unemployed workers and employers producing at lower levels of output (and thereby earning lower profits) constitute deadweight loss to the economy. If in place are a system of government transfers to the now unemployed, that is financed by taxes on the employed, then there will be a secondary deadweight loss to the economy as a result of the first round or primary regulatory policy of the minimum wage floor that is above the competitive wage rate.

It should be noted that the analysis of deadweight loss from taxation enquires ultimately into how much change or elasticity there is in the factor of production that is being taxed. If the factor of production is inelastic, then there will be little behavioral response to the tax, and therefore little deadweight loss beyond the obvious reduction in income due to the payment of taxes. A head tax is typically viewed as the only tax without any deadweight loss associated with it, as is a tax on land because the supply of land (but not improvements) is generally viewed as fixed or entirely inelastic. When employees and employers relocate purely to escape a tax in a particular geographic area, the relocation can be viewed as a deadweight loss because it is a response to the tax. Such an extreme effect of course affects the subsequent ability of the local government to raise further income taxes because part of the tax base has disappeared as a result of the imposition of the tax to begin with.

As noted above in Section 1, the primary differences between minimum and living wage rules involve the extent to which each wage floor covers labor markets, and the manner in which the intervention is imposed. In the case of a minimum wage, national or state authority sets an hourly wage rate floor for classes or categories of employment relationships (e.g. full time, in covered occupations and industries). A living wage is imposed on a more limited geographic area of the labor market that are characterized primarily by the relationship of an employer to the municipality or county imposing the ordinance *per se.*

Alteration in the employment relation between employer and employee, because of the ordinance, can lead to a variety of direct and indirect effects. Because the wage rate may be above that which would be freely negotiated between employer and employee, those employees who receive the higher wage rate will be better off than otherwise would be the case, while the employer will unambiguously be worse off because they will be receiving fewer hours of work for a fixed wage bill, and will have to pay more in total wages than otherwise would be the case were the living wage ordinance not in place. They may try to recover lost profits by raising prices to customers, including prices paid to the municipality imposing the ordinance, as well as paying other employees, including managers and the owners, less than would otherwise be the case, and negotiating lower prices or discounts from suppliers of needed factors of production.

If the municipality itself is imposing the living wage obligation on its own employment relations, some combination of service levels and taxes and fees will be altered since it is paying more for labor services as a consequence of the living wage floor.

Beyond these immediate hourly wage costs will be additional costs in benefits that are calculated on the basis of payroll. It is not uncommon for benefits (Social Security, Unemployment Insurance, retirement and health contributions) to amount to 20 or 30% of direct compensation costs.

In each of the above circumstances when the employer must change his behavior because of the artificially imposed wage floor, some sort of economic deadweight loss must occur since quantities and prices are different than those that would be arrived at with a freely functioning labor market without the wage floor. While some employees will be unambiguously better off as a consequence of receiving more than they would were there not a wage floor, it also is the case that some employees will no longer be working as a result of the wage floor. During their spell of unemployment, they will draw on their unemployment insurance benefits, and qualify over time for various kinds of income maintenance programs of cash and in-kind payments whose financing involves taxation and in turn, additional deadweight loss.

Employers facing higher labor costs may, of course, seek to pay for them by charging customers higher prices, and hope that total quantity sold and market share will not be adversely affected.[18]

Figure 3 shows graphically the above idea of fully employed (100%) labor and capital contributing the total value of output over 10 periods of time. Total potential or maximum output begins at 100 and grows to 130.5 by period 10.

---

[18] See Aaronson (2001) on the matter of pass-through in product market prices.

Figure 3
Full Employment Output over Time
Wages + Profits = Total Value of Output
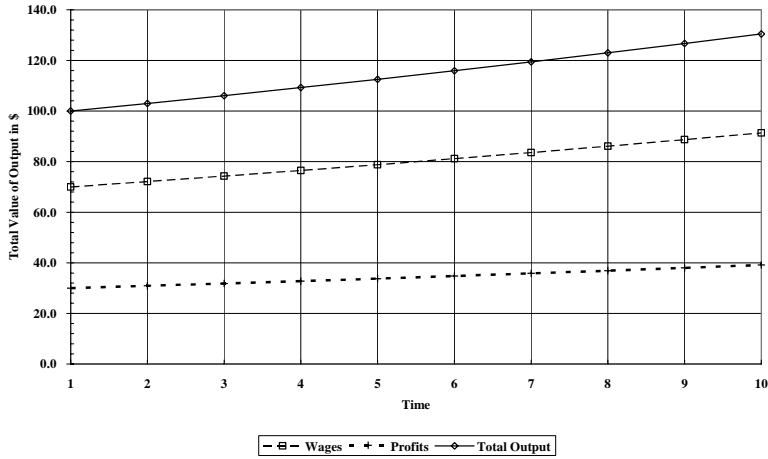
Figure 4
GDP at Different Capacity Utilization Levels
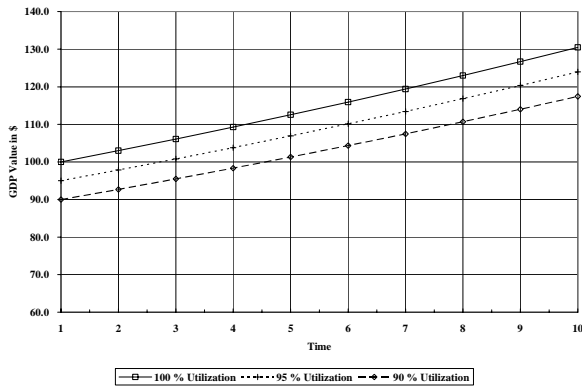
Figure 4 above displays graphically the idea that if capital and labor are underutilized, then output is lower than it might potentially be.

Algebraically, with Wages $_{i\,100\%}$ denoting the aggregation of total wages paid to labor when all who want to work at a given wage are working for mutually agreed upon numbers of hours for time period i, and Profits $_{i\,100\%}$ denoting aggregation of the return to employers of their investment or profits in time period i, we can write the accounting identify for total potential output, GDP$_{i\,100\,\%}$ in the economy as:

$$GDP_{i\,100\,\%} = \text{Wages}_{i\,100\%} + \text{Profits}_{i\,100\%} \tag{1}$$

The above example of pure redistribution involves the imposition of, say, a tax rate t on Wages for some j = 1, … n employees whose wage rate w_{ij} is above a threshold w^*, $w_{ij} > w^*$. Tax revenue, T_i, is thus $\sum t * w_{ij}$ in the case of a proportional tax rate and take home pay is (1-t) $*w_{ij}$ .Government spending on operations, G_i, is financed by and equals T_i, and the question arising is whether the level of T_i, is affected by taking money from some people to give to others.[19] If so, total production in the economy will be at a lower level than were there no intervention by government, and the resulting capacity utilization of labor and capital will be lower than were there no pure transfer system. Thus whether (2) is as large as (1) is an open question and depends on the behavioral response of workers and employers to the system of pure transfers.

$$GDP_{?\%} = \text{Wages}_{?\%} + \text{Profits}_{?\%} + G - T \tag{2}$$

3.2 The Micro-Economics of An Economy with Government with Minimum Wage Laws and Varying Market Organization

Neoclassical labor economics has applied the above general reasoning about the effects of government wage floors to the labor market under varying assumptions about the employer's market[20] with both theoretical predictions about the effects of wage floors. Rather less is known about how to interpret the *overall* or general efficiency losses resulting in secondary and other markets as a result of interventions such as wage floors, or those that result from the imposition of taxes on some workers to finance income maintenance transfers to others displaced by wage floors.[21] Below we briefly review the implications for employer decision making when both product and factor (labor and capital) markets are competitive, and a wage floor is introduced, and then relax these assumptions. Employers are presumed to maximize profits, and those looking for work offer hours of work in light of offered wage rates and their valuation of leisure.[22]

---

[19] Progressivity in tax means that the tax rate, t, is a positive function of w, and holds out the possibility of further discouragement effects for those more highly compensated and therefore more valuable or productive in the labor market.

[20] That is, the effects of dropping the assumption of competition in the product market are well recognized, e.g. the effect of monopoly or oligopoly in the product market, are well known, as are the effects of the employer being a monopsonist.

[21] See Ehrenberg and Smith (2002), Chapter 3 and 4, and Hamermesh (1993), especially pp. 186-91, for balanced and comprehensive treatments of the effects of minimum wage laws on the labor market. The original analysis of the effects of a minimum wage floor can be traced to at least Stigler (1946) and Welch (1976).

[22] The development here follows Ehrenberg and Smith (2002), chapters 3 and 4.

3.2.1 The Competitive case

In the competitive case, profit maximization leads the employer to produce and sell his goods and services up to the point that marginal revenue from the next unit of sale equals the marginal cost of producing that unit of sale. Given the assumption of competition, the employer or firm is a *price-taker*. It then follows that the production and offer to sell in the market occurs to the point that the price received equals the marginal cost of production. Also, given competition in the market for labor, the employer is a *wage-taker* and can not by himself influence the cost of labor being offered.

Factors of production, labor and capital, are employed based on their contribution to production. The theory of diminishing returns means that adding additional amounts of labor, holding capital constant, will lead to diminishing marginal additions to output. Capital and labor should be added or hired by the profit maximizing employer to the point that the marginal revenue productivity of each factor is equal to its marginal expense (e.g. the wage or capital cost of employing another hour of labor equals its marginal contribution to revenues). The marginal revenue productivity of a factor reflects its physical productivity. For the competitive case in product and labor markets, the marginal revenue productivity is simply the wage rate, and profits will be maximized when the wage rate equals the marginal physical productivity of labor times the product price:

$$MP_L \cdot * P = W \tag{3}$$

The net result of this is that the demand for labor, dimensioned in terms of hours of work the employer wants to hire, is downward sloping or inverse in relation to the wage rate that must be paid to attract a desired number of hours of work. In the very short run when capital can not be varied but employment levels can, the firm is unable to substitute capital for labor or labor for capital. As technology changes, however, and labor and capital prices change, firms will continuously review the physical productivity and prices of labor and capital and make adjustments in order to continue to maximize profits. The extent to which capital can be substituted for labor can also depend on the regulatory environment imposed by government. When it is impossible to shed labor in favor of more productive capital, and the firm remains as a price taker, its profits and market share will suffer.[23]

3.2.2 The Monopoly case

When the employer is able to set price, various marginal conditions change and the equilibrium for the demand for labor changes. Note that price or P in (3) has been replaced by marginal revenue in the equilibrium restatement of (4) in this monopoly situation:

$$MP_L * MR = W \tag{4}$$

Since we are now dealing with a monopolist, $MR < P$, which in turn forces his demand for labor to be less than the competitive case for each wage rate. If the employer is a monopolist in the product market but a competitive buyer of labor services, he may wind up paying the same wage rate

---

[23] This situation characterizes in part European labor markets.

as other firms but simply hire fewer hours because his profit maximizing level of output, given he is a monopolist, is less than in the competitive case. As a *wage taker*, the monopolist faces a horizontal supply curve at the wage rate W.

3.2.3 The Monopsony case

When a firm dominates a factor market, in this case the labor market, it can *set* the wage rate rather than be a *wage-taker.* Unlike the competitive situation in which the supply of labor is horizontal, the monopsonist faces an upward sloping supply curve of labor. In a monopsony market, the wage rate and hours of work employed are *less* than in the competitive case because the monopsonistic firm sets the marginal revenue product of labor to the marginal expense it pays, and in effect sets the wage rate rather than simply taking it.

In competitive product and factor markets, a wage floor or mandated wage such as a minimum wage will cause both employer and workers to be disappointed with the involuntary unemployment resulting. The effect of a wage floor *above* an existing equilibrium wage may be expected to raise wages received for fewer workers, and, in most situations, fewer total hours will be hired. Disappointed or involuntarily unemployed workers may then go to other sectors that are not covered by the wage floor, and drive down the wage in that market and increase employment compared to what it was before imposition of the wage floor in the covered market. Under most situations of technology, and demand and supply elasticities, overall output in the two markets will be lower as a result of the wage floor in the first market.

In the case of monopsony in the labor market, it is possible for imposition of a wage floor, above an initial equilibrium wage reached, to both increase wages *and* employment. If the wage rate at the floor is above the initial wage rate that the employer chose, then the new supply curve of labor will be horizontal which implies no increase in the marginal expense of labor. The profit maximizing monopsonist who equates the marginal expense of labor to its marginal revenue productivity will then *expand* employment. Over time, as capital becomes less fixed the monopsonist firm with respect to the labor market will begin to substitute capital for labor since the *average* cost of labor has risen compared to the pre-wage floor situation.

4.0 Empirical Studies and Findings on Effects of Minimum Wage Laws and Living Wage Ordinances

Whether or not government intervention in the labor market to assure a minimum wage has desired effects has been a prominent area of empirical labor economics research in the US since the adoption of the Fair Labor Standards Act of 1938. Because advocacy and adoption of living wage ordinances is relatively recent, there is substantially less research on the effects of living wages. Below, recent findings on the effects of minimum wages are summarized, and the research and findings on the effects of living wages are reviewed and summarized. The purpose of these reviews is to motivate the research questions and empirical research in Section 5 and 6.

4.1 Minimum Wage Studies[24]

Until the early 1990's, there was general agreement that federal minimum wage legislation adversely impacted the employment of low wage workers, and in particular young (teenagers) and relatively unskilled workers.[25] Research by David Card and Alan Krueger in a paper[26] and an important book[27] challenged theoretical predictions of the competitive model of product and factor markets briefly reviewed above, and presented detailed empirical analysis that supported the assertion that imposing a minimum wage for an entire industry above an equilibrium wage can increase the wages of the targeted group as well as *increase* employment in the short run. Looking at fast-food stores in metropolitan Philadelphia in Pennsylvania and New Jersey, they provide short-run econometric evidence that employment *and* product prices can increase from such a policy, and so will wages of low income (teenage) workers, because they have been forcibly raised by the new minimum wage.

The Card-Krueger findings, based on their analysis of the March, Current Population Survey[28] and their own survey data on fast-food employers in Pennsylvania and New Jersey, have stimulated a substantial reaction in the applied labor economics literature. Without reviewing the details of their controversial findings and those of others, the following seems to be the state of the argument: Whether or not one can empirically support their paradoxical result that teen employment *increases* upon an increase in the federal or state minimum wage depends in part on how one measures the occurrence or timing of the policy change. Burkhauser, Couch and Wittenberg (2000) find that by using *monthly* CPS data, rather than *one* month of CPS data each year, as do Card and Krueger (1995), increases in the minimum wage have the depressing effect on teenage employment that neoclassical microeconomic labor theory predicts, and that resort to the theoretical conjecture that short-run monopsony behavior is at work to explain this empirical finding is unnecessary. Burkhauser, Couch and Wittenberg (2000) also find that including year effects through annual dummy variables in regressions explaining the natural logarithm of teen employment as a share of population[29] masks macro-economic effects that are more properly otherwise measured, and that the use of year dummies with just the March CPS tends to mask the depressing effects of minimum wage law changes on teen employment.

4.2 Living Wage Studies

---

[24] There are several recent, balanced reviews of the empirical minimum wage literature. See Ehrenberg (2002, Chapter 4); Hamermesh (1993, Chapter 3) is informative about the earlier US and international studies. In conjunction with their own empirical contributions to the most recent CPS analyses of the minimum wage debates, see Burkhauser, Richard V., Kenneth A. Couch and David C. Wittenberg (1996) and Burkhauser, Richard V., Kenneth A. Couch, and David C. Wittenberg (2000).

[25] See Neumark and Wascher (1992) and Deere, Murphy and Welch (1995)

[26] See, principally, Card and Krueger (1994).

[27] Card and Krueger (1995).

[28] See Card and Krueger (2005), Table 9.2 at p. 285.

[29] See Burkhauser, Couch, and Wittenberg (2000), Table 1, p. 661. Whether or not the ratio of teen employment to population accurately estimates the teen employment rate, typically defined as the ratio of teen employment to the teen *labor force,* is difficult to determine. The use of population is likely dictated by the absence of monthly measures of the teen labor force. Of course, the labor force in such a ratio is likely endogenous to offered wage rates so that statistical estimation of the ratio of teen employment to teen labor force would require a structural specification that separately explained the teen labor force. Such an effort would bring associated data difficulties and econometric complexities.

