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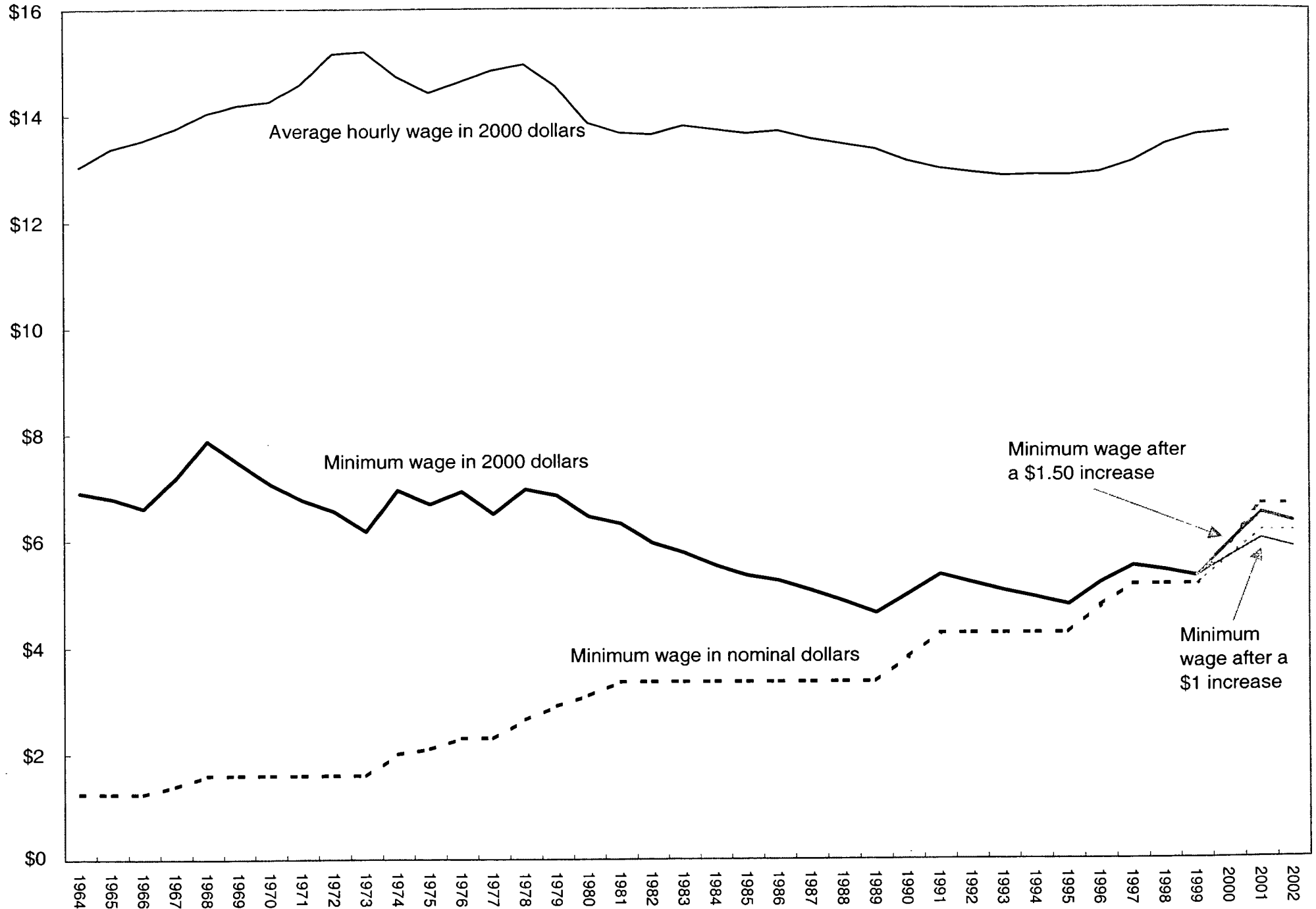
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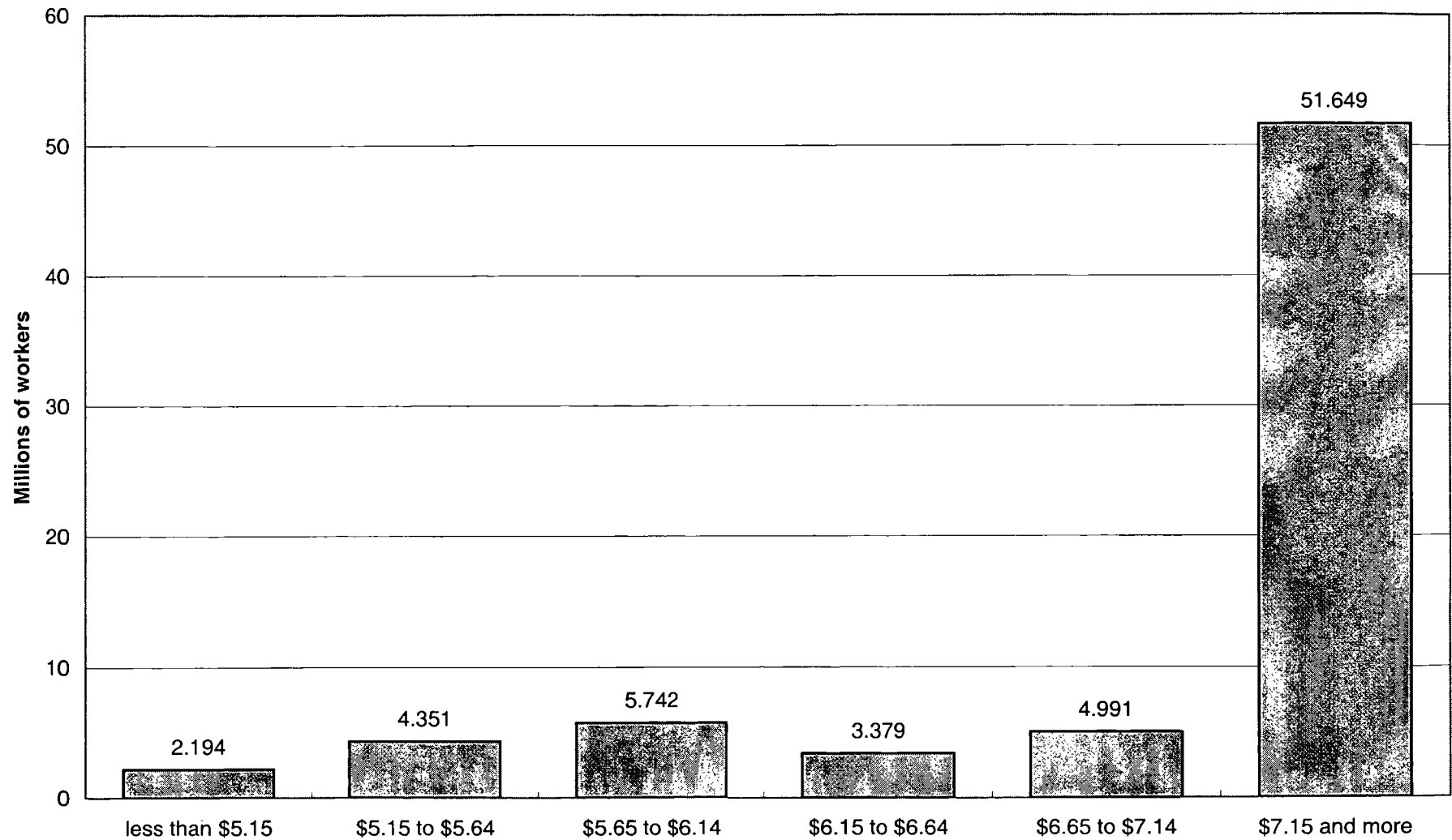
Folder Title:
Labor - Minimum Wage: Minimum Wage

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Hourly Wage Rates, 1938-2002



US Hourly Rate Workers by Wage Level, 1999



From: William B. Boning on 08/04/2000 10:15:30 AM

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To: Kathryn L. Shaw/CEA/EOP@EOP

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Subject: Youth subminimum-aka training wage

Finally, the 1989 amendments established a single annual dollar volume test of \$500,000 for enterprise coverage of both retail and non-retail businesses. At the same time, the amendments eliminated the minimum wage and overtime pay exemption for small retail firms. Thus, employees of small retail businesses became subject to minimum wage and overtime pay in any workweek in which they engage in commerce or the production of goods for commerce. The minimum wage was raised to \$3.80 an hour beginning April 1, 1990, and to \$4.25 an hour beginning April 1, 1991. The amendments also established a training wage provision (at 85% of the minimum wage, but not less than \$3.35 an hour) for employees under the age of 20 a provision that expired in 1993. Finally, the amendments established an overtime exception for time spent by employees in remedial education and civil money penalties for willful or repeated violations of the minimum wage or overtime pay requirements of the law¹.

Base = Alternative =		MSR00T1B MWG00T1B	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
comp/hr	P:LCMHB	Base Level	4.4	4.6	4.6	4.4	4.2	4.1	4.1	4.0	4.0	4.0	4.0	3.9
	% chg	Alternative	4.4	4.9	4.9	4.5	4.1	4.0	4.1	4.0	4.0	4.0	4.0	3.8
		Difference	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		% Difference	0.0	6.4	6.8	0.7	-0.5	-0.7	0.2	0.7	0.7	0.3	-0.2	-0.4
level	L:LCMHB	Base Level	24.0	25.1	26.2	27.4	28.5	29.7	30.9	32.2	33.4	34.8	36.1	37.6
		Alternative	24.0	25.1	26.3	27.5	28.7	29.9	31.1	32.3	33.6	35.0	36.4	37.8
		Difference	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
		% Difference	0.0	0.1	0.4	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Payroll emp	L:LEB	Base Level	107.7	109.8	111.4	112.0	112.7	113.7	114.8	116.0	117.4	118.8	120.1	121.4
		Alternative	107.7	109.8	111.3	111.8	112.4	113.5	114.7	115.9	117.4	118.7	120.1	121.4
		Difference	0.0	0.0	0.0	-0.2	-0.3	-0.2	-0.1	0.0	0.0	0.0	-0.1	0.0
		% Difference	0.0	0.0	0.0	-0.2	-0.3	-0.2	-0.1	0.0	0.0	0.0	0.0	0.0
GDP price index	P:PGDP	Base Level	1.6	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
		Alternative	1.6	2.1	2.2	2.1	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0
		Difference	0.0	0.1	0.2	0.2	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
		% Difference	0.0	3.0	11.8	8.0	0.7	4.5	4.8	1.5	-0.7	-1.5	-1.3	-0.3
	L:PGDP	Base Level	104.6	106.6	108.7	110.8	113.0	115.3	117.6	120.0	122.4	124.8	127.3	129.9
		Alternative	104.6	106.6	108.9	111.3	113.6	115.9	118.4	120.8	123.2	125.6	128.1	130.7
		Difference	0.0	0.0	0.2	0.4	0.5	0.6	0.7	0.8	0.8	0.8	0.8	0.8
		% Difference	0.0	0.0	0.2	0.4	0.5	0.5	0.6	0.7	0.7	0.6	0.6	0.6

Base = Alternative =		MSR00T1B MWG00T1B	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
comp/hr	P:LCMHB	Base Level	4.4	4.6	4.6	4.4	4.2	4.1	4.1	4.0	4.0	4.0	4.0	3.9
	% chg	Alternative	4.4	4.9	4.9	4.5	4.1	4.0	4.1	4.0	4.0	4.0	4.0	3.8
		Difference	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		% Difference	0.0	6.4	6.8	0.7	-0.5	-0.7	0.2	0.7	0.7	0.3	-0.2	-0.4
level	L:LCMHB	Base Level	24.0	25.1	26.2	27.4	28.5	29.7	30.9	32.2	33.4	34.8	36.1	37.6
		Alternative	24.0	25.1	26.3	27.5	28.7	29.9	31.1	32.3	33.6	35.0	36.4	37.8
		Difference	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
		% Difference	0.0	0.1	0.4	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Payroll emp	L:LEB	Base Level	107.7	109.8	111.4	112.0	112.7	113.7	114.8	116.0	117.4	118.8	120.1	121.4
		Alternative	107.7	109.8	111.3	111.8	112.4	113.5	114.7	115.9	117.4	118.7	120.1	121.4
		Difference	0.0	0.0	0.0	-0.2	-0.3	-0.2	-0.1	0.0	0.0	0.0	-0.1	0.0
		% Difference	0.0	0.0	0.0	-0.2	-0.3	-0.2	-0.1	0.0	0.0	0.0	0.0	0.0
GDP price index	P:PGDP	Base Level	1.6	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
		Alternative	1.6	2.1	2.2	2.1	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0
		Difference	0.0	0.1	0.2	0.2	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
		% Difference	0.0	3.0	11.8	8.0	0.7	4.5	4.8	1.5	-0.7	-1.5	-1.3	-0.3
	L:PGDP	Base Level	104.6	106.6	108.7	110.8	113.0	115.3	117.6	120.0	122.4	124.8	127.3	129.9
		Alternative	104.6	106.6	108.9	111.3	113.6	115.9	118.4	120.8	123.2	125.6	128.1	130.7
		Difference	0.0	0.0	0.2	0.4	0.5	0.6	0.7	0.8	0.8	0.8	0.8	0.8
		% Difference	0.0	0.0	0.2	0.4	0.5	0.5	0.6	0.7	0.7	0.6	0.6	0.6

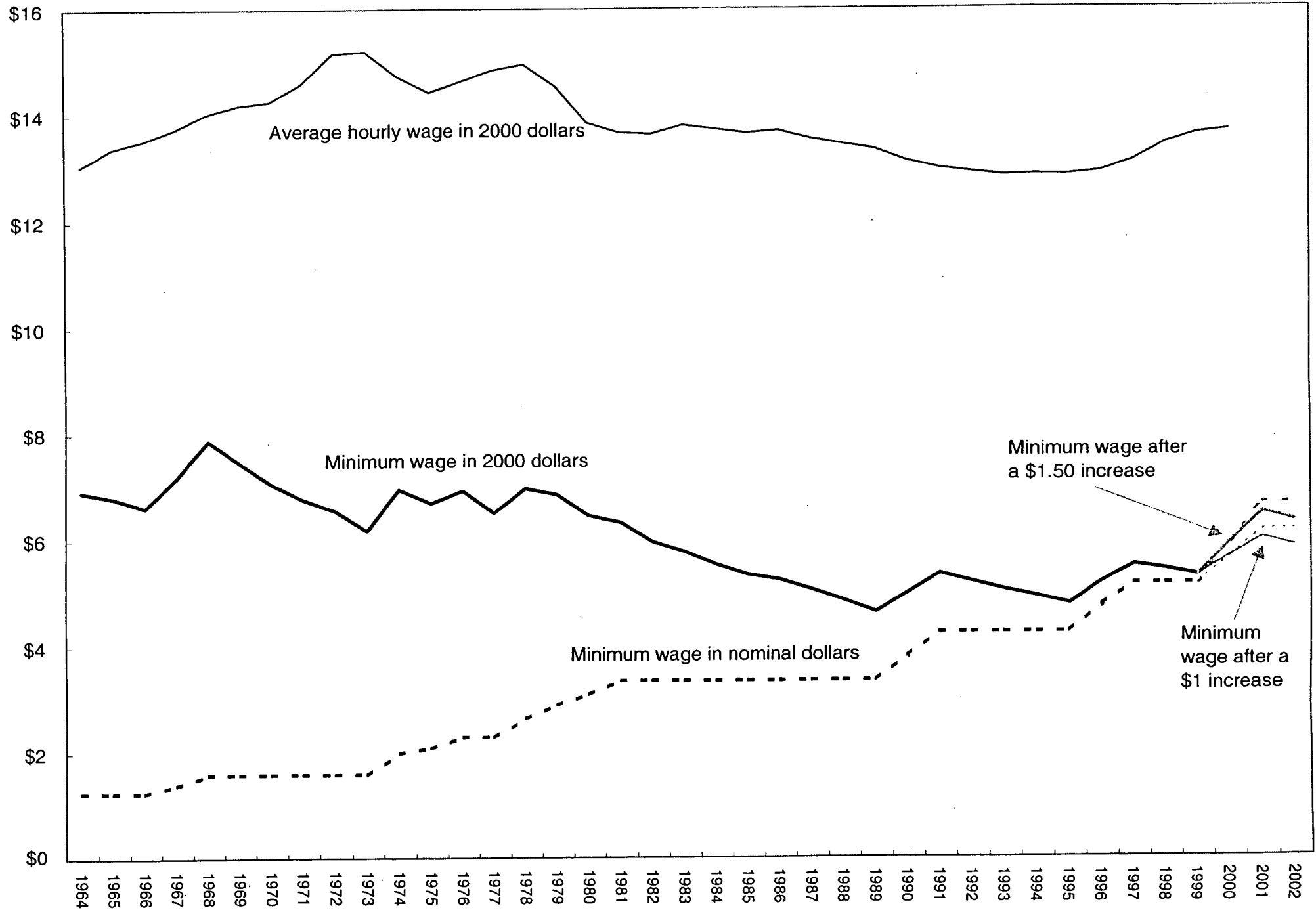
Base = Alternative =		MSR00T1B MWG00T1B	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
comp/hr	P:LCMHB	Base Level	4.4	4.6	4.6	4.4	4.2	4.1	4.1	4.0	4.0	4.0	4.0	3.9
	70 chg	Alternative	4.4	4.9	4.9	4.5	4.1	4.0	4.1	4.0	4.0	4.0	4.0	3.8
		Difference	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		% Difference	0.0	6.4	6.8	0.7	-0.5	-0.7	0.2	0.7	0.7	0.3	-0.2	-0.4
level	L:LCMHB	Base Level	24.0	25.1	26.2	27.4	28.5	29.7	30.9	32.2	33.4	34.8	36.1	37.6
		Alternative	24.0	25.1	26.3	27.5	28.7	29.9	31.1	32.3	33.6	35.0	36.4	37.8
		Difference	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
		% Difference	0.0	0.1	0.4	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Payroll emp	L:LEB	Base Level	107.7	109.8	111.4	112.0	112.7	113.7	114.8	116.0	117.4	118.8	120.1	121.4
		Alternative	107.7	109.8	111.3	111.8	112.4	113.5	114.7	115.9	117.4	118.7	120.1	121.4
		Difference	0.0	0.0	0.0	-0.2	-0.3	-0.2	-0.1	0.0	0.0	0.0	-0.1	0.0
		% Difference	0.0	0.0	0.0	-0.2	-0.3	-0.2	-0.1	0.0	0.0	0.0	0.0	0.0
GDP price index	P:PGDP	Base Level	1.6	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
		Alternative	1.6	2.1	2.2	2.1	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0
		Difference	0.0	0.1	0.2	0.2	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
		% Difference	0.0	3.0	11.8	8.0	0.7	4.5	4.8	1.5	-0.7	-1.5	-1.3	-0.3
	L:PGDP	Base Level	104.6	106.6	108.7	110.8	113.0	115.3	117.6	120.0	122.4	124.8	127.3	129.9
		Alternative	104.6	106.6	108.9	111.3	113.6	115.9	118.4	120.8	123.2	125.6	128.1	130.7
		Difference	0.0	0.0	0.2	0.4	0.5	0.6	0.7	0.8	0.8	0.8	0.8	0.8
		% Difference	0.0	0.0	0.2	0.4	0.5	0.5	0.6	0.7	0.7	0.6	0.6	0.6

Base = Alternative =		MSR00T1B MWG00T1B	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Comp/hr	P:LCMHB	Base Level	4.4	4.6	4.6	4.4	4.2	4.1	4.1	4.0	4.0	4.0	4.0	3.9
	70 chg	Alternative	4.4	4.9	4.9	4.5	4.1	4.0	4.1	4.0	4.0	4.0	4.0	3.8
		Difference	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		% Difference	0.0	6.4	6.8	0.7	-0.5	-0.7	0.2	0.7	0.7	0.3	-0.2	-0.4
level	L:LCMHB	Base Level	24.0	25.1	26.2	27.4	28.5	29.7	30.9	32.2	33.4	34.8	36.1	37.6
		Alternative	24.0	25.1	26.3	27.5	28.7	29.9	31.1	32.3	33.6	35.0	36.4	37.8
		Difference	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
		% Difference	0.0	0.1	0.4	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Payroll emp	L:LEB	Base Level	107.7	109.8	111.4	112.0	112.7	113.7	114.8	116.0	117.4	118.8	120.1	121.4
		Alternative	107.7	109.8	111.3	111.8	112.4	113.5	114.7	115.9	117.4	118.7	120.1	121.4
		Difference	0.0	0.0	0.0	-0.2	-0.3	-0.2	-0.1	0.0	0.0	0.0	-0.1	0.0
		% Difference	0.0	0.0	0.0	-0.2	-0.3	-0.2	-0.1	0.0	0.0	0.0	0.0	0.0
GDP price index	P:PGDP	Base Level	1.6	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
		Alternative	1.6	2.1	2.2	2.1	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0
		Difference	0.0	0.1	0.2	0.2	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
		% Difference	0.0	3.0	11.8	8.0	0.7	4.5	4.8	1.5	-0.7	-1.5	-1.3	-0.3
	L:PGDP	Base Level	104.6	106.6	108.7	110.8	113.0	115.3	117.6	120.0	122.4	124.8	127.3	129.9
		Alternative	104.6	106.6	108.9	111.3	113.6	115.9	118.4	120.8	123.2	125.6	128.1	130.7
		Difference	0.0	0.0	0.2	0.4	0.5	0.6	0.7	0.8	0.8	0.8	0.8	0.8
		% Difference	0.0	0.0	0.2	0.4	0.5	0.5	0.6	0.7	0.7	0.6	0.6	0.6

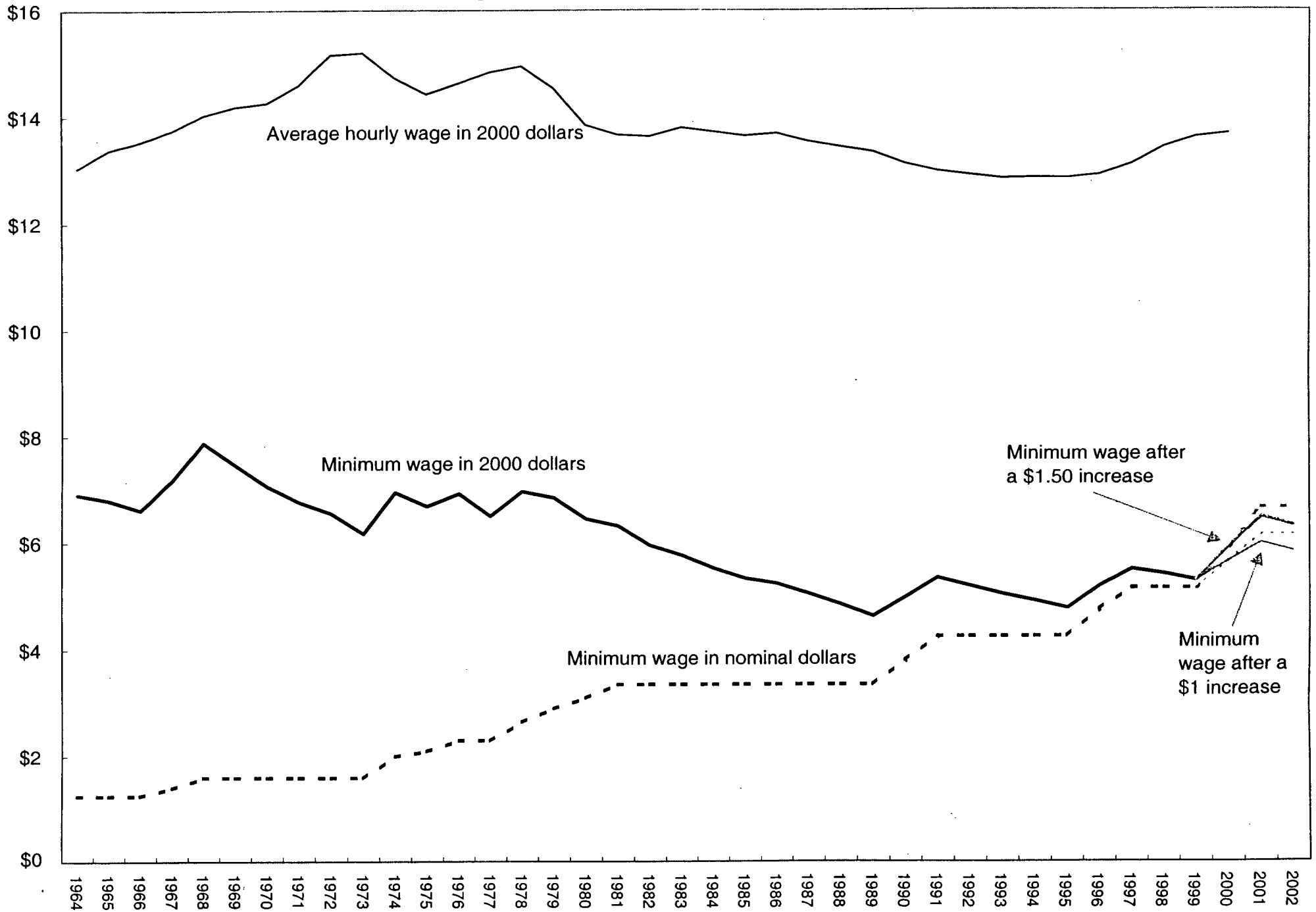
Base = Alternative =		MSR00T1B MWG00T1B	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Comp/hr	P:LCMHB	Base Level	4.4	4.6	4.6	4.4	4.2	4.1	4.1	4.0	4.0	4.0	4.0	3.9
	% chg	Alternative	4.4	4.9	4.9	4.5	4.1	4.0	4.1	4.0	4.0	4.0	4.0	3.8
		Difference	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		~~% Difference~~	~~0.0~~	6.4	6.8	0.7	-0.5	-0.7	0.2	0.7	0.7	0.3	-0.2	-0.4
level	L:LCMHB	Base Level	24.0	25.1	26.2	27.4	28.5	29.7	30.9	32.2	33.4	34.8	36.1	37.6
		Alternative	24.0	25.1	26.3	27.5	28.7	29.9	31.1	32.3	33.6	35.0	36.4	37.8
		Difference	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
		% Difference	0.0	0.1	0.4	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Payroll emp	L:LEB	Base Level	107.7	109.8	111.4	112.0	112.7	113.7	114.8	116.0	117.4	118.8	120.1	121.4
		Alternative	107.7	109.8	111.3	111.8	112.4	113.5	114.7	115.9	117.4	118.7	120.1	121.4
		Difference	0.0	0.0	0.0	-0.2	-0.3	-0.2	-0.1	0.0	0.0	0.0	-0.1	0.0
		% Difference	0.0	0.0	0.0	-0.2	-0.3	-0.2	-0.1	0.0	0.0	0.0	0.0	0.0
GDP price index	P:PGDP	Base Level	1.6	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
		Alternative	1.6	2.1	2.2	2.1	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0
		Difference	0.0	0.1	0.2	0.2	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
		~~% Difference~~	~~0.0~~	3.0	11.8	8.0	0.7	4.5	4.8	1.5	-0.7	-1.5	-1.3	-0.3
	L:PGDP	Base Level	104.6	106.6	108.7	110.8	113.0	115.3	117.6	120.0	122.4	124.8	127.3	129.9
		Alternative	104.6	106.6	108.9	111.3	113.6	115.9	118.4	120.8	123.2	125.6	128.1	130.7
		Difference	0.0	0.0	0.2	0.4	0.5	0.6	0.7	0.8	0.8	0.8	0.8	0.8
		% Difference	0.0	0.0	0.2	0.4	0.5	0.5	0.6	0.7	0.7	0.6	0.6	0.6