Studies of the effects of living wage ordinances fall into several groups. At the municipal or regional level there are *ex ante* advocacy studies that seek to demonstrate the advantage to municipal legislators of adoption of such ordinances. [30] There are also, in many instances, studies of the same proposed ordinances that seek to show the additional costs to the local government of embracing such policies, and/or the additional costs that local businesses would face under those versions of living wage ordinances that obligate contractors or beneficiaries of various forms of local assistance from the government to pay living wage rates. [31]

Reynolds (1999) for example, examined the Detroit living wage proposal, and concluded that "the overall costs to employers in complying with Detroit's living wage law are relatively minor,"[32] and that "…even if all the wage increases were passed entirely to the city, the amount would represents under three-tenths of one percent of Detroit's city budget.[33] Further, Reynolds (1999) predicted there would be no negative effects on employment or investment patterns in Detroit, and that 85% of affected workers would see "…substantial gains in overall income."[34] These results are comparable to those of Weisbrodt and Sforza-Roderick (1996) for Baltimore and Pollin and Luce (1998) for Los Angeles. Looking at Chicago's proposed living wage ordinance in 1999, Tolley, Bernstein and Lesage (1999) concluded that the proposed ordinance would raise wages of 8,470 workers, and cause job losses for 1,337 others, at a cost of $7,000 per newly covered worker that would result in only $2,000 of additional take-home pay. They predict a tax increase of $19.8 million by Chicago to cover the additional payroll and administrative monitoring costs of the proposed ordinance.[35]

Systematic analysis of the effects of living wage ordinances on the approximately 100 municipalities imposing them have been infrequent until 2002 and the work of David Neumark[36]. Neumark and Adams (2003a) examined 35 living wage communities with monthly CPS Outgoing Rotation Group data and annual CPS annual data to measure the effect of such ordinances on urban poverty. They conclude, based on their use of CPS data, that living wage ordinances are effective at moving families out of poverty as measured by whether or not the family's earnings or income are above the poverty line at each point in time in the data. In particular they find that a 10% increase in the living wage reduces the odds that the family lives in poverty by about .0035, which implies an elasticity of about -.19. [37]

As is well known, earnings are only one component of a household's economic position, and, as Neumark and Adams note, adding into the analysis considerations of the refundable earned income tax credit, cash and in kind transfers to food and health care might change the results. They are, however, somewhat limited by the CPS as it does not systematically cover refundable tax credits and federal and state income and in-kind transfers. This is a matter we shall return to when devising the research strategy for this study.

---

[30] Examples of these studies include: Weisbrodt and Sforza-Roderick (1996) and Niedt, Christopher, Ruiters, Wise and Schoenberger (1999).

[31] Examples of these studies include Tolley, Bernstein and Lesage (1999) , Employment Policies Institute.

[32] Reynolds (1999), p.1.

[33] *Ibid.*

[34] *Ibid,* p. 2.

[35] Tolley, Bernstein and Lesage (1999), p. 28.

[36] See Neumark (2002) for an initial, quite extensive monograph on the topic.

[37] Neumark and Adams (2003a), p.515.

Neumark and Adams (2003a) also examined with CPS data the effect of such ordinances possible dis-employment effects, which they find to be quite modest. Most recently, Adams and Neumark (2005) explore monthly CPS data from January, 1996 through December, 2002, to ascertain if living wage ordinances have affected the wages of those who fall below the 10th percentile in any given city-month cell of the earnings distribution. To ascertain employment effects, they estimate a linear probability model of each person working or not working.[38] An important focus of their analysis is whether the *type* of living wage ordinance enacted has differential effects on wages and employment. In describing their data, Neumark and Adams comment that

> "…all that can be identified (and therefore the only information exploited in the empirical analysis) is **the city in which a worker lives** (emphasis added) and the type of law prevailing there."[39]

This statement about the geographic location of CPS respondents used in their statistical analysis may not be entirely accurate, and, because we exploit below different sources of data on municipal and community employment, it deserves further scrutiny. While an important advantage of using the Current Population Survey monthly rotation data is that it provides wage and employment information as well as household information, the geographic specificity for the approximately 100,000 households sampled monthly throughout the United States is rather limited viz. a viz. the municipalities actually imposing living wage ordinances.

State of residence is reported and deemed by Census to be reliable for all states and the District of Columbia. However, geographic attribution of CPS respondents below the state level becomes more complicated as the sample size necessarily diminishes and confidentiality concerns begin to affect what Census can disclose for researchers to use. The Census Bureau's documentation for the CPS[40] reports that 173 Metropolitan Statistical Areas (MSAs), 69 Primary Metropolitan Statistical Areas (PMSAs), 41 Central Cities, and 217 Counties are uniquely identified on the CPS data and are routinely publicly released.[41] However, only eight of the 41 central cities that are identifiable in the CPS ever adopted living wage ordinances that were analyzed by Neumark and Adams (2003a) and only eleven in Adams and Neumark (2005).

Some indication of the possible difference between living in, say, a central city of residence and living in the broader metropolitan area can be gleaned by comparing the ratio of population of the central city or Minor Civil Division, as measured and enumerated in the decennial Census, to the

---

[38] See Neumark and Adams (2005), pp. 174-177.

[39] *Op cit.*, p. 173.

[40] See, for example, http://www.census.gov/apsd/techdoc/cps/cpsjan&may00.pdf.

[41] A cross-check of the 41 central cities identified on the monthly CPS files at http://www.census.gov/apsd/techdoc/cps/cpsjan&may00.pdf and the 34 municipalities examined by Neumark (2002) at Table 1 indicates that only 12 cities (including 2 city-county governments of residence, Boston, Chicago, Dayton, Detroit, Los Angeles, Minneapolis, Oakland, San Francisco, St. Louis and St Paul) overlap. This means that attribution of *city* of residence for the other 23 municipalities examined by them must be on the basis of county, or other geographic area. Neumark (2002) apparently relied on MSA coding when central city coding was not available. Of the 24 municipal ordinances investigated by Adams and Neumark (2005), only 11 central cities or city-county governments of residence are actually identifiable.

entire MSA population in the same census year. This percentage can be viewed as the odds that the CPS household was actually sampled from the municipality whose living wage ordinance is hypothesized to affect wages received and the odds of working or not in that municipality. Table 6 shows this ratio using 2000 Census data for the 96 municipalities identified above in Table 4. Note that in some cases where the parent MSA was unknown, which is the case for some of the smaller municipalities, I have simply used the municipality population and shown 100%. Nonetheless, the analysis is rather discouraging because the median ratio is 25% which indicates that, even if the CPS did sample from the general MSA, the chances that the sampled households were in fact from the municipality which had imposed the living wage ordinance are likely to be small. [42]

Even though one can raise questions about the geographic accuracy of the data that Neumark and Adams in several papers have used, they do seem to find that living wage ordinances do have discernible, negative effects on employment of low wage workers. [43]

Another aspect of the extant living wage literature is its reliance on the date of adoption as the signal whose effect on employment or poverty is then analyzed. As is well known in the public finance literature on effects of taxation, there is frequently an important behavioral response to the date of implementation as contrasted to the date of adoption. For example, in the analysis of taxpayer responses to known, future increases in capital gains tax rates that took place in 1986, a number of important studies found huge increases of realizations to take advantages of lower, pre-law tax rates.[44] Since living wage ordinances *increase* the costs of labor, it is likely that adverse effects will be realized *after* implementation, rather than before, since it is then that labor costs become more costly.

4.3 Implications of Literature for this Study

Several questions arise from this review of the literature on living wage effects that divide into questions about effects were geographic attribution more accurately measured, and new questions that deserve investigation. With respect to the existing literature and data issues two problems seem evident. First, there remains an evident need to do empirical analysis of living wage effects with data whose geographic framework is consistent with the decision-making bodies that have imposed living wage ordinances. Second, the minimum wage and living wage literature both point to the importance of getting the timing of implementation accurately included in the analysis.

With respect to questions posed about the distributional effects of living wage ordinances, several points should be noted. None of the available systematic living wage literature examines whether or not such ordinances improve the overall financial position of the beneficiaries viz. a viz. what was available had recipients earned the minimum wage and available federal and state income

---

[42] Another difficulty the empirical researcher of living wage effects faces involves the matter of place of *residence* vs. place of *employment* of the data being utilized. Both the CPS and monthly data used here below use a residence concept rather than a place of employment concept. To the extent that low wage employees are less mobile than their high wage counterparts, this may not be that difficult a matter. Most living wage ordinances do not specify their application to residents vs. non-residents; rather, as noted above, they typically involve contracts to provide municipal services.

[43] See also Zelenitz and Toikka (2005) for findings of adverse effects of living wage ordinances using SIPPS data. Like Adams and Neumark (2005), they presume that MSA information is reliable in identifying the geographic location of households in municipalities that have enacted living wage ordinances.

[44] See, for example, Burman and Randolph (1994).

maintenance transfers, and none of that literature examines the budgetary and employment implications for municipalities, *per se*, that have adopted living wage ordinances.[45]

These matters are addressed as follows. Section 5 below explores this distributional issue through a state by state review of cash and in kind state and federal transfer program rules to determine if a living wage household would be, overall, better off then were it to work at the minimum wage and receive other benefits. Section 6 below examines employment and budget effects for a larger number of jurisdictions than have been examined by prior studies, and does so with data that pertains to solely municipalities that adopted living wage ordinances.

Table 6
Comparison of Population in Metropolitan Statistical Area
And Actual Population of Municipality Imposing
Living Wage Ordinance (2000 Census)

Year of Adoption	Name of Government Imposing Living Wage Ordinance	State	2000 Population Government	2000 Population of MSA	MCD/MSA Population Share
2000	Alexandria	VA	128,283	3,727,565	3.4%
2001	Ann Arbor	MI	114,024	322,895	35.3%
2001	Ashland	OR	19,522	na	100.0%
1994	Baltimore	MD	651,154	2,552,994	25.5%
2002	Bellingham	WA	67,171	166,814	40.3%
2000	Berkeley	CA	102,743	4,123,740	2.5%
2001	Bexar County	TX	1,392,931	1,711,703	81.4%
1997	Boston	MA	589,141	4,391,344	13.4%
2001	Bozeman	MT	27,509	67,831	40.6%
2002	Broward County	FL	1,623,018	5,007,564	32.4%
1999	Buffalo	NY	292,648	1,170,111	25.0%
2003	Burlington	VT	38,889	198,889	19.6%
1999	Cambridge	MA	101,355	4,391,344	2.3%
2001	Charlottesville	VA	45,049	174,021	25.9%
1998	Chicago	IL	2,896,016	7,628,412	38.0%
2002	Cincinnati	OH	331,285	2,009,632	16.5%
2000	Cleveland	OH	478,403	2,148,143	22.3%
1998	Cook County	IL	5,376,741	7,628,412	70.5%
1999	Corvallis	OR	49,322	78,153	63.1%
2002	Cumberland County	NJ	146,438	na	100.0%
1999	Dane County	WI	426,526	501,774	85.0%
2003	Dayton	OH	166,179	848,153	19.6%
2000	Denver	CO	554,636	2,179,240	25.5%
1988	Des Moines	IA	42,351	481,394	8.8%
1998	Detroit	MI	951,270	4,452,557	21.4%
1998	Durham	NC	187,035	426,493	43.9%

---

[45] Zelenitz and Toikka (2005) is an exception to this observation in that they count earnings, cash, and in kind transfers to arrive at a measure of economic income, and then explain such monthly household data with a dummy variable for date of adoption of a living wage ordinance, and control variables, in order to ascertain whether or not the living wage increased economic income.

Year of Adoption	Name of Government Imposing Living Wage Ordinance	State	2000 Population Government	2000 Population of MSA	MCD/MSA Population Share
2001	Eastpointe	MI	34,077	4,452,557	0.8%
2000	Eau Claire County	WI	93,142	148,337	62.8%
2001	Ferndale	MI	22,105	4,452,557	0.5%
2001	Gainesville	FL	95,447	232,392	41.1%
1991	Gary	IN	102,746	na	100.0%
2000	Gloucester County	NJ	254,673	5,687,147	4.5%
1999	Hartford	CT	121,578	1,148,618	10.6%
1999	Hayward	CA	140,030	4,123,740	3.4%
1999	Hidalgo County	TX	569,463	na	100.0%
1999	Hudson County	NJ	608,975	18,323,002	3.3%
2003	Ingham County	MI	279,320	na	100.0%
2003	Ithaca	NY	29,287	96,501	30.3%
2001	James City County	VA	48,102	na	100.0%
1996	Jersey City	NJ	240,055	18,323,002	1.3%
2003	La Crosse	WI	51,818	126,838	40.9%
1997	Los Angeles City	CA	3,694,820	12,365,627	29.9%
1999	Los Angeles County	CA	9,519,338	12,365,627	77.0%
2002	Louisville	KY	949,835	1,161,975	81.7%
1999	Madison	WI	208,054	501,774	41.5%
2002	Marin County	CA	247,289	4,123,740	6.0%
1999	Memphis	TN	650,100	1,205,204	53.9%
2000	Meridan	CT	58,244	106,569	54.7%
2001	Miami Beach	FL	87,933	5,007,564	1.8%
1999	Miami-Dade County	FL	2,253,362	5,007,564	45.0%
1995	Milwaukee City [46]	WI	596,974	1,500,741	39.8%
1997	Milwaukee County	WI	940,164	1,500,741	62.6%
1996	Milwaukee School District	WI	590,503	1,500,741	39.3%
1997	Minneapolis	MN	382,618	2,968,806	12.9%
2001	Missoula	MT	57,053	95,802	59.6%
2002	Montgomery County	MD	873,341	4,796,183	18.2%
1996	Multnomah County	OR	660,486	1,927,881	34.3%
1997	New Haven	CT	123,626	824,008	15.0%
2002	New York City	NY	8,008,278	18,323,002	43.7%
1998	Oakland	CA	399,484	4,123,740	9.7%
2002	Orange County	FL	896,344	1,644,561	54.5%
1998	Orange County	NC	118,227	426,493	27.7%
2002	Oxnard	CA	170,358	12,365,627	1.4%
2001	Oyster Bay	NY	293,925	18,323,002	1.6%
2003	Palm Beach County	FL	1,131,184	5,007,564	22.6%
1996	Pasadena	CA	133,936	12,365,627	1.1%
2002	Pima County	AZ	843,746	843,746	100.0%
2001	Pittsburgh	PA	334,563	2,431,087	13.8%
2001	Pittsfield Twp	MI	30,167	na	100.0%
1998	Portland	OR	529,121	487,568	108.5%

---

[46] Note that Milwaukee contains overlapping jurisdictions.

Year of Adoption	Name of Government Imposing Living Wage Ordinance	State	2000 Population Government	2000 Population of MSA	MCD/MSA Population Share
2003	Prince George's County	MD	801,515	4,796,183	16.7%
2001	Richmond	CA	99,216	1,096,957	9.0%
2001	Richmond School Board	VA	198,267	1,096,957	18.1%
2001	Rochester	NY	219,773	1,037,831	21.2%
1998	San Antonio	TX	1,144,646	1,711,703	66.9%
2000	San Fernando	CA	23,564	12,365,627	0.2%
1998	San Jose	CA	894,943	4,123,740	21.7%
1995	Santa Clara County	CA	1,682,585	4,123,740	40.8%
2000	Santa Cruz City	CA	54,593	na	100.0%
2002	Santa Fe	NM	62,203	129,292	48.1%
2001	Santa Monica	CA	84,084	12,365,627	0.7%
1999	Somerville	MA	77,478	4,391,344	1.8%
2002	Southfield	MI	78,296	4,452,557	1.8%
2000	St. Louis	MO	348,189	2,698,687	12.9%
1997	St. Paul	MN	287,151	2,968,806	9.7%
2001	Suffolk County	NY	1,419,369	18,323,002	7.7%
2001	Toledo	OH	313,619	659,188	47.6%
2000	Travis County	TX	812,280	1,249,763	65.0%
2000	Tucson	AZ	486,699	843,746	57.7%
2001	Ventura County	CA	753,197	na	100.0%
2000	Warren	MI	2,107	82,874	2.5%
2001	Washtenaw County	MI	322,895	4,452,557	7.3%
2002	Watsonville	CA	44,265	na	100.0%
1997	West Hollywood	CA	35,716	12,365,627	0.3%
2002	Westchester County	NY	923,459	18,323,002	5.0%
1999	Ypsilanti	MI	22,362	322,895	6.9%
1999	Ypsilanti Twp	MI	49,182	322,895	15.2%
Note: na denotes not available MSA population assumed=MCD Population				Q1	8.8%
				Median	25.5%
				Q3	54.7%

Source: Employment Policies Institute, 2000 Census

5.0 Distributional Analysis: Minimum Wage vs. Living Wage

5.1 Wages and Transfers: General

Our focus here is to describe what a household working at low wages would obtain from working and what the transfer system applicable to it would provide in comparison to an established standard of living, the Federal Poverty Line (FPL). We shall review and then apply detailed federal and state eligibility rules to a hypothetical family of three, an adult and two young children, to determine arithmetically whether earning a minimum wage plus various transfer payments, as contrasted with earning a living wage plus various transfer payments, leads to the conclusion that the household is better off under the living wage than under the minimum wage. A family of three is analyzed to take advantage of available income maintenance transfer calculations made available to this project by

the Library of Congress which routinely provides such information to the congressional committees of jurisdiction that deal with the earned income tax credit, Temporary Assistance for Needy Families (TANF), Medicaid, and Food Stamps.