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1.5 (2001:4)

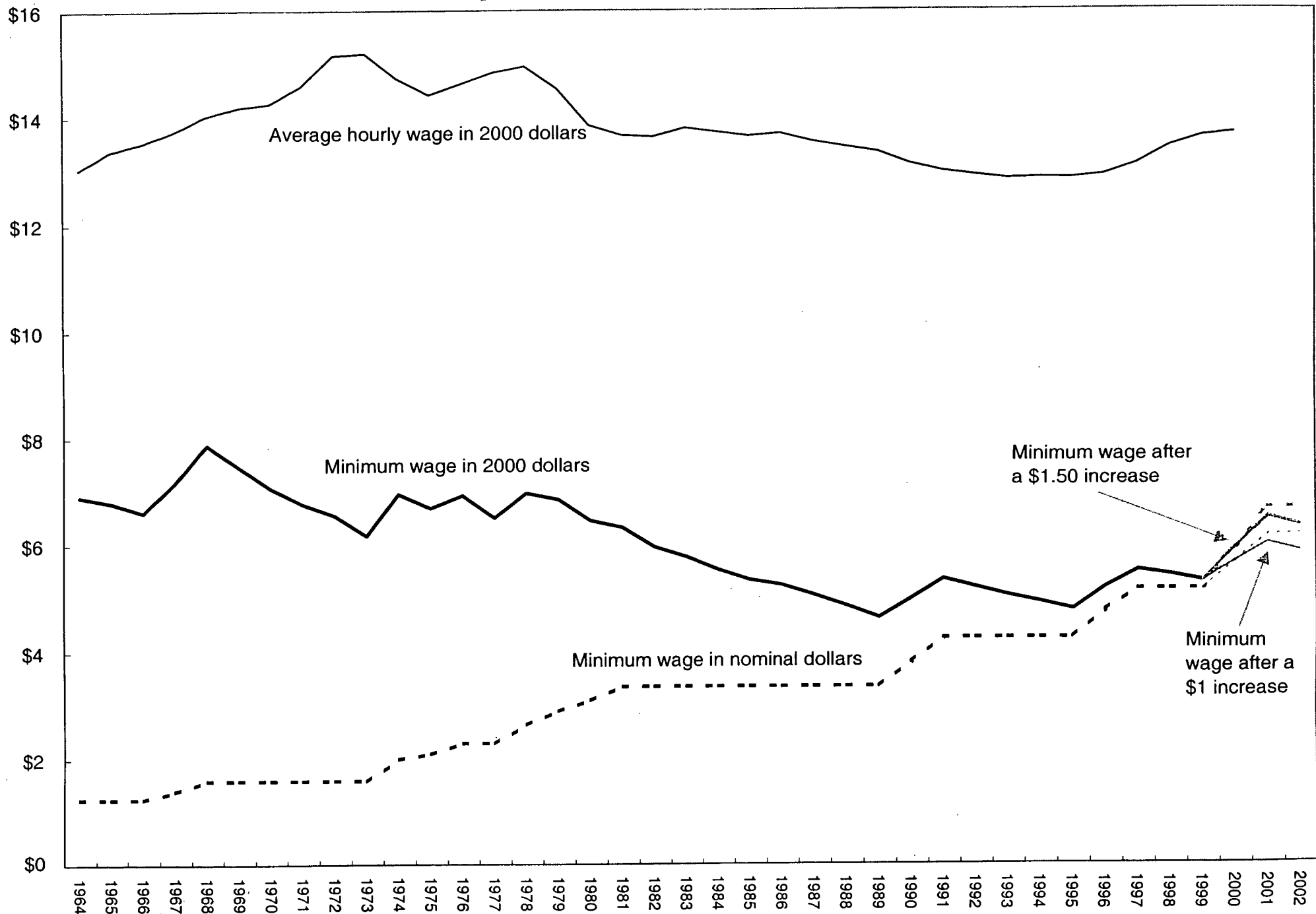
Hourly Wage Rates, 1938-2002



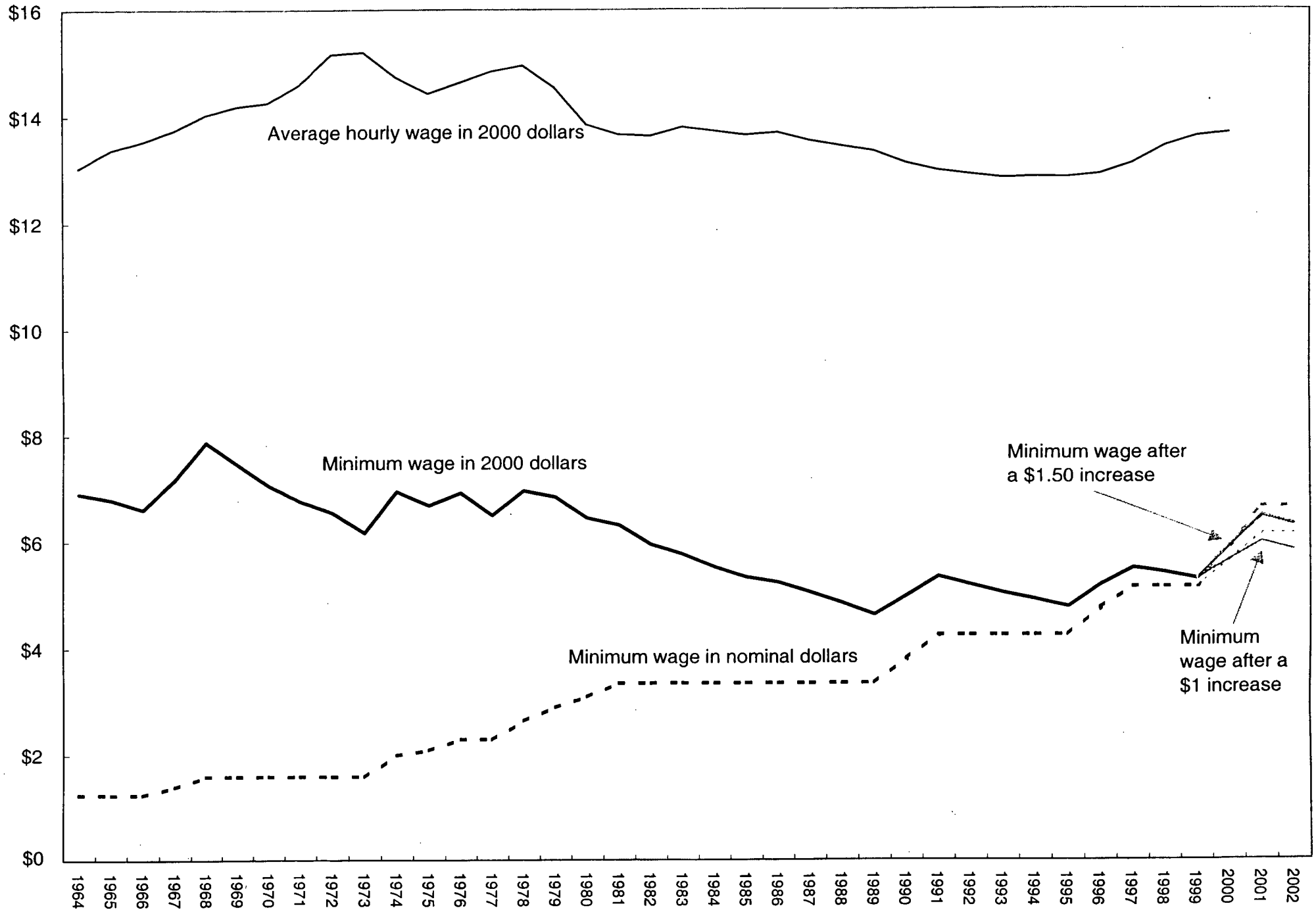
Hourly Wage Rates, 1938-2002



Hourly Wage Rates, 1938-2002



Hourly Wage Rates, 1938-2002



Value of The Federal Minimum Wage, 1938-2000

The table below is a representation of the minimum wage over the last 43 years in 1997 dollars adjusted for inflation using the CPI-U

The shaded blocks on the chart below represent years in which the Fair Labor Standards Act was amended to raise the minimum wage.

The table below shows the actual minimum wage (Nominal Dollars) and the relative value of the minimum wage (1998 Dollars). The bolded rows represent years in which the Fair Labor Standards Act was amended to raise the minimum wage.

Year	Value of the Minimum Wage		Value of the Average Hourly		Minimum Projection 1		Minimum Projection 2	
	Minimum Wage, Nominal Dollars	Minimum Wage, 2000 Dollars	Average Hourly Wage, Nominal Dollars	Average Hourly Wage, 2000 Dollars	\$1 Increase, Nominal Dollars	\$1 Increase, 2000 Dollars	\$1.50 Increase, Nominal Dollars	\$1.50 Increase, 2000 Dollars
1964	1.25	6.91	2.36	13.04				
1965	1.25	6.80	2.46	13.38				
1966	1.25	6.61	2.56	13.53				
1967	1.40	7.18	2.68	13.75				
1968	1.60	7.88	2.85	14.03				
1969	1.60	7.47	3.04	14.19				
1970	1.60	7.06	3.23	14.26				
1971	1.60	6.77	3.45	14.59				
1972	1.60	6.56	3.70	15.16				
1973	1.60	6.17	3.94	15.20				
1974	2.00	6.95	4.24	14.73				
1975	2.10	6.69	4.53	14.42				
1976	2.30	6.92	4.86	14.63				
1977	2.30	6.50	5.25	14.84				
1978	2.65	6.96	5.69	14.95				
1979	2.90	6.84	6.16	14.53				
1980	3.10	6.44	6.66	13.85				
1981	3.35	6.31	7.25	13.66				
1982	3.35	5.95	7.68	13.63				
1983	3.35	5.76	8.02	13.79				
1984	3.35	5.52	8.32	13.72				
1985	3.35	5.33	8.57	13.64				
1986	3.35	5.24	8.76	13.69				
1987	3.35	5.05	8.98	13.54				
1988	3.35	4.85	9.28	13.44				
1989	3.35	4.63	9.66	13.34				
1990	3.80	4.98	10.01	13.12				
1991	4.25	5.35	10.32	12.98				
1992	4.25	5.19	10.57	12.91				
1993	4.25	5.04	10.83	12.84				
1994	4.25	4.91	11.12	12.85				
1995	4.25	4.78	11.43	12.85				
1996	4.75	5.19	11.82	12.90				
1997	5.15	5.50	12.28	13.11				
1998	5.15	5.41	12.78	13.43				
1999	5.15	5.30	13.24	13.61	5.15	5.30	5.15	5.30
2000			13.68	13.68	5.65	5.65	5.90	5.90
2001					6.15	5.99	6.65	6.48
2002					6.15	5.84	6.65	6.32

Source:
Bureau of Labor Statistics

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Minimum Wages and Youth Employment in France
and the United States
John M. Abowd, Francis Kramarz, Thomas Lemieux
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ABSTRACT

We use longitudinal individual wage and employment data for young people in France and the United States to investigate the effect of intertemporal changes in an individual's status vis-à-vis the real minimum wage on employment transition rates. We find that movements in both French and American real minimum wages are associated with relatively important employment effects in general, and very strong effects on workers employed at the minimum wage. In the French case, albeit imprecisely estimated, a 1% increase in the real minimum wage decreases the employment probability of a young man currently employed at the minimum wage by 2.5%. In the United States, a decrease in the real minimum of 1% increases the probability that a young man employed at the minimum wage came from nonemployment by 2.2%. These effects get worse with age in the United States, and are mitigated by eligibility for special employment promotion contracts in France.

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1. Introduction

In this paper we examine the link between changes in the minimum wage and employment outcomes for the youth (under 31) labor market, in France and the United States. We make use of longitudinal data on employment status and earnings to see how individuals are affected by real increases (in the case of France) or real decreases (in the case of the United States) in the minimum wage conditional on the individual's location in the earnings distribution. We take particular care to distinguish sub-populations that might be affected differently by the minimum wage, focusing, in particular, on low-wage workers and (in the case of France, where the data are available) on the use of employment-promotion contracts that allow the payment of sub-minimum wages.

Although little attention has been paid to the situation in Europe¹, some European countries provide interesting alternatives to the much-studied U.S. case. France, in particular, seems a perfect contrast to the United States. Whereas in the United States the nominal federal minimum wage remained constant for most states during most of the 1980s (thus implying a declining real federal minimum wage), nominal minimum wages in France rose steadily over the 1980s, as did real minimum wages. In this paper we exploit the different growth patterns in real minimum wages in a symmetric manner to more clearly understand their effect on employment.

Most existing studies of the French minimum wage system use aggregate time-series data and find no effect of the minimum wage system on youth employment². This is surprising because, since its inception, a significant percentage of the French labor force has been employed at wages close to the minimum wage. One reason for the orientation in the empirical analyses done in France is, certainly, the tendency of American applied researchers to rely upon aggregate time series analyses³ prior to the widespread dissemination of public use micro-economic data

¹ See Dolado et. al. (1996) for a summary of minimum wage studies for France, the Netherlands, Spain and the United Kingdom.

² See, for example, Bazen and Martin (1991).

³ See Brown, Gilroy and Kohen (1982) for a review.

such as the Current Population Survey (CPS). Another reason is that research access to French micro-data was extremely limited until the 1990s. In the present study we use micro-data from France and the United States that were collected in household surveys which are quite comparable. In particular, we use longitudinal information on the workers. Consequently, we are able to analyze both French and American minimum wage systems using individual-level panel data.

Because of the dramatic differences in the evolution of both nominal and real French minimum wages, as compared to the national U.S. minimum⁴, we have designed statistical comparisons that address the same behavior using the different variations in the national minimum wage systems to identify the relevant effects. We use two different statistical approaches based on the same idea: analysis of employment transition probabilities conditional on the position of an individual in the wage distribution. In each approach, we decompose the wage distribution into 4 components (under, around, marginally over and over the minimum wage). We then, in our first approach, use a multinomial logit model to analyze the factors that affect the probability of making a transition between a particular position in the wage distribution and employment or nonemployment (in the case of France) or between employment or nonemployment and the position in the wage distribution (in the case of the United States). We find that young workers paid around the minimum wage in France were more likely to transition to a nonemployment state (unemployment or inactivity) than those paid over the minimum wage, and that, for French men, such differences were greater in years where major increases in the minimum wage occurred. In the U.S., we find that among workers currently employed around the minimum wage, a larger share were in a nonemployment state the previous period than among workers above the minimum wage. In both cases, the effects are strongest for the youngest workers. We find some minor “spillover” effects in both cases, and provide evidence to suggest that these effects capture some of the heterogeneity between low-wage and high-wage labor markets.

⁴ We do not consider state-specific minimum wages or youth subminimum wages in the United States, which became increasingly important at the end of the 1980s. See Neumark and Wascher (1992) for an explicit treatment of this variation in the U.S. data. Similarly, we do not explicitly control for minimum wages specified by collective agreement in France that exceed the national minimum. See Margolis (1993) for a detailed treatment of the effects of the collective bargaining agreement salary grids on employment.

In the second approach, we exploit the size of the movements in the real minimum wage more directly⁵. For France, we use the automatic and legislated increases in the nominal minimum wage that occur (at least) each July to identify groups of workers whose current wage rate will fall below the new minimum wage rate after the increase. We also identify workers whose present employment is part of a special youth program that permits wage payments below the statutory minimum. We use the limited duration of employment spells in such programs to identify a second group of minimum wage employment effects. Our statistical analysis identifies the change in future employment probabilities given an individual's minimum wage status in the present period. We show that individuals whose reference-year wage was between the two real minimum wages, as defined above, have substantially lower subsequent employment probabilities than those who were not. The conditional elasticity of subsequent nonemployment as a function of the real minimum wage for young male workers in France in this situation, evaluated at sample means, is - 2.5. This effect is present even when unobserved labor market heterogeneity and supply behavior are partially controlled for by the inclusion of a separate category for workers marginally over the minimum. However, the impact of the minimum wage decreases with experience. We also show that youths who participated in employment programs had lower subsequent employment probabilities. For the United States we use the constancy of the nominal minimum wage between 1981 and 1987 to identify groups of employed workers whose real wage in the present period would have been below the real minimum wage in the previous period. We show that young men whose wages were between the two real minimum wages, as described above, had lower employment probabilities in the previous period than individuals who were not (the conditional elasticity, evaluated at sample means, is 2.2). These effects get worse with age in the United States, and are mitigated by eligibility for special employment promotion contracts in France.

The structure of this paper is as follows. Section 2 provides some institutional background on the systems of minimum wages in both France and the United States, and provides some preliminary indications of the potential impact in each case based on empirical wage distributions. Section 3 describes the data that we use to analyze the impact of minimum wages,

⁵ Our analysis bears some resemblance to that of Linneman (1982).

and section 4 lays out the statistical models used to evaluate the employment effects of minimum wage changes. Section 5 details the results of our multinomial logit analysis, and section 6 discusses the conditional logit analyses. Section 7 concludes.

2. Institutional Background

2.1 France

The first minimum wage law in France was enacted in 1950, creating a guaranteed hourly wage rate that was partially indexed to the rate of increase in consumer prices. Beginning in 1970, the original minimum wage law was replaced by the current system (called the SMIC, “salaire minimum interprofessionnel de croissance”) linking the changes in the minimum wage to both consumer price inflation and growth in the hourly blue-collar wage rate. In addition to formula-based increases in the SMIC, the government legislated increases many times over the next two decades. The statutory minimum wage in France regulates the hourly regular cash compensation received by an employee, including the employee’s part of any payroll taxes⁶.

Figure 1 shows the time series for the French minimum wage and the associated employee-paid and employer-paid payroll taxes. Because of the extensive use of payroll taxes to finance mandatory employee benefits, by the 1980s the French minimum wage imposed a substantially greater cost upon the employer than its statutory value. Employees share in the legal allocation of the payroll taxes, as the figure shows; however, low wage workers benefit substantially more than the average worker from the social security systems financed through these taxes in proportion to their revenue (unemployment insurance, health care, retirement income and employment programs, in particular). Appendix Table A provides a complete

⁶ In theory, there are no provisions in any of the minimum wage laws that would allow regional variation in the SMIC. In some sectors in the French economy, however, the effective minimum wage was determined by (often extended) collective bargaining agreements. These agreements typically covered entire regions and industries, especially when extended to non-bargaining employers. Although relatively important in the 1970s, these provisions became increasingly irrelevant during the 1980s (our period of analysis) as the collective agreement nominal salary grids remained fixed in the face of an increasing nominal SMIC. See Margolis (1993) for a discussion of extended collective agreements and their relation to the SMIC.

analyses⁷. For 1981, 17.7% of the employed work force had wage rates at or below the minimum wage and an additional 14.6% had wage rates within an additional \$1.00 per hour of the minimum. For 1987, only 9.5% of employed persons have hourly wage rates at or below the minimum while an additional 9.9% lie within an additional \$1.00 per hour of the minimum.

Figure 4: Empirical Distribution of Hourly Wages in the U.S. 1981

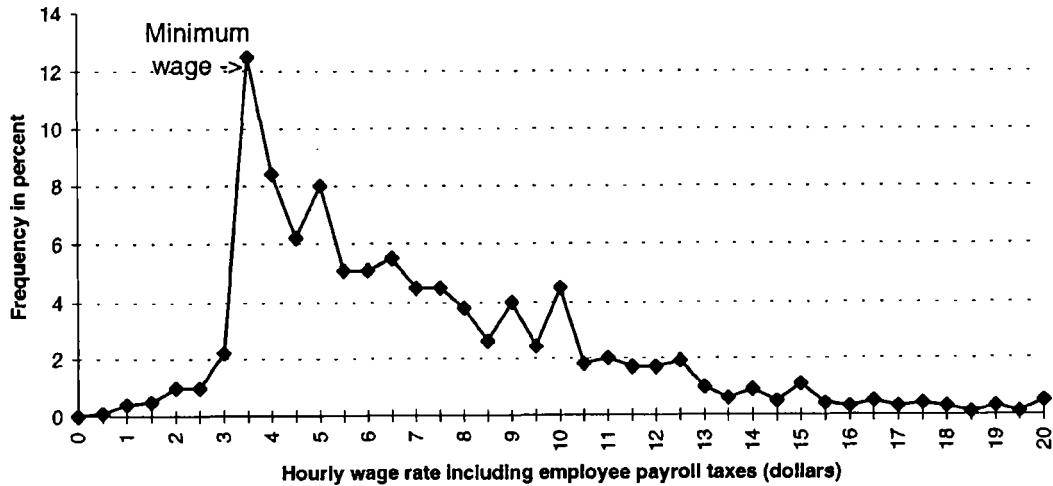
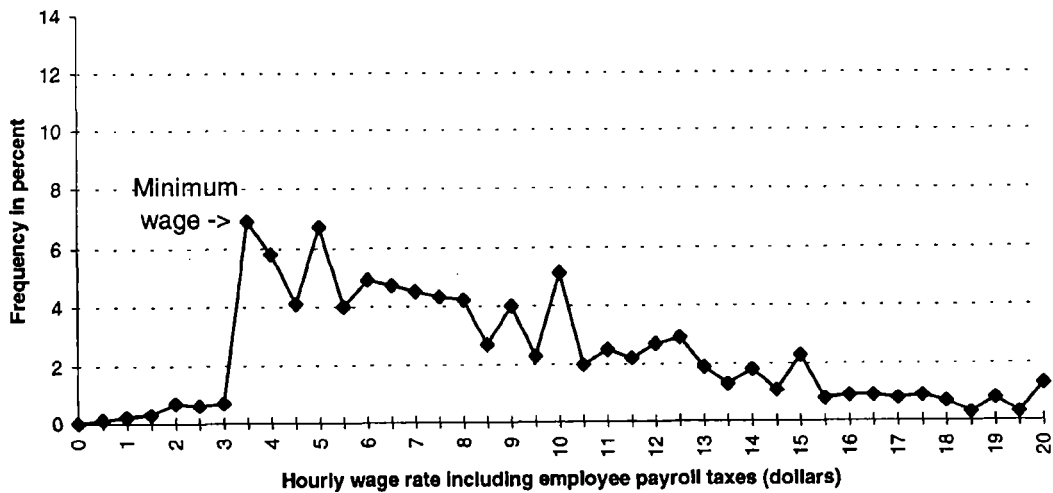
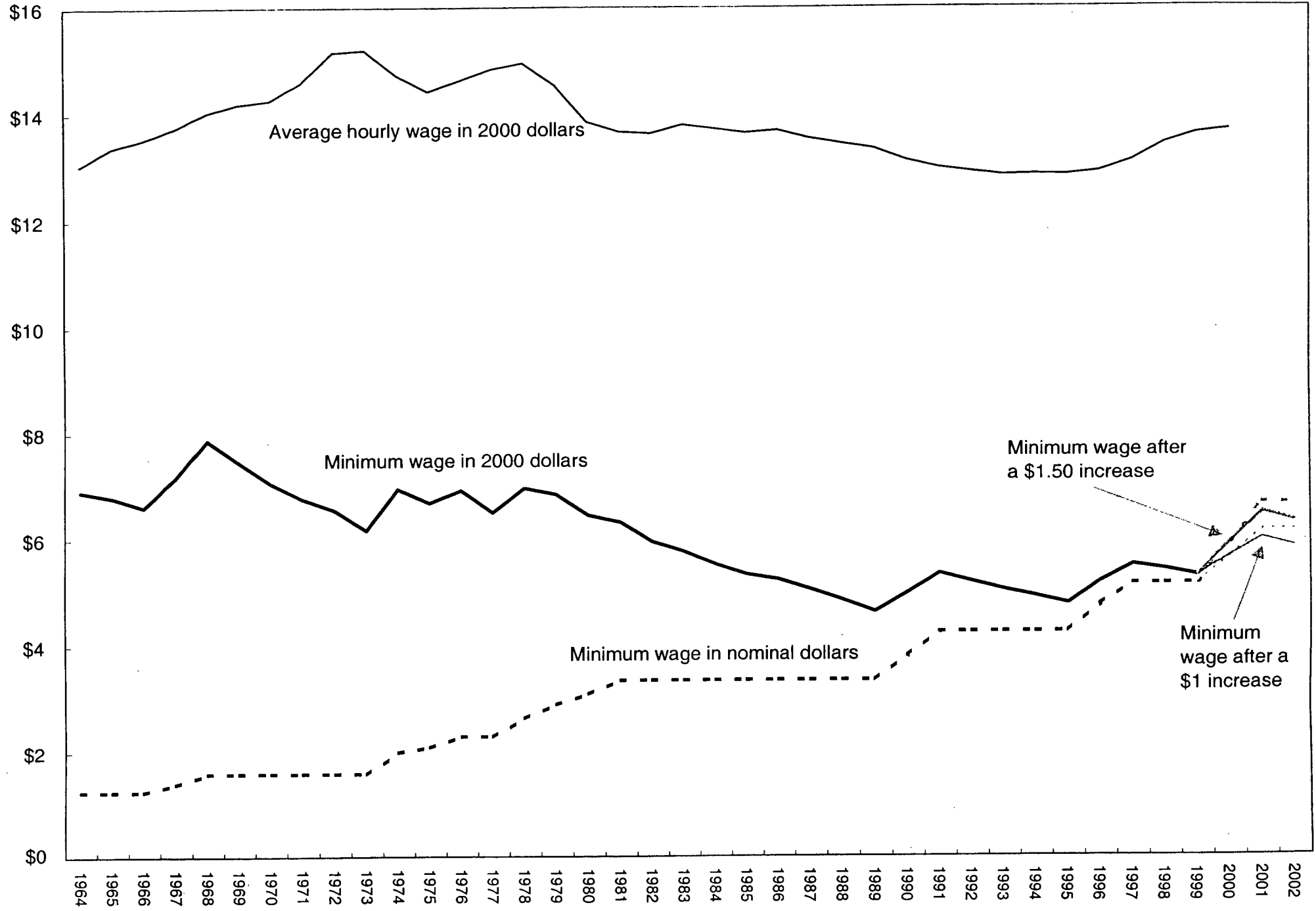


Figure 5: Empirical Distribution of Hourly Wages in the U.S. 1987

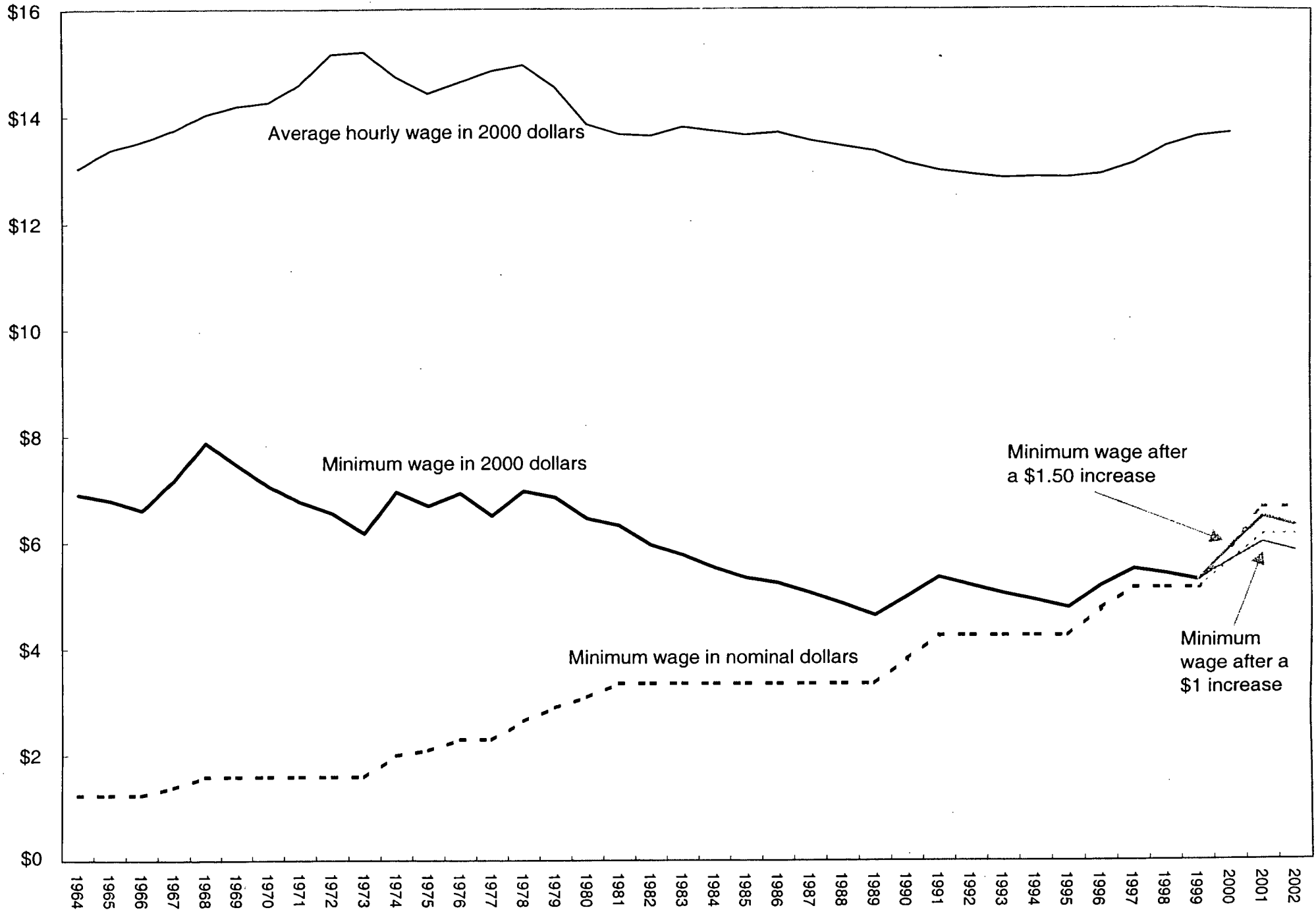


⁷ It should be noted that the federal minimum wage was increased to \$3.35 / hour in 1980.

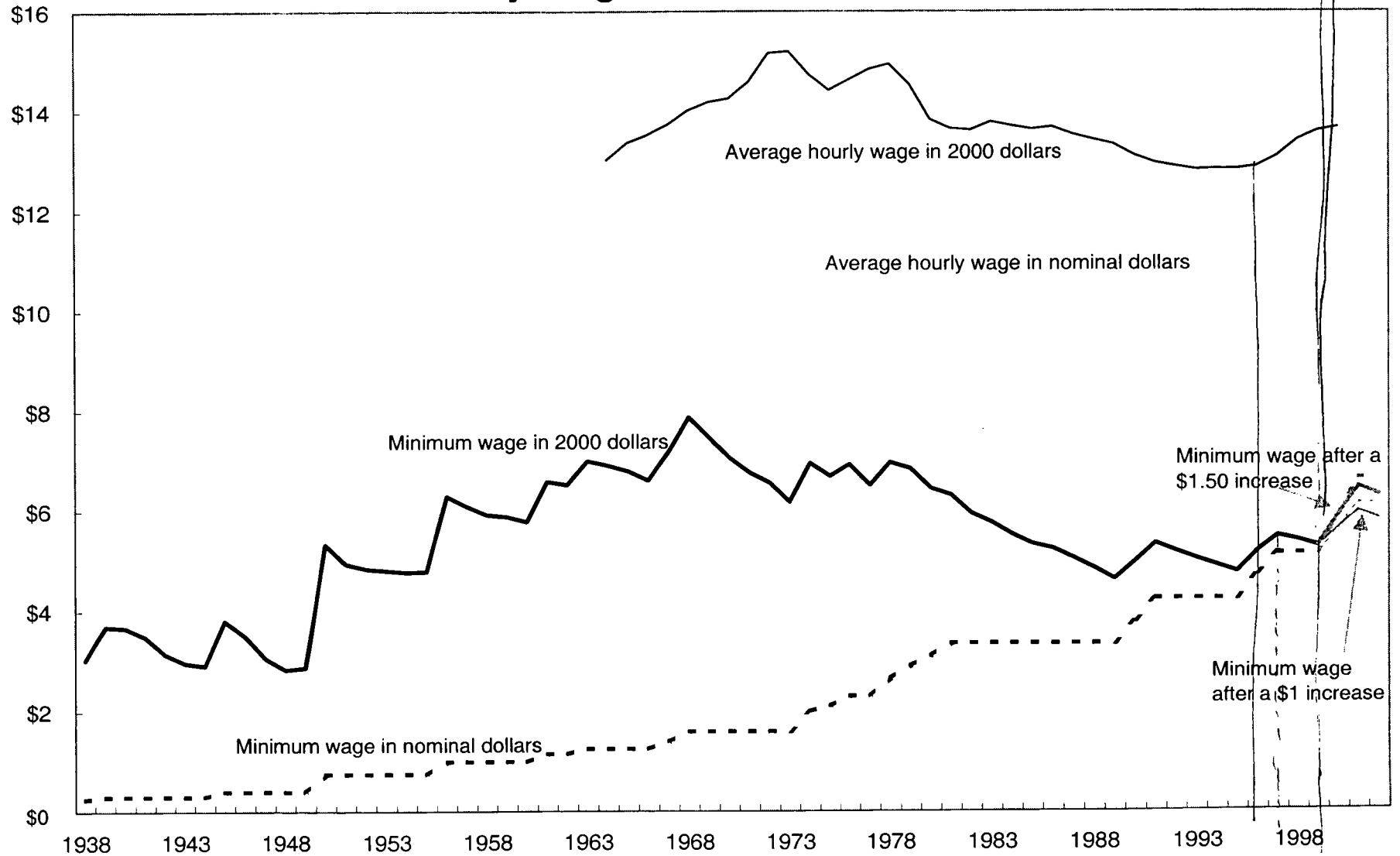
Hourly Wage Rates, 1938-2002



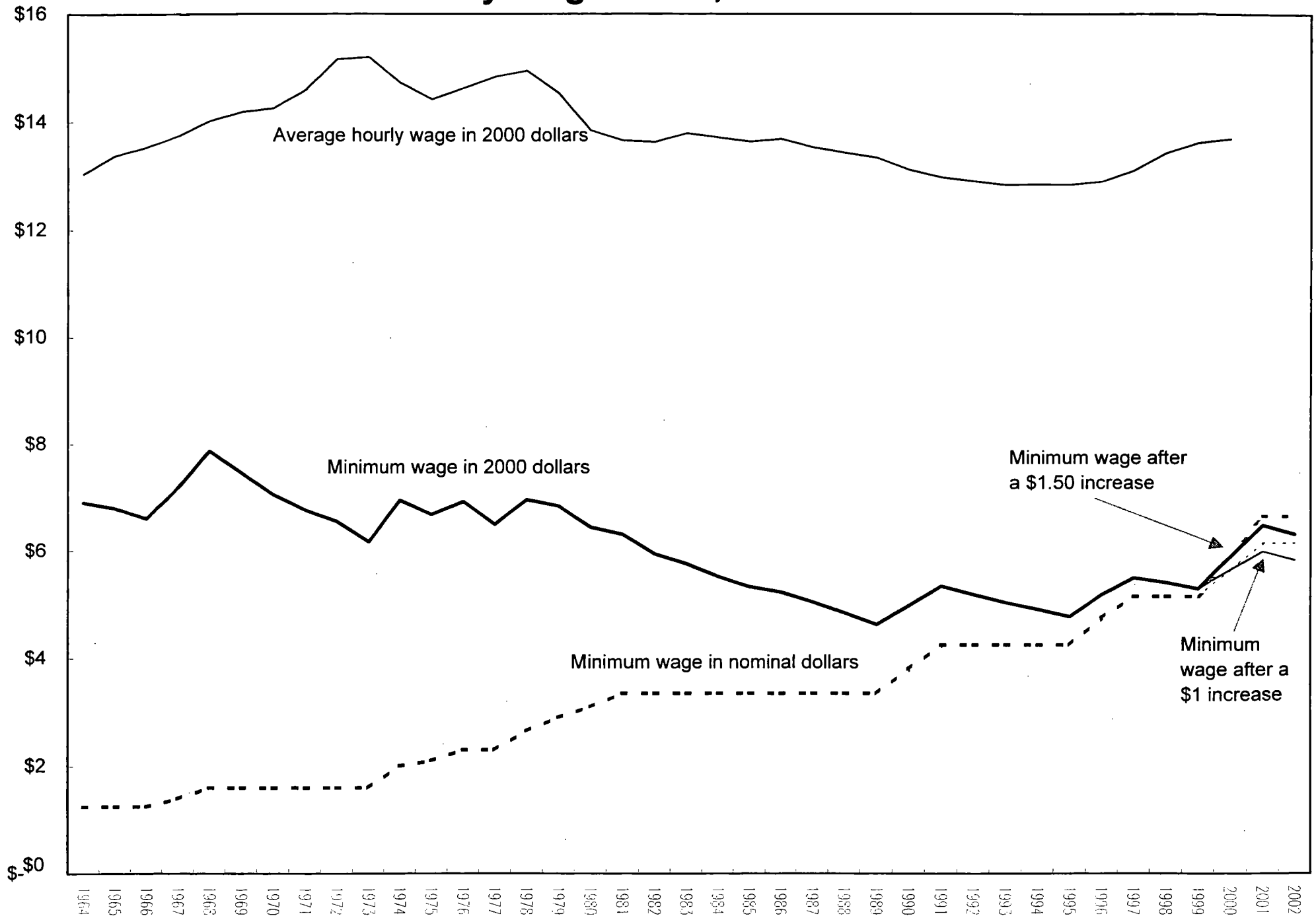
Hourly Wage Rates, 1938-2002



Hourly Wage Rates, 1938-2002



Hourly Wage Rates, 1938-2002



Value of The Federal Minimum Wage, 1938-2000

The table below is a representation of the minimum wage over the last 43 years in 1997 dollars adjusted for inflation using the CPI-U

The shaded blocks on the chart below represent years in which the Fair Labor Standards Act was amended to raise the minimum wage.

The table below shows the actual minimum wage (Nominal Dollars) and the relative value of the minimum wage (1998 Dollars). The bolded rows represent years in which the Fair Labor Standards Act was amended to raise the minimum wage.

Year	Value of the Minimum Wage			Value of the Average Hourly		Minimum Projection 1	
	Minimum Wage, Nominal Dollars	CPI-U inflator	Minimum Wage, 2000 Dollars	Average Hourly Wage, Nominal Dollars	Average Hourly Wage, 2000 Dollars	\$1 increase, Nominal Dollars	\$1 increase, 2000 Dollars
1938	\$ 0	\$ 12	\$ 3				
1939	\$ 0	\$ 12	\$ 4				
1940	\$ 0	\$ 12	\$ 4				
1941	\$ 0	\$ 12	\$ 3				
1942	\$ 0	\$ 11	\$ 3				
1943	\$ 0	\$ 10	\$ 3				
1944	\$ 0	\$ 10	\$ 3				
1945	\$ 0	\$ 10	\$ 4				
1946	\$ 0	\$ 9	\$ 4				
1947	\$ 0	\$ 8	\$ 3				
1948	\$ 0	\$ 7	\$ 3				
1949	\$ 0	\$ 7	\$ 3				
1950	\$ 1	\$ 7	\$ 5				
1951	\$ 1	\$ 7	\$ 5				
1952	\$ 1	\$ 6	\$ 5				
1953	\$ 1	\$ 6	\$ 5				
1954	\$ 1	\$ 6	\$ 5				
1955	\$ 1	\$ 6	\$ 5				
1956	\$ 1	\$ 6	\$ 6				
1957	\$ 1	\$ 6	\$ 6				

1958	\$	1	\$ 6	\$	6			
1959	\$	1	\$ 6	\$	6			
1960	\$	1	\$ 6	\$	6			
1961	\$	1	\$ 6	\$	7			
1962	\$	1	\$ 6	\$	7			
1963	\$	1	\$ 6	\$	7			
1964	\$	1	\$ 6	\$	7	\$ 2	\$	13
1965	\$	1	\$ 5	\$	7	\$ 2	\$	13
1966	\$	1	\$ 5	\$	7	\$ 3	\$	14
1967	\$	1	\$ 5	\$	7	\$ 3	\$	14
1968	\$	2	\$ 5	\$	8	\$ 3	\$	14
1969	\$	2	\$ 5	\$	7	\$ 3	\$	14
1970	\$	2	\$ 4	\$	7	\$ 3	\$	14
1971	\$	2	\$ 4	\$	7	\$ 3	\$	15
1972	\$	2	\$ 4	\$	7	\$ 4	\$	15
1973	\$	2	\$ 4	\$	6	\$ 4	\$	15
1974	\$	2	\$ 3	\$	7	\$ 4	\$	15
1975	\$	2	\$ 3	\$	7	\$ 5	\$	14
1976	\$	2	\$ 3	\$	7	\$ 5	\$	15
1977	\$	2	\$ 3	\$	7	\$ 5	\$	15
1978	\$	3	\$ 3	\$	7	\$ 6	\$	15
1979	\$	3	\$ 2	\$	7	\$ 6	\$	15
1980	\$	3	\$ 2	\$	6	\$ 7	\$	14
1981	\$	3	\$ 2	\$	6	\$ 7	\$	14
1982	\$	3	\$ 2	\$	6	\$ 8	\$	14
1983	\$	3	\$ 2	\$	6	\$ 8	\$	14
1984	\$	3	\$ 2	\$	6	\$ 8	\$	14
1985	\$	3	\$ 2	\$	5	\$ 9	\$	14
1986	\$	3	\$ 2	\$	5	\$ 9	\$	14
1987	\$	3	\$ 2	\$	5	\$ 9	\$	14
1988	\$	3	\$ 1	\$	5	\$ 9	\$	13
1989	\$	3	\$ 1	\$	5	\$ 10	\$	13
1990	\$	4	\$ 1	\$	5	\$ 10	\$	13
1991	\$	4	\$ 1	\$	5	\$ 10	\$	13
1992	\$	4	\$ 1	\$	5	\$ 11	\$	13
1993	\$	4	\$ 1	\$	5	\$ 11	\$	13
1994	\$	4	\$ 1	\$	5	\$ 11	\$	13

1995	\$	4	\$	1	\$	5	\$	11	\$	13		
1996	\$	5	\$	1	\$	5	\$	12	\$	13		
1997	\$	5	\$	1	\$	5	\$	12	\$	13		
1998	\$	5	\$	1	\$	5	\$	13	\$	13		
1999	\$	5	\$	1	\$	5	\$	13	\$	14	\$	5
2000			\$	1			\$	14	\$	14	\$	6
2001			\$	1							\$	6
2002			\$	1							\$	6

Source:
Bureau of Labor Statistics

Minimum Projection 2	
\$1.50 increase, Nominal Dollars	\$1.50 increase, 2000 Dollars

\$	5	\$	5
\$	6	\$	6
\$	7	\$	6
\$	7	\$	6

Value of The Federal Minimum Wage, 1938-2000

The table below is a representation of the minimum wage over the last 43 years in 1997 dollars adjusted for inflation using the CPI-U

The shaded blocks on the chart below represent years in which the Fair Labor Standards Act was amended to raise the minimum wage.

The table below shows the actual minimum wage (Nominal Dollars) and the relative value of the minimum wage (1998 Dollars). The bolded rows represent years in which the Fair Labor Standards Act was amended to raise the minimum wage.

Year	Value of the Minimum Wage			Value of the Average Hourly		Minimum Projection 1		Minimum Projection 2	
	Minimum Wage, Nominal Dollars	CPI-U Inflation	Minimum Wage, 2000 Dollars	Average Hourly Wage, Nominal Dollars	Average Hourly Wage, 2000 Dollars	\$1 increase, Nominal Dollars	\$1 increase, 2000 Dollars	\$1.50 increase, Nominal Dollars	\$1.50 increase, 2000 Dollars
1938.00	0.25	12.15	3.04						
1939.00	0.30	12.32	3.70						
1940.00	0.30	12.24	3.67						
1941.00	0.30	11.65	3.50						
1942.00	0.30	10.51	3.15						
1943.00	0.30	9.90	2.97						
1944.00	0.30	9.73	2.92						
1945.00	0.40	9.52	3.81						
1946.00	0.40	8.78	3.51						
1947.00	0.40	7.68	3.07						
1948.00	0.40	7.11	2.84						
1949.00	0.40	7.20	2.88						
1950.00	0.75	7.11	5.33						
1951.00	0.75	6.59	4.94						
1952.00	0.75	6.46	4.85						
1953.00	0.75	6.42	4.81						
1954.00	0.75	6.37	4.78						
1955.00	0.75	6.39	4.79						
1956.00	1.00	6.30	6.30						
1957.00	1.00	6.10	6.10						
1958.00	1.00	5.93	5.93						
1959.00	1.00	5.89	5.89						
1960.00	1.00	5.79	5.79						
1961.00	1.15	5.73	6.59						
1962.00	1.15	5.67	6.52						
1963.00	1.25	5.60	7.00						

1964.00	1.25	5.53	6.91	2.36	13.04				
1965.00	1.25	5.44	6.80	2.46	13.38				
1966.00	1.25	5.29	6.61	2.56	13.53				
1967.00	1.40	5.13	7.18	2.68	13.75				
1968.00	1.60	4.92	7.88	2.85	14.03				
1969.00	1.60	4.67	7.47	3.04	14.19				
1970.00	1.60	4.41	7.06	3.23	14.26				
1971.00	1.60	4.23	6.77	3.45	14.59				
1972.00	1.60	4.10	6.56	3.70	15.16				
1973.00	1.60	3.86	6.17	3.94	15.20				
1974.00	2.00	3.47	6.95	4.24	14.73				
1975.00	2.10	3.18	6.69	4.53	14.42				
1976.00	2.30	3.01	6.92	4.86	14.63				
1977.00	2.30	2.83	6.50	5.25	14.84				
1978.00	2.65	2.63	6.96	5.69	14.95				
1979.00	2.90	2.36	6.84	6.16	14.53				
1980.00	3.10	2.08	6.44	6.66	13.85				
1981.00	3.35	1.88	6.31	7.25	13.66				
1982.00	3.35	1.78	5.95	7.68	13.63				
1983.00	3.35	1.72	5.76	8.02	13.79				
1984.00	3.35	1.65	5.52	8.32	13.72				
1985.00	3.35	1.59	5.33	8.57	13.64				
1986.00	3.35	1.56	5.24	8.76	13.69				
1987.00	3.35	1.51	5.05	8.98	13.54				
1988.00	3.35	1.45	4.85	9.28	13.44				
1989.00	3.35	1.38	4.63	9.66	13.34				
1990.00	3.80	1.31	4.98	10.01	13.12				
1991.00	4.25	1.26	5.35	10.32	12.98				
1992.00	4.25	1.22	5.19	10.57	12.91				
1993.00	4.25	1.19	5.04	10.83	12.84				
1994.00	4.25	1.16	4.91	11.12	12.85				
1995.00	4.25	1.12	4.78	11.43	12.85				
1996.00	4.75	1.09	5.19	11.82	12.90				
1997.00	5.15	1.07	5.50	12.28	13.11				
1998.00	5.15	1.05	5.41	12.78	13.43				
1999.00	5.15	1.03	5.30	13.24	13.61	5.15	5.30	5.15	5.30
2000.00		1.00		13.68	13.68	5.65	5.65	5.90	5.90
2001.00		0.97				6.15	5.99	6.65	6.48
2002.00		0.95				6.15	5.84	6.65	6.32

Source:
Bureau of Labor Statistics

Jason Furman

• SI

• how does it tie into tax cuts?

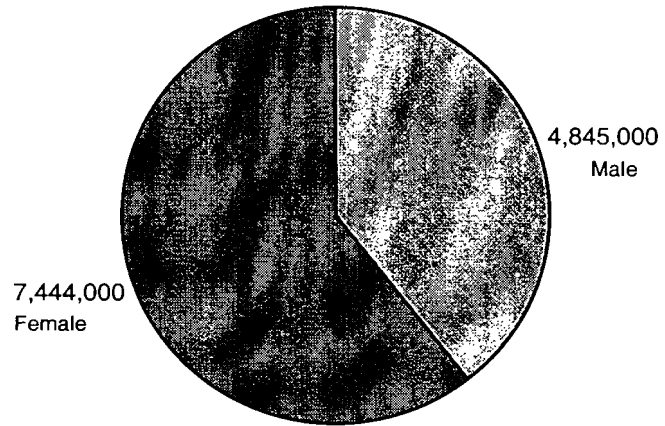
tax cuts for small businesses —
30% tax cut on telephone service

Plattini

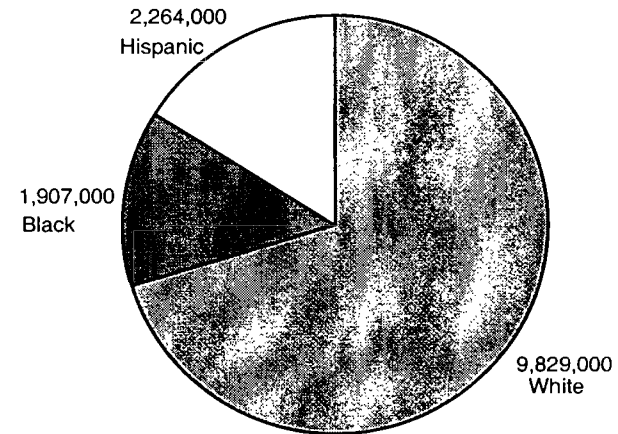
• CEA estimate of the impact of one-time change in min. wage on π

- one time effect
- no spillover.