Economic income is generally defined to include labor market earnings, income from capital, and the value of monetary and non-monetary or in-kind transfers. For households composed of able-bodied, working age adult(s) with children, this means adding up wages, interest, dividends, rents and royalties, cash transfers under Temporary Assistance for Needy Families (TANF), the cash value of Food Stamps and various forms of federally financed and state designed health assistance, Medicaid or State's Children Health Insurance Program (SCHIP). Also, because the federal earned income tax credit (EITC) is refundable and quite sizeable, the cash value of the credit should be included in the accounting definition of economic income to get a complete picture of resources available to a low wage household.

$$\text{Economic Income} = \text{Wages} + \text{Capital Income} + \text{TANF} + \text{Food Stamps} + \text{Medicaid/SCHIP} + \text{EITC} \qquad (5)$$

Also, eligibility for receiving various cash and in-kind transfers depends further on liquid and non-liquid assets. This entails the amount of money in savings accounts and the value of a home and automobile being below fixed amounts. Given initial eligibility based on assets found to be below stated minimums, benefits such as TANF or Food Stamps are computed according to the following generic formula:

$$\text{Benefit} = \text{Guarantee} - \text{Wages} - \text{Unearned Income} - \text{Exclusion(s)} - \text{Disregarded Net Wages} \quad (6)$$

Actual computation of economic income thus entails knowing the details for each transfer program and its version of Equation (6) ---which can be rather complicated. An important calculation when adding up benefits requires knowing at what level earnings are sufficiently high that the left hand side of Equation (6) is zero.

Beyond these general considerations surrounding whether or not benefits under TANF or Food Stamps are available, transfer programs usually contain categorical eligibility rules that pertain to the mental and physical status of adult(s) in the household, whether or not the adult woman is pregnant, and the age of related persons in the household who may reasonably thought to be dependent, e.g. children and the elderly.

Tax systems also impact the economic income of a working household, and while in principle should be considered as reductions in available resources, in the interests of tractability, only the employee's share of FICA taxes will be considered. Since the federal tax system's tax entry points are indexed and above the Federal Poverty Line, the exclusion of federal taxation from our analysis will not alter our results.[47]

5.2 Major Federal Transfers Programs in Detail

---

[47] This study does not examine the implications of varying state and local sales and use, income, and unemployment taxes.

We discuss here in more detail the major federal programs of cash and in kind assistance that potentially affect the economic income of a working household as a prelude to calculating what a household's economic income would be were it to work full time in a state at the minimum wage as contrasted with working at a living wage.

5.2.1 Transitional Assistance for Needy Families (TANF)

Prior to 1996, low income families could obtain cash assistance under the Aid to Families with Dependent Children or AFDC program. AFDC was partially federally financed with the federal share varying by state from a minimum of 50% to 83%, a rate of disregard of 2/3, and state defined minimum guarantees. Until 1996 federal financial obligations under AFDC had the status of *entitlement* payments in just the same sense as Social Security payments are. In 1996, the program was substantially revised. States were given block grants and substantial discretion in the determination of eligibility. States gaining control over the *rate of disregard* were guaranteed $16 billion in block grants to finance TANF, and dramatically increased child care. States were also required to continue to maintain eligibility levels of earned income at 1996 levels. To calculate what a household is eligible to obtain under TANF, one must know the rules state by state. Consider for example, South Dakota, whose monthly benefit is $483 for an adult with two children, or $5,796/year.[48] To calculate the maximum annual earnings that would enable a TANF beneficiary to continue receiving TANF, one must know the specific exclusion and disregard rate in South Dakota's plan: South Dakota stipulates that $90 is excluded on a monthly basis, and the disregard rate is 20% of Wages Net of Exclusion(s):

TANF Benefit = $483 – [Wages – ($90) – 20% (Wages – $90)]

TANF Benefit = 0 at Wages = $693 or $8,316/year $\qquad\qquad$ (7)

5.2.2 Food Stamps (National Benefit Formula)

Most families qualifying for TANF have earnings low enough to also qualify for the federal Food Stamps program. The Food Stamps program is entirely federally financed. The Food Stamps benefit formula is nationally uniform and specified in federal law. In 2002, better than 80% of TANF recipients also received Food Stamps[49]. The Food Stamps monthly formula is:

Food Stamps = Guarantee - 30% (Countable Income – Other Expenses) $\qquad$ (8)

Countable income = Cash Income - $124 = Earnings + TANF – $124

Where Other Expenses = 20% of Earnings. For an adult with 2 children, the 2003 benefits[50] are:

Food Stamps = $371 – 24% Earnings + $37.20 $\qquad\qquad$ (9)

---

[48] South Dakota's plan is typical for many states without intra-state variation in plans.
[49] Committee on Ways and Means, US Congress, *2004 Green Book,* Table 15-1, p. 15-3.
[50] As of October, 2003.

Food Stamps = 0 at Earnings = $1701/month or $20, 410

5.2.3 The Federal Refundable Earned Income Tax Credit in 2003

For a family of one adult and two children in 2003, the EITC = 40% of earnings up to $4,200 at $10,500 of earnings, $4,200 until $14,750 in earnings and then declines at 22.2% of earnings beyond $14,750. For a minimum wage worker at $5.15/hour and 2080 hours/year, the EITC = $4,200 – .222* (10,750 –10,500) or about $4,144.50. This is a 38.4% wage supplement to the minimum wage and effectively brings it to $7.13/hour. Figure 5 graphically displays the credit across earnings levels for the household of an adult with two children in 2003. Note that the credit is fixed at $4,200 over the earnings range or "mesa" of $10,500 to $14,750. Table 7 displays the 2003 parameters of the EITC for households of varying sizes for the general EIC equation:

$$\text{EITC} = \beta E - \delta E \tag{10}$$

Note that in 2003, for a family of three, the EITC was available to families with earned income up to $33, 692.

Figure 5
Family of 3 Earned Income Tax Credit (EITC) in 2003
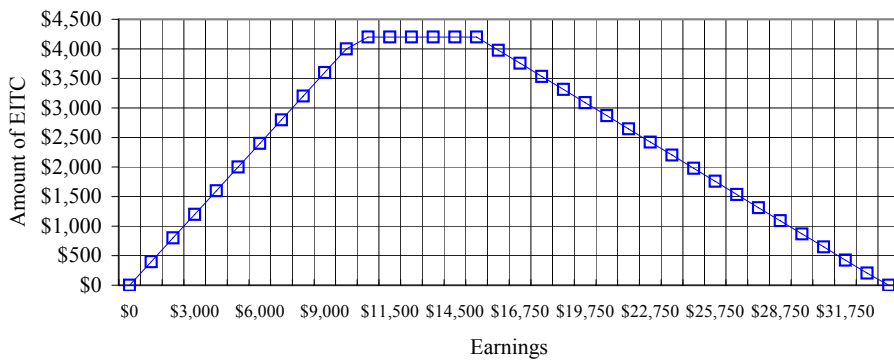
Table 7
2003 EITC Parameters

Maximum Earned Income Tax Credit	Number Of Children	Rate of Credit		Earnings Inflection Points		Credit=0
		β	$-\delta$	Mesa 1	Mesa 2	@ Earnings
$380	0	7.6%	-7.6%	$5,000	$6,200	$11,230
$2,557	1	34.1%	-15.9%	$7,500	$13,750	$29,666
$4,200	> 1	40.0%	-22.2%	$10,500	$14,750	$33,692

5.2.4 Categorical Programs of Health Assistance: Medicaid and State Children's Health Insurance Program (SCHIP)

Prior to the 1996 federal welfare reform amendments, states were required to provide medical assistance to the needy or Medicaid for poor, single parent households that received cash assistance under AFDC. The federal government shared in the financing of AFDC and Medicaid. States could optionally extend Medicaid to those working poor households whose earned income was beyond the AFDC cash assistance eligibility levels. Practically, many states elected to extend Medicaid to the working poor who received Food Stamps but not AFDC, and also had in place optional programs of cash assistance to two adult poor households.

The 1996 federal welfare reform amendments continued to require states to provide Medicaid coverage to poor households, who would be eligible were the 1996 AFDC earned income eligibility rules still in place, and required the states to provide Medicaid coverage to just the *children* in households that were not eligible for the continued Medicaid coverage, as long as the household in question was at or below 133% of the federal poverty line. Since the AFDC income eligibility level for Medicaid purposes was fixed at 1996 levels, and the federal poverty level is revised each year to reflect changes in the cost of living, over time adult Medicaid coverage for poor households would decline unless the states elected, under the new program of cash assistance put in place in 1996, TANF, to extend Medicaid coverage that would be triggered by receipt of TANF. Many states elected to provide Medicaid based on receipt of TANF.

States were also required under the 1996 federal welfare reform legislation to provide a new form of more limited medical assistance, SCHIP, to children in poor households. The range of medical services under SCHIP is typically more narrow than under Medicaid, but the income

eligibility, set by the states, is more generous (See Table 12 below), and ranges from 150% of the Federal Poverty Line to as much as 300%.

The practical implication of these eligibility interactions is that, whether or not the adult is covered by Medicaid, or just the children are covered by Medicaid or SCHIPS depends on the relationship of the earned income in the household to the earned income eligibility cutoffs that reflect either state policy, or the federal poverty line.

For example, a household working at the minimum wage in 2003 may be eligible for Medicaid coverage for the adult(s) and children in the household if the $10,712 of annual earnings still qualified them for historical AFDC cash benefits in their state of residence. If the 1996 AFDC income eligibility level was below $10,712/year for an adult and two children under the age of 19, the children would be eligible for Medicaid coverage under the state Medicaid plan since $10,712/year is well under 133% of the federal poverty level in 2003. The 133% poverty line cutoff was $20,295.80[51] in 2003.   If the state elected to extend Medicaid coverage to the adult and two children in this example under TANF, which replaced AFDC in 1996, then the eligibility question is whether or not the $10,712 is below the TANF earned income eligibility cutoff for 2003.

Similarly, if the $10,712 is beyond the historical AFDC earned income eligibility level *and* also is beyond the TANF earned income eligibility level, then the children in the household would be covered under the Medicaid program because, as noted above, $10,712 is smaller than 133% of the federal poverty line.

If we put 133% of the federal poverty line on an hourly basis in 2003, we find that it is $9.76/hour[52]. This means that any living wage ordinance *above* $9.76/hour will force the children off of Medicaid coverage and onto SCHIP coverage as long as the hourly wage rate (and implied annual earnings) is beneath the state-determined earned income eligibility standard for SCHIP. As noted above, the eligibility for SCHIP among the states ranges from 150% to 300% of the Federal Poverty Line.[53] In hourly wage rate terms, this means that, depending on the state, a living wage ordinance between $11.00/hour and $22.02/hour would qualify children for SCHIP coverage.

5.2.4.1 Medicaid Program Details[54]

States have discretion in determining which groups their Medicaid programs will cover and the financial criteria for Medicaid eligibility. To be eligible for Federal funds, states are required to provide Medicaid coverage for most individuals who receive federally assisted income maintenance payments, typically TANF as well as for related groups not receiving cash payments. Some examples of the mandatory Medicaid eligibility groups are:

---

[51] Federal Register of February 7, 2003.

[52] That is, $20,295.80/2080=$9.76

[53] However, the 1996 welfare reform provided for any state to petition the Department of Health and Human Services for a waiver, and also allowed the states to exclude various forms of income and allow various kinds of work expenses that would bring net income to within Medicaid or SCHIP eligibility levels.

[54] This section is drawn from CMS documentation available on their web site: http://www.cms.hhs.gov/home/medicaid.asp.

- Low income families with children, as described in Section 1931 of the Social Security Act, who meet certain of the eligibility requirements in the State's AFDC plan in effect on July 16, 1996;
- Supplemental Security Income (SSI) recipients (or in States using more restrictive criteria-- aged, blind, and disabled individuals who meet criteria which are more restrictive than those of the SSI program and which were in place in the State's approved Medicaid plan as of January 1, 1972);
- infants born to Medicaid-eligible pregnant women. Medicaid eligibility must continue throughout the first year of life so long as the infant remains in the mother's household and she remains eligible, or would be eligible if she were still pregnant;
- children under age 6 and pregnant women whose family income is at or below 133 percent of the Federal poverty level. (The minimum mandatory income level for pregnant women and infants in certain States may be higher than 133 percent, if as of certain dates the State had established a higher percentage for covering those groups.) States are required to extend Medicaid eligibility until age 19 to all children born after September 30, 1983 (or such earlier date as the State may choose) in families with incomes at or below the Federal poverty level. This phases in coverage, so that by the year 2002, all poor children under age 19 will be covered. Once eligibility is established, pregnant women remain eligible for Medicaid through the end of the calendar month in which the 60th day after the end of the pregnancy falls, regardless of any change in family income. States are not required to have a resource test for these poverty level related groups. However, any resource test imposed can be no more restrictive than that of the AFDC program for infants and children and the SSI program for pregnant women;
- recipients of adoption assistance and foster care under Title IV-E of the Social Security Act;
- certain Medicare beneficiaries (described below); and
- special protected groups who may keep Medicaid for a period of time. Examples are: persons who lose SSI payments due to earnings from work or increased Social Security benefits; and families who are provided 6 to 12 months of Medicaid coverage following loss of eligibility under Section 1931 due to earnings, or 4 months of Medicaid coverage following loss of eligibility under Section 1931 due to an increase in child or spousal support.

States also have the option to provide Medicaid coverage for other "categorically needy" groups. These optional groups share characteristics of the mandatory groups, but the eligibility criteria are somewhat more liberally defined. Examples of the optional groups that States may cover as categorically needy (and for which they will receive Federal matching funds) under the Medicaid program are:

- infants up to age one and pregnant women not covered under the mandatory rules whose family income is below 185 percent of the Federal poverty level (the percentage to be set by each State);
- optional targeted low income children;
- certain aged, blind, or disabled adults who have incomes above those requiring mandatory coverage, but below the Federal poverty level;
- children under age 21 who meet income and resources requirements for AFDC, but who otherwise are not eligible for AFDC;
- institutionalized individuals with income and resources below specified limits;

- persons who would be eligible if institutionalized but are receiving care under home and community-based services waivers;
- recipients of State supplementary payments;
- TB-infected persons who would be financially eligible for Medicaid at the SSI level (only for TB-related ambulatory services and TB drugs); and
- low-income, uninsured women screened and diagnosed through the Centers for Disease Control and Prevention's Breast and Cervical Cancer Early Detection Program and determined to be in need of treatment for breast or cervical cancer.

Medically Needy Eligibility Groups

The option to have a "medically needy" program allows States to extend Medicaid eligibility to additional qualified persons who may have too much income to qualify under the mandatory or optional categorically needy groups. This option allows them to "spend down" to Medicaid eligibility by incurring medical and/or remedial care expenses to offset their excess income, thereby reducing countable income to a level below the maximum allowed by that State's Medicaid plan. States may also allow families to establish eligibility as medically needy by paying monthly premiums to the State in an amount equal to the difference between family income (reduced by unpaid expenses, if any, incurred for medical care in previous months) and the income eligibility standard.