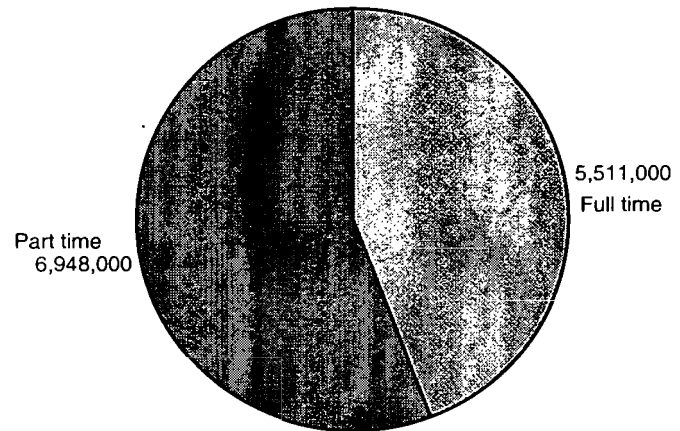
People earning less than \$6.15 per hour



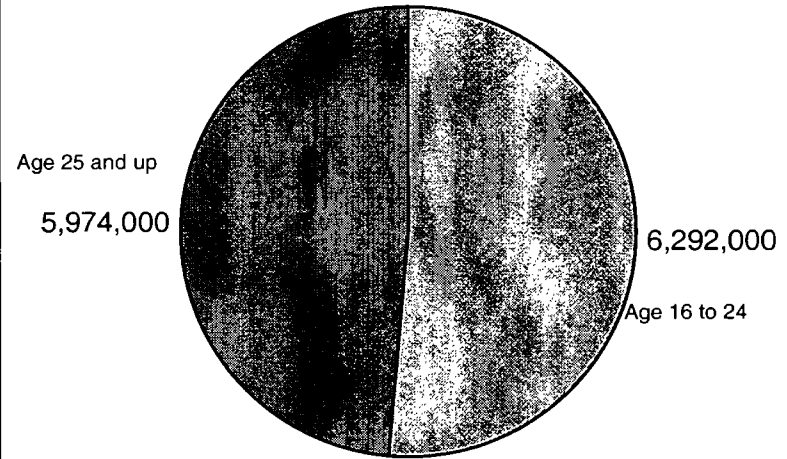
People earning less than \$6.15 per hour



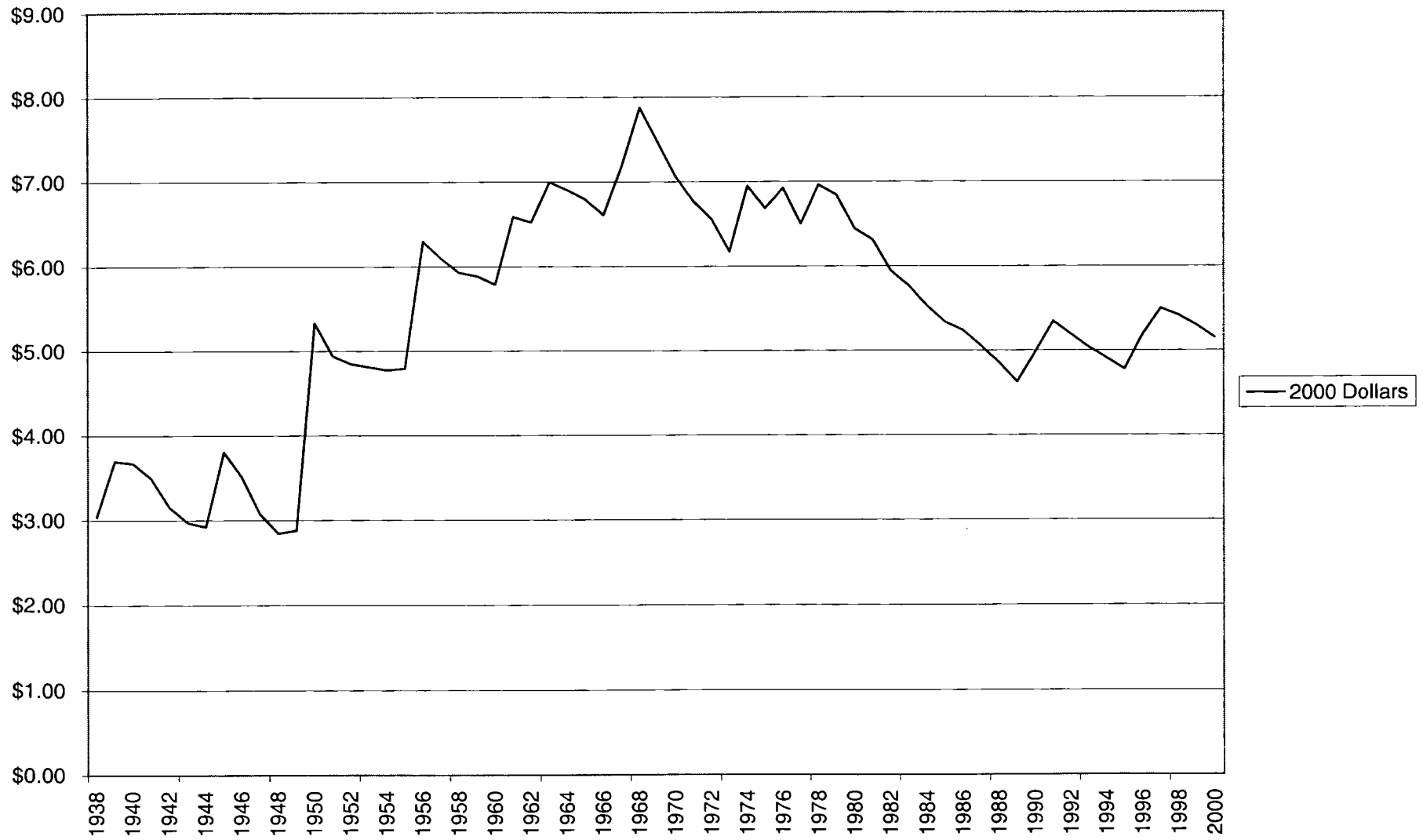
People earning less than \$6.15 per hour



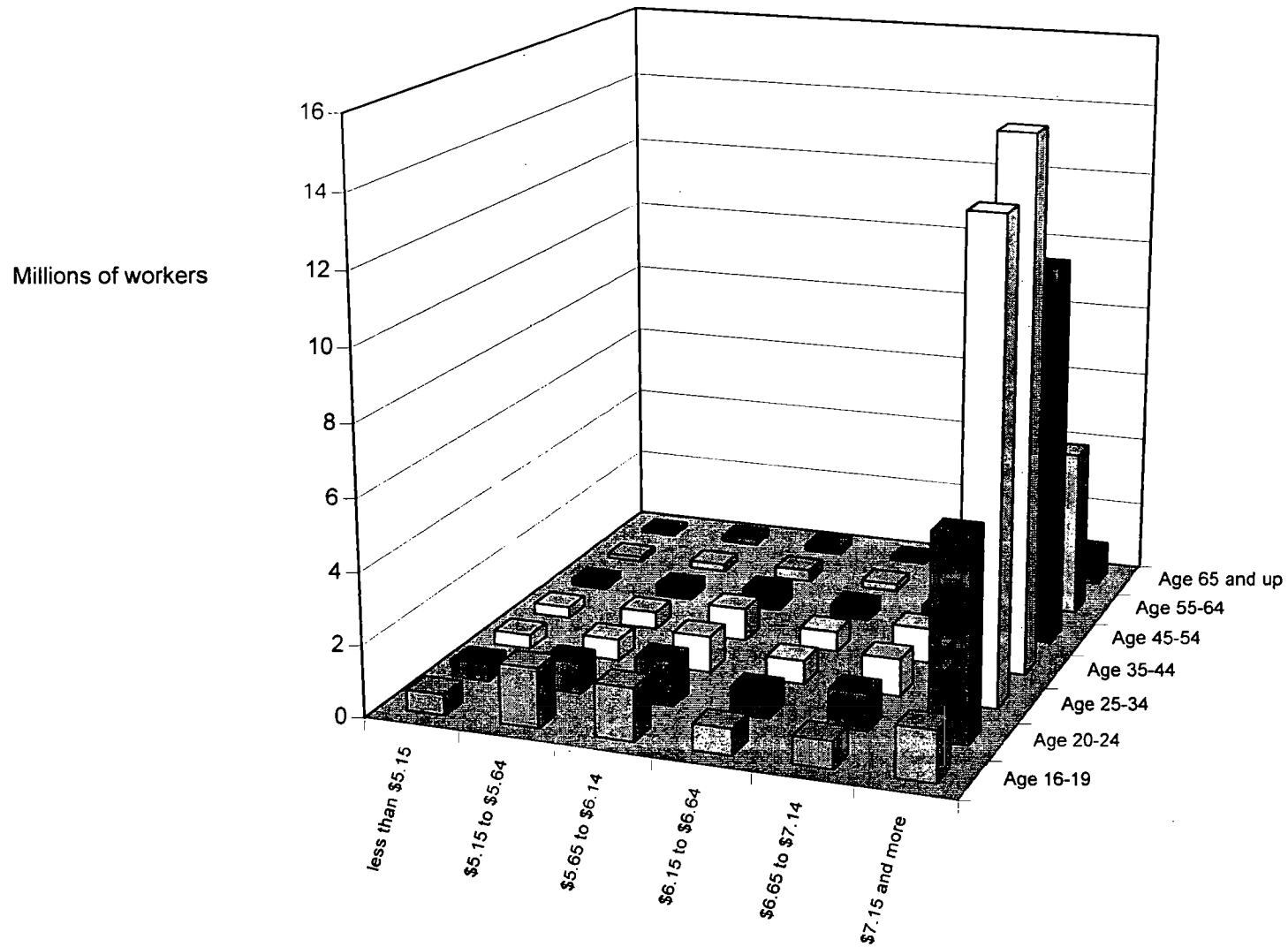
People earning less than \$6.15 per hour



Minimum wage



Wage Distribution of Hourly Workers, by Wage Rate and Age, 1999



Value of The Federal Minimum Wage, 1938-2000

The table below is a representation of the minimum wage over the last 43 years in 1997 dollars adjusted for inflation using the CPI-U

The shaded blocks on the chart below represent years in which the Fair Labor Standards Act was amended to raise the minimum wage.

The table below shows the actual minimum wage (Nominal Dollars) and the relative value of the minimum wage (1998 Dollars). The bolded rows represent years in which the Fair Labor Standards Act was amended to raise the minimum wage.

Year	Value of the Minimum Wage	
	Nominal Dollars	2000 Dollars
1938	\$0.25	\$3.04
1939	0.3	3.70
1940	0.3	3.67
1941	0.3	3.50
1942	0.3	3.15
1943	0.3	2.97
1944	0.3	2.92
1945	0.4	3.81
1946	0.4	3.51
1947	0.4	3.07
1948	0.4	2.84
1949	0.4	2.88
1950	0.75	5.33
1951	0.75	4.94
1952	0.75	4.85
1953	0.75	4.81
1954	0.75	4.78
1955	0.75	4.79
1956	1	6.30
1957	1	6.10
1958	1	5.93
1959	1	5.89
1960	1	5.79
1961	1.15	6.59
1962	1.15	6.52
1963	1.25	7.00
1964	1.25	6.91
1965	1.25	6.80
1966	1.25	6.61
1967	1.4	7.18
1968	1.6	7.88
1969	1.6	7.47
1970	1.6	7.06
1971	1.6	6.77
1972	1.6	6.56
1973	1.6	6.17
1974	2	6.95

1975	2.1	6.69
1976	2.3	6.92
1977	2.3	6.50
1978	2.65	6.96
1979	2.9	6.84
1980	3.1	6.44
1981	3.35	6.31
1982	3.35	5.95
1983	3.35	5.76
1984	3.35	5.52
1985	3.35	5.33
1986	3.35	5.24
1987	3.35	5.05
1988	3.35	4.85
1989	3.35	4.63
1990	3.8	4.98
1991	4.25	5.35
1992	4.25	5.19
1993	4.25	5.04
1994	4.25	4.91
1995	4.25	4.78
1996	4.75	5.19
1997	5.15	5.50
1998	5.15	5.41
1999	5.15	5.30
2000	5.15	5.15

Source:
Bureau of Labor Statistics

From: William B. Boning on 08/02/2000 03:11:01 PM

Record Type: Record

To: Kathryn L. Shaw/CEA/EOP@EOP

cc:

Subject: min wage

A quick search thru SSRN turned up a paper by Neumark on Youth employment. I printed the abstract and will bring it over. Neumark has several papers, most are not too recent, but a March 2000 paper compares minimum wage and EITC and says EITC is better.

Here are a few notes on min wage from the DoL website (note that the youth exemption is only 90 days--maybe long enough for summer jobs).

Brent

Minimum wage notes

From DoL web page;

What is the new minimum wage?

The federal minimum wage increased to \$5.15 an hour effective September 1, 1997. The federal minimum wage provisions are contained in the Fair Labor Standards Act (FLSA).

Who will get a pay raise?

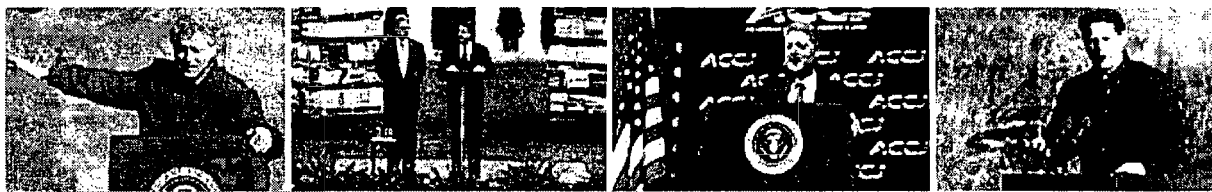
The minimum wage law (the FLSA) applies to employees of enterprises that do at least \$500,000 in business a year. It also applies to employees of smaller firms if the employees are engaged in interstate commerce or in the production of goods for commerce, such as employees who work in transportation or communications or who regularly use the mails or telephones for interstate communications. It also applies to employees of federal, state or local government agencies, hospitals and schools, and it generally applies to domestic workers.

The FLSA contains a number of exemptions from the minimum wage that may apply to some workers. The law establishes a youth sub-minimum wage of \$4.25 that employers can pay employees under 20 years of age during their first 90 consecutive calendar days of employment with an employer. The youth sub-minimum wage is not affected by the September 1, 1997 increase.

1989 3.
1995 \$4.25
96 \$4.75
97 \$5.15

THE WHITE HOUSE

RADIO ADDRESS OF THE PRESIDENT TO THE NATION

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THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release Saturday, July 29, 2000

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RADIO ADDRESS OF THE PRESIDENT TO THE NATION

Providence, Rhode Island

THE PRESIDENT: Good morning. This weekend marks the start of the summer recess for members of Congress. Many are heading home to their districts, and most Republicans are meeting in Philadelphia for their party's convention.

But wherever they go, I hope they will be thinking of the millions of Americans for whom summer vacations are not an option: the millions who work all summer long, all year long, earning no more than the minimum wage.

I want to talk to you today about giving these hard-pressed Americans a much-deserved raise and helping them to live the American Dream. The face of the minimum wage is the face of America. Every one of us knows at least one person who works for minimum wage: it might be a member of your family; it might be the person who cares for your children during the day; or serves you lunch at the shop on the corner; or cleans your office every night.

Seventy percent of the workers on the minimum wage are adults; 60 percent are women; and almost 50 percent work full-time. Many are their families' sole breadwinners, struggling to bring up their children on \$10,700 a year. These hard-working Americans need a raise. They deserve it. They've

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earned it.

I've always believed that if you work hard and play by the rules, you ought to have a decent chance for yourself and for a better life for your children. That's the promise I made when I first ran for President, and that's the basic bargain behind so much of what we've done in the years since -- from expanding the earned income tax credit for lower-income working people, to passing the Family and Medical Leave Act, from increased child care assistance to health care for children, to helping millions and millions of Americans move from welfare to work.

That's also why, in 1996, we raised the minimum wage to \$5.15 an hour over two years. It's high time we did it again. In fact, it's long overdue.

More than a year ago now, I proposed to raise the minimum wage by \$1 over two years -- a modest increase that merely restores the minimum wage to what it was back in 1982 in real dollar terms. Still, it's no small change. For a full-time worker, it would mean another \$2,000 a year -- \$2,000 more to pay for a child's college education, to cover critical health care, to pay the rent. And for a year now, the Republican leadership has sat on that proposal.

Back in 1996, the last time we raised the minimum wage, some of these same Republicans called it -- and I quote, "a job killer cloaked in kindness." They said it would cause -- again, a quote -- "a juvenile crime wave of epic proportions." Well, time has not been kind to their predictions, and neither have the numbers. Our economy has created more than 11 million new jobs since we last raised the minimum wage. And study after study shows that a raise in the minimum wage is good not only for working families, it's good for our entire economy -- especially at a time of labor shortages when we want to increase incentives for all Americans who can, to find work.

So this time, unlike the last time, the congressional majority knows better than to speak against raising the minimum wage. This time, instead of arguing the facts, the leadership is playing legislative games, stalling action and stifling debate.

Already, these delays have cost the minimum wage worker more than \$900 in hard-earned pay. To paraphrase Shakespeare: they've come to bury the minimum wage, not to raise it.

For working Americans, the wait grows longer. As

recently as this week, the majority in Congress was still talking about raising the minimum wage, but they couldn't bring themselves to actually do it. In the last hours before their recess, they were still working overtime to give tax breaks to the tiniest, wealthiest fraction of America's families and still doing nothing for the 10 million people who would benefit from a boost in the minimum wage.

This weekend, Republican leaders gathered in Philadelphia. From their seats inside the convention hall, I hope they'll stop a moment to think of Americans outside that hall -- Americans working in the restaurants, the shops, the hotels of Philadelphia, working hard for the minimum wage.

If Republican leaders really want to make their compassion count, they ought to join me in getting back to business and raising the minimum wage. I hope the majority will join the Democrats to seize this moment, to stop the delays, to work with me to help our working families.

Thanks for listening.

President and First Lady	Vice President and Mrs. Gore
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Finally, Individual Development Accounts (IDAs) empower low-income families to save for a first home, to enroll in postsecondary education, or to start a new business.

As a result of welfare reform, by June 1999 the number of welfare recipients nationwide had fallen to 6.9 million, 51 percent less than in 1993. That number represents 2.5 percent of the total population, the lowest proportion since 1967. Twenty-seven States were awarded bonus funds for their superior results in reforming welfare, and a number of government studies found encouraging outcomes. For example, more than 1.3 million welfare recipients nationwide went to work in the 12-month period from October 1997 through September 1998. Retention rates are also promising: 80 percent of those who got jobs were still working 3 months later. States reported an average earnings increase of 23 percent for former welfare recipients, from \$2,038 in the first quarter of employment to \$2,571 in the third quarter. *Among those remaining on welfare,* the proportion of all welfare recipients working has nearly quadrupled, from 7 percent in 1992 to 27 percent in 1998, with the remainder fulfilling their participation requirements through job search, education, and training. Thus all 50 States met the overall work participation requirements.

Independent studies confirm these conclusions, finding that about 70 percent of welfare recipients have left welfare for work. When women move to paying jobs, they develop the skills needed to produce higher sustainable incomes over their lifetimes and to reduce the intergenerational cycle of dependency. In addition, the Administration's initiative to reduce teen pregnancy (Box 5-3) plays a role in breaking the cycle of dependency and increasing the well-being of families by reducing the number of children born to teen mothers.

Box 5-3 The National Strategy to Reduce Teen Pregnancy

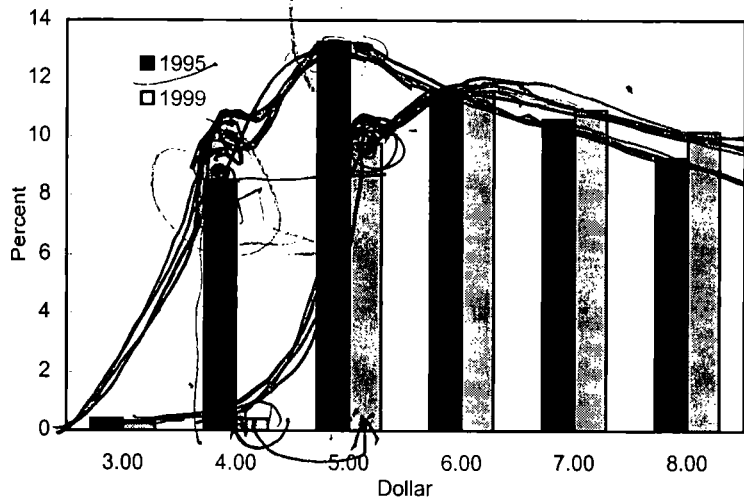
From 1980 to 1990 the overall birth rate to teens aged 15-19 rose from 53.0 to 59.9 per 1,000. Since then, however, this trend has been improving. Nationwide, teen births declined by 18 percent from 1991 to 1998, and teen birth rates have fallen in every State and across ethnic and racial groups. For a subset of this group, girls aged 15-17, the 1998 birth rate was at its

U [i.e.: all uninsured children? or who exactly?]

V an illegible insert here



Chart 6: Distribution of Wages



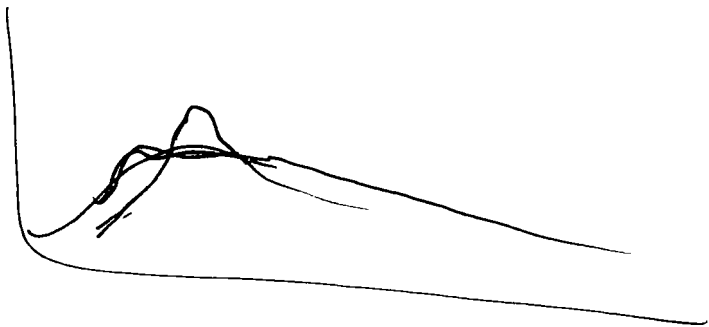
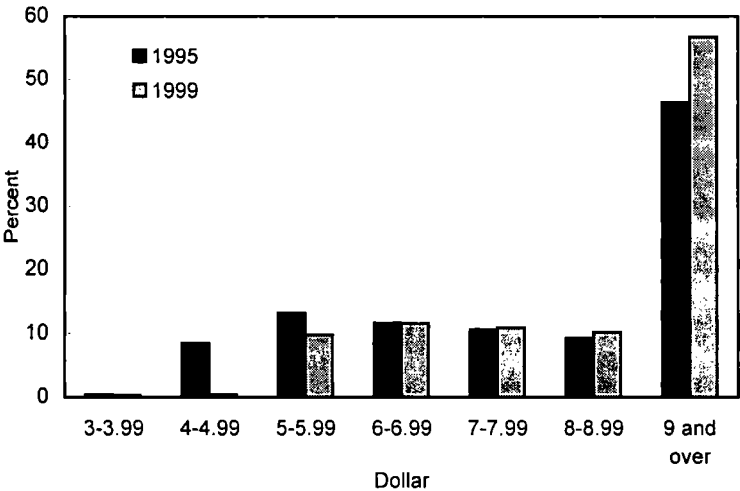
'95 → 4.25
4.75
5.15

Oct '96

99 average

5.

Chart 6: Distribution of Wages



**RAISING THE MINIMUM WAGE:
A SMART POLICY FOR AMERICA'S WORKERS AND THE AMERICAN ECONOMY**
July 28, 2000

Today, in his weekly radio address, President Clinton will call on Congress to pass clean, straightforward legislation to raise the minimum wage by \$1 – from \$5.15 to \$6.15 – in two equal steps. The President first called for an increase in the minimum wage in his State of the Union Address in January 1999. Congress at first stalled and then held the minimum wage increase hostage for tax cuts that are part of a costly and fiscally irresponsible plan that would drain the entire surplus and leave nothing for priorities like an affordable Medicare prescription drug benefit. Congressional delay has cost a full-time minimum wage worker over \$900.

- **The President's Proposal to Raise the Minimum Wage by \$1 to \$6.15 an Hour Would Potentially Benefit More than 10 Million American Workers – Most of Whom Are Adult Workers.** 10.1 million hourly paid workers make between \$5.15 and \$6.14 an hour and thus would potentially benefit from a \$1 increase in the minimum wage. About 69 percent of these workers are adults (age 20 or over), about 60 percent are women, about 45 percent worked full-time, and about 33 percent are parents with children under age 18. In 1997, the earnings of the average minimum wage worker accounted for 54 percent of their family's total earnings.
- **Increasing the Minimum Wage Would Help Hard-Pressed Families Pay for Groceries, Rent, and Other Necessities.** Raising the minimum wage from \$5.15 to \$6.15 would raise the annual earnings of a full-time worker by about \$2,000 a year. For a full-time worker, the minimum wage increase would translate into enough money to pay for nearly 7 months of groceries or 5 months of rent. *Congressional delay has cost a full-time minimum wage worker over \$900 since September 1, 1999 – the date originally proposed for the first 50 cent increase by President Clinton, Senator Kennedy, and Representative Bonior.*
- **The President's Modest Increase Would Simply Restore the Real Value of the Minimum Wage to What it Was in 1982.** Raising the minimum wage by \$1 over two years would simply restore the real value of the minimum wage to what it was in 1982. This would help reverse the erosion in the real value of the minimum wage during the 1980s when, between January 1981 and March 1990, the minimum wage was unchanged at \$3.35 an hour, while prices rose by nearly 50 percent.
- **The Impact from Last Minimum Wage Increase Is Clear: over 10 Million Workers Got A Raise and Strong Job Growth Continued.** Since the last minimum wage increase in 1996/97, the economy has created more than 11 million jobs and the unemployment rate has fallen from 5.2 percent in September 1996 to 4.0 percent in June 2000, near its lowest level in over thirty years. Labor market trends for workers most affected by the minimum wage increase – including younger workers with lower educational levels and minorities – also show no negative impact of the minimum wage on employment.
- **Economic Studies Find No Negative Effect of the Minimum Wage on Employment.** Numerous careful economic studies, including ones by David Card and Alan Krueger of Princeton University, have shown that increasing the minimum wage has no negative effect on employment. Recent research has even suggested that higher wages can *increase*

employment, because they increase employers' ability to attract, retain, and motivate workers. And they benefit workers by increasing the reward to work.