Eligibility for the medically needy program does not have to be as extensive as the categorically needy program. However, States which elect to include the medically needy under their plans are required to include certain children under age 18 and pregnant women who, except for income and resources, would be eligible as categorically needy. They may choose to provide coverage to other medically needy persons: aged, blind, and/or disabled persons; certain relatives of children deprived of parental support and care; and certain other financially eligible children up to age 21. In 1995, there were 40 medically needy programs which provided at least some services to recipients.

Amplification on Medicaid Eligibility

Coverage may start retroactive to any or all of the 3 months prior to application, if the individual would have been eligible during the retroactive period. Coverage generally stops at the end of the month in which a person's circumstances change. Most States have additional "State-only" programs to provide medical assistance for specified poor persons who do not qualify for the Medicaid program. No Federal funds are provided for State-only programs.

Medicaid does not provide medical assistance for all poor persons. Even under the broadest provisions of the Federal statute (except for emergency services for certain persons), the Medicaid program does not provide health care services, even for very poor persons, unless they are in one of the groups designated above. Low income is only one test for Medicaid eligibility; assets and resources are also tested against established thresholds. As noted earlier, categorically needy persons who are eligible for Medicaid may or may not also receive cash assistance from the TANF program or from the SSI program. Medically needy persons who would be categorically eligible except for income or assets may become eligible for Medicaid solely because of excessive medical expenses.

States may use more liberal income and resources methodologies to determine Medicaid eligibility for certain AFDC-related and aged, blind, and disabled individuals under sections 1902(r)(2) and 1931 of the Social Security Act. For some groups, the more liberal income methodologies cannot result in the individual's income exceeding the limits prescribed for Federal matching.

Significant changes were made in the Medicare Catastrophic Coverage Act (MCCA) of 1988 which affected Medicaid. Although much of the MCCA was repealed, the portions affecting Medicaid remain in effect. The law also accelerated Medicaid eligibility for some nursing home patients by protecting assets for the institutionalized person's spouse at home at the time of the initial eligibility determination after institutionalization. Before an institutionalized person's monthly income is used to pay for the cost of institutional care, a minimum monthly maintenance needs allowance is deducted from the institutionalized spouse's income to bring the income of the community spouse up to a moderate level.

5.2.4.2 SCHIP Details

As part of the Balanced Budget Act of 1997, Congress created Title XXI, the State Children's Health Insurance Program (SCHIP), to address the growing problem of children without health insurance. SCHIP was designed as a Federal/State partnership, similar to Medicaid, with the goal of expanding health insurance to children whose families earn too much money to be eligible for Medicaid, but not enough money to purchase private insurance. SCHIP is the single largest expansion of health insurance coverage for children since the initiation of Medicaid in the mid-1960s.

SCHIP is designed to provide coverage to "targeted low-income children." A "targeted low-income child" is one who resides in a family with income below 200% of the Federal Poverty Level (FPL) or whose family has an income 50% higher than the state's Medicaid eligibility threshold. Some states have expanded SCHIP eligibility beyond the 200% FPL limit, and others are covering entire families and not just children.

SCHIP offers states three options when designing a program. The state can:

- use SCHIP funds to expand Medicaid eligibility to children who previously did not qualify for the program, or;
- design a separate children's health insurance program entirely separate from Medicaid; or;
- combine both the Medicaid and separate program options.

As of September 30, 1999, each of the states and territories had an approved SCHIP plan in place.

Similar to Medicaid, a state's SCHIP plan is the mechanism that begins Federal Financial Participation (FFP) in a given state. As in Medicaid, the Center for Medicaid and Medicare Services (CMS) must either approve or disapprove a state plan within 90 days of its submission to CMS. The "90-day clock" remains ongoing unless CMS submits a formal written request for additional information from the state. When the information is received, unlike Medicaid, SCHIP does not

reset the clock, but rather, starts counting again from the day that the written request was issued. Unlike Medicaid, there is no limit to the number of requests for additional information that may be made. Similar to Medicaid, under SCHIP, states can modify their State Plans by submitting State Plan Amendments (SPAs). As with the initial plan submission, when a SPA is received by CMS, a 90-day clock begins. Here again, the 90-day clock may be stopped by a written request for additional information, and it resumes when the response is received. The 90-day clock does not reset, but begins counting from the day that the request for additional information was made.

5.3 Empirical Results of Putting the Pieces Together

In this section we combine information about state minimum wage and living wage ordinances in 2003 in conjunction with state by state programmatic information about TANF, Food Stamps, the federal Earned Income Tax Credit (EICT)[55], Medicaid, and SCHIP. Our objective is to ascertain if a household of 3 composed of an adult and two children is better off overall by working full time under the state minimum wage, or working under a living wage ordinance.[56] While a living wage ordinance ensures that the adult will earn a higher hourly wage rate, it is possible, as will be shown below, that the phase-outs under the various programs of assistance may make the household worse off after all transfers are taken into account than were the household to earn the minimum wage and receive various cash and in kind transfers. Since living wage ordinances in most states provide for two wage rates, with the lower wage rate entitling the employee to employer provided health insurance, we must make a variety of comparisons and pay close attention to program eligibility details.

In order to keep the numbers of comparisons tractable, we shall make our comparisons at the state level, and compare what a minimum wage household would obtain in relation to the federal poverty line in 2003 to what such a household would obtain were it to earn the lowest living wage in the same state (with employer provided benefits) or would obtain were it to earn the highest living wage in the same state without employer provided health benefits. In the latter case, we shall examine what sort of health benefits would be available to the adult under Medicaid, to the two children under Medicaid, and to the two children under SCHIP. Also, we shall restrict our attention to only those states which contain communities with living wage ordinances.

Our analysis of the financial position of the household of 3 at the state minimum wage begins in Table 8. As of 2003, at least ¾ of the states that contained communities with living wage ordinances had minimum wage rates at $5.15/hour which translates to $10,704 annually. (See Column B of Table 8.) Further note that, because the annual gross earnings are below the first inflection point in the EITC in all but a handful of states, the EITC provided $4,204 or the maximum refundable tax credit in the preponderance of states. Positive TANF grants to the minimum wage households were evident in only 10 states, while Food Stamps were evident in all but one state. Overall, in better than ¾ of the states, the household working fulltime at the minimum state wage, and receiving the EITC, TANF, and Food Stamps, found itself between 107% to 119% of the 2003 Federal Poverty Line. Note this was after subtracting the employee's share of FICA but before consideration of Medicaid or SCHIP benefits.

---

[55] Note that state earned income tax credits, along with positive federal and state taxes are not accounted for due to time and resource limitations.
[56] Calculations below take into account the various phase-outs of the EITC, Food Stamps, Medicaid etc.

Table 9 repeats the analysis for the same household that would be paid the lowest living wage in the state, typically that included health benefits, and Table 10 repeats the analysis for the same household that would be paid the <u>highest</u> living wage in the state, typically that would <u>not</u> include health benefits. In both living wage scenarios, the general pattern is for the living wage communities to place their employees or subcontractors' employees at higher points above the poverty line than under the state minimum wage.

Figure 6 shows the summary pattern of each of the three tables. Note that ¾ of the households under the state minimum wage scenario are from 110 to 120% of the federal poverty line, while ¾ of the households under the smallest living wage (that presumably includes health benefits of unknown amounts) are from 129 to 135% of the federal poverty line, while ¾ of the states with the highest living wage (that presumably does not include health benefits) are at between 140% to 152.5% of the federal poverty line.

Figure 6
2003 Household Economic Income under
Minimum & Living Wage Ordinances
Distribution of States by % of 2003 Federal Poverty Line
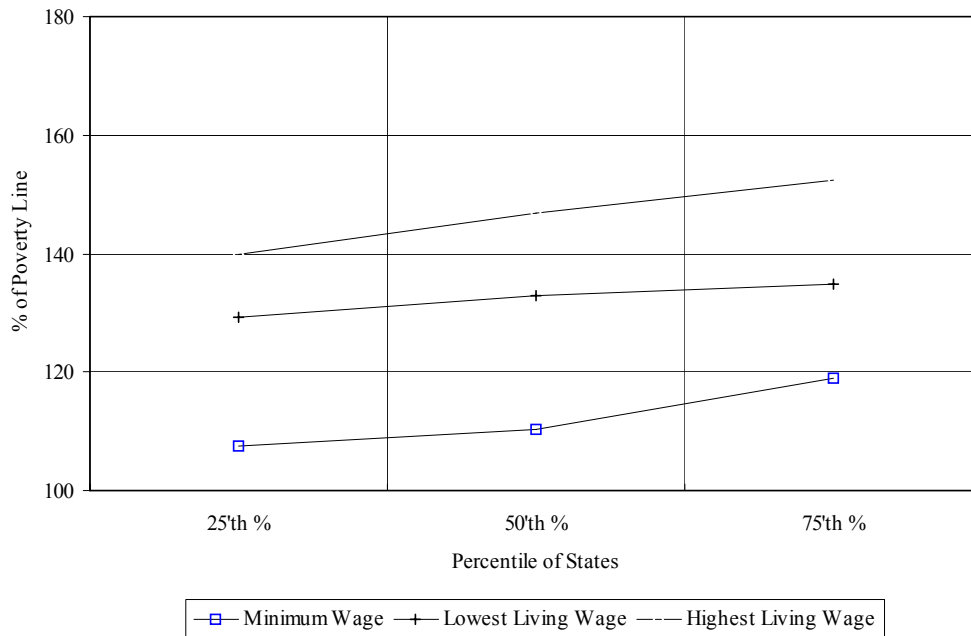
Table 8
Minimum Wage and Transfer Income
as % of 2003 Federal Poverty Level
for Family of 3 in
States with Living Wage Ordinances

State & Number of Living Wage Communities	B 1/ 2003 State Minimum Wage	C 2/ Annual Gross Earnings (2080 Hours)	D 3/ 2003 Earned Income Credit (Federal)	E 3/ 2003 TANF	F 3/ 2003 Food Stamps	G Total of: Earnings + TANF + FS - FICA	H Total as % of 2003 Poverty Line ($15,260)
Arizona (2)	$5.15	$10,704	$4,204	$0	$2,304	$16,393	107.4%
California (17)	$6.74	$14,029	$4,141	$2,472	$756	$20,325	133.2%
Colorado (1)	$5.15	$10,704	$4,204	$0	$2,304	$16,393	107.4%
Connecticut (3)_	$6.89	$14,341	$4,075	$7,632	$0	$24,951	163.5%
Florida (6)	$5.15	$10,704	$4,204	$0	$2,304	$16,393	107.4%
Illinois (2)	$5.15	$10,704	$4,204	$1,176	$1,944	$17,209	112.8%
Indiana (1)	$5.15	$10,704	$4,204	$780	$2,064	$16,933	111.0%
Iowa (1)	$5.15	$10,704	$4,204	$828	$2,052	$16,969	111.2%
Kentucky (1)	$5.15	$10,704	$4,204	$0	$2,304	$16,393	107.4%
Maryland (3)	$5.15	$10,704	$4,204	$0	$2,304	$16,393	107.4%
Massachusetts (3)	$6.74	$14,029	$4,141	$0	$1,500	$18,597	121.9%
Michigan (11)	$5.15	$10,704	$4,204	$0	$2,304	$16,393	107.4%
Minnesota (2)	$5.15	$10,704	$4,204	$372	$3,744	$18,205	119.3%
Montana (2)	$5.15	$10,704	$4,204	$0	$2,304	$16,393	107.4%
New Jersey (4)	$5.15	$10,704	$4,204	$0	$2,304	$16,393	107.4%
New Mexico (1)	$5.15	$10,704	$4,204	$60	$2,280	$16,429	107.7%
New York (7)	$5.15	$10,704	$4,204	$2,112	$1,668	$17,869	117.1%
North Carolina (2)	$5.15	$10,704	$4,204	$0	$2,304	$16,393	107.4%
Ohio (4)	$5.15	$10,704	$4,204	$624	$2,112	$16,825	110.3%
Oregon (4)	$6.89	$14,341	$4,075	$0	$1,428	$18,747	122.9%
Pennsylvania (1)	$5.15	$10,704	$4,204	$0	$2,304	$16,393	107.4%
Texas (4)	$5.15	$10,704	$4,204	$0	$2,304	$16,393	107.4%
Vermont (1)	$6.25	$12,990	$4,204	$0	$1,752	$17,952	117.6%
Virginia (4)	$5.15	$10,704	$4,204	$4,668	$900	$19,657	128.8%
Washington (1)	$7.00	$14,570	$4,027	$0	$1,368	$18,850	123.5%
Wisconsin	$5.15	$10,704	$4,204	$0	$2,304	$16,393	107.4%
Mean	$5.52	$11,476	$4,182	$797	$1,970	$17,547	115.0%
25th %	$5.15	$10,704	$4,204	$0	$1,689	$16,393	107.4%
Median	$5.15	$10,704	$4,204	$0	$2,280	$16,825	110.3%
75th %	$5.15	$10,704	$4,204	$741	$2,304	$18,142	118.9%

All entries are annualized at 2080 hours/year for family of 3: 1 adult and 2 children under age 14.
1/ Minimum wage is the larger of state or federal minimum wage ($5.15/hour) in 2003.
2/ Source: US Department of Labor, Web Site.
3/ Source, unpublished tables prepared by the Congressional Research Service based on Federal and state minimum wage rates, Federal rules for Earned Income Tax Credit and Food Stamps for 2003, Congressional Research Service, Library of Congress, personal correspondence.

Variations among the states in the type of services provided under Medicaid and SCHIPS can be summarized by examining the average expenditures for qualifying households. Unfortunately, information on the cash value of such health expenditures lags, and the most recent information on state reported Medicaid expenditures is for Fiscal Year 2001. However, since we are comparing across states, the tardiness of the information is uniform. [57]

We next include the value of health care benefits in the distributional analysis.

Table 11 is constructed from components of the Center for Medicaid and Medicare Services of the Department of Health and Human Services, and displays the average annual expenditure for adult Medicaid services. Note that both long-term and intensive care are *excluded* from this average calculation. Adult[58] Medicaid expenditures averaged $4,257 in 2001, but displayed considerable variation: the 25th percentile state spent $3,276 while the 75th percentile state spent $5,044. Medicaid expenditures per child were significantly lower. They averaged $1,812/child compared to $4,257/adult; the 25th percentile level of child spending was $1,525 and the 75th percentile spending per child was $2,118. Thus Medicaid household benefits were very substantial: $7,880 at the mean, and from $7,045 to $8,902.[59]

Table 12 derives the SCHIP average spending per child in FY 2002 for states with living wage ordinances.[60] As noted earlier, the range of SCHIP services is typically narrower than under Medicaid, and the distribution of average expenditures shown at the bottom of Table 12 (See Column F) shows SCHIP average spending to be $1,527 in FY2002 compared to the average per child Medicaid spending in FY 2001 of $1,812 or about $285/child or 16% less. The 25th and 75th percentiles display the same pattern. Figure 7 compares the percentile distribution of Medicaid and SCHIP spending/child.

Table 13 combines the information from Tables 8-12 for states which had living wage communities for an adult, working full time, and two children. In columns A through D of Table 13, the resulting earned income plus cash and in kind transfers (wages + EITC + cash value of health care) are shown as a percentage of the Federal Poverty Line in 2003 ($15,360) to give an indication of overall income adequacy of the two regimes. Whether or not health care is available for the children under the minimum wage vs. living wage scenarios is crucial to ascertaining which regime is more beneficial to such low wage earners. Under the minimum wage scenario, the household wound up at between 140% (Michigan) to 214% (Connecticut) of the 2003 Federal Poverty Line. Were the household to rely on the smallest living wage in each state, which typically obligates the

---

[57] Since the adoption of TANF, the states have been accorded substantial flexibility in the design and operation of their systems of cash and in kind transfers. In the analysis reported below, every effort has been made, especially in the area of health care available to low income wage earners through Medicaid and SCHIPs, to fairly characterize what coverage is. Both federal and state eligibility determination manuals and offices were called to ascertain the details of eligibility and benefit levels. Since precise characterizations were not possible for living wage households in each instance, the comparative analysis below examines hypothetical households that receive the lowest and highest living wage in a state, and whose children may be covered by SCHIP. Medicaid is generally not categorically available for such households according to the written sources reviewed state by state and followed up by phone calls to state Medicaid offices.