- **The Minimum Wage Plays an Important Role in Ensuring That All Workers Share in a Growing Economy.** In the last seven years, incomes have grown nearly as strongly from the bottom to the top of the income distribution, ending a decades long increase in inequality. In contrast, in the previous two decades inequality widened, as poorer workers saw their incomes decline in real terms. Research has shown that the decline in the real value of the minimum wage from 1979 to 1988 was responsible for approximately 24 percent of the increase in wage inequality experienced by men and about 32 percent of the increase in wage inequality for women.
- **Recent Increases in the Minimum Wage Have Helped Reduce the Welfare Caseload.** By increasing the reward to work, a higher minimum wage attracts new workers into the workforce. An analysis by the Council of Economic Advisers showed that the 90 cent increase in the minimum wage signed into law by President Clinton in 1996, and increased minimum wages in some states, were responsible for 10 to 16 percent of the decline in welfare caseloads between 1996 and 1998.
- **Helping Ensure Parents Can Raise Their Children Out of Poverty.** A working parent with two children earning the minimum wage in 1993 made \$10,563 with the EITC (in 1998 inflation-adjusted dollars)—well below the poverty line. In 1993 the President fought for an increase in the EITC and in 1996 he fought for an increase in the minimum wage. As a result of these changes, a comparably situated family in 1998 was above the poverty line – making \$13,268, a 26 percent inflation-adjusted increase in their standard of living.

Distribution of Wage and Salary Workers Paid Hourly Rates by State, 1999

	Number (in thousands)		Percent of All Wage and Salary Workers	
	\$5.15 to \$6.14	\$6.15 to \$7.14	\$5.15 to \$6.14	\$6.15 to \$7.14
Total	10,093	8,370	13.9	11.6
Alabama	202	146	18.1	13.1
Alaska	9	13	5.5	7.6
Arizona	200	157	15.2	11.9
Arkansas	130	101	20.9	16.2
California	1,463	1,023	17.4	12.1
Colorado	79	92	7.3	8.4
Connecticut	62	70	7.5	8.6
Delaware	22	21	10.8	10.0
DC	12	12	10.0	10.7
Florida	597	530	15.5	13.8
Georgia	267	248	13.1	12.3
Hawaii	47	29	15.0	9.4
Idaho	58	45	15.6	12.3
Illinois	428	354	13.2	10.8
Indiana	180	209	9.8	11.4
Iowa	103	91	11.2	9.9
Kansas	123	96	15.6	12.3
Kentucky	157	161	14.2	14.7
Louisiana	297	123	25.9	10.7
Maine	45	39	11.8	10.4
Maryland	125	137	9.5	10.5
Massachusetts	161	162	9.6	9.7
Michigan	341	312	11.3	10.3
Minnesota	115	121	8.0	8.4
Mississippi	146	74	22.7	11.5
Missouri	172	169	11.9	11.8
Montana	54	32	21.5	12.7
Nebraska	67	68	13.2	13.6
Nevada	60	60	11.2	11.3
New Hampshire	29	31	8.2	8.5
New Jersey	205	187	10.6	9.8
New Mexico	75	39	18.0	9.1
New York	566	395	14.8	10.3
North Carolina	247	223	12.4	11.2
North Dakota	34	29	18.3	15.9
Ohio	427	356	12.7	10.6
Oklahoma	170	126	19.6	14.5
Oregon	35	184	3.7	19.7
Pennsylvania	454	338	13.8	10.3
Rhode Island	37	25	13.4	9.3
South Carolina	153	116	14.9	11.3
South Dakota	33	29	15.2	13.7
Tennessee	208	216	13.6	14.2
Texas	929	653	18.5	13.1
Utah	61	84	10.1	14.0
Vermont	21	20	12.4	11.5
Virginia	218	207	13.6	12.8
Washington	180	158	10.9	9.6
West Virginia	106	60	22.2	12.8
Wisconsin	157	177	8.9	10.0
Wyoming	25	19	17.8	13.8

Note: Workers in the \$5.15 to \$6.14 category would be directly affected by a \$1.00 increase in the minimum wage. Those in the \$6.15 to \$7.14 category could be affected by spillovers.

Source: U.S. Department of Labor, Bureau of Labor Statistics, unpublished tabulations from the Current Population Survey, 1999.

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[Minimum Wage Working
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The Jerome Levy Economics Institute of Bard College

Public Policy Brief

No. 57A, December 1999

Do Institutions Affect the Wage Structure?

Oren M. Levin-Waldman

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

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

The theory of perfect competition in labor markets predicts that a minimum wage causes unem-

ployment if it is higher than the equilibrium wage. Results of empirical studies of a correlation between increases in the minimum wage and increases in unemployment have been mixed. Some studies find little or no disemployment effect, and most of those that do show a disemployment effect suggest that that effect is primarily in the teen labor market. Card and Krueger (1998) found that in the states they examined employment actually rose after an increase in the minimum wage.

The question of who earns the statutory minimum wage is open to debate. Although it is widely believed that most are teenagers, some studies have found that most are adults with

The full text of this paper is published as Levy Institute Public Policy Brief No. 57.

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

NBER WORKING PAPER SERIES

MINIMUM WAGES AND
ON-THE-JOB TRAINING

Daron Acemoglu
Jörn-Steffen Pischke

Working Paper 7184
<http://www.nber.org/papers/w7184>

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
June 1999

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Minimum Wages and On-the-job Training
Daron Acemoglu and Jörn-Steffen Pischke
NBER Working Paper No. 7184
June 1999
JEL No. J24, J31, J41

ABSTRACT

Becker's theory of human capital predicts that minimum wages should reduce training investments for affected workers, because they prevent these workers from taking wage cuts necessary to finance training. We show that when the assumption of perfectly competitive labor markets underlying this theory is relaxed, minimum wages can increase training of affected workers, by inducing firms to train their unskilled employees. More generally, a minimum wage increases training for constrained workers, while reducing it for those taking wage cuts to finance their training. We provide new estimates on the impact of the state and federal increases in the minimum wage between 1987 and 1992 of the training of low wage workers. We find no evidence that minimum wages reduce training. These results are consistent with our model, but difficult to reconcile with the standard theory of human capital.

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1 Introduction

Much of the recent debate on the minimum wage has focused on its employment implications. The theory of human capital suggests that minimum wages should also have important adverse effects by reducing training and wage growth. In the standard human capital theory, as developed by Becker (1964), Ben-Porath (1967), and Mincer (1972), a large part of human capital is accumulated on the job, and workers often finance these investments through lower wages. A binding minimum wage will therefore reduce workplace training, as it prevents low wage workers from accepting the necessary wage cuts (Rosen, 1972). The early empirical literature has confirmed this prediction. The negative impact on human capital formation has been an important argument against minimum wages in the minds of many economists and policy-makers.

In this paper, we revisit the impact of minimum wages on training. We provide new empirical estimates that are quite different from those already in the literature, bringing a new perspective to this debate. We also provide some new theoretical ideas on the impact of minimum wages on training, which imply that minimum wages may increase the training of low paid workers. Since the standard theory of human capital predicts a negative effect of minimum wages on training, our evidence enables an evaluation of the empirical success of the alternative theoretical approaches.

The standard theory of human capital is based on competitive labor markets. The implications of minimum wages in noncompetitive labor markets are very different. We show that in the presence of labor market frictions, minimum wages shift the incentives for training investments from the worker to the employer, and may increase training investments. The intuition for this result is that minimum wages make it less profitable to employ unskilled workers. When there are no rents in the employment relationship, as in a competitive labor market, the firm has no option but to lay off workers who were previously paid below the new minimum wage. In contrast, in the presence of labor market rents, it may be more profitable to increase the productivity of workers, who are already receiving high wages, rather than laying them off. Figure 1 illustrates this intuition diagrammatically. It draws the relation between worker skills, τ , productivity, $f(\tau)$, and wages $w(\tau)$. The gap between productivity and wages, Δ , is the rent that the firm obtains. A binding minimum wage, in the absence of such rents, forces the firm to lay off the worker. However, with Δ sufficiently high, the firm would like to retain the worker despite the higher wages dictated by the minimum wage. In this case, the firm would also like to increase the productivity of the worker. Without the minimum wage, the gap between $f(\tau)$ and $w(\tau)$ was constant, so there was no point in incurring costs of training. However, with a minimum wage, profits are less at $\tau = 0$ than at $\tau = 1$. So

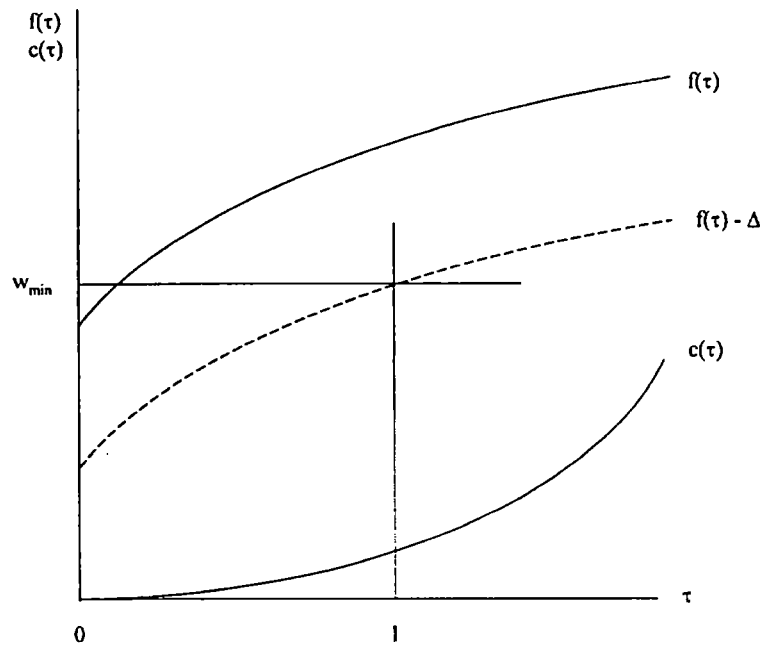


Figure 1: Training with a Minimum Wage and Employment Rents

if the firm can increase its employee's skills to $\tau = 1$ at a moderate cost, it will prefer to do so. In essence, the minimum wage has made the firm the *de facto* residual claimant of the increase in the worker's productivity, whereas without the minimum wage, the worker was the residual claimant.

This reasoning suggests that a binding minimum wage may induce firms to invest more in the skills of their employees. As in the standard theory, however, the wages of some workers may have been low because they were compensating their employers for investments in general skills, and the minimum wage would prevent this. Our approach, therefore, predicts that minimum wages reduce the training of workers taking wage cuts to finance their training, while inducing further training for those who were constrained in their human capital investments. In the first part of the paper, we outline this theory in greater detail.

The broad aggregate trends in the data do not appear in line with the standard theory. A variety of evidence, including the spike in the wage distribution at the minimum (e.g. DiNardo, Fortin, and Lemieux, 1996; Card and Krueger, 1995), suggests that minimum wages are binding for some workers. Therefore, the standard theory predicts that the decline in the real minimum wage during the 1980s should have increased training for low wage workers. Comparing formal and informal company training among high

school dropouts in the Training Supplements of the CPS, we find this not to be the case. The training incidence falls from 15 percent in 1983 to 11 percent in 1991, even though the real value in the minimum wage was lower in 1991 than in 1983 (see Acemoglu and Pischke, 1999a).

Nevertheless, other aggregate trends may have been responsible for the decline in training among low wage workers. In our micro data work, we control for these aggregate trends and exploit cross-state and region variations in how binding minimum wages are. We use the National Longitudinal Survey of Youth (NLSY) for the period 1987 to 1992. This period encompasses a number of state minimum wage increases as well as two federal increases in the minimum in 1990 and 1991. Our data therefore contain a large amount of within state variation in minimum wages. Furthermore, the NLSY is a panel of youths and oversamples those from disadvantaged backgrounds, so it contains a relatively high number of low wage workers directly affected by minimum wage increases.

Our empirical results show almost no evidence of a reduction in training in response to minimum wages. Some of our specifications, which look most directly at workers affected by minimum wage increases, suggest that minimum wages may have increased worker training slightly, although these positive coefficients are not statistically significant.

No (or small positive) effects of minimum wages on training investments for workers for whom the minimum is binding suggest that the adverse effects of minimum wages on the human capital of low wage workers may be rather limited. These findings contrast with the predictions of the standard theory. The standard theory implies that an increase in the minimum wage should eliminate all general training among affected workers, as these investments have to be financed solely by the workers themselves. Our results are therefore even harder to reconcile with the standard theory if most training in the NLSY is general, as Loewenstein and Spletzer (1997) find to be the case in later waves. Our evidence therefore suggests that models with imperfect labor markets may be more appropriate for an analysis of training decisions and the impact of minimum wages on training investments than models based on competitive labor markets.

The rest of the paper is organized as follows. The following section discusses the related literature. Section 3 presents a simple theoretical setup where, contrary to the predictions of the standard theory, minimum wages increase training investments. This setup is special and is chosen to illustrate the main theoretical contribution of this paper clearly. In Section 4, we consider a more general and realistic model where minimum wages increase training for some workers, while reducing it for others. In Section 5, we describe our empirical strategy and give an overview of the data. Our results are presented in Section 6 and Section 7 concludes.

2 Previous Literature

Previous theoretical discussions of the effect of the minimum wage on training are based on the human capital model of Becker (1964). In the models of Rosen (1972) and Hashimoto (1982), minimum wages reduce training investments, because they prevent workers from taking the wage cuts necessary to finance general human capital investments. Our theoretical result deviates sharply from this conventional wisdom. We build on our previous work, Acemoglu and Pischke (1999b), which showed that a compression in the structure of wages can induce firm-sponsored training. Here, we show that minimum wages shift training investments from workers to firms, and may increase the overall amount of training.

There is a small empirical literature investigating the impact of minimum wages on training. Part of this literature focuses on whether minimum wage laws lead to slower observed wage growth in micro data. Both Leighton and Mincer (1981) and Hashimoto (1982) have found this to be the case and concluded that minimum wage laws lead to less training. In our model, the introduction of a small minimum wage could lead to a shift of training expenses from workers to firms, and reduce wage growth, even when it causes an increase in training. More generally, since minimum wages cut the lower tail of the wage distribution, and typically create a spike at the minimum, they would appear to reduce age-wage profiles even when they have no effect on training. Therefore, it is unsatisfactory to interpret the decline in age-earnings profiles as evidence of reduced investment in general training. Consistent with this view, Grossberg and Sicilian (1999) find no effect of minimum wages on training, but still find lower wage growth for minimum wage workers. Furthermore, Card and Krueger (1995) compared cross sectional wage profiles in California before and after the 1988 minimum wage increase with a number of comparison states. They also found flatter profiles in California after the minimum wage increase. However, they point out that the Californian profile also shifts up and does not cross the previous age-wage profile. This pattern contradicts the standard theory, but is consistent with the predictions of our model.

Given the difficulty of interpreting changes in the slope of wage profiles, we find it more compelling to look at the impact of minimum wages on training directly, but we are only aware of four previous studies doing this for the US. Leighton and Mincer (1981) use worker reported data on the receipt of training from the Panel Study of Income Dynamic (PSID) and the NLS and find that workers in states with lower wages and therefore a more binding federal minimum wage receive significantly less training. Cross state comparisons may be confounded by the presence of other state effects, however. For example, industrial and occupational composition of employment

varies substantially across states, and different industries and occupations have different skill requirements. These considerations suggest that across state comparisons are hard to interpret. Schiller (1994) reports a similar finding using later data from the NLSY by comparing the training incidence of minimum wage workers with those earning higher wages. The evidence from this study is even harder to interpret because worker traits which lead to higher pay are typically also associated with more training. Grossberg and Sicilian (1999) use data from the Employment Opportunity Pilot Project (EOPP) and compare minimum wage workers both to workers earning slightly less and slightly more, ameliorating the problem of worker heterogeneity somewhat. They find insignificant negative effects on training for male minimum wage workers and insignificant positive effects for women. Leighton and Mincer only analyzed men, although women make up the majority of minimum wage workers.

Some of these problems are overcome in a more recent study by Neumark and Wascher (1998), who use Current Population Survey (CPS) supplements to compare the impact of minimum wages on training within states using comparisons of young workers in 1991 with older workers (who are less likely to be affected by the minimum wage) and with young workers in 1983. These comparisons assume that state differences in training levels are the same for younger and older workers and remain so over long time periods, which are stringent requirements. They also find negative effects of minimum wages on training, but these effects seem to be too large to be sensible. Their treatment group consists of all young workers, but not all of these workers are affected by the minimum wage. Their estimates imply that formal training among workers aged 20-24 in California (a high minimum wage state) was 3.2 percentage points lower than in states which were subject to the federal minimum. Suppose this reduction in training is entirely due to workers being affected by the minimum wage. Assuming, quite generously, that minimum wages affect all workers earning less than 160 percent of the minimum (which comprises 30% of workers aged 20-24), this estimate implies that among affected workers, training is lower by over 10 percentage points (i.e. 3.2 percentage points divided by 0.30). It is important to note that the average incidence of training among workers aged 20-24 earning 160 percent of the minimum or less in low minimum wage states is 2.7 percent, much lower than among all workers aged 20-24 (for whom the incidence is 10 percent). So this estimate implies that introducing California's minimum wage to low minimum wage states should have wiped out all training *four times* among affected workers in these states. This suggests that the fixed effects assumptions made by Neumark and Washer are quite suspect.

3 Minimum Wages and Training: Basic Theory

In this section, we use a simple two-period model to analyze the impact of minimum wages on training. The main result of this analysis is that plausible deviations from perfectly competitive labor markets, which introduce firm-specific rents, change the conclusions of Becker's seminal analysis. Namely, we find that with labor market imperfections, minimum wages can increase investments in general training, and in most cases, they will increase training for employees previously constrained in their human capital investments, while reducing it for those taking wage cuts to finance their training.

We start with the simplest model which illustrates our most original result. In this model, all skills are general, and workers cannot finance their own training. With competitive labor markets and without minimum wages, there are no training investments. As a result, moderate minimum wages increase training unambiguously.

These simplifying assumptions are unnecessary for our main insights, however, and they hide the potential adverse effects of minimum wages on training. In the next section, we consider a less restrictive model where workers are potentially heterogeneous, and can take wage cuts to finance training. In this more general environment, minimum wages will increase training for some workers, but reduce it for those previously taking wage cuts to finance training.

3.1 Environment

The world lasts for two periods, 1 and 2. There is no discounting, and all agents are risk-neutral. There is a continuum of workers with density n , who supply labor inelastically. We start with the case in which all workers have common ability normalized to 1. We view period 1 as the early career of workers. During this period a worker's productivity is $\theta < 1$, and he can also receive training. To simplify the discussion we assume that training is indivisible, so only $\tau = 0$ (no training) and $\tau = 1$ (training) are possible. Without training, but with the experience of first period employment, the worker's productivity increases to 1 in period 2. Training, in turn, increases his productivity in period 2 further, to $\phi > 1$. We assume that training is general, so this increase in productivity applies equally in all firms. The cost of training is incurred in terms of lower output in the first period and is equal to $c > 0$. As noted above, in this section, we assume that all training investments have to be financed by the firm. This could be because training is non-contractible, so the firm can renege on its training promise even if the worker takes a wage cut to finance his training (see Acemoglu and Pischke, 1999a, for a discussion).

We now impose:

Assumption 1: $\phi - 1 > c$.

This condition ensures that training is socially beneficial.

There is a continuum 1 of firms competing to hire workers in both periods. Each firm can hire at most one worker. Firm j has to incur a setup cost k_j (e.g. buy some equipment). We assume that k_j has a continuous distribution among firms given by $F(k)$ with lower support at $\underline{k} < 0$ and upper support at $\bar{k} < \delta + \theta$ (δ is defined below). This smooth distribution enables us to generate a downward sloping demand for labor in period 1. A negative value of k implies that the firm will make profits in the first period even after incurring the required capital cost, for example because it has some special expertise in this area of business. However, to realize these profits, it needs to hire a worker and to produce. We suppose that the lower support $\underline{k}$ is low enough (e.g. $\underline{k} \rightarrow -\infty$), so that minimum wages never stop all employment in the first period.¹

Once set up, all firms have access to the common technology. In the first period, revenue per worker is θ . Their second period revenue is 1 if they employ an untrained worker and ϕ if they employ a trained worker. Also, the firm obtains an additional revenue δ , if the worker was employed in the first period with this firm. Therefore, δ is a firm-specific productivity increase, and is the only deviation from competitive labor markets we introduce. δ creates a match-specific surplus to be divided between the firm and the worker. We assume Bertrand competition among firms (or equivalently, firms make take it or leave it offers to workers). Since the second-best opportunity of workers does not include δ , initial employers capture the whole amount δ , only paying the “market wage”, even though workers’ productivity is higher than this. As will become apparent shortly, the presence of rents from the employment relationship is crucial, but the results would be unaffected if the worker captures a fraction $\beta < 1$ of this surplus. Observe also that this mobility cost implies that all workers will stay with their initial employer.²

¹Decreasing returns at the firm level is an alternative assumption which generates a smoothly decreasing demand for labor. The equivalent of the assumption $\underline{k} \rightarrow -\infty$ in that case is that the marginal product of labor in the first period is very large when very few workers are employed. This formulation yields the same results.

²Alternatively, we could have that a worker who changes a job in the second period incurs a mobility cost δ , because he has to acquire some costly firm-specific skills before becoming productive. All our results continue to hold with this alternative interpretation. Also, in practice, workers earning close to the minimum wage have high mobility. Our results continue to hold if a fraction $s < 1$ of workers change jobs.

3.2 Equilibrium Without Minimum Wages

Equilibrium can now be characterized by backward induction. In the second period, each firm is willing to pay up to 1 for an untrained worker employed by another firm, and is willing to pay ϕ for a trained worker. Bertrand competition then ensures that³

$$\begin{aligned} w_2(NT) &= 1, \\ w_2(T) &= \phi. \end{aligned} \tag{1}$$

Using the fact that in equilibrium all workers stay with their first period employer, the profits that firm j makes from an untrained and trained worker can be written as:

$$\begin{aligned} \Pi_j(NT) &= (\theta - k_j - w_1) + (1 + \delta - w_2(NT)) \\ \Pi_j(T) &= (\theta - k_j - c - w_1) + (\phi + \delta - w_2(T)) \end{aligned} \tag{2}$$

The first bracket in each expression gives first period profits, while the second is profits in period 2. Substituting (1) into (2), we immediately see that $\Pi(T) - \Pi(NT) = -c$, that is the firm loses the training costs if it trains. The reason is simple: a trained worker receives $\phi - 1$ more in the second period, and this is exactly the increase in his contribution to the firm's output. So the worker is the full residual claimant of the increase in productivity due to training, and the second period profit of the firm is equal to δ , independent of whether the worker is trained. Since training costs c in the first period has to be paid by the firm, it is not optimal for firm to invest in its employee's skills. Although there are firm-specific rents, because they do not interact with training, firms have no incentive to train (see Acemoglu and Pischke, 1999b). Therefore, with competitive labor markets, firms have no incentive to invest in their workers' general skills, even though training is socially desirable.

To complete the characterization of the equilibrium, we have to determine first period wages. It is clear that only the n firms with the lowest capital costs will be active. So, the firm with the n^{th} lowest capital cost k_n has to make zero profits. This gives:

$$w_1 = \theta + \delta - k_n \tag{3}$$

A noteworthy feature is that compensation can be front-loaded or back-loaded. Front-loading arises because firms anticipate δ , the rent they will receive in the second period, and are willing to bid higher than the worker's current productivity. The reason why compensation could be back-loaded is that firms incur the capital cost only in the first

³Even though workers do not receive any of the firm-specific rents, there is no labor mobility in equilibrium. Suppose this were not so, then the firm could offer ε more than the market wage and convince the worker to stay, so mobility cannot be part of an equilibrium.

period, and anticipate to compete harder for workers in the second period. We assume that

Assumption 2: $\theta + \delta - k_n < 1$.

This limits front-loading and ensures that there is a positive experience premium even without training, i.e. $w_1 < w_2(NT)$. Recall that k_n is not an endogenous variable, but a parameter—the n^{th} lowest capital cost.

Now, denoting total employment by E , we can summarize this analysis (proof in the text):

Proposition 1 *There is a unique equilibrium in which there is no training and all firms with $k_j \leq k_n$ are active. All workers are employed, $E = n$, and receive the first period wage given by (3) and the second period wage $w_2(NT)$ given by (1).*

So despite Assumption 1, which ensures that training is socially beneficial, there is no training in equilibrium. This is in line with Becker’s standard theory; firms are unwilling to invest in the general skill of their employees as they do not receive any of the benefits of training, and workers are assumed unable to “buy” training. However, there is full employment in this decentralized economy, in particular, the level of employment, E , is equal to the labor force, n .

3.3 The Impact of Minimum Wages on Training

Now consider the imposition of a binding minimum wage $w_M > 1$. Assumption 2 ensures that $w_M > \theta + \delta - k_n$, so the minimum wage is also binding in the first period. Since the demand for labor is downward sloping, the minimum wage will reduce employment in this economy. The main question for the focus of this paper, however, is how the minimum wage affects training.

We start by writing wages in the presence of minimum wage laws. With a similar reasoning to above, (1) and (3) change to:

$$\begin{aligned} w_1 &= w_M, \\ w_2(NT) &= w_M, \\ w_2(T) &= \max \{w_M; \phi\}. \end{aligned} \tag{4}$$

$w_2(T)$ features the “max” operator because the minimum wage may be less than or greater than the productivity of a trained worker, ϕ . Profits with and without training

now become:

$$\begin{aligned}\Pi_j(NT) &= (\theta - k_j - w_M) + \max[(1 + \delta - w_M); 0] \\ \Pi_j(T) &= (\theta - k_j - c - w_M) + \max[(\phi + \delta - \max\{w_M, \phi\}); 0]\end{aligned}$$

where the first “max” operator takes care of the fact that the firm may decide not to operate in the second period if the minimum wage is too high.