[58] An adult is defined to be between the ages of 19 and 44, while a child is defined to be between the ages of less than 1 and 18 years old.

[59] We implicitly assume that the reported budgetary expenditures for health care are equal, on average, to the value received by needy household.

[60] Note that for Colorado and Minnesota budgetary information was not available for 2002 SCHIP expenditures.

employer to provide some sort of health coverage, the household wound up at between 90% and 159% of the Federal Poverty Line. Were the household to qualify the *children* for SCHIP coverage and work at the smallest living wage, the household wound up at between 118.6% and 181% of the Federal Poverty Line. Finally, if the household were to earn the *highest* living wage in each state and the children qualified for SCHIP, then the household wound up at between 147% and 184% of the Federal Poverty Line.

Another way to summarize the distributional effects of the minimum wage vs. the living wage is to tally for each state which regime would have been financially most beneficial. (See columns E, F and G of Table 13). Taking the minimum wage package as a percentage of the Federal Poverty Line as the *numeraire*, we find that in 100% of the states with a living wage, the combination of the minimum wage, EITC, Food Stamps, TANF, if available, and Medicaid was more beneficial to the hypothetical household than the lowest living wage[61] plus the EITC, Food Stamps and TANF, if available, without SCHIP healthcare. When we move to compare the minimum wage to what would be available under the smallest living wage and SCHIP for the two children, we find that the minimum wage household remains better off in 80% of the states, while if we compare the minimum wage household to what it would receive under the *highest* living wage *and* SCHIP, we find that the minimum wage household is better off in 48% or about ½ of the states[62], although in virtually all cases both systems of wage floors and transfers placed the households well above the federal poverty line.

Figure 7
Medicaid vs. SCHIP Spending/Child
FY 2001 (Medicaid) & FY 2002 (SCHIP)

---
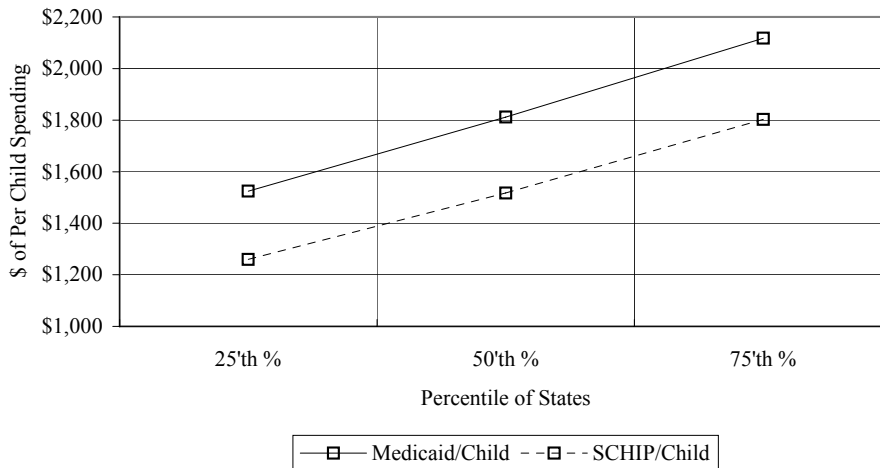
[61] It is not possible to estimate the value of employer provided health care to the adult and two children under the living wage scenarios.
[62] Note that because the living wage in Gary is pegged to the *prevailing wage* which varies, comparisons can not be made to Indiana's system of income maintenance available to households working at the minimum wage.

Table 9
Smallest Living Wage + Transfers + EITC
as % of 2003 Federal Poverty Line
for Adult and Two Children
Exclusive of Health Assistance
In States with Living Wage Ordinances

State	B 1/ 2003 Smallest Living Wage in State at time of Adoption	C 2003 Annual Smallest Living Wage 2080 Hours	D 2/ 2003 Federal EITC	E 3/ 2003 TANF	F 3/ 2003 Food Stamps	G 2003 Total of Earnings + EITC + TANF + FS + - FICA	H Total as % of 2003 Poverty Line ($15,260)
Arizona	$8.00	$16,640	$3,784	$0	$941	$20,092	131.8%
California	$11.50	$23,920	$2,168	$0	$0	$24,258	159.1%
Colorado	$8.50	$17,680	$3,553	$0	$691	$20,572	134.9%
Connecticut	$9.02	$18,762	$3,313	$0	$432	$21,071	138.2%
Florida	$7.98	$16,598	$3,794	$0	$951	$20,073	131.6%
Illinois	$7.60	$15,808	$3,969	$0	$1,140	$19,708	129.2%
Indiana	Prevailing wage rate						Na
Iowa	$9.00	$18,720	$3,322	$0	$442	$21,052	138.0%
Kentucky	$8.50	$17,680	$3,553	$0	$691	$20,572	134.9%
Maryland	$8.20	$17,056	$3,692	$0	$841	$20,284	133.0%
Massachusetts	$8.20	$17,056	$3,692	$0	$841	$20,284	133.0%
Michigan	$8.23	$17,118	$3,678	$0	$826	$20,313	133.2%
Minnesota	$8.83	$18,366	$3,401	$0	$526	$20,889	137.0%
Montana	$7.95	$16,536	$3,807	$0	$966	$20,044	131.4%
New Jersey	$10.77	$22,402	$2,505	$0	$0	$23,193	152.1%
New Mexico	$8.50	$17,680	$3,553	$0	$691	$20,572	134.9%
New York	$7.25	$15,080	$4,131	$0	$1,315	$19,372	127.0%
North Carolina	$8.46	$17,597	$3,572	$0	$711	$20,534	134.6%
Ohio	$8.50	$17,680	$3,553	$0	$691	$20,572	134.9%
Oregon	$8.00	$16,640	$3,784	$0	$941	$20,092	131.8%
Pennsylvania	$9.12	$18,970	$3,267	$0	$382	$21,167	138.8%
Texas	$6.75	$14,040	$1,247	$0	$1,565	$15,778	103.5%
Vermont	$9.90	$20,592	$0	$0	$0	$19,017	124.7%
Virginia	$8.25	$17,160	$590	$0	$816	$17,253	113.1%
Washington	$10.00	$20,800	$0	$0	$0	$19,209	126.0%
Wisconsin	$6.25	$13,000	$1,466	$0	$1,814	$15,286	100.2%
Mean	$8.53	$17,743	$2,936	$0	$729	$20,050	131.5%
25th %	$8.00	$16,640	$2,505	$0	$442	$19,708	129.2%
Median	$8.48	$17,638	$3,553	$0	$720	$20,284	133.0%
75th %	$9.00	$18,720	$3,692	$0	$941	$20,572	134.9%

Table 10
Highest Living Wage + Transfers + EITC
as % of 2003 Federal Poverty Line
for Adult and Two Children
Exclusive of Health Assistance
In States with Living Wage Ordinances

State	B 1/ 2003 Highest Living Wage in State at Time of Adoption	C 2003 Annual Highest Living Wage 2080 Hours	D 2/ 2003 Federal EITC	E 3/ 2003 TANF	F 3/ 2003 Food Stamps	G 2003 Total of: Earnings + EITC + FS + TANF - FICA	H Total as % of 2003 Poverty Line ($15,260)
Arizona	$9.30	$19,344	$3,184	$0	$292	$21,340	139.8%
California	$12.55	$26,104	$1,683	$0	$0	$25,790	169.0%
Colorado	$8.50	$17,680	$3,554	$0	$691	$20,572	134.8%
Connecticut	$9.02	$18,762	$3,313	$0	$432	$21,071	138.1%
Florida	$10.82	$22,506	$2,482	$0	$0	$23,266	152.5%
Illinois	$7.60	$15,808	$3,969	$0	$1,140	$19,708	129.2%
Indiana	Prevailing wage rate						0.0%
Iowa	$9.00	$18,720	$3,323	$0	$442	$21,052	138.0%
Kentucky	$8.50	$17,680	$3,554	$0	$691	$20,572	134.8%
Maryland	$10.50	$21,840	$2,630	$0	$0	$22,799	149.4%
Massachusetts	$10.68	$22,214	$2,547	$0	$0	$23,062	151.1%
Michigan	$11.50	$23,920	$2,168	$0	$0	$24,258	159.0%
Minnesota	$9.92	$20,634	$2,898	$0	$0	$21,953	143.9%
Montana	$9.50	$19,760	$3,092	$0	$192	$21,532	141.1%
New Jersey	$10.87	$22,610	$2,459	$0	$0	$23,339	152.9%
New Mexico	$8.50	$17,680	$3,554	$0	$691	$20,572	134.8%
New York	$10.25	$21,320	$2,745	$0	$0	$22,434	147.0%
North Carolina	$10.00	$20,800	$2,861	$0	$0	$22,070	144.6%
Ohio	$11.02	$22,922	$2,390	$0	$0	$23,558	154.4%
Oregon	$10.75	$22,360	$2,515	$0	$0	$23,164	151.8%
Pennsylvania	$10.62	$22,090	$2,575	$0	$0	$22,974	150.6%
Texas	$10.13	$21,070	$2,801	$0	$0	$22,259	145.9%
Vermont	$11.68	$24,294	$2,085	$0	$0	$24,521	160.7%
Virginia	$10.21	$21,237	$2,764	$0	$0	$22,376	146.6%
Washington	$11.50	$23,920	$2,168	$0	$0	$24,258	159.0%
Wisconsin	$9.73	$20,238	$2,986	$0	$77	$21,753	142.5%
Mean	$10.11	$21,020	$2,812	$0	$186	$22,410	141.2%
25th %	$9.30	$19,344	$2,482	$0	$0	$21,340	138.5%
Median	$10.17	$21,154	$2,782	$0	$0	$22,393	145.9%
75th %	$10.82	$22,506	$3,184	$0	$292	$23,266	152.3%

Table 11
2001 Average Medicaid Expenditures
for Adult and Child (Excluding Long-Term and Intensive Care)
Household Composed of One Adult and Two Children under Age 19
in States with Living Wage Ordinances

State	Each Child	Adult	Total Household Adult + 2 Children
Arizona	$1,927	$3,057	$6,911
California	$1,301	$1,607	$4,209
Colorado	$2,034	$5,077	$9,145
Connecticut	$1,215	$5,324	$7,753
Florida	$1,526	$3,183	$6,234
Illinois	$1,529	$4,627	$7,686
Indiana	$1,467	$4,738	$7,673
Iowa	$2,063	$5,164	$9,290
Kentucky	$2,136	$4,692	$8,964
Maryland	$2,599	$6,375	$11,573
Massachusetts	$1,895	$4,369	$8,160
Michigan	$1,204	$2,632	$5,040
Minnesota	$2,342	$5,358	$10,042
Montana	$2,287	$4,185	$8,760
New Jersey	$1,884	$5,181	$8,949
New Mexico	$1,884	$3,554	$7,323
New York	$2,533	$7,924	$12,990
North Carolina	$1,715	$4,024	$7,454
Ohio	$1,533	$4,118	$7,183
Oregon	$1,728	$2,630	$6,086
Pennsylvania	$2,201	$3,791	$8,193
Texas	$1,644	$3,983	$7,272
Vermont	$2,202	$3,109	$7,512
Virginia	$1,494	$4,944	$7,933
Washington	$1,234	$3,088	$5,555
Wisconsin	$1,525	$3,949	$6,999
Mean	$1,812	$4,257	$7,880
25th %	$1,525	$3,276	$7,045
Median	$1,812	$4,185	$7,686
75th %	$2,118	$5,044	$8,902

Source: US Department of Health and Human Services, Center for Medicaid
And Medicare Services, Table 2 and Table 5, 2082 Reports for 2001.

Table 12
State SCHIP
Average Expenditure in FY 2002
for States with Living Wage Ordinances

State	B 1/ FY 2002 SCHIP Eligibility % of Federal Poverty Line	C FY 2002 Gross Income Cutoff	D 2/ FY 2002 TOTAL SCHIP	E 3/ FY02 SCHIP Budget $ millions	F Average FY02 SCHIP Expenditure / Enrollee
Arizona	200%	$30,500	62,847	$89.9	$1,431
California	250%	$38,125	593,048	$654.0	$1,103
Colorado	185%	$28,213	39,913	NA	NA
Connecticut	300%	$45,750	12,501	$19.9	$1,590
Florida	200%	$30,500	263,419	$282.2	$1,071
Illinois	185%	$28,213	47,700	$68.1	$1,427
Indiana	200%	$30,500	50,800	$83.6	$1,646
Iowa	200%	$30,500	23,052	$46.0	$1,997
Kentucky	200%	$30,500	63,806	$105.1	$1,647
Maryland	300%	$45,750	100,976	$182.7	$1,809
Massachusetts	200%	$30,500	72,641	$92.2	$1,270
Michigan	200%	$30,500	56,145	$69.1	$1,231
Minnesota	280%	$42,700	18	NA	NA
Montana	150%	$22,875	10,443	$16.2	$1,550
New Jersey	350%	$53,375	97,538	$216.3	$2,217
New Mexico	235%	$35,838	6,919	$18.4	$2,655
New York	250%	$38,125	570,658	$740.2	$1,297
North Carolina	200%	$30,500	74,179	$133.6	$1,801
Ohio	200%	$30,500	120,473	$182.8	$1,517
Oregon	170%	$25,925	24,140	$19.1	$789
Pennsylvania	200%	$30,500	118,502	$157.2	$1,327
Texas	200%	$30,500	528,854	$630.7	$1,193
Vermont	300%	$45,750	3,583	$3.8	$1,062
Virginia	200%	$30,500	41,081	$56.4	$1,373
Washington	250%	$38,125	6,665	$12.8	$1,914
Wisconsin	185%	$28,213	35,774	$99.1	$2,770
Mean	223%	$33,961	116,372	$166	$1,570
25th %	200%	$30,500	23,324	$39	$1,260
Median	200%	$30,500	56,145	$92	$1,517
75th %	250%	$38,125	100,117	$183	$1,803

Source: US Department of Health and Human Services, Center for Medicaid
and Medicare Services FY02 SCHIP Budget and Enrollment

Table 13
Comparison of Annualized Minimum and Living Wage
+ Transfers + EITC + Health Assistance
for Household of 1 Adult & 2 Children
in Living Wage States for 2003 as % of Federal Poverty Line

	A	B	C	D	E	F	G
	As % of Federal Poverty Line						
	Minimum Wage + Transfers + EITC + Medicaid	Smallest Living Wage +Transfers + EITC + No Health Care	Smallest Living Wage + EITC + Transfers + SCHIP	Highest Living Wage + EITC + Transfers + SCHIP	Paired Comparisons of Most Beneficial		
					Columns A vs. B	Columns A vs. C	Columns A vs. D
Arizona	152.7%	131.3%	150.0%	158.2%	A	A	D
California	160.8%	159.0%	173.4%	183.5%	A	C	D
Colorado	167.4%	134.4%	154.3%	154.3%	A	A	A
Connecticut	214.3%	137.7%	158.5%	158.5%	A	A	A
Florida	148.3%	131.1%	145.2%	166.5%	A	A	D
Illinois	163.1%	128.8%	147.5%	147.5%	A	A	A
Indiana	161.2%	Prevailing	Prevailing	Prevailing	-	-	-
Iowa	172.1%	137.6%	163.7%	163.7%	A	A	A
Kentucky	166.2%	134.4%	156.0%	156.0%	A	A	A
Maryland	183.3%	132.5%	156.2%	173.1%	A	A	A
Massachusetts	175.3%	132.5%	149.2%	167.8%	A	A	A
Michigan	140.4%	132.7%	148.9%	175.1%	A	C	D
Minnesota	185.1%	136.5%	156.4%	163.7%	A	A	A
Montana	164.8%	131.0%	151.3%	161.0%	A	A	A
New Jersey	166.1%	152.0%	181.0%	182.0%	A	C	D
New Mexico	155.6%	134.4%	169.2%	169.2%	A	C	D
New York	202.2%	126.6%	143.6%	164.0%	A	A	A
North Carolina	156.3%	134.2%	157.8%	168.2%	A	C	D
Ohio	157.3%	134.4%	154.3%	174.3%	A	A	D
Oregon	162.7%	131.3%	141.6%	162.1%	A	A	A
Pennsylvania	161.1%	138.3%	155.7%	167.9%	A	A	D
Texas	155.1%	103.0%	118.6%	161.5%	A	A	D
Vermont	166.9%	124.6%	138.5%	174.6%	A	A	D
Virginia	180.8%	112.7%	130.7%	164.6%	A	A	A
Washington	159.9%	125.9%	151.0%	184.1%	A	A	D
Wisconsin	153.3%	90.2%	126.5%	178.5%	A	A	D
Mean	166.6%	130.7%	151.2%	167.2%	100% A	80% A	48% A
Median	163.1%	132.5%	151.2%	166.9%			
Max	214.3%	159.0%	181.0%	184.1%			
Min	140.4%	90.2%	118.6%	147.5%			

6.0 Employment and Budget Effects of Living Wage Ordinances

We examine in this section the conjecture that adoption of living wage ordinances has adversely impacted the immediate employment by municipalities, the resident employment market more generally, and the budgetary position of municipalities that have adopted such ordinances. To begin, we note that aggregate municipal employment has, since the recession in the 1980's, grown rather systematically. (See Figure 8). Similarly, total employment and local municipal budgets have generally grown secularly as well. The question we pose is whether or not communities that have adopted living wage ordinances have thereupon continued to grow in terms of their municipal employment, resident employment, and overall local budgets.

Figure 8

Municipal Employment: 1955-2003
(Excludes Local Education)
1955=100%
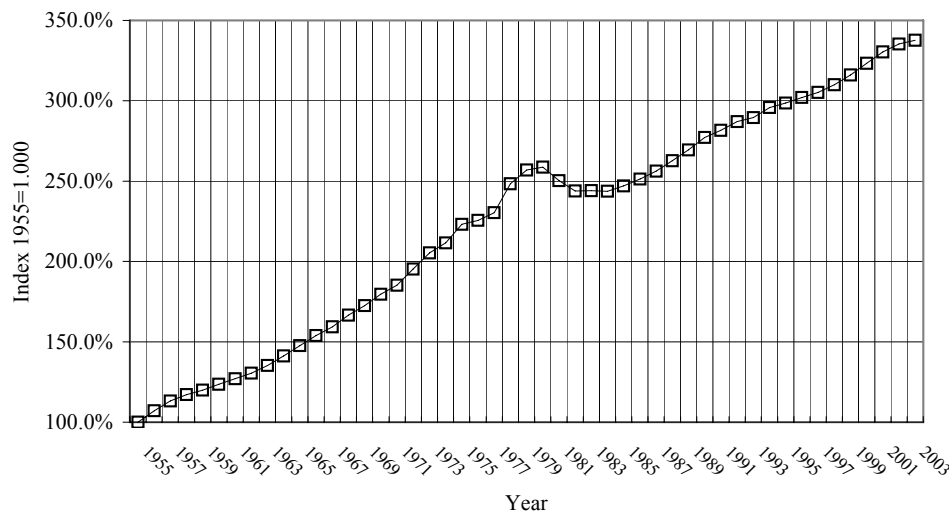
Source: US Bureau of Labor Statistics, Current Employment Survey, Local Government Employment, Excluding Local Schools.

6.1 Data and Methodology

Our empirical objective is to ascertain if the adoption of living wage ordinances, detailed above in Section 3, have discernible effects on local labor markets and local budgets. In general we expect such ordinances to impact local labor markets in much the same way as minimum wages might, although because coverage is far less complete, we do not readily expect total community employment to be substantially lessened by such ordinances. While relatively few ordinances apply directly to wages by municipalities to their employees, it is, however, conceivable that, by raising the wage rates to contractors and grantees, the municipalities themselves may find that they must raise their own wage rates to attract employees. Whether or not this will occur depends on the offsetting effect that raising the wage rate will have for some private sector workers. Those who are unemployed or whose productivity does not warrant the living wage, whom those businesses doing business with the municipality or grantees must pay, may either be discouraged and look for work outside the municipality, or flood the employment office of the municipality, *per se*, and thus increase the supply of willing, low wage workers to the municipality. If the municipality, however, is entirely organized, as many older industrial cities are, then this increased supply may not be relevant or available to the municipality itself, since the entry level wage rate specified in the collective bargaining agreement likely will be well above the minimum wage or even the living wage rate that the city embraced in its ordinance.

We can imagine that the adoption of a living wage may cause overall budgetary pressures on the municipality that may induce it, unexpectedly, to lay off its own employees rather than raise taxes and/or fees. Another reason a municipality might lay off its own employees upon enactment of a living wage ordinance might be to arbitrate between the living wage and their own bargained wages when the latter are higher than the former. In this situation, the collective bargaining unit might find itself perversely affected by pursuing a living wage ordinance since the municipality would find that outsourcing would be more cost-effective than hiring more full-time workers itself.

From a data standpoint, we are thus interested in ascertaining the effect of living wage ordinances on the *municipality's* employment as well as the effect of the living wage ordinance on employment in the jurisdiction overall.

6.1.1 Annual Municipal Employment Data: 1972-2002

Each year, the Governments Division of the US Bureau of the Census collects substantial financial and employment information on a panel of large municipalities (counties, cities, townships), large special districts (school districts and public authorities), and all state governments. In addition, a sample of medium and small size municipalities and special districts are captured as well. Every five years, a Census of Governments is performed that collects financial and employment information on all 90,000+ units of state and local government.

The Governments Division provided access to their employment data for the panel of larger municipalities for the period 1972-2002, and this data was matched to the living wage ordinance information described above in Section 2.0.

6.1.2 Monthly Resident Community Employment Data: 1990-2002

Small area, community employment data were obtained from the US Department of Labor, Bureau of Labor Statistics, Current Employment Survey. BLS cooperates with State employment security agencies in the Current Employment Statistics (CES) survey to collect data each month on employment, hours, and earnings from a sample of non-farm establishments and includes government.[63] These monthly data were matched to the data on living wage ordinances described in Section 2.

Since a number of the municipalities that adopted living wages lie within counties that themselves adopted living wage ordinances, some care must be exercised in performing the regression analysis to avoid double counting. For example, the City of Los Angeles lies within Los Angeles County. While it makes sense to ascertain if the City and County increased or decreased each of its own employment upon enactment of living wage ordinances, regressing the living wage ordinance on the overall community employment of the City and County entails double counting the City's community employment (private + public) while at the same time explaining the County's private + public employment. Below, fixed effect regression results are reported with and without the overlying or overlapping counties when analyzing the community employment data.

6.1.3 Annual Revenue and Tax Data: 1990-2001

Governmental budgetary information on the municipalities that adopted living wage ordinances was obtained from the Governments Division of the US Bureau of the Census through a special tabulations request.[64] The Governments Division measures the total revenue obtained in an accounting period by a municipal government, the total *own-source* revenues obtained in an accounting period by a municipality, and the taxes and charges obtained by a municipality in an accounting period. These data were merged with the data on municipal living wage ordinances described in Section 2.[65]

6.1.4 The General Fixed Effects Statistical Model

As discussed above in Sections 6.1.1-6.1.3, the number of governments for which municipal employment, resident community employment, revenue, and tax data varies both in terms of the number, and coverage across time. In our data there are municipalities as large as Los Angeles, California and as small as Pittsfield Charter Township, Michigan. In the case of each municipality, we know the year and month at which time the living wage ordinance was adopted. This constitutes a dichotomous "event" that persists through the end of the time period of each dataset whose effect on employment or budgetary behavior we seek to explain. For each community, we thus construct a

---

[63] The author wishes to thank Ms. Lisa Williamson of BLS for providing these unpublished monthly tabulations of local area employment. It should be pointed out that these data refer to employment on a place of residence basis, and thus do not measure employees who commute to work in the municipalities under study. For a further description of the data and methodology underlying its construction, see: http://www.bls.gov/sae/790meth.htm , and C*urrent Employment Statistics State Operating Manual,* October 1989, *Employment and Earnings*, Explanatory Notes, monthly.

[64] The author wishes to thank Ms. Donna Hirsch of the Government's Division of the Census Bureau for providing these unpublished tabulations to the project.

[65] The reader will note that due to missing data, the counts of municipalities across tables varies.

dummy variable, $Living_{ti}$, for the t'th time period and i'th municipality[66], that takes on the value 0 until the year (and month) that the living wage ordinance was adopted.[67] At that point and thereafter, $Living_{ti}$ takes on the value 1.0. Since the scale of the communities is so heterogeneous, we estimate semi-log regressions of the general form:

$$\text{Log}_e \ Employment_{ti} \ = \ \Theta_1 \ + \ \Theta_2 \ Living_{ti} + \ \varepsilon_{ti} \tag{10}$$

Because many characteristics of the municipalities are unobserved, and all of our measures that we wish to explain trend over time, we add n-1 dummy variables for the i =1,..n municipalities, and j-1 dummy variables for time (year, or year and month). This specification is thus a panel regression model in time and panel members, and is described as a "fixed effects" model. In this specification, there is only one estimated Θ_2 that may be interpreted as the percentage effect of a living wage ordinance in effect, holding constant time and municipality. It is thus an overall effect extracted out of the groupings of the municipalities and time dummies in the panel. Since questions about ε_{ti} may arise because the data is time series, we calculate "robust standard errors."[68] In the tables below, we report only the effect of the living wage ordinance, Θ_2, along with the number of observations and goodness of fit, $R.^2$. Thus, in the interests of space and readability, I do not report the coefficients of the dummy variables on time and municipalities.[69]

Generally, we expect $\Theta_2 < 0$ for various measures of employment. That is, upon adoption of a living wage ordinance, we expect municipal and community employment to be subsequently lower. Due to the absence of data on other variables for these jurisdictions that themselves vary over time, the estimated Θ_2's should be viewed as likely upper bounds on the effect of adopting a living wage ordinance; however, since both time and municipality are held constant, they may capture most other unobserved variables or effects.

6.2 Empirical Results

We present here the fixed effects regression results on municipal employment, resident community employment, and several fiscal measures for 62[70] communities that adopted some form of living wage ordinance. Both annual and monthly data over relatively long periods of time are examined.

6.2.1 Municipal Employment in Living Wage Communities: 1972-2002

---

[66] By specifying a dummy variable for each municipality, we take into account differential coverage in the type of ordinance each municipality adopted, as well as compliance effects that may vary by municipality. The time variables may be thought to capture general secular events throughout the economy.

[67] See Section 6.3 below for a comparison of the effects of using the effective date of implementation vs. using the date of adoption in the estimation model.

[68] See Arellano (1987) that examines the viability of such a group specification across time and when there are unobservable variables. By using dummy variables for municipalities, the nature of the ordinance that is adopted by each municipality is accounted for, and by using dummy variables for year and month, trends in the economy are also accounted for.

[69] They are available from the author upon request.

[70] While Table 4 counts 96 cities, counties and a few school districts, data for annual municipal employment or finances for all 96 were not available, and monthly community employment data were also not available for all 96. The lists of jurisdictions statistically analyzed are displayed in Table 15 and Table 17 below.

Table 14 reports the fixed effects regression analysis of municipal employment. Two measures of municipal employment are explored: the count of total employees, and the count of full time equivalents. Remarkably, the adoption of a living wage ordinance, holding constant time and municipal effects, is followed by a 10.21% decline in municipal employment, and a 9.79% decline in municipal full-time employment.[71] Total payroll and full time equivalent payroll also declined upon adoption of living wage ordinances by comparable amounts. Note that the goodness of fit measures across the four results in Table 14 were 95% or *better*, and that the statistical significance of the living wage dummy variables was at the 99% level or better in each fixed effects regression.

Table 15 shows for each of the municipalities for whom data were available the implication of the fixed effects regression results in Table 14. Total municipal employment would have been 95,759 *higher* were the living wage ordinances not adopted --- compare projected employment of 1,033,358 and the observed municipal employment of 937,629 in 2002.

Table 14
Fixed Effects Estimates of the Impact of Living Wage on
Annual Municipal Employment and Payroll: 1972-2002
(Municipality and Year Fixed Effects
with robust standard errors)

Dependent Variable Model	Living Wage Dummy	R^2	Observations
Log$_e$ Total Employees A	- 0.1021	0.9612	2,756
	t=-3.21		
Log$_e$ Full Time Equivalents B	- 0.0979	0.9630	2,750
	t=-3.11		
Log$_e$ Total Payroll in $ C	- 0.0999	0.9683	2,756
	t=-3.19		
Log$_e$ Full Time Equivalent Payroll in $ D	- 0.0983	0.9664	2,744
	t=-3.130		

Note: time and municipality fixed effects variables not shown in table.

---

[71] The data analyzed represent 90 of the communities with Tucson City, Arizona and 1972 being the omitted municipality and the omitted year.

Table 15
Municipal Employment Effect
With and Without
Living Wage Ordinances in 2002

Municipality	Observed Municipal Employment With Living Wage 1/	Projected Municipal Employment without Living Wage	
		Total 2/ Employment Model A	3/ Full Time Equivalents Model B
Alexandria City	4,787	5,276	5,256
Ann Arbor City	1,208	1,331	1,326
Baltimore City	29,418	32,422	32,298
Bellingham City	983	1,083	1,079
Berkeley City	1,755	1,934	1,927
Boston City	22,630	24,941	24,845
Bozeman City	303	334	333
Buffalo City	12,783	14,088	14,034
Burlington City	753	830	827
Cambridge City	3,399	3,746	3,732
Chicago City	41,432	45,662	45,488
Cincinnati City	7,053	7,773	7,743
Cleveland City	9,551	10,526	10,486
Corvallis City	570	628	626
Dayton City	3,057	3,369	3,356
Denver City And County	13,400	14,768	14,712
Detroit City	42,873	47,250	47,070
Durham City	2,130	2,347	2,339
Eastpointe City	318	350	349
Ferndale City	229	252	251
Gainesville City	2,120	2,336	2,328
Hartford City	2,539	2,798	2,788
Hayward City	942	1,038	1,034
Ithaca City	522	575	573
Jersey City	3,658	4,031	4,016
La Crosse City	902	994	990
Los Angeles City	51,150	56,372	56,158
Louisville City	4,743	5,227	5,207
Madison City	2,650	2,921	2,909
Memphis City	26,717	29,445	29,333
Meriden City	2,085	2,298	2,289
Miami Beach City	1,793	1,976	1,969

Municipality	Observed Municipal Employment With Living Wage 1/	Projected Municipal Employment without Living Wage	
		Total 2/ Employment Model A	3/ Full Time Equivalents Model B
Milwaukee City	8,062	8,885	8,851
Minneapolis City	6,451	7,110	7,083
Missoula City	384	423	422
Montgomery County	39,742	43,800	43,633
New Haven City	6,822	7,519	7,490
New York City	455,485	501,990	500,077
Oakland City	5,270	5,808	5,786
Oxnard City	1,421	1,566	1,560
Oyster Bay Town	1,292	1,424	1,418
Palm Beach County	9,382	10,340	10,300
Pasadena City	1,881	2,073	2,065
Pittsburgh City	4,294	4,732	4,714
Portland City	6,377	7,028	7,001
Prince Georges County	31,325	34,523	34,392
Richmond City, CA	1,202	1,325	1,320
Rochester City	12,233	13,482	13,431
San Antonio City	17,797	19,614	19,539
San Jose City	8,175	9,010	8,975
Santa Cruz City	1,163	1,282	1,277
Santa Fe City	1,331	1,467	1,461
Santa Monica City	2,039	2,247	2,239
Somerville City	2,249	2,479	2,469
Southfield City	1,027	1,132	1,128
St Paul City	3,396	3,743	3,728
Toledo City	2,999	3,305	3,293
Tucson City	6,666	7,347	7,319
Warren Township	13	14	14
Watsonville City	404	445	444
West Hollywood City	157	173	172
Ypsilanti Charter Township	137	151	150
Totals	937,629	1,033,358	1,029,422

Comment [.2]: Is this Richmond city CA or VA? Should both be listed here?

Notes: 1/ Tabulations of Municipal Employment data from Governments Division, US Bureau of the Census
2/ Simulations with Model A from Table 14
3/ Simulations with Model B from Table 14

6.2.2 Resident Employment in Living Wage Communities: 1990-2003

Table 16 reports two sets of fixed effects regression results that explain resident community employment as measured by the US Bureau of Labor Statistics. Note that each set of regressions in Table 16 contains 3 models that explain *annual* resident community employment, and 3 models that explain *monthly* resident community employment in light of Burkhauser, Couch and Wittenberg (2000). In turn, each of the 3 models varies in terms of the geographic specificity of the area employment being explained. Model A and D explain the employment of the municipalities including overlapping counties that have adopted living wage ordinances as discussed earlier, and Model B and E eliminate overlapping counties but include other, generally smaller counties for whom the BLS employment data may be less reliable. Model C and F examine just resident employment data in each of the municipalities (but not counties) for which matched data were available.