First, suppose $w_M > \phi$, so that the second period wage is equal to the minimum even for skilled workers. In this case, we have

$$\Pi_j(T) - \Pi_j(NT) = \phi - 1 - c > 0,$$

which is always positive by Assumption 1. So in stark contrast to the economy without minimum wages, firms now prefer to train their employees. The firm has to pay the minimum wage irrespective of whether the worker is skilled or not, so the full return to training is captured by the employer.

Next, suppose that $w_M < \phi$, so that second period wage for trained workers exceeds the minimum. Then, $\Pi_j(T) - \Pi_j(NT) = w_M - 1 - c$. This can be positive or negative depending on how high the minimum wage is.

At this point, notice the importance of firm-specific rents. If $\delta = 0$, then in the second period, a firm which trains pays $\max\{\phi, w_M\}$, so necessarily loses money. So there cannot be any training. More generally, in all this analysis we have to make sure that minimum wages are not high enough to shut down all employment in the second period. This requires $w_M < \phi + \delta - c$.

We can now state the main result of this section (proof in the text):⁴

Proposition 2 .

1. *If $\phi + \delta - c > w_M > \phi$, then all employed workers are trained, $w_1 = w_2(NT) = w_2(T) = w_M$, and all firms with $k \leq k^*$ are active where $k^* \equiv \theta + \phi + \delta - c - 2w_M < k_n$. Employment in both periods is equal to $E = 1 - F(k^*)$.*
2. *If $1 + c < w_M < \phi$, then all employed workers are trained, $w_1 = w_2(NT) = w_M$, and $w_2(T) = \phi$. All firms with $k \leq k^{**}$ are active where $k^{**} \equiv \theta + \delta - c - w_M \in (k^*, k_n)$, so employment in both periods is now $E = 1 - F(k^{**})$.*
3. *If $w_M < 1 + c$, then there is no training, $w_1 = w_2(NT) = w_M$, and $w_2(T) = \phi$, all firms with $k \leq k^+$ are active where $k^+ \equiv 1 + \theta + \delta - 2w_M \in (k^{**}, k_n)$, so employment is now equal to $E = 1 - F(k^+)$.*

⁴When there is training, $w_2(NT)$ gives “off-the-equilibrium” path wages, and similarly for $w_2(T)$, when there is no training. Also notice that if $c > \delta$, then we will never be in case 2.

As in the standard neoclassical model, minimum wages reduce employment in all cases, because some firms (jobs) making close to zero profits before the introduction of the minimum will choose to become inactive. But moderate minimum wages increase training. Firm-specific rents (labor market imperfections) are crucial for this result. If $\delta = 0$, there is no training and employment in the second period collapses to zero. The firm has to pay minimum wages even for unskilled workers and a binding minimum wage reduces the rents the firm receives from the employment relationship. Training raises the worker's productivity, and therefore restores some of these rents.

Figure 1 in the introduction gives the basic intuition. The minimum wage determines the wage both at $\tau = 0$ and $\tau = 1$, so all productivity increases from training accrue to the employer, as in case 1. The most interesting case might be case 2. If the minimum wage is low enough, it may induce the firm to sponsor training but the worker receives some of the proceeds from the training, because the productivity of the trained worker exceeds the minimum wage.⁵

Notice how minimum wages affect wage growth here. In case 1, the minimum wage induces training, but will lead to a reduction in wage growth (from $1 - \theta - \delta + k_n$ to zero), so inferring whether minimum wages increase training by looking at the slope of the wage profile, as in Hashimoto (1982), is not possible. Since minimum wages increase first period wages, they will typically reduce wage growth (though in case 2, if ϕ is sufficiently large, they may increase wage growth).

Finally, notice that the results continue to apply if w_M is a wage above the legal minimum that the firm has to pay to the worker, due to other imperfections such as bargaining. Therefore, if an increase in the minimum creates spillover effects to wages above the minimum, our analysis predicts that firms may also be induced to train the workers affected by these spillovers. In practice, minimum wages appear to create spillover effects (e.g. DiNardo, Fortin and Lemieux, 1996; Lee, 1999), so we expect them to also influence the training of low wage workers earning above the minimum.

4 The Effect of Minimum Wages When Workers Can Pay For Training

We now generalize the model of the previous section in two crucial respects: (1) workers can invest in their general training, but some of them are affected by credit constraints; (2) returns to training vary across workers.

⁵This is special to the case where the firm has to choose a discrete level of training. If the firm could choose training continuously, it would never train the worker beyond the point where it has to pay above the minimum wage in the second period (see Figure 1).

More specifically, there is a distribution of abilities across workers denoted by $G(\eta)$ with support $[\underline{\eta}, \bar{\eta}]$. A worker with ability η_i produces $\theta\eta_i$ in the first period, η_i in the second period if untrained, and $\phi\eta_i$ if trained. The cost of training is c independent of ability.

To simplify the discussion, we also assume:

Assumption 3: $(\phi - 1)\underline{\eta} > c$.

This implies that training is beneficial for all workers, so we do not have to keep track of whether the worker in question should get training or not.

Furthermore, we assume that workers can “buy” training from their employers, so the contractual problems discussed in the previous section are absent. Nevertheless, workers do not have access to perfect credit markets, and need to achieve a certain level of consumption in the first period. We denote this by γ_i for worker i , and denote the distribution of γ by $H(\gamma)$, with upper support $\bar{\gamma}$. The distribution of γ is independent of the distribution of η . A worker needs to have a consumption level γ out of his wage income, and $\gamma < 0$ implies that the individual has other assets, so he does not need his wage income to meet his consumption obligations.⁶ The rest of the setup is unchanged.

4.1 Equilibrium Without Minimum Wages

Decentralized equilibrium without minimum wages is straightforward to characterize. Once again all firms with $k_j \leq k_n$ are active. Market wages are now conditioned on ability as well as training:

$$\begin{aligned} w_2(\eta_i, NT) &= \eta_i \\ w_2(\eta_i, T) &= \phi\eta_i. \end{aligned} \tag{5}$$

Writing profits with and without firm-sponsored training as before, we see once again that $\Pi_j(T) - \Pi_j(NT) = -c$. Firms therefore have no incentive to invest in their employees' skills. But now, there can be worker-financed training. More specifically, by Assumption 3, all workers who can afford it will prefer to get training by taking a wage cut. Therefore, worker i gets training if and only if

$$\theta\eta_i + \delta - k_n \geq c + \gamma_i. \tag{6}$$

This inequality ensures that the first period wage is high enough that the worker can afford to pay for his own training. Summarizing this result (proof in the text):

⁶This amounts to lexicographic preferences, whereby the worker first tries to meet his minimum consumption level, and then maximizes the sum of consumption in both periods. Introducing a concave utility function for the worker in both periods gives similar results, as it creates a desire for smooth consumption, but complicates the analysis substantially, so we have opted for this simpler formulation.

Proposition 3 *There is a unique equilibrium in which all firms with $k_j \leq k_n$ are active, wages in the second period are given by (5), and all workers for whom (6) does not hold receive the first-period wage $w_1(\eta_i) = \theta\eta_i + \delta - k_n$ and do not obtain training. Workers for whom (6) holds receive the first-period wage $w_1(\eta_i) = \theta\eta_i + \delta - k_n - c$ and obtain training.*

So in this competitive equilibrium there is investment in training. All training is of the Becker-type, financed by workers taking a wage cut in the first period. The only reason why the equilibrium is not first-best is because some of the workers are credit constrained and cannot invest in training even though doing so would increase total output.

It is also possible to obtain a relatively simple expression for the incidence of training. Because of Assumption 3, all workers who can afford it will invest in training. We can write the incidence of training as

$$T = \int_{\underline{\eta}}^{\bar{\eta}} H(\theta\eta + \delta - k_n - c) dG(\eta).$$

Only workers for whom (6) holds obtain training, and this depends on the size of γ relative to first period wages which depend on their ability η .

4.2 The Impact of Minimum Wages on Training

Now consider a binding minimum wage, i.e. w_M such that $w_M > \theta\underline{\eta} + \delta - k_n$ and $w_M > \underline{\eta}$. Also to reduce the cases to be studied, suppose that $w_M < \phi\underline{\eta} + \delta - c$, so that second period employment does not collapse. Similar reasoning to above immediately gives second period wages as:

$$\begin{aligned} w_2(\eta_i, NT) &= \max\{w_M, \eta_i\} \\ w_2(\eta_i, T) &= \max\{w_M, \phi\eta_i\} \end{aligned} \tag{7}$$

Let us start with the adverse effect of the minimum wage on investment in skills. Some of the workers previously financing their own training are now unable to do so. For example, consider worker i such that $\gamma_i < \theta\eta_i + \delta - k_n - c < w_M$, that is worker i was financing his training by taking a wage cut, to a level now below the minimum. Clearly, the minimum wage prevents this.⁷ So a binding minimum wage reduces training for some workers. If $\delta = 0$ —so that we are in competitive labor markets—, this is the only

⁷This is without a training subminimum. In our model, as in the standard Becker model, introducing training subminima increases training.

impact of the minimum wage on training; since all training is general in this economy, the minimum wage eliminates all training among affected workers.

In addition, however, the minimum wage induces firms to train their low skill workers as in the previous section. Consider a worker with $\gamma_i > \theta\eta_i + \delta - k_n - c$, that is a worker who could not afford to buy training before the minimum wage. It is then clear, from the analysis in the previous subsection, that if $w_M > \phi\eta_i$, then the firm would prefer to invest in training. Similarly, even when $w_M < \phi\eta_i$, if $w_M > \eta_i + c$, the firm prefers to provide training. Therefore, as in the previous section, labor market rents and minimum wages induce employers to invest in general training of some workers.

More formally, as in the previous section, a worker receives firm-sponsored training if

$$w_M > \eta_i + c \quad (8)$$

(since $\phi\eta_i > \eta_i + c$, if the trained worker's wage is at the minimum, (8) is still satisfied). Alternatively, the worker will obtain training when he finances it himself, despite the minimum wage. This happens if

$$\theta\eta_i + \delta - k^* - c > \max\{w_M, \gamma_i\} \quad (9)$$

where k^* is the new equilibrium cutoff capital cost.

These observations provide some insight into the effects of minimum wages on training. Minimum wages induce firms to train their workers, but prevent workers' own investment in training. To understand the whole picture, however, we need to characterize the equilibrium fully, which is a little more involved than before. We have to determine first period wages for workers of different abilities, and find the equilibrium level of employment when a minimum wage is binding. However, since first period wages are not central to our focus, we only give these in Appendix 1, and only determine equilibrium employment here.

The key observation is that there exists, once again, a cutoff level of capital cost, such that all $k_j \leq k^*$ will be active. Furthermore, given the additive relation between firm and worker heterogeneity, firm j , if active, has to make exactly the same total profit, Π_j , from hiring any worker i , so that each firm is indifferent about which worker to hire (otherwise, all firms would want to hire the more profitable worker, pushing up his period 1 wage). So let us write the profit that a firm makes from a worker of talent η_i as:

$$\Pi_j(\eta_i) = \max \{ \Pi_j(\eta_i, NT), \Pi_j(\eta_i, T) \},$$

where

$$\Pi_j(\eta_i, NT) = (\theta\eta_i - w_1(\eta_i, NT) - k_j) + (\eta_i + \delta - \max\{w_M, \eta_i\}),$$

$$\Pi_j(\eta_i, T) = (\theta\eta_i - w_1(\eta_i, T) - k_j - c) + (\phi\eta_i + \delta - \max\{w_M, \phi\eta_i\})$$

after substituting (7). $w_1(\eta_i, NT)$ denotes the first period wage for a worker with ability η_i not receiving training, and $w_1(\eta_i, T)$ denotes the first period wage for a worker receiving training. These first period wages have to adjust to ensure that $\Pi_j(\eta_i) = \Pi_j = k^* - k_j$ for all i hired in equilibrium, where k^* is the equilibrium cutoff capital cost. This expression follows by noting that the firm with k^* will make zero profits, so a firm with $k_j < k^*$ should make profits equal to $k^* - k_j$. Clearly $w_1(\eta_i, \cdot) \geq w_M$ by law.

To characterize the equilibrium, we need to determine k^* . Since the minimum wage is binding, the marginal worker has to be employed at the minimum.⁸ Hence, defining the ability of the marginal worker as η^* , we must have

$$\Pi_{j^*}(\eta^*) = (\theta\eta^* - k^* - w_M - c) + (\phi\eta^* + \delta - \max\{w_M, \phi\eta^*\}) = 0,$$

where $k_{j^*} = k^*$, and we have used the fact that a worker at the minimum wage in the second period necessarily receives training. Hence:

$$k^* = (\theta + \phi)\eta^* + \delta - c - w_M - \max\{w_M, \phi\eta^*\}. \quad (10)$$

The number of workers employed, i.e. those with $\eta \geq \eta^*$, has to be equal to the number of active firms, i.e. to the firms with $k \leq k^*$. Hence:

$$[1 - G(\eta^*)]n = F(k^*) \quad (11)$$

where k^* is as given by (10). Notice that the left hand side is strictly decreasing in η^* , while the right hand side is increasing. Together with the boundary conditions implied by the fact that G and F are distribution functions, this ensures a unique solution (η^*, k^*) .

We can now summarize the results (proof in the text):

Proposition 4 *There is a unique equilibrium with employment level $E = F(k^*)$ where k^* is given by (10) and (11). Workers with η_i satisfying (8) or (9) receive training.*

The incidence of training among employed workers is now:

$$T^{MW} = \frac{n}{F(k^*)} \left[G(w_M - c) - G(\eta^*) + \int_{\underline{\gamma}}^{\bar{\gamma}} [1 - G(\hat{\eta}(\gamma))] dH(\gamma) \right]$$

⁸Alternatively, the marginal worker could be one who has lower talent but low γ , so that he can pay for his training. This would imply $\eta_i \geq \tilde{\eta} = [w_M + c + k^* - \delta] / \theta$. However, $\tilde{\eta}$ is unambiguously greater than η^* obtained below, confirming that the marginal worker has to be at the minimum wage.

where $\hat{\eta}(\gamma) \equiv \max \{w_M/\phi; [\max\{w_M, \gamma\} - \delta + k^* + c]/\theta\}$. The second term in brackets is explained by noting that workers who have high enough ability such that (8) does not hold could potentially finance their training, but in that case, they need to have sufficient funds in the first period, i.e. low enough γ , so that they are not affected by credit constraints. Therefore, minimum wages increase training for workers who were previously unable to finance their training, and have second period wages close to the minimum. They reduce training for workers who were financing their own training, and have second period wage sufficiently above the minimum so that it is not in the interest of their employers to provide them with training.

As the above discussion suggests T^{MW} could be smaller than or greater than T , so in this more general model, minimum wages could increase or reduce training among those still employed. More specifically, they will increase training for some workers, especially those at low wages affected by credit constraints, and reduce it for those taking wage cuts to finance their own training. This discussion also suggests that we expect T^{MW} to be greater than T (i.e. minimum wages to increase training), when most workers are credit constrained, and when there are many workers with abilities between η^* and $w_M - c$, for whom minimum wages lead to firm-sponsored training.

Finally, we have so far compared an economy without minimum wages to one with a binding minimum wage. The results of comparing two economies with different levels of minimum wages are similar. The only difference is that in a model with a binding but low minimum wage, some workers with low values of γ_i are already prevented from paying for their own training. So increasing an already binding, but relatively low, minimum wage is perhaps more likely to increase training than introducing one in an economy without minimum wages. Whether this happens is an empirical question, and we will now provide some new evidence on this.

5 Empirical Strategy and Data

The federal minimum wage was unchanged between 1981 and 1990, but various states imposed their own minima above the federal level during the late 1980s. While minimum wages were rather uniform across states before 1987 and after 1991, there was substantial dispersion between these dates. We will exploit this variation. Table 1 displays the statutory minimum wages in the US states over this period.

We use two complementary approaches to identifying the impact of minimum wages on training. The first one, which we find most compelling, looks at the training of workers who are directly affected by an increase in the state or federal minimum wage. The second approach looks at the relation between training and a measure of how binding

the minimum wage is across regions. This latter approach is most closely related to the empirical work in the previous literature, and therefore serves as a check on the robustness of our results.

5.1 Empirical Specification

The most direct way to estimate the impact of the minimum wage on training outcomes is to look at workers who are actually affected by changes in the minimum wage. In order to illustrate the approach, consider the following regression equation

$$\tau_{irt} = \alpha mw_{irt} + \beta' x_{it} + d_t + v_r + \mu_i + \varepsilon_{irt} \quad (12)$$

where τ_{irt} is a measure of training for individual i in region r at time t , d_t , v_r and μ_i are time, region, and individual effects, and x_{it} are other individual characteristics like education, age, gender, and information about the job an individual holds. mw_{irt} is a measure of whether the minimum wage binds for individual i in region r at time t . One measure for mw_{irt} would be whether the actual wage of an individual is close to the minimum wage for the region and time period. This has been the approach of Schiller (1994) and Grossberg and Sicilian (1999) using cross-sectional variation. But this strategy has the problem that other, possibly unobserved, person characteristics which are correlated with the individual's wage will also tend be correlated with training receipt.

We therefore difference eq. (12) to obtain

$$\Delta\tau_{irt} = \alpha\Delta mw_{irt} + \beta'\Delta x_{it} + \Delta d_t + \Delta\varepsilon_{irt}. \quad (13)$$

Changes in training should now be related to changes in whether a worker is affected by the minimum wage. As a measure of Δmw_{irt} we use a dummy variable which indicates that the minimum wage increased from one year to the next, and the worker earned below the new minimum wage in the base year. This measure captures workers who are directly affected by a change in the minimum wage, similar to Card's (1992) analysis of employment effects. The measure relies purely on the variation of the minimum wage and base period wages, but not changes in individual wages, which may be correlated with when a worker received training. Our analysis will focus on individuals who do not move between states because moving would also confound Δmw_{irt} with behavioral effects. Therefore, differencing has eliminated the region effect in eq. (13).

Although we feel that this analysis of eq. (13) exploits variation of the minimum wage most directly, hence gives the most reliable results, previous studies have relied on eq. (12) to study the impact of the level of the minimum wage on training. To

make our results more comparable to these previous studies, we also undertake analysis of the levels equation. Rather than indicating affected workers directly, the variable mw_{it} will in this case measure how binding the minimum wage is in a particular state or region. We start by using simply the actual minimum wage in region r at time t , w_{rt}^m . What matters for the theory, however, is how binding the minimum wage is. The same federal minimum affects more workers in low wage regions than in high wage regions, and this source of variation would not be captured by w_{rt}^m . Therefore, we prefer specifications in which a given level of the minimum wage is allowed to have different effects in different regions depending on their average wages. For this purpose, we consider relative minimum wage measures $w_{rt}^m/\bar{w}_r$, where $\bar{w}_r$ is a measure of the location of the wage distribution in region r (the median wage of older workers) over the whole sample period. This measure $\bar{w}_r$ should not be affected by the minimum wage itself, and therefore just parameterizes the wage distribution, and $w_{rt}^m/\bar{w}_r$ measures how high the minimum wage is relative to the region's wage distribution. Notice that we are not using $\bar{w}_{rt}$ which would move with the business cycle at the regional level, and might create a spurious correlation if training incidence were also cyclical.

An obvious choice for the regions are states, since minimum wages vary at the state level. However, the wage distribution also varies within states, so that the relative minimum wage measure can be defined for smaller regions. Apart from states, we use two other measures. One partitions states into SMSAs and non-SMSA parts as our region definition. This lets us exploit the often substantial variation in wage levels between large SMSAs (like New York City) and rural areas in a state (like upstate New York) in the analysis. In total, we distinguish 136 regions. Details on the construction of these are available in Appendix 2. When we use states or these smaller regions, our measure for $\bar{w}_r$ is the average of the median wages of male workers age 35-54 in each year between 1987 and 1992. The second "region" definition distinguishes between the male and female wage distribution within states, i.e. $\bar{w}_r$ uses the average of the median wages of male workers age 35-54 in the state if the respondent is male, and of the median wages of female workers age 35-54 if the respondent is female. This measure exploits the fact that women should be more affected by a given minimum wage than men because women tend to earn less than men.

In the right hand panel of Table 1 we show the relative minimum wages using the male medians by state and year over the sample period. It is apparent that there is substantially more dispersion in this measure (which is still coarser than the other regional measures we use below) than in the minimum wage itself. For example, the federal minimum wage increases between 1989 and 1991 raised the relative minimum wage by only 0.055 in New Jersey but by 0.085 in Arkansas, both states without a state

minimum wage above the federal level in 1989. This illustrates how the scaling of the minimum wage measure leverages the increase in the federal minimum wage across states with different wage distributions.

There are a number of practical problems in implementing the estimation of equations (12) and (13). For example, training is not easily defined at a point in time. Because most training spells only last for a short period of time, we will define τ_{rit} as referring to all incidents of training within a single year. Thus, τ_{rit} will be 1 if the individual received any training during the year, and 0 otherwise. In the differenced equation (13), the dependent variable takes on the values -1, 0, and 1. We will estimate the models as linear probability models, facilitating differencing and the inclusion of fixed effects in the levels version.

Looking at a time period as long as a year has its drawbacks. The minimum wage may change within a year. In order to minimize the impact of this, we look at periods of 12 months starting in April and ending in March. Both federal minimum wage increases in 1990 and 1991 went into effect April 1. Some state minimum wage increases also took effect on April 1, but many did not. Whenever the minimum wage changed during the year, we use an employment weighted average of the minimum wage in effect during the year.

The covariance matrix of the error term in eq. (13) will have a first order moving average structure at the individual level. We therefore estimate standard errors with the Huber estimator, which is robust to arbitrary cluster effects at the individual level. This covariance estimator is consistent in this case but not efficient. In (12), the key regressor, the minimum wage variable, only varies at the region and year level while we use individual level data. Conventional standard errors may therefore overstate the precision of the estimates (Moulton, 1986). Suppose the error term has the form $\varepsilon_{rit} = \lambda_i + v_{rt} + \xi_{rit}$, i.e. the error is composed of an individual level component λ_i , a region*time component v_{rt} , and a component ξ_{rit} , which is uncorrelated across individuals, regions, and time periods. Notice that the error ε_{rit} will be heteroskedastic, since we are estimating a linear probability model. There is no straightforward way to calculate consistent standard errors for this error structure. We extend the standard Huber estimator to allow for both an individual level component and a region*time component in the error term. This estimator seems to perform well in practice in samples of our size. We report the results of some small Monte Carlo experiments in Appendix 3.

5.2 The Data

Our data on training come from the National Longitudinal Survey of Youth (NLSY). The NLSY is a panel of youths aged 14 to 21 in 1979. This dataset is particularly suitable for this project because it samples young workers, and it oversamples those from disadvantaged backgrounds, who are more likely to work in jobs at or slightly above the minimum wage (see Card and Krueger, 1995). We will follow the cohorts interviewed in the NLSY from 1987 to 1992, years of significant changes in state and federal minimum wages. During the 1988 to 1992 surveys, the NLSY asked a consistent set of questions about on-the-job training during the previous year. The information about the training includes length and type of the program, site, and whether the explicit costs of the training were paid for by the employer or someone else. The first set of training questions in 1988 refer to a longer time frame than the questions in subsequent years, because no similar data were collected in 1987. In 1993, the module on training in the survey was expanded substantially and the survey switched from paper and pencil to computer assisted interviewing. We use some data from the 1993 survey to complement information on training during the April 1992 to March 1993 year. There were some other minor additions to the training questions before 1993 as well.

The sequence of questions on training begins with a lead-in stating

“I would now like to ask you about other types of schooling and training you may have had, excluding regular schooling we have already talked about. Some sources of occupational training programs include government training programs, business schools, apprenticeship programs, vocational or technical institutes, correspondence courses, company or military training, seminars, and adult education courses.”

This suggests that respondents will mostly report relatively formal training programs and neglect other sources of informal on-the-job training, a suspicion which has been substantiated by Loewenstein and Spletzer (1999) using the more detailed training data in the NLSY starting in 1993. While this may be a drawback, this limitation of the data is pervasive in this literature.

We are only interested in training programs which take place in firms, or are sponsored directly by the employer, not in courses taken by individuals outside work on their own initiative or government sponsored training programs. We therefore classify the following forms of training as “employer related training”: any training for which the respondent gives as venue an apprenticeship program; formal company training; or seminars or training programs at work run by someone other than the employer; or if

the respondent classifies the training as on-the-job training or work experience; or if the employer paid for the training (even though we do not interpret the answer to this question as the employer necessarily bearing the investment costs). We do not classify a training programs as employer related if the training was partly paid for by a government program.⁹ For each training program we record the start date as reported on the 1988 to 1993 surveys. If this date falls within an April to March period between 1987 and 1993, we assign the training to this particular year. We treat observations with a missing start date as missing.¹⁰

We do not use any information on the job or employer in the estimation directly. However, training often takes place when individuals start new jobs and minimum wage increases may affect turnover and hiring. Hence, it seems important to control for turnover in some fashion. We include a dummy variable for whether a respondent started any new job within a particular year from information in the work history module of the data.

We limit our sample to workers who have 12 years of education or less, a group most likely to be affected by the minimum wage. We use the oversamples of blacks, Hispanics and poor whites in the analysis, but we drop the military subsample. The results are weighted by the NLSY sampling weights throughout. Individuals living in the District of Columbia are excluded, because DC had a plethora of different minimum wage rules, making it hard to define a sensible overall measure of the minimum wage. Our basic sample includes all workers who report a wage at the interview for the current year and for the past year, and who were employed for at least one month during the year according to the information in the work history module.¹¹ We also restrict the sample to those with valid wage information. For the analysis using eq. (13) we also include individuals who move between states.