Several things are immediately evident by comparing the annual to the monthly results. First, the annual results for living wage do not exhibit a statistically significant, negative effect of the living wage dummy variable. None of the three annual living wage coefficients on the living wage is statistically significant, although the overall goodness of fit is quite high, better than 99% in each case. Second, by contrast, each of the three monthly coefficients on the living wage is statistically significant, and grows in size as the geographic focus of the analysis is sharpened. Using all monthly data, including overlapping counties, the adoption of a living wage ordinance lowers resident community employment by about ½ of 1%. This reduction in resident community employment grows to about 1% when non-overlapping, non-county data is examined. That is, were a living wage ordinance *not adopted,* resident employment in a community that had adopted a living wage ordinance would have been 1% *higher.* Given that municipal employment is rarely larger than 3% of total local employment, without regard to place of residence of employment within a municipal boundary,[72] this is a striking, and very large effect.[73]

Table 17 uses the monthly fixed effects regression results in Table 16, and juxtaposes the resident employment projections were there no living wage ordinance in effect for each of the municipal areas against the observed 2002 levels of resident employment.[74] Since each of the municipalities had in place a living wage ordinance in 2002, Table 17 shows what might happen were the ordinance repealed. Depending on which model is used to estimate the effect of repealing the living wage ordinance, the overall employment gain ranges from 67,652 to 140,457. This would appear to be an extremely large effect.

---

[72] See, for example, Table 530 of the *Statistical Abstract of the United States* for 2000, .

[73] Tolley, Bernstein and Lesage (1999) predicted that the living wage ordinance that Chicago considered and ultimately enacted would reduce Chicago's employment on the order of 1,350 jobs. The *ex post* estimates in Table 14 and 15 imply much larger employment effects: a reduction in municipal employment of over 4,200 jobs, and a reduction in resident community employment (public + private) of about 5,500, or on the order of a three-fold larger impact.

[74] Given the semi-log specification, the employment effects displayed are, of course, a constant proportional effect.

Table 16
Fixed Effects Estimates of Impact of Living Wage
on Annual or Monthly Community Employment: 1990-2003
(Municipality and Year, or Year and Monthly Fixed Effects
with robust standard errors)

Dependent Variable	Model Number	Time Period of Data/Geography	Living Wage Dummy	R^2	Observations
Log_e Total Community Employment	A	Annual , All Data	-0.000494	0.9987	1,218
			t=-0.09		
Log_e Total Community Employment	B	Annual, No Overlapping	-0.0032	0.9985	1,092
			t=-0.56		
Log_e Total Community Employment	C	Annual, No Overlapping, No Small Counties	-0.006037	0.9986	868
			t=-1.00		
Log_e Total Community Employment	D	Monthly, All Data	-0.004672	0.9986	14,616
			t=-3.12		
Log_e Total Community Employment	E	Monthly, No Overlapping	-0.0076298	0.9984	13,104
			t=-4.65		
Log_e Total Community Employment	F	Monthly, No Overlapping, No Small Counties	-0.0097	0.9986	10,422
			t=-5.59		

Table 17
Resident Community Employment Effects in 2002
Observed With and Without Living Wage Ordinance

Municipality	State	Actual Observed Data (With Living Wage)	Estimated Residential Employment Effects without Living Wage		
			Model D	Model E	Model F
Alexandria city	VA	79,294	79,664	79,899	80,063
Ann Arbor city	MI	68,615	68,936	69,139	69,281
Baltimore city	MD	263,246	264,476	265,255	265,799
Bellingham city	WA	36,120	36,289	36,396	36,470
Berkeley city	CA	62,563	62,855	63,040	63,170
Boston city	MA	298,090	299,483	300,364	300,981
Bozeman city	MT	19,493	19,584	19,642	19,682
Buffalo city	NY	130,679	131,290	131,676	131,947
Burlington city	VT	23,404	23,513	23,583	23,631
Cambridge city	MA	57,846	58,116	58,287	58,407
Chicago city	IL	1,196,779	1,202,370	1,205,910	1,208,388
Cincinnati city	OH	159,686	160,432	160,904	161,235
Cleveland city	OH	179,870	180,710	181,242	181,615
Corvallis city	OR	25,131	25,248	25,323	25,375
Dayton city	OH	69,606	69,931	70,137	70,281
Denver County/city	CO	273,742	275,021	275,831	276,397
Detroit city	MI	336,299	337,870	338,865	339,561
Durham city	NC	87,727	88,137	88,396	88,578
Eastpointe city	MI	18,669	18,756	18,811	18,850
Ferndale city	MI	14,150	14,216	14,258	14,287
Gainesville city	FL	49,938	50,171	50,319	50,422
Hartford city	CT	46,012	46,227	46,363	46,458
Hayward city	CA	61,994	62,284	62,467	62,595
Ithaca city	NY	15,224	15,295	15,340	15,372
Jersey City	NJ	104,432	104,920	105,229	105,445
La Crosse city	WI	26,697	26,822	26,901	26,956
Los Angeles city	CA	1,785,169	1,793,509	1,798,789	1,802,485
Louisville city	KY	112,604	113,130	113,463	113,696
Madison city	WI	133,990	134,616	135,012	135,290
Memphis city	TN	305,235	306,661	307,564	308,196
Meriden city	CT	29,715	29,854	29,942	30,003
Miami Beach city	FL	43,168	43,370	43,497	43,587
Milwaukee city	WI	249,072	250,236	250,972	251,488
Minneapolis city	MN	207,560	208,530	209,144	209,573
Missoula city	MT	29,071	29,207	29,293	29,353

Municipality	State	Actual Observed Data (With Living Wage)	Estimated Residential Employment Effects without Living Wage		
			Model D	Model E	Model F
Montgomery County	MD	486,910	489,185	490,625	491,633
New Haven city	CT	54,960	55,217	55,379	55,493
New York city	NY	3,440,284	3,456,357	3,466,533	3,473,655
Oakland city	CA	181,563	182,411	182,948	183,324
Oxnard city	CA	79,960	80,334	80,570	80,736
Oyster Bay town	NY	159,896	160,643	161,116	161,447
Palm Beach County	FL	557,497	560,102	561,751	562,905
Pasadena city	CA	70,173	70,501	70,708	70,854
Pittsburgh city	PA	151,210	151,916	152,364	152,677
Portland city	OR	259,200	260,411	261,178	261,714
Prince George's County	MD	442,691	444,759	446,069	446,985
Richmond city	CA	47,451	47,673	47,813	47,911
Richmond city	VA	91,019	91,444	91,713	91,902
San Antonio city	TX	523,771	526,218	527,767	528,852
San Jose city	CA	423,709	425,689	426,942	427,819
Santa Cruz city	CA	27,534	27,663	27,744	27,801
Santa Fe city	NM	39,762	39,948	40,065	40,148
Santa Monica city	CA	53,833	54,085	54,244	54,355
Somerville city	MA	44,360	44,567	44,698	44,790
Southfield city	MI	45,632	45,845	45,980	46,075
St. Paul city	MN	147,505	148,194	148,630	148,936
Toledo city	OH	150,210	150,912	151,356	151,667
Tucson city	AZ	254,599	255,788	256,542	257,069
Warren city	MI	80,680	81,057	81,296	81,463
Watsonville city	CA	13,649	13,713	13,753	13,781
West Hollywood city	CA	23,564	23,674	23,744	23,793
Ypsilanti township	MI	27,539	27,668	27,749	27,806
Totals		14,480,051	14,547,703	14,590,530	14,620,508

Formatted: Highlight

Comment [.3]: In Table 15 you list only one Richmond city…

Formatted: Highlight

6.2.3 Revenue and Tax Effects of Living Wage Ordinances

State and local governments are obligated by constitution and state law to balance their budgets annually. The question we pursue here, again with fixed effects statistical models, is whether or not the adoption of a living wage ordinance is associated with a change in the budgetary position of municipal governments, holding constant both time and municipality effects. Again, we pursue answers to this question with data structures that contain all of the communities including overlapping counties, and then eliminate the overlapping counties to see if greater geographic focus alters our inferences. With respect to the dependent variables of interest, we examine first total revenues, then total own-source revenues that includes own source taxes and fees and charges, then total own source taxes, and then property taxes, and finally all fees and charges. Whether or not a government will maintain the same number of hours in the face of significantly higher wage rates in terms of their own employment policies, or indirectly in terms of their contractors is difficult to anticipate. Much depends on how their electorate views the importance of services in relation to taxes and fees that must be raised to support higher service costs. Thus, unlike our expectations with respect to the effect of living wage ordinances on employment, we are less certain of the effects of living wage ordinances on spending and taxes.

Recall that above we found that municipalities generally reduced employment and payroll upon adoption of living wage ordinances. Whether or not taxes and spending would also fall directly or indirectly depends on how prevalent the wage increase was in comparison to the reduction in municipal employees. Since the extent of outsourcing is not observable in our data set, it is possible that reductions in municipal employment could be also associated with *increases* in municipal spending.[75]

Table 18 contains the results. When we examine all 704 matched annual observations of data, we find that the fixed effects models do quite well in explaining variations in each of the dependent variables in terms of R^2; however, the patterns of signs and statistical significance are inconsistent. We find first that that in terms of total revenues, the adoption of living wage ordinances are associated with 5.9% *higher* total revenues; however, there is no statistically significant coefficient on any of the other measures of own-source revenues. When overlapping counties are excluded from the analysis, we find that total general revenues are higher by 3% upon enactment of a living wage ordinance, and own source revenues are higher by ½ of 1%; however, we can not ascertain from the regression analysis whether taxes are raised and/or fees and charges are raised as the living wage coefficient on total taxes is negative, but the coefficient on fees and charges is of indeterminate sign because of a lack of statistical significance.

Since we found that total and full time equivalent payroll was reduced upon enactment of living wage ordinances in Table 16 and 17, and that total revenues were increased, it follows that total local spending was positively associated with the adoption of living wage ordinances. Higher expenses could be realized in the payment to contractors and subcontractors, as well as the

---

[75] Outsourcing occurs not by replacing municipal employees by a contract with, say, a private street-cleaning service, but also through the reassignment of municipal employees to municipally controlled organizations, typically *public authorities*, that are not measured in the general fund, but are controlled by the mayor and city council. Chicago and Pittsburgh have been very aggressive in using such entities for a variety of purposes.

substitution of capital and technology for current municipal employment. It is also possible that funding for retirement systems was increased and/or outstanding debt was called and paid off. Unfortunately the data obtained from the Governments Division does not contain sufficient expenditure detail to isolate changes in the composition of municipal budgets that can be directly associated with the adoption of living wage ordinances. Nonetheless, the finding that total revenues increase upon enactment of living wage ordinances is of interest and concern.

Table 18
Revenue and Tax Effects of Living Wage Ordinances
In Municipalities: 1990-2001
Semi-Log Fixed Effects Regressions
with Robust Standard Errors
(Municipality and Year Fixed Effects)

A	B	C	D	E	A'	B'	C'	D'	E'
Dependent Variable	Data Coverage	Living Wage	NOBS*	R^2	Dependent Variable	Data Coverage	Living Wage	NOBS	R^2
Log_e Total Revenues	1990- 2001 All Units	0.0586	704	0.9924	Log_e Total Revenues	1990-2001 Non-Overlapping Municipalities Only	0.0309	548	0.9912
		t=2.36					t=2.52		
Log_e Own Source Revenues	1990- 2001 All Units	0.0229	704	0.9914	Log_e Own Source Revenues	1990-2001 Non-Overlapping Municipalities Only	0.0566	548	0.9908
		t=1.12					2.34		
Log_e Total Taxes	1990- 2001 All Units	-0.0319	703	0.9888	Log_e Total Taxes	1990-2001 Non-Overlapping Municipalities Only	-0.0387	547	0.9888
		t=-1.7					t=-1.97		
Log_e Property Taxes	1990- 2001 All Units	-0.0287	703	0.9834	Log_e Property Taxes	1990-2001 Non-Overlapping Municipalities Only	-0.0519	547	0.9786
		t=-1.33					t=-1.60		
Log_e Total Charges	1990- 2001 All Units	0.0023	703	0.9641	Log_e Total Charges	1990-2001 Non-Overlapping Municipalities Only	0.0742	548	0.957
		t=.05					t=1.41		

Formatted: Font: Highlight

*Number of Observations

6.3 Comparison of Effective Date vs. Date of Adoption in Analyzing Impact of Living Wage

Throughout the empirical analysis above, inferences about the impact of the living wage on the employment of municipal employees, community employment, and on the budgetary position of jurisdictions that imposed a living have been based on the date of legislative adoption. This is the typical measure found in other studies of when a living wage occurs. Reviewing actual ordinances was not always feasible in this study, and EPI data was generally utilized. To determine date of implementation, actual ordinances were read. For the 86 jurisdictions for which ordinances that stated the effective date could be reviewed, there was some delay in the implementation of the ordinances. Only 3 jurisdictions had effective dates that were 2 years subsequent to the date of enactment, while 19 had effective dates that occurred in the year subsequent to enactment.

Below, I compare the estimated effects of living wage ordinances on municipal and community employment levels.[76]

Table 19 reports the fixed effects regressions for jurisdictions, reported earlier in Table 14, for which both year of adoption and year of effective date could be ascertained, and data on the dependent variable were available. It is evident that in the case of total payrolls, accounting for the effective date of implementation leads to a significantly larger effect; compare the estimated reduction total payrolls using date of adoption, 6.8%, to the estimated reduction in total payrolls using effective date of implementation, 8.7%.

---

[76] Estimation of budgetary effects using data on effective date of implementation compared to date of adoption were not statistically significant per the results in Table 18 above, and are not, therefore interesting enough to display.

Table 19

Comparison of Measuring Living Wage Effects on Municipal Employment
Year of Adoption vs. Year of Effective Date

		Year of Adoption Living Wage Dummy	R^2	Observations	Effective Date of Adoption Living Wage Dummy	R^2	Observations
Log_e Total Employees	A	-0.081086 t=-2.69	0.9838	1974	-0.089713 t=-2.9	0.9846	1974
Log_e Full Time Equivalents	B	-0.0839924 t=-2.92	0.9862	1968	-0.087023 t=-2.92	0.9863	1968
Log_e Total Payroll in $	C	-0.0682395 t=-2.34	0.9874	1974	-0.087023 t=-2.92	0.9863	1968
Equivalent Payroll in $	D	-0.0681087 t=-2.31	0.9864	1962	-0.0713021 t=-2.35	0.9864	1962

Table 20 displays the estimated effects on community employment of measuring the living wage at the time of adoption vs. measuring at the time of implementation. As in the earlier analysis in Table 16, the fixed effects results become statistically significant when the geographic focus is narrowed to non-overlapping municipalities. Panels D'-F' in Table 20 below indicate that the estimated impact of implementing a living wage ordinance entails anywhere from a .8% to 1% reduction in community employment. Comparable adverse estimated effects, using a date of adoption measure of the living wage, displays somewhat lower estimated effects, anywhere from a .6 to .7% reduction in community employment. Given the rather strong t-statistics from the former set of estimates, it is evident that using date of implementation or the effective date sharpens the estimates of the adverse community employment effects of living wage ordinances.