In addition, we use the 1987 to 1993 outgoing rotation group files of the CPS. We calculate the median wage for workers age 35 to 54 from this data source to construct the relative minimum wage measure. The CPS outgoing rotation groups are large enough to do this even for smaller areas within states. For example, each region-year cell has at least 27 observations on older male workers, but few cells are that small, and the median number of observations is 274.

⁹The most common government program, JTPA, involves wage subsidies up to 50 percent if trainees are placed with private sector employers. Hence, the incidence of training under this program is unlikely to be affected by minimum wage legislation.

¹⁰The NLSY also provides information on the length of training. We do not use the duration of training directly, because of the frequency of missing values but we checked that our results are robust to excluding very short training spells.

¹¹The NLSY refers to this wage measure as the CPS wage because of the CPS style question. The CPS wage may refer to a prior job if the respondent is not working at the time of the interview.

6 Empirical Results

Table 2 reports means of some demographic indicators for the three samples from the NLSY. All samples include respondents with 12 years of schooling or less working in at least one month during the year. Since young adults still obtain additional schooling in this age range, the samples changes over time. The non-mover sample differs little from the unrestricted sample. About 20 to 25 percent of each sample report having started a new job during the calendar year. While this includes secondary and temporary jobs, the number matches relatively closely the fraction of low education workers in the same age group who report tenure of 12 month or less on their current job in the January 1991 CPS. This relatively high rate of job starts reflects the large turnover among young, low skilled workers.

The average nominal hourly wage in the basic sample rises from about \$7.50 in 1987 to almost \$10 in 1992. While a number of sample members earn the minimum wage or less, as shown in the last row, the majority of respondents earn far above the minimum wage. These samples therefore include many workers whose wage is not directly affected by the minimum. These higher wage workers effectively form our control group in the differenced analysis. When we look at the impact of the level of the minimum wage, on the other hand, most of the sample members are not directly affected by the minimum wage, a problem which has also affected previous studies. In order to address this issue we also use a low wage sample, defined as workers employed at a wage which is 150 percent of the federal minimum or less in the *previous* year. The last two columns give the basic descriptive statistics for this sample, which is about a third the size of the basic sample. These low wage workers include more women and blacks. The number of high school dropouts is only slightly higher. Average wages in this sample are much lower and do not grow substantially over the sample period, due to the sample selection. We think of this group as much more likely to be actually subject to the minimum wage or spillovers resulting from it. Since a larger fraction of these workers are directly affected by the minimum wage, according to standard theory we should find larger negative effects in this sample.

Table 3 reports sample means for some of the key variables in our regressions. The first row of the table reports the incidence of training, which is around 10 percent. The only exception is 1987, where the measured incidence is much lower. This is presumably due to the fact that the training questions were first asked on the 1988 survey so that the questions referring to 1987 had a longer recall period than for later years. There is also a small drop in 1991, possibly due to the recession. If we exclude very short training spells of 1 day or less, the incidence drops to about 7 to 8 percent.

Our measure of the minimum wage in a region is the higher of the state and the federal minimum wage. In Table 3, we report the average minimum wage in a year across all regions. These averages are weighted by the residence of our sample population. In 1987, the average minimum wage was 3.36, when only Alaska, and the New England states had state minima above the federal minimum wage of 3.35. It rises to 3.44 in 1988, mainly reflecting the increase in the California state minimum, and increases further to 3.51 in 1989, due to new minimum wage laws in other states, among them Oregon, Washington, and Pennsylvania. The standard deviation across respondents reaches a high of 29 cents in this year, indicating a substantial amount of variation in state minimum wage levels. This variation drops substantially in 1990 and 1991, when the two federal increases raise the minima in those states which had not taken action before. The averages of 3.87 and 4.26 are now only slightly above the federal minimum wages of 3.80 and 4.25. In 1992, New Jersey raises its minimum wage to 5.05, increasing the spread again.

For our analysis of equation (13), we use four different measures for workers affected by the minimum wage. The first one includes all workers who earned less than the new minimum wage in a year prior to a minimum wage increase. This includes workers who report a wage below the initial minimum. The top panel of Table 3 shows that about 1.4 percent of the sample were affected by minimum wage increases in 1988, mostly due to the increase in the California minimum wage. The state increases in 1989 affect slightly more workers, but a large fraction of workers (7 and 9 percent, respectively) is only affected by the federal increases in 1990 and 1991. The second measure excludes workers below the minimum wage in the base year. It is not completely clear whether these workers should be considered affected or not. Minimum wage coverage was fairly universal during the time period we consider, so that these reports presumably reflect mostly measurement error.¹² We therefore prefer the first measure which includes these workers. Excluding them cuts the fraction of affected workers about in half in each year.

An increase in the minimum may also affect the wages of higher wage workers via spillover effects, and our model then predicts that their training should be affected. Lee (1999), for example, finds large spillover effects from the minimum wage changes during our sample period, and we report similar results below in Table 5. In order to investigate whether spillovers affect our results, we also included workers who initially earned above the new minimum in the affected group. We choose alternatively 150 percent and 130 percent of the new minimum wage. This yields about two to four times as many affected workers as our original measure. The bottom panel of Table 3 reports the relative minimum wage measures, i.e. the minimum wage divided by the

¹²It is also possible that respondents receiving tips do not include these in the wage measure.

state, regional, or state/gender median for older workers. The changes in these measures over time reflect again the increases in various state minimum wages and the federal increases in 1990 and 1991.

6.1 Results Using Affected Workers

Regression results for the first differenced version of the model are displayed in Table 4. Apart from the minimum wage effect, the regressions include a constant (capturing any linear effects of age), a full set of time dummies and variables for the change in high school graduation status and for whether the worker took a new job. The coefficients on these covariates are quite sensible. High school graduates are 7 percentage points more likely to receive training. This effect is imprecisely estimated because there are few workers who acquire a high school degree or equivalent during the sample period. Workers starting a new job are 3 percentage points more likely to receive training and this effect is estimated quite precisely. These estimates are sensible and demonstrate that the training variable is able to pick up the expected variation in the data.

The coefficients on the variable for affected workers are directly interpretable as the effect of raising the minimum wage on the incidence of training. The four different specifications correspond to four different definitions of the “affected” variable. In column (1), we define all workers whose wage in the previous year is below the current minimum as affected. The point estimate indicates that being affected by a minimum wage increase raises the probability of receiving training by 1 percentage point. The effect is not significant, however, and a 95 percent confidence interval includes negative effects as large as 1.8 percentage points.

The specification in column (1) counts workers who were reporting wages below the previous minimum in the base year as affected. While we prefer this specification, as discussed above, it is possible that some of the wages below the initial minimum refer to uncovered workers. Therefore we exclude these workers from the affected group in the second column. The results are not very different. Neither of the previous specifications allows spillovers of the minimum wage on workers with slightly higher wages. If we redefine the affected group as workers whose previous wage was within 150 or 130 percent of the new minimum wage in columns (3) and (4), we find basically zero effects of minimum wages on training, but these specifications may count too many workers as affected.

The training question that we use includes very short training programs, and it is important to ensure that our results are not sensitive to eliminating these short spells. With this purpose, we also repeated these regressions excluding training spells lasting

a single day or less. We obtain slightly smaller coefficients for affected workers, ranging from 0.004 for the measure in column (2) to -0.013 for the measure in column (4), while the standard errors were basically unchanged.

Overall, the results contrast sharply with the predictions of the standard theory. The standard model predicts that all general training should be eliminated for workers affected by a minimum wage increase. The average incidence of training in the sample is about 10 percent, but this may not be the right baseline, since it includes higher wage workers not affected by the minimum wage. Average training incidence for workers affected by a minimum wage increase in the following year is 5.2 percent for the measure of affected workers used in column (1). The 95 percent confidence interval is consistent with declines in training as large as 1.8 percentage points. This means we can reject that the minimum wage eliminates more than a third of the training in this group. Similar conclusions are obtained for the other measures of affected workers.

Since according to the standard theory, an increase in the minimum wage should eliminate all general training among affected workers, our results could only be consistent with the standard theory if most training is specific. But Loewenstein and Spletzer (1997) find in later waves of the NLSY 63 percent of all training to be general, and in another 14 percent of training programs, most of the skills are reported to be general. They find similar results with other datasets as well. We can therefore reject the strongest implication of the standard theory that minimum wages should wipe out all training for affected workers. However, we cannot rule out that minimum wages simply reduce training for affected workers, without completely eliminating it. Nevertheless, our results indicate a substantially smaller effect of minimum wages on training than the estimates in the previous literature.¹³

6.2 Results Using Minimum Wage Changes

While the results in Table 4 indicate no adverse effects of minimum wages on training, our methodology differs somewhat from the previous literature. In this section we present alternative results based on the regression equation (12). The sample we use in this section also includes workers who move from state to state between interviews, but this sample differs little from the non-mover sample.

Recall that this sample contains many workers not directly affected by the minimum wage, so it is natural to worry about whether minimum wages will have a significant effect on the earnings of workers in this sample, since in the absence of such a finding,

¹³For example, as we discussed in Section 2, Neumark and Wascher's (1998) estimates imply that minimum wages reduce training among workers close to the minimum wage by much more than the existing amount of training.

we may expect no effect on training incidence either. Before turning to the impact of minimum wages on training, we therefore look at the effect of the minimum wage on actual wages. Table 5 displays quantile regression estimates of the real wage of workers in this sample on the real value of the minimum wage and a full set of year and state dummies. The first feature of the results is that low quantiles of the wage distribution are affected by changes in the minimum wage, which shows that minimum wages do have an effect on the wages of low paid workers. So according to the standard theory, there should be a negative effect on training.

A one dollar increase in the minimum wage raises wages of the 10th percentile worker in the NLSY by 37 cents, which may seem small. The second column in the table replicates these results with a comparable sample using the CPS outgoing rotation groups, with similar results, showing that these results are not particular to the NLSY. There are various reasons to expect why the coefficients even at the low quantiles should be less than one. There is certainly much measurement error in the wage reports of workers, biasing these coefficients down. Furthermore, Table 2 revealed that even workers at the 10th percentile will typically earn above the old minimum wage already, and therefore they may not receive the full increase when the minimum wage goes up. Nevertheless, the results in Table 5 show that workers as high as the 30th percentile of the wage distribution may be affected by minimum wage changes, and therefore their training may also be affected.

Table 5 also shows that there are many workers in this sample who are not affected by minimum wages. This means that our estimates of training effects will tend to be biased towards zero. This motivates our strategy to compare our basic results to those in the lower wage sample using only workers earning less than 150 percent of the federal minimum wage in the previous year, corresponding roughly to the workers up to the 30th percentile of the original sample. This sample more closely approximates the workers actually affected by the minimum wage or by spillovers resulting from the minimum. If the results in the larger sample are biased towards zero, then the more restrictive sample should lead to more extreme estimates.

Table 6 presents our regression results for the incidence of training on the minimum wage and relative minimum wage measures. We present four sets of regressions with and without time and region fixed effects, as well as one specification which includes individual instead of region fixed effects.¹⁴ Other covariates in the regressions are dummies for blacks, Hispanics, females, high school graduates, and whether the individual

¹⁴If training this year makes it less likely that the individual will be trained in the future, the individual effects model may be problematic. However, in our sample, training is positively correlated over time.

started a new job during the year, and a linear variable for age.¹⁵ The coefficients on the demographic covariates are again sensible. Minorities receive significantly less training. Contrary to the typical finding in the literature, women receive as much training as men in this low wage group. High school dropouts receive less training, and workers starting new jobs receive more training. Not surprisingly, this latter effect is strongest when individual effects are controlled for.

If no region or time effects are included, the effect of the minimum wage measure is positive and significant. This reflects that states with higher minimum wages tend to have more training. Because these states tend to have higher wages in general, this may simply mean that high and low wage states differ, for example in terms of their industrial and occupational structure. In fact, the positive result in column (2) vanishes when we look at the relative minimum wage measures below or when we control for state and time effects in column (4). This latter specification, which we prefer, suggests that higher minimum wages have a small negative effect on training. The federal minimum wage increased by 81 cents in real terms from 1989 to 1991. This increase led to about 0.6 percentage points less of training. We find similar results including individual fixed effects instead of state effects in column (5).¹⁶

The estimates are more negative if we look at the low wage sample in row 2. Unfortunately, these results are very imprecisely estimated and are consistent with both substantial negative and positive effects. One reason for this is that the minimum wage variable we are using in the first two rows does not exploit a relevant part of the information, which is that a given level of the minimum wage will have very different effects depending on how high wages are in a region. To exploit this information, we next turn to the relative minimum wage measures.

Rows 3 and 4 of the table report results where we divide the minimum wage by the median wage of older males in the state. The specification which exploits primarily the cross region variation in the minimum wage measure in column (2) now results in a moderate negative coefficient. In row 5 below, where we use more detailed regions and obtain more precise results, this coefficient is even significant. This specification compares most closely to the approach of Leighton and Mincer (1981). But the results in columns (4) or (5), which are much closer to zero, indicate again that the minimum wage measure was picking up across region differences in training incidence. We feel

¹⁵Curvature of the age profile is empirically unimportant for the small age range in the sample, therefore we do not include higher order terms.

¹⁶In the specification with individual fixed effects, only the region*time clusters remain in the error term. The standard Huber estimator allowing for these clusters is consistent. Our standard errors in column (5) are therefore the most reliable. Interestingly, the standard errors on the minimum wage variable do not differ substantially from those in column (4).

that the estimates including time and region or individual effects are most reliable. Some of the time variation of our training measure is likely due to the change in the survey questions and cyclical variations. Differences in training incidence across regions may reflect differences in industrial and occupational compositions. The negative effect of the minimum wage in column (2) is therefore likely to reflect the fact that higher wage regions tend to have more training. The results including time and region effects, which are the most reliable, do not indicate any negative effects of minimum wages on training.¹⁷

In order to interpret the magnitudes of the estimates and confidence intervals using this relative measure of the minimum wage, return to the bottom panel of Table 3. The relative minimum wages increased by about 5 to 6 percentage points from 1989 to 1991. To gauge the impact of the federal increases, it is more useful to calculate the means only for the states that were subject to the federal minimum in 1989. For these states, the federal increases raised the relative minimum wage measures by 0.07 using the male state or region medians, and by 0.08 using the state/gender medians. This means that a 95 percent confidence interval for the estimates in column (4) using state medians for the unrestricted sample excludes negative changes in training of 2.9 percentage points or larger in response to the federal increases. It is instructive to compare this result to the findings by Neumark and Wascher (1998), for example. Their point estimates imply that the California state minimum wage (which was similar in magnitude to the federal increase between 1989 and 1991) led to a decline in formal training of 3.2 percentage points among young workers age 20-24, a group with a similar average training incidence as our sample. We can reject a decrease of this size for our sample.

Looking at the low wage sample, we obtain a virtually identical point estimate when we include time and state effects. When we include individual instead of state effects, the point estimate is actually positive now. Thus, the results with the low wage sample do not indicate that the estimates for the basic sample were attenuated. These conclusions are unchanged when we look at the minimum wage measure scaled by alternative values of the median wage. In rows 5 and 6, we use the median wage for 136 regions smaller than the states. We find small positive point estimates for the basic sample, and slightly larger estimates in the low wage sample. To the degree that these results indicate attenuation in the basic sample, they suggest that the actual effect of minimum wages on training is positive, rather than negative. The within estimates using these smaller regions turn out not to be any more precise than the state results, however.

¹⁷Our theory predicts that minimum wages reduce employment, but our samples focus on employed workers. This might bias our estimates up. When we use a sample of respondents including non-workers, we actually find slightly more positive results, however.

The last two rows in Table 7 present results scaling the minimum wage by the median wage for older workers in the same state and of the same gender as the respondent. The results for the basic sample are again rather similar to the previous measures. The results are now somewhat more precise, because there is more variation in the measure exploiting gender differences. For the low wage sample, the results are a bit different. Controlling for time and state effects, we now find a negative effect for minimum wages. However, this result is not replicated when we control for individual effects instead. In addition, if we tighten the low wage sample further to include only workers who earned less than 130 percent of the federal minimum wage in the previous year, we find a coefficient of 0.097 (with a standard error of 0.294). We conclude that the negative estimate for the low wage sample is much more likely an indication of the sampling variation of these estimates rather than evidence that the estimates for the basic sample are attenuated.

7 Concluding Remarks

Standard theory of human capital makes an unambiguous prediction regarding the impact of minimum wages: training should decline for affected workers, because workers finance the provision of the general component of training by taking lower wages, and minimum wages prevent this. We show that this conclusion is not robust. In labor markets where employers obtain rents from the employment relationship, the theory has quite different implications regarding the impact of minimum wages on training. While minimum wages reduce training for some workers as in the standard theory, they also encourage firm-sponsored training and increase human capital investments for other workers. Therefore, our model predicts offsetting effects of minimum wages on training, and is even consistent with minimum wages increasing training investments.

In the second part of the paper, we provided some new empirical evidence on the impact of minimum wages on training. Focusing on workers actually affected by minimum wage changes we find no evidence that minimum wages reduce training. In addition, we can reject negative estimates of the magnitude previously found in the literature. This result is not an artefact of our methodology, since we find comparable results using specifications which are more similar to previous studies. We obtain the most negative estimates when we simply regress training on the real minimum wage within states. However, these estimates are also the most imprecise, and therefore the least informative. When we rely on relative minimum wage measures, thus better exploiting the differential impact of the changes in the federal minimum wage, we find no negative effects on training. We probe these results by comparing estimates from a larger base-

line sample to those from a smaller sample of low wage workers. The baseline sample resembles what other researchers have used, in that it includes many workers unaffected by the minimum wage. If these unaffected workers simply obscure the impact of the minimum wage on training, we should find systematically more negative effects using low wage workers, but this is not the case, once again suggesting that binding minimum wages do not reduce training.

A drawback of our analysis is that we only focus on rather formal training. Possibly a much larger part of on-the-job learning in low wage jobs is more informal. It is plausible that formal and informal training are positively related, but our analysis does not shed any direct light on the receipt of less formal training. The NLSY introduced more extensive questions on informal training starting in 1993. Unfortunately, this is a period with little dispersion in minimum wage changes, and the NLSY sample is also aging so that fewer workers receive the minimum in the 1990s.

8 Appendix 1: First Period Wages With Worker Heterogeneity

First, take a η_i satisfying $w_M > \phi\eta_i$, then $\Pi_j(\eta_i) = \Pi_j = k^* - k_j$ solves for

$$w_1(\eta_i, T) = \max \{w_M, (\phi + \theta)\eta_i + \delta - w_M - k^* - c\}. \quad (14)$$

So (14) gives first period wages when the minimum wage is binding.

In contrast, we could have $w_M \in (\eta_i - c, \phi\eta_i)$, that is the minimum wage is binding in the second period if worker i is not trained, but does not bind when he is trained. Then, $\Pi_j(\eta_i) = \Pi_j = k^* - k_j$ solves for

$$w_1(\eta_i, T) = \max \{w_M, \theta\eta_i + \delta - k^* - c\}.$$

Next, if η_i satisfies (9), then by construction, worker i takes a wage cut in the first period to obtain training, so:

$$w_1(\eta_i, T) = \theta\eta_i + \delta - k^* - c > w_M.$$

Finally, if (8) and (9) do not hold, then,

$$w_1(\eta_i, NT) = \max \{w_M, (1 + \theta)\eta_i + \delta - k^*\},$$

which completes the characterization of first period wages for given k^* .

9 Appendix 2: Construction of Regions

Some of the minimum wage measures used in this paper scale the state minimum wage level by a regional reference wage. An NLSY respondent's reference wage is the median wage in his/her geographic region for 35-54 year old male workers calculated from the CPS Outgoing Rotation Groups. This appendix explains how the regions were constructed.

To account for the fact that there is significant variation in average wages within many states, and to allow the minimum wage measure to have greater within-state variation, we used information on an NLSY respondent's CMSA/MSA of residence, ("msa_code"). Because of sample sizes, we used msa_code only for individuals residing in the large MSAs. For all other areas (i.e., smaller MSAs and non-MSAs), we used data on whether an individual resided in an MSA ("msa_status").

The following list contains the 35 MSAs we classified as large. We included the 20 CMSAs defined by the 1990 FIPS Guidelines (plus the St. Louis, MO CMSA, while we

do not distinguish the Providence, RI CMSA from other metropolitan parts of RI) and added 15 MSAs with large populations.

Atlanta, GA
Baltimore, MD
Boston-Lawrence-Salem, MA-NH CMSA
Buffalo-Niagara Falls, NY CMSA
Chicago-Gary Lake County, IL-IN CMSA
Cincinnati-Hamilton, OH-KY CMSA
Cleveland-Akron-Lorraine, OH CMSA
Columbus, OH
Dallas-Fort Worth, TX CMSA
Denver-Boulder, CO CMSA
Detroit-Ann Arbor, MI CMSA
Hartford-New Britain-Middletown, CT CMSA
Houston, TX CMSA
Indianapolis, IN
Kansas City, KS
Los Angeles-Anaheim-Riverside, CA CMSA
Miami-Ft. Lauderdale, FL CMSA
Milwaukee-Racine, WI CMSA
Minneapolis-St. Paul, MN
New Orleans, LA
New York-New Jersey-Long Island, NY-NJ-CT CMSA
Norfolk-Virginia Beach-Newport News, VA
Orlando, FL
Philadelphia-Wilmington-Trenton, PA-DE-NJ CMSA
Phoenix , AZ
Pittsburgh-Beaver Valley, PA CMSA
Portland-Vancouver, OR CMSA
Sacramento, CA
St. Louis, MO CMSA
San Antonio, TX
San Diego, CA
San Francisco-Oakland-San Jose, CA CMSA
Seattle-Tacoma, WA CMSA
Tampa-St. Petersburg-Clearwater, FL
Washington, DC, DC-MD-VA

The full set of regions consists of state-`msa_code` level regions for the above 35 MSAs and state-`msa_status` level regions for all other areas. The example of an individual living in Massachusetts illustrates how the reference wage is chosen. If the individual lived in the Boston CMSA, the reference wage would be the median wage for 35-54 year old male workers living in the Massachusetts part of the Boston CMSA (the “MSA median”). If the individual lived in a metropolitan area other than the Boston CMSA, the reference wage would be the median wage for 35-54 year old male workers living in Massachusetts metropolitan areas other than the Boston CMSA. If the individual lived in a non-metropolitan area, the reference wage would be the median wage for 35-54 year old male workers living in Massachusetts non-metropolitan areas (“non-MSA median”).

For confidentiality reasons, both the NLSY and CPS sometimes suppress the specific MSA of residence for individuals in smaller MSAs and/or smaller states. In the CPS data, there were five states in which `msa_status` was sometimes suppressed: Maryland, Nevada, Rhode Island, Utah and Wyoming. We classified these suppressed observations as non-MSA, with the following rationale. In Maryland, the suppressed observations are from the Maryland part of the Philadelphia CMSA. In Nevada, they are from the non-central city part of the Reno MSA. In Rhode Island, they are from the Rhode Island part of the New London MSA. In Utah, they are from the Utah part of the Flagstaff MSA. Finally, no MSAs in Wyoming are identified. For all five states, an individual was either classified as living in an MSA or the information was suppressed, i.e. observations from fringes of MSAs were grouped with the non-MSA observations to ensure confidentiality. Thus, classifying all the individuals living in areas with suppressed codes as non-MSA seems the most sensible choice.

In addition, there are MSAs which straddle different states and sometimes part of an MSA in a particular state is not identified if the part is too small. This was the case for: the Indiana part of the Cincinnati MSA, the Maryland part of the Philadelphia CMSA, the North Carolina part of the Norfolk MSA and the Wisconsin part of the Chicago CMSA and Minneapolis MSA. The CPS groups these areas with other metropolitan areas, and thus it is appropriate to use the state-MSA median for these observations in the NLSY. Finally, in Maryland, the Cumberland, MD-WV MSA and the Hagerstown, MD MSA are not separately identified. Here we assign the non-MSA median since Maryland’s non-MSA median is really a median excluding the Baltimore and Washington, D.C. MSAs.

In the NLSY data, there were two complications. First, as in the CPS, `msa_status` was suppressed for certain individuals. We dropped the suppressed observations (62 out of 21,680 observations from the Basic Sample). Second, the NLSY uses NECMAs for the New England states whereas the CPS uses CMSA/MSAs. The NLSY switched to

NECMA codes in 1988; we constructed the NECMA codes for 1987 by using information on state and county of residence. We then mapped NECMA codes into MSA codes. Specifically, individuals living in the Boston NECMA or Hartford NECMA were classified as living in the Boston CMSA and Hartford CMSA, respectively. Also, individuals living in any NECMA were classified as living in an MSA.

All together, the unrestricted NLSY sample contains 21,618 observations from 136 regions and 753 region-year categories. Of the 136 regions, 44 correspond to state-msa.code level regions, 45 to state-MSA level regions and 47 to state-non-MSA regions. These regions form a partition of the country. The median number of observations in each region-year cell in the CPS is 274 and the range is 27 (for the Indiana part of the Chicago CMSA in 1991) to 2261 (the Los Angeles CMSA in 1990). Less than 10 percent of all cells have fewer than a 100 observations and less than 5 percent of the NLSY observations fall into those cells.