Table 20
Comparison of Measuring Living Wage Effects by
Date of Adoption vs. Date of Implementation on
Annual and Monthly Community Employment

Log_e Total Community Employment	Model	Time Period	Date of Adoption of Living Wage	R^2	Observations	Model	Time Period	Effective Data of Implementation of Living Wage	R^2	Observations
	A	Annual All Data	0.0021	0.9988	1022	A'	Annual All Data	-0.0034695	0.9988	1022
			t=.41					t=-.64		
	B	Annual No Overlapping	-0.0012136	0.9986	910	B'	Annual No Overlapping	-0.0064095	0.9986	910
			t=-0.21					t=-1.1		
	C	Annual No Overlapping No Small Counties	-0.0054938	0.9987	742	C'	Annual No Overlapping No Small Counties	-0.0098685	0.9987	742
			t=-.88					t=-1.49		
	D	Monthly All Data	-0.006053	0.9986	10584	D'	Monthly All Data	-0.01037	0.9986	10584
			t=-3.56					t=-5.93		
	E	Monthly No Overlapping	-0.0067784	0.9986	10248	E'	Monthly No Overlapping	-0.0107444	0.9986	10248
			t=-3.95					t=-6.25		
	F	Monthly Overlapping No Small Counties	-0.006105	0.9985	8904	F'	Monthly Overlapping No Small Counties	-0.008766	0.9985	8904
			t=-3.26					t=-4.60		

7.0 Summary and Conclusions

Over the past decade, better than 90 municipalities and counties have adopted local ordinances that obligate themselves, those they give grants to, and those they do business with to pay hourly wages well above federal and state minimum wage rates. While the avowed purpose of such ordinances has typically been to ensure that those working for such governments, or those who do business and/or benefit from government contracts, pay employees engaged in such contracts or activities wage rates that will ensure that the employees and their families will live above the poverty line, the advocates of such policies typically minimize any adverse effects such policies might have on the level of municipal employment, the indirect effects on other employment in the municipality, and have typically not discussed how such higher wages will be financed through higher municipal taxes and fees and/or alterations in the overall level of services provided. The economic analysis in this study has identified conceptually that such additional costs must be borne

somewhere in the economy by others who pay taxes and fees, and/or employ workers through their own businesses.

This study has sought empirically to: (i) examine whether or not the overall standard of living of employees who obtain such living wage jobs, are in fact better off than were they to work at the applicable minimum wage and take advantage of various federal and state transfer programs, (ii) examine what happens to public and community employment, and (iii) examine the budgets of jurisdictions that adopt living wage ordinances. Particular care has been taken to use data that pertains to activity occurring *within* the jurisdictions that adopt such ordinances, and to take into account the passage of time.

With respect to the distributional question, a careful review of benefit rules, state by state, indicates that hypothetical households that worked full-time and earned either the applicable minimum or living wage would generally find themselves above the Federal Poverty Line in 2003. The federal Earned Income Tax Credit, TANF, and Food Stamps in conjunction with earnings at either wage rate, placed the representative household of one adult and two minor children above the poverty line. In all states with a living wage, the combination of earnings from the minimum wage, the Earned Income Tax Credit, TANF, Food Stamps, and Medicaid available for the adult and two children provided a higher standard of living than the combination of earnings from the living wage, EITC, TANF and Food Stamps. Typically, such living wage households would not have access to Medicaid for the adult, and eligibility for the children would be difficult to obtain. Whether or not the employer-provided health care would be sufficient to change this conclusion could not be ascertained. If the living wage household obtained health care for the children via SCHIP, and worked at the lower living that included health care benefits, still in 80% of the states the household would have been better off under the minimum wage scenario because the EITC, TANF, and Food Stamps would be more generous. If the household received the higher living wage and other transfers, and received SCHIP for the children in the household, then the household would still be better off in about ½ of the states under the minimum wage scenario. What these detailed calculations, state by state, indicate is that the existing federal safety net is rather effective for low wage households *generally* in lifting families well above the poverty line,[77] and calls into question whether or not additional local policies are necessary to alleviate poverty. Given current national attention to the future of Medicaid and active negotiations among the states and the federal government on matters of health coverage for needy children, this finding should underline the importance of understanding the beneficial impact of current law.

Statistical analyses of the municipal and community employment effects of living wage ordinances indicate that the effects are discernible, and surprisingly large. Total municipal annual employment was estimated to be 10% lower upon adoption of living wage ordinances, full time equivalent employment was found to be 9.8% lower, total payroll was found to be 10% lower, and fulltime equivalent payroll was found to be 9.8% lower upon enactment of living wage ordinances. These should be viewed as upper bounds on likely effects because other explanatory factors that

---

[77] The median state under the minimum wage scenario raised the household to 163% of the 2003 federal poverty line, while the median state under living wage scenarios raised the household to 151 to 167% of the federal poverty line.

might affect these municipal level measures were not available over time. On the other hand, both time and municipality were held constant in the statistical analysis over the period 1972-2002.[78]

Resident community employment in municipalities that adopted living wage ordinances was also negatively impacted, but the effects were smaller and only discernible when using monthly data and ranged from about ½ of 1% to about 1% depending on whether or not overlapping counties were included in the analysis. Again, these should be viewed as upper bounds on the likely employment effects of living wage ordinances on community employment, because explanatory factors other than time and municipality were not available to the study.

With respect to the fiscal implications for municipalities that adopted living wage ordinances, the study found mixed results. Annual total revenues, that included own-source taxes, fees and charges, and intergovernmental transfers, were anywhere from 3% to 5.9% higher upon adoption of living wage ordinances over the period 1990-2001. On the other hand, no discernible effects on property taxes or fees was found, and total own source taxes were 3.8% *lower* upon adoption of living wage ordinances. It is conjectured that the detail in these data are not sufficient to measure hypothesized budgetary and political decisions regarding how to finance living wage ordinances.

While significant new knowledge about the potential benefits and labor market effects of living wage ordinances have been reported in this study, there remain a number of outstanding issues of national importance. Given the relative parity that has been found in the distributional analysis of minimum and living wages, there remain practical questions about the efficacy of both policies, or *pick up rates,* in moving households from below to above the federal poverty line. Also, there remains an important question of what the economic welfare costs are of such federal intervention in the labor market. Upper bounds on the job losses associated with adopting living wages have been identified; however, given that such transfers as the EITC, TANF and Food Stamps must be financed, there is a question of what the economic welfare costs are of federal and state financing of such policies. Due to limitations of time and resources, it was not possible to examine the effects of federal and state tax policies, other than the analysis of the federal EITC, so that one could reach conclusions about the standard of living of minimum wage and living wage households on an after tax and after transfer basis. Questions also remain about whether municipalities that declined to enact living wage ordinances experienced more robust labor markets, and were not forced to raise taxes. Finally, further research seems warranted to determine the *ex post* budgetary effects of living wage policies on those municipalities that adopt them.

---

[78] It is possible that the municipalities that choose to enact living wage ordinances self-select in such a fashion. That is, it is possible that communities whose general employment was declining, whose own-source revenues were increasing, and whose municipal employment was decreasing were also the ones to adopt living wage ordinances. Analysis of the time path of employment and budgets of those communities that *rejected* the adoption of living wage ordinances is worthy of further study that may shed light on the self-selection issue.

8.0 Bibliography

Aaronson, Daniel (2001),. "Price Pass-Through and the Minimum Wage." *Review of Economics and Statistics.* 83, 1: 158-169.

ACORN (2001). Web site of Living Wage Resources. Center of the Association of Community Organizations for Reform Now,   www.acorn.org

Adams, Scott and David Neumark (2005). "When do Living Wages Bite?," *Industrial Relations*, 44 1 (January, 2005), 164-192.

Adams, Scott and David Neumark (2005). "A Decade of Living Wages: What Have We Learned?, " *California Economic Policy*, 1, 3 (July, 2005), 1-23.

Arellano, M. (1987). "Computing Robust Standard Errors for Within-Groups Estimators," *Oxford Bulletin of Economics and Statistics,* 49, 431-434.

Bartik, Timonthy J. (2001). *Jobs for the Poor: Can Labor Demand Policies Help?* (New York: Russell Sage Foundation.)

Bartik, Timothy J. (2002). "Thinking about Local Living Wage Requirements." (Kalamazoo, Michigan: Upjohn Institute Staff Working Paper No. 02-76.

Bhaskar, V. and Ted To (1999). "Minimum Wages for Ronald McDonald Monopsonies: A Theory of Monopsonistic Competition," *Economic Journal* 109: 190-203.

Boardman, A., D. Greenberg, A. Vining and D. Weimer (2001). *Cost-Benefit Analysis: Concepts and Practice.* Prentice-Hall, Second Edition.

Bogart, William T (1996). Enterprise Zones and Employment: Evidence from New Jersey," *Journal of Urban Economics* 40, 198-215.

Brenner, Mark D. Jeannette Wicks-Lim, and Robert Pollin (2005). "The Economic Impact of the Boston Living Wage Ordinance," *Industrial Relations*, 44, 1 (January, 2005), 59-83.

Brown, Charles (1999). "Minimum Wages, Employment and the Distribution of Income." In Orley Ashenfelter and David Card, eds., *Handbook of Labor Economics*, vol. 3: 2101-2163.

Brueckner, Jan, Jacques-Francois Thisse, and Yves Zenou (2002). "Local Labor Markets, Job Matching, and Urban Location," *International Economic Review*, Volume 43, (1), February, 2002, 155-171.

Burkhauser, Richard V., Kenneth A. Couch and David C. Wittenberg (1996). "Who Gets What from Minimum Wage Hikes: A Reestimation of Card and Krueger's Distributional Analysis in Myth and Measurement: The New Economics of the Minimum Wage," *Industrial and Labor Relations Review* 49 (3): 547-552.

Burkhauser, Richard V., Kenneth A. Couch, and David C. Wittenberg (2000). "A Reassessment of the New Economics of the Minimum Wage Literature with Monthly Data from the Current Population Survey," *Journal of Labor Economics*, 18, 4 (October, 2000), 653-680.

Burman, Leonard E. and William C. Randolph, (1994). "Measuring Permanent Responses to Capital Gains Tax Changes in Panel Data," *American Economic Review*, 84 (September), 794-809.

Card, David and Alan Krueger (1994). "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania," *American Economic Review*, 85, 772-93.

Card, David and Alan Krueger (1995). *Myth and Measurement: The New Economics of the Minimum Wage*. Princeton: Princeton University Press

Card, David and Alan Krueger (2000). "Minimum Wages and Employment: a Case Study of the Fast-Food Industry in New Jersey and Pennsylvania: Reply. "*American Economic Review* 90, 5: 1397-1420.

Deere, Donald, Kevin M. Murphy and Finis Welch, (1995), "Reexamining Methods of Estimating Minimum Wage Effects: Employment and the 1990-1991 Minimum Wage Hike," *American Economic Association Papers and Proceedings* 85 (1995), 232-37.

Dickens, Richard, Stephen Machin and Alan Manning (1999). "The Effects of Minimum Wages on Employment: Theory and Evidence from Britain." *Journal of Labor Economics* 17, 1:1-23.

Ehrenberg, Ronald G. and Robert S. Smith (2002). *Modern Labor Economics: Theory and Public Policy: Eighth Edition.* (New York, Addison-Wesley

Employment Policies Institute (1998a). *The Baltimore Living Wage Study: Omissions, Fabrications and Flaws.* (Washington, DC: EPI).

Employment Policies Institute (1998b). *What Do Unions Do?* (New York: Basic Books).

Fairris, David and Michael Reich (2005). "The Impacts of Living Wage Policies: Introduction to the Special Issue," *Industrial Relations*, 44, 1 (January, 2005), 1-13.

Greene, William H (2000). *Econometric Analysis. Fourth Edition.* (Upper Saddle River, New Jersey: Prentice Hall).

Grieson, Ronald E. (1980). "Theoretical Analysis and Empirical Measurements of the Effects of the Philadelphia Income Tax," *Journal of Urban Economics* 8: 1237-137.

Groshen, Erica L. (1991). "Five Reasons Why Wages Vary Among Employers," *Industrial Relations* 30(3): 350-381.

Hamermesh, Daniel S. (1993). *Labor Demand.* Princeton University Press.

Houseman, Susan N (1998). "The Effects of Employer Mandates,: in Richard B. Freeman and Peter Gottschalk (editors), *Generating Jobs: How to Increase Demand for Less-Skilled Workers.* (New York: Russell Sage Foundation).

Inman, Robert P. with Sally Hines, Jeffrey Preston and Richard Weiss (1987). "Philadelphia's Fiscal Management of Economic Transition," in Luce and Summers (editors), Local Fiscal Issues in the Philadelphia Metropolitan Area. (Philadelphia, PA: University of Pennsylvania Press).

Killingsworth, Mark R. (1983). *Labor Supply.* Cambridge University Press.

Luce, Stephanie (2005), "The Role of Community Involvement in Implementing Living Wage Ordinances," *Industrial Relations*, 44, 1 (January, 2005), 32-58

Mincer, Jacob (1976). "Unemployment Effects of Minimum Wage Changes," *Journal of Political Economy*, 84 (August, 1976), S87-S104.

Neumark, David and William Wascher (1992)."Employment Effects of Minimum Wages and Subminimum Wages: Panel Data on State Minimum Wage Laws," *Industrial and Labor Relations Review*, 46 (1992), 55-81.

Neumark, David and William Wascher (2000). "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania: Comment," *American Economic Review* 90, 5: 1362-1396.

Neumark, David (2002). *How Living Wage Laws Affect Low-Wage Workers and Low-Income Families.* (San Francisco, California: Public Policy Institute.)

Neumark, David and Scott Adams (2003a). "Do Living Wage Ordinances Reduce Urban Poverty?" *Journal of Human Resources* 38, 3 (Summer, 2003), 490-521.

Neumark, David and Scott Adams (2003b). "Detecting the Effects of Living Wage Laws," *Industrial Relations,* 42 (October, 2003), 531-64.

Niedt, Christopher, Greg Ruiters, Dana Wise and Erica Schoenberger (1999). "The Effects of the Living Wage in Baltimore," Department of Geography and Environmental Engineering, Johns Hopkins University, Worker Paper, No. 119.

Pollin, Robert and Stephanie Luce (1998). *The Living Wage: Building A Fair Economy.* (New York: Free Press).

Rebitzer, James B., and Lowell J. Taylor (1995). "The Consequences of Minimum Wage Laws: Some New Theoretical Ideas," *Journal of Public Economics* 56.2: 245-255

Reich, Michael, Peter Hall and Fiona Hsu (1999). " Living Wages and the San Francisco Economy: The Benefits and the Costs." Bay Area Living Wage Research Group Report. Center on Pay and Inequality, Institute of Industrial Relations, University of California, Berkeley.

Reynolds, David (1999). *The Impact of the Detroit Living Wage Ordinance.* (Detroit, Michigan: Center for Urban Studies and Labor Studies Center, Wayne State University).

Reynolds, David (2001). Living Wage Campaign. ACORN.

Reynolds, David (2000). The Impact of the Detroit Living Wage Ordinance," Center for Urban Studies and Labor Studies Center Report. College of Urban, Labor and Metropolitan Affairs, Wayne State University.

Rowe, Gretchen with Jeffrey Versteeg. *Welfare Rules Databook: State Policies as of July 2003*. Washington, D.C.: The Urban Institute, Forthcoming.

Sander, Richard H., E. Douglass Williams and Joseph Doherty (2000). *An Economic Analysis of the Proposed Santa Monica Living Wage.* Report prepared for the City of Los Angeles, Empirical Research Group, UCLA.

Shepherd, A. Ross (2000). "Minimum Wages and the Card-Krueger Paradox," *Southern Economic Journal*, 67, 2 (October, 2000), 469-478.

Smith, Tony and Yves Zenou (1997). "Dual Labor Markets, Urban Unemployment, and Multicentric Cities," *Journal of Economic Theory*, 76, 185-214;

Stigler, George (1946). "The Economics of Minimum Wage Legislation," *American Economic Review*, 36, 358-65.

Swope, Christopher (1998). "The Living Wage Wars," *Governing* (December), 23-25.

Tolley, George, Peter Bernstein and Michael Lesage (1999). *Economic Analysis of a Living Wage Ordinance.* (Washington, DC: Employment Policies Institute).

Weisbrot, Mark, and Michael Sforza-Roderick (1996). *Baltimore's Living Wage Law: An Analysis of the Fiscal and Economic Costs of Baltimore City Ordinance 442.* (Washington, DC: The Preamble Center for Public Policy.)

White, H. (1980), "A Heteroskedasticty-consistent covariance matrix estimator and a direct test for heteroskedasticity," *Econometrica*¸ 48: 817-838.

Zelenitz, Aaron S., and Richard S. Toikka (2005). *Effective Tax Rates and the Living Wage*. (Washington, DC: The Employment Policies Institute, May, 2005).

Zenou, Yves and Tony Smith, (1995). "Efficiency Wages, involuntary unemployment, and urban spatial structure," *Regional Science and Urban* Economics 25, 547-573.