10 Appendix 3: Estimation of the Standard Errors

We assume that the error term has the form $\varepsilon_{ij} = \lambda_i + v_j + \xi_{ij}$ where i denotes individual and j denotes region*time. Let x_{ij} be a vector of right-hand side variables,

$$X_i = \begin{bmatrix} x'_{i1} \\ x'_{i2} \\ \dots \\ x'_{iJ} \end{bmatrix}$$

the matrix of right-hand side variables for individual i , and X the stacked matrix of all the X_i 's. To simultaneously adjust for individual and region*time effects, we use the covariance matrix

$$\hat{V} = (X'X)^{-1}X'\Omega X(X'X)^{-1}$$

where

$$X'\Omega X = \sum_i X'_i \hat{\varepsilon}_i \hat{\varepsilon}'_i X_i + \sum_{i \neq k} \sum_j \hat{\varepsilon}_{ij} \hat{\varepsilon}_{kj} x_{ij} x'_{kj}.$$

In order to get an idea how this covariance estimator performs in our sample, we conducted a small Monte Carlo experiment. For this experiment we generated samples with the same number of observations, individuals, regions, and time periods as in our unrestricted sample according to the design

$$\begin{aligned} y_{ij}^* &= 0.4 + 0.1x_{1ij} + 0.1x_{2j} + 0.1x_{3i} + \lambda_i + v_j + \xi_{ij} \\ y_{ij} &= \begin{cases} 1 & \text{if } p \leq y_{ij}^* \\ 0 & \text{if } p > y_{ij}^* \end{cases} \end{aligned}$$

where p and each of the x 's are drawn from a uniform (0,1) distribution and $\lambda_i, v_j, \xi_{ij} \sim N(0,0.1)$. In regression 1, we computed the OLS estimate of y on the three x 's and constructed the covariance matrix above. In regression 2, we estimated the regression of y on the x 's also including region and time fixed effects. We replicated each regression 10000 times with the following results:

regressor	Regression 1			Regression 2		
	x_{1ij}	x_{2j}	x_{3i}	x_{1ij}	x_{2j}	x_{3i}
standard deviation of $\hat{\beta}$	0.0116	0.0320	0.0126	0.0116	0.0355	0.0124
mean of estimated standard error	0.0116	0.0314	0.0124	0.0115	0.0304	0.0122
Year Effects		No			Yes	
Region Effects		No			Yes	

Regression 1 indicates that the covariance estimator does a good job in estimating the sampling variation for all regressors. However, in regression 2, the sampling variation for x_{2j} , which only varies at the region*time level, i.e. the analogue to our minimum wage measure, is understated by about 15 percent. Of course, these results are only suggestive. In our design, v_j contributes a third to the total variance of the error term. The results would change as we change the relative variances of this error component.

References

- [1] Acemoglu, Daron and Jörn-Steffen Pischke (1999a) "Beyond Becker: Training in imperfect labor markets," *Economic Journal Features* 109, F112-142.
- [2] Acemoglu, Daron and Jörn-Steffen Pischke (1999b) "The structure of wages and investment in general training," *Journal of Political Economy* 107, 539-572.
- [3] Becker, Gary (1964) *Human capital*. Chicago: The University of Chicago Press.
- [4] Ben-Porath, Yoram (1967) "The production of human capital over the life cycle," *Journal of Political Economy* 75, 352-365.
- [5] Card, David (1992) "Using regional variation in wages to measure the effect of the federal minimum wage," *Industrial and Labor Relations Review* 46, 22-37.
- [6] Card, David and Alan B. Krueger (1995) *Myth and measurement. The new economics of the minimum wage*. Princeton: Princeton University Press.
- [7] DiNardo, John, Nicole Fortin and Thomas Lemieux (1996) "Labor market institutions, and the distribution of wages, 1973-1992: A semiparametric approach," *Econometrica* 64, 1001-1044.
- [8] Grossberg, Adam J. and Paul Sicilian (1999) "Minimum wages, on-the-job-training, and wage growth," *Southern Economic Journal* 65, 539-556.
- [9] Hashimoto, Masanori (1982) "Minimum wage effects on training on the job," *American Economic Review* 72, 1070-1087.
- [10] Lee, David (1999) "Wage inequality in the U.S. during the 1980s: Rising dispersion or falling minimum wage?" *Quarterly Journal of Economics* 114, forthcoming.
- [11] Leighton, Linda and Jacob Mincer (1981) "The effects of the minimum wage on human capital formation," in Simon Rottenberg (ed.) *The economics of legal minimum wages*. Washington: American Enterprise Institute for Public Policy Research, 155-173.
- [12] Loewenstein, Mark A. and James R. Spletzer (1997) "General and specific training: Evidence from the NLSY," mimeographed, Bureau of Labor Statistics.
- [13] Loewenstein, Mark A. and James R. Spletzer (1999) "Formal and informal training: Evidence from the NLSY," in Solomon Polachek (ed.) *Research in labor economics*, vol. 18, Greenwich, CT: JAI Press.

- [14] Mincer, Jacob (1974) *Schooling, Experience, and Earnings*. New York: Columbia University Press.
- [15] Moulton, Brent R. (1986) "Random group effects and the precision of regression estimates," *Journal of Econometrics* 32, 385-397.
- [16] Neumark, David and William Wascher (1998) "Minimum wages and training revisited," NBER Working Paper No. 6651.
- [17] Rosen, Sherwin (1972) "Learning and experience in the labor market," *Journal of Human Resources* 7, 326-342.
- [18] Schiller, Bradley R. (1994) "Moving up: The training and wage gains of minimum-wage entrants," *Social Science Quarterly* 75, 622-636

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Table 1
Minimum Wage and Relative Minimum by State and Year

State	Statutory Minimum Wage						Minimum Wage/Avg. Median Wage Age 35-54					
	1987	1988	1989	1990	1991	1992	1987	1988	1989	1990	1991	1992
Alabama	3.35	3.35	3.35	3.80	4.25	4.25	0.308	0.306	0.305	0.344	0.383	0.381
Alaska	3.85	3.85	3.85	4.30	4.75	4.75	0.215	0.214	0.213	0.237	0.260	0.259
Arizona	3.35	3.35	3.35	3.80	4.25	4.25	0.262	0.261	0.260	0.293	0.326	0.325
Arkansas	3.35	3.35	3.35	3.80	4.25	4.25	0.342	0.341	0.339	0.382	0.426	0.424
California	3.35	3.35/4.25	4.25	4.25	4.25	4.25	0.234	0.279	0.294	0.292	0.291	0.290
Colorado	3.35	3.35	3.35	3.80	4.25	4.25	0.245	0.244	0.243	0.274	0.305	0.304
Connecticut	3.37/3.75	3.75/4.25	4.25	4.25	4.27	4.27	0.236	0.265	0.279	0.277	0.277	0.276
Delaware	3.35	3.35	3.35	3.80	4.25	4.25	0.242	0.241	0.240	0.270	0.301	0.300
Florida	3.35	3.35	3.35	3.80	4.25	4.25	0.304	0.303	0.302	0.340	0.378	0.377
Georgia	3.35	3.35	3.35	3.80	4.25	4.25	0.290	0.288	0.287	0.324	0.360	0.359
Hawaii	3.35/3.85	3.85	3.85	3.85	4.25	4.75/5.25	0.251	0.276	0.275	0.273	0.300	0.343
Idaho	3.35	3.35	3.35	3.80	4.25	4.25	0.296	0.294	0.293	0.330	0.368	0.366
Illinois	3.35	3.35	3.35	3.80	4.25	4.25	0.239	0.238	0.237	0.268	0.298	0.297
Indiana	3.35	3.35	3.35	3.80	4.25	4.25	0.281	0.280	0.279	0.314	0.350	0.348
Iowa	3.35	3.35	3.35/3.85	3.85/4.25	4.25/4.65	4.65	0.285	0.283	0.293	0.330	0.363	0.386
Kansas	3.35	3.35	3.35	3.80	4.25	4.25	0.270	0.269	0.267	0.301	0.335	0.334
Kentucky	3.35	3.35	3.35	3.80	4.25	4.25	0.291	0.290	0.288	0.325	0.362	0.361
Louisiana	3.35	3.35	3.35	3.80	4.25	4.25	0.289	0.288	0.286	0.323	0.359	0.358
Maryland	3.35	3.35	3.35	3.80	4.25	4.25	0.235	0.234	0.233	0.262	0.292	0.291
Massachusetts	3.55/3.65	3.65/3.75	3.75	3.80	4.25	4.25	0.250	0.256	0.256	0.258	0.287	0.286
Michigan	3.35	3.35	3.35	3.80	4.25	4.25	0.231	0.230	0.229	0.258	0.287	0.286
Minnesota	3.35/3.55	3.55/3.85	3.85/3.95	3.95/4.25 ¹	4.25	4.25	0.256	0.272	0.288	0.292	0.312	0.311
Mississippi	3.35	3.35	3.35	3.80	4.25	4.25	0.340	0.339	0.337	0.380	0.423	0.422
Missouri	3.35	3.35	3.35	3.80	4.25	4.25	0.279	0.278	0.277	0.312	0.348	0.346
Montana	3.35	3.35	3.35	3.80	4.25	4.25	0.292	0.290	0.289	0.326	0.363	0.361
Nebraska	3.35	3.35	3.35	3.80	4.25	4.25	0.303	0.302	0.300	0.338	0.377	0.375
Nevada	3.35	3.35	3.35	3.80	4.25	4.25	0.266	0.265	0.264	0.297	0.331	0.330
New Hampshire	3.45/3.55	3.55/3.65	3.65/3.75	3.75/3.85	4.25	4.25	0.257	0.263	0.269	0.277	0.308	0.307
New Jersey	3.35	3.35	3.35	3.80	4.25	5.05	0.216	0.216	0.214	0.242	0.269	0.319
New Mexico	3.35	3.35	3.35	3.80	4.25	4.25	0.284	0.283	0.281	0.317	0.353	0.352
New York	3.35	3.35	3.35	3.80	4.25	4.25	0.238	0.237	0.236	0.266	0.296	0.295
North Carolina	3.35	3.35	3.35	3.80	4.25	4.25	0.315	0.313	0.312	0.352	0.391	0.390
North Dakota	3.35	3.35	3.35	3.80	4.25	4.25	0.291	0.290	0.288	0.325	0.361	0.360
Ohio	3.35	3.35	3.35	3.80	4.25	4.25	0.260	0.259	0.258	0.291	0.324	0.322
Oklahoma	3.35	3.35	3.35	3.80	4.25	4.25	0.282	0.281	0.279	0.315	0.350	0.349
Oregon	3.35	3.35	3.35/4.25 ²	4.25/4.75	4.75	4.75	0.262	0.261	0.287	0.336	0.364	0.363
Pennsylvania	3.35	3.35/3.70	3.70	3.80	4.25	4.25	0.269	0.273	0.294	0.300	0.334	0.333
Rhode Island	3.55/3.65	3.65/4.00	4.00/4.25	4.25	4.45	4.45	0.281	0.302	0.321	0.324	0.338	0.337
South Carolina	3.35	3.35	3.35	3.80	4.25	4.25	0.305	0.304	0.302	0.341	0.379	0.378
South Dakota	3.35	3.35	3.35	3.80	4.25	4.25	0.337	0.336	0.334	0.377	0.420	0.418
Tennessee	3.35	3.35	3.35	3.80	4.25	4.25	0.331	0.329	0.328	0.370	0.411	0.410
Texas	3.35	3.35	3.35	3.80	4.25	4.25	0.280	0.279	0.278	0.313	0.348	0.347
Utah	3.35	3.35	3.35	3.80	4.25	4.25	0.259	0.258	0.256	0.289	0.322	0.320
Vermont	3.45/3.55	3.55/3.65	3.65/3.75	3.85	4.25	4.25	0.306	0.313	0.320	0.324	0.361	0.360
Virginia	3.35	3.35	3.35	3.80	4.25	4.25	0.252	0.251	0.249	0.281	0.313	0.312
Washington	3.35	3.35/3.85	3.85/4.25	4.25	4.25	4.25	0.236	0.244	0.277	0.294	0.293	0.292
West Virginia	3.35	3.35	3.35	3.80	4.25	4.25	0.294	0.293	0.292	0.329	0.366	0.365
Wisconsin	3.35	3.35	3.35/3.65	3.80	4.25	4.25	0.270	0.269	0.286	0.302	0.336	0.335
Wyoming	3.35	3.35	3.35	3.80	4.25	4.25	0.263	0.262	0.261	0.294	0.327	0.326

¹ Minnesota: Only large employers covered by the new 1991 minimum wage.

² Oregon: Minimum wage changed from 3.35 to 3.85 and then 4.25 during the year.

Notes: Left hand panel of the table shows the higher of the state or federal minimum wages in each state and year. Years begin in April of the year shown until March of the following year. Multiple minima are shown if the state minimum changed during the April to March period. The right hand panel of the table shows the minimum wage divided by the average median wage for male workers 35-54 years old in the state during the 1987 to 1992 period.

Table 2
Sample Means of Demographics
(Standard Deviations in Parentheses)

<i>Variable</i>	<i>Non-mover Sample</i>		<i>Unrestricted Sample</i>		<i>Low Wage Sample</i>	
	<i>1988</i>	<i>1992</i>	<i>1987</i>	<i>1992</i>	<i>1987</i>	<i>1992</i>
Female	0.434	0.428	0.432	0.427	0.527	0.602
Black	0.134	0.132	0.128	0.133	0.169	0.203
Hispanic	0.067	0.067	0.064	0.067	0.061	0.073
Age	27.2	31.2	26.2	31.2	25.8	31.1
Less than High School	0.187	0.171	0.192	0.173	0.262	0.240
New Job	0.273	0.216	0.268	0.220	0.338	0.323
Nominal Hourly Wage	8.16 (5.36)	9.71 (6.54)	7.58 (5.51)	9.70 (6.52)	5.12 (2.57)	5.91 (2.82)
Real Hourly Wage (1982-84 \$)	7.30 (4.79)	8.52 (5.73)	6.81 (4.95)	8.51 (5.72)	4.60 (2.30)	5.18 (2.47)
Fraction Earning Minimum or Less	0.042	0.058	0.068	0.059	0.155	0.162
Number of Observations	3872	3094	3979	3136	1673	1048

Notes: Unbalanced panel from the NLSY. Unrestricted sample consists of individual-year observations that have high school education or less, work in at least one month of the year and in both the prior and current year have non-missing wage data. Non-mover sample excludes from the unrestricted sample individuals who have moved to a new state since the previous year. Low wage sample imposes on the unrestricted sample the restriction that the "CPS wage" in the previous year is less than or equal to 150% of the federal minimum wage. Year refers to April to March (of following calendar year). New job refers to the start of any new job during the year. Hourly wage is the "CPS wage" for workers employed at a "CPS job" only. NLSY data include black, Hispanic and poor white oversamples. The poor white oversamples were discontinued in the 1991 survey year, accounting for the lower number of observations in 1992. Statistics are weighted by the NLSY sampling weights.

Table 3
Sample Means of Key Variables
(Standard Deviations in Parentheses)

<i>Variable</i>	<i>1987</i>	<i>1988</i>	<i>1989</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>
<i>Non-mover Sample</i>						
Training Incidence		0.099	0.099	0.106	0.094	0.103
Nominal Minimum Wage		3.44 (0.21)	3.51 (0.29)	3.87 (0.16)	4.26 (0.05)	4.28 (0.15)
Minimum wage increased and wage in prior year is below the current minimum wage		0.014	0.020	0.069	0.091	0.001
Minimum increased and wage in prior year is below the current minimum and above prior year minimum		0.007	0.008	0.034	0.050	0.034
Minimum wage increased and wage in prior year is below 150 % of the current minimum wage		0.062	0.085	0.263	0.293	0.011
Minimum wage increased and wage in prior year is below 130% of the current minimum wage		0.041	0.058	0.166	0.204	0.007
Number of Observations		3872	3793	3187	3122	3094
<i>Unrestricted Sample</i>						
Training Incidence	0.064	0.099	0.100	0.107	0.094	0.102
Nominal Minimum Wage	3.36 (0.06)	3.44 (0.21)	3.51 (0.29)	3.87 (0.16)	4.26 (0.05)	4.29 (0.15)
Real Minimum Wage (1982-84 \$)	3.02 (0.05)	3.08 (0.19)	3.12 (0.26)	3.42 (0.14)	3.75 (0.05)	3.76 (0.13)
Minimum Wage/Median Wage (men 35-54, states)	0.267 (0.030)	0.271 (0.027)	0.276 (0.028)	0.301 (0.031)	0.331 (0.038)	0.332 (0.037)
Minimum Wage/Median Wage (men 35-54, regions)	0.272 (0.043)	0.277 (0.041)	0.282 (0.042)	0.307 (0.045)	0.338 (0.053)	0.340 (0.051)
Minimum Wage/Median Wage (35-54, state and gender)	0.324 (0.077)	0.330 (0.076)	0.336 (0.078)	0.366 (0.086)	0.402 (0.097)	0.404 (0.097)
Fraction Earning Minimum or Less	0.068	0.044	0.050	0.047	0.072	0.059
Number of Observations	3979	4043	3958	3295	3207	3136

Notes: See Table 2 for a description of the sample composition. Training incidence refers to employment related training. Minimum wage refers to the higher of the state or federal minimum applicable to an NLSY respondent. Median wage for 35-54 year old workers are calculated from the CPS Outgoing Rotation Groups. The poor white oversamples were discontinued in the 1991 survey year, accounting for the lower number of observations in 1990 to 1992. Statistics are weighted by the NLSY sampling weights.

Table 4
The Effect of Minimum Wage Increases on Affected Workers

<i>Independent Variable</i>	<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>
Minimum wage increased and wage in prior year is below the current minimum wage	0.010 (0.014)	--	--	--
Minimum increased and wage in prior year is below the current minimum and above prior year minimum	--	0.016 (0.019)	--	--
Minimum wage increased and wage in prior year is below 150 % of the current minimum wage	--	--	0.005 (0.008)	--
Minimum wage increased and wage in prior year is below 130% of the current minimum wage	--	--	--	-0.002 (0.010)
Change in high school graduation status	0.070 (0.053)	0.070 (0.054)	0.070 (0.054)	0.070 (0.054)
Change in new job status	0.032 (0.008)	0.032 (0.008)	0.032 (0.008)	0.032 (0.008)

Notes: Non-mover sample, consisting of all workers with a high school education or less, who do not move between states from one year to the next. Dependent variable is the change in training incidence between two consecutive years. All regressions also include a constant and year dummies. Regressions are weighted by NSLY sampling weights. Standard errors are adjusted for the presence of individual effects in the error term, and therefore robust to the MA structure of the error. Sample size is 17074.

Table 5
Quantile Regressions for Real Wage on Real Minimum Wage
Unrestricted Sample

<i>Quantile</i>	<i>NLSY</i>	<i>CPS</i>
0.10	0.376 (0.087)	0.247 (0.024) [0.084]
0.20	0.156 (0.105)	0.137 (0.011) [0.109]
0.30	0.146 (0.163)	0.052 (0.016) [0.121]
0.40	0.049 (0.158)	0.032 (0.045) [0.102]
0.50	0.137 (0.178)	0.000 (0.025) [0.111]
0.60	0.029 (0.173)	0.130 (0.053) [0.113]
0.70	-0.120 (0.247)	0.030 (0.043) [0.135]
0.80	0.296 (0.446)	0.011 (0.044) [0.198]
0.90	0.312 (0.593)	0.157 (0.143) [0.282]
Year Effects	Yes	Yes
State Effects	Yes	Yes

Notes: Samples include respondents with a high school degree or less. Dependent variable is the real hourly wage. NLSY regressions are weighted by the NLSY sampling weights. Standard errors in parentheses are not adjusted for clusters in the error term. Bootstrapped standard errors using state*year blocks are in brackets (100 replications). Number of observations is 21618 in the NLSY, and 119464 in the CPS.

Table 6
Panel Regressions for Training Incidence

<i>Sample</i>	<i>Independent Variable</i>	<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>
Unrestricted	Real Minimum Wage	0.038 (0.012)	0.053 (0.019)	0.026 (0.010)	-0.007 (0.017)	-0.009 (0.020)
Low Wage	Real Minimum Wage	-0.002 (0.015)	-0.003 (0.030)	-0.001 (0.013)	-0.021 (0.032)	-0.033 (0.054)
Unrestricted	Real Minimum Wage/Avg. Median Wage (men 35-54, states)	-0.007 (0.086)	-0.189 (0.108)	0.285 (0.111)	-0.048 (0.187)	-0.080 (0.197)
Low Wage	Real Minimum Wage/Avg. Median Wage (men 35-54, states)	-0.021 (0.119)	-0.021 (0.150)	0.001 (0.147)	-0.057 (0.396)	0.201 (0.427)
Unrestricted	Real Minimum Wage/Avg. Median Wage (men 35-54, regions)	-0.075 (0.059)	-0.182 (0.067)	0.302 (0.100)	0.036 (0.192)	0.051 (0.172)
Low Wage	Real Minimum Wage/Avg. Median Wage (men 35-54, regions)	-0.053 (0.080)	-0.065 (0.079)	0.055 (0.146)	0.131 (0.372)	0.272 (0.329)
Unrestricted	Real Minimum Wage/Avg. Median Wage (35-54, state and gender)	-0.026 (0.063)	-0.171 (0.081)	0.237 (0.083)	0.048 (0.147)	-0.005 (0.166)
Low Wage	Real Minimum Wage/Avg. Median Wage (35-54, state and gender)	-0.038 (0.082)	-0.051 (0.096)	-0.009 (0.109)	-0.128 (0.248)	0.129 (0.313)
	Year Effects	No	Yes	No	Yes	Yes
	State or Region Effects	No	No	Yes	Yes	No
	Individual Effects	No	No	No	No	Yes

Notes: Sample includes respondents with a high school degree or less. Dependent variable is training incidence. All regressions also include a linear term in age, dummy variables for blacks, Hispanics, females, less than high school, whether the respondent started a new job within the year, and a constant where applicable. Regressions are weighted by the NLSY sampling weights. Standard errors in columns (1) to (4) are adjusted for the presence of state*time or region*time and individual effects in the error term (see Appendix 2 for details). Standard errors in columns (5) are adjusted for the presence of region*time effects in the error term. Number of observations is 21618 in the unrestricted sample and 7026 in the low wage sample.

**Description of Possible Tax Proposal
for
Democratic Substitute for Minimum Wage Tax Bill**

The Democratic substitute would provide approximately \$30 billion over the 10-year budget window in tax relief targeted to small businesses. The cost of that tax relief would be fully offset. Following is a description of the tax benefits and offsets which are included in the Democratic substitute.

Tax Benefits

1. The substitute contains a permanent extension of the Work Opportunity Tax Credit and the Welfare to Work credit. In addition, the substitute would remove the age restrictions on the eligibility of food stamp recipients for the WOTC. Both of those credits are designed to encourage employment of disadvantaged workers. Under current law, they will terminate December 31, 2001.
2. Under current law, there is a phase-in of 100 percent deductibility of health insurance premiums paid by the self-employed. For year 2000 the percent deductible is 60 percent, and it will reach 100 percent in 2003. The substitute would accelerate 100 percent deductibility to years after 2000.
3. Under current law, small businesses are permitted to deduct currently (i.e., expense) a portion of their business investments in plant and equipment. The amount that they may expense is \$20,000 in 2000 and is scheduled to be increased to \$25,000 in 2003. The substitute would provide a \$30,000 limit on expensing for small businesses effective for years after 2000.
4. Section 415 of the Code imposes limitations on contributions and benefits under qualified employer retirement plans. The substitute contains modifications to those limitations for multiemployer plans and plans maintained by tax-exempt organizations.

5. Under current law, a 10% investment tax credit and 7-year amortization are allowed for the first \$10,000 of reforestation expenses incurred by the taxpayer during any year. The substitute would increase the investment credit to 20%, shorten the amortization period to 3 years, and increase the dollar limitation on these benefits to \$20,000.
6. Currently, 50% of business meal and entertainment expenses are deductible. The substitute would increase the deduction to 65% for small businesses. For this purpose, small businesses would be defined as businesses with annual gross receipts of less than \$5 million.
7. The substitute would repeal a provision that disallows the business deduction for travel expenses incurred with respect to a spouse, dependent, or other individual accompanying the taxpayer on business travel.
8. Under current law sec.127, there is an exclusion for amounts paid by an employer for the education or training of an employee. The substitute would provide an exclusion for postsecondary educational benefits provided for the employees' children. There would be a \$2,000 per-child limit on the exclusion.
9. The substitute would increase the limitation for calendar year 2001 on the Qualified School Academy Bond Program from \$400 million to \$1.4 billion. In addition, the substitute would authorize \$1.1 billion in school construction bonds for calendar year 2001 as provided in the President's school construction initiative. Contractors on projects funded under the program who fail to pay prevailing wage rates would be subjected to a penalty tax.
10. The substitute would repeal the changes made to the installment method by section 536(a) of the tax extender bill of last year.

Estate Tax Relief

Under current law, there is a \$1.3 million exclusion from the estate tax for interests in farms and closely held businesses. In the case of a married couple, a separate \$1.3 million exclusion is available for each spouse if they meet the requirements of the exclusion. Married couples with large amounts of assets typically can engage in estate tax planning so that the full benefit of the \$1.3 million exclusion is realized in the estate of each spouse. That planning is more difficult in the case of married couples with moderate amounts of wealth. Therefore many couples lose the full benefit of the \$1.3 million exclusion.

The substitute effectively would create a \$4 million exclusion per family for farms and closely-held businesses. The substitute would accomplish this by increasing the limit on the small business exclusion from \$1.3 to \$2 million and by providing that the portion of that exclusion not used in the estate of the spouse to first die will be allowed to the estate of the other spouse.

Revenue Offsets

A. Tax Motivated Expatriation

In 1995 and 1996, there was a bitter partisan debate over the issue of tax motivated expatriation. Over the objection of the Clinton Administration the Senate Republicans and Democrats and the House Democrats, the House Republicans enacted their version of expatriation legislation. That version left many avoidance devices untouched and does not appear to have been ineffective in stopping tax-motivated expatriation.

The substitute would include the provisions of H.R. 3099, introduced by Mr. Rangel. Those provisions are substantially identical to provisions included in the President's budget this year. The Treasury Department estimates that the provisions would raise approximately \$3 billion over 10 years.

But joint tax won't
Score.

Aimed
at
farms
and
small
businesses.

10-10 TAX 003 005

The provisions in the alternative -

1. Impose a tax on the unrealized appreciation in the value of an expatriates' assets with a \$600,000 gain exclusion (\$1.2 million exclusion for married couples).
2. Eliminate the ability to avoid estate and gift taxes through expatriation by imposing a tax on the receipt by U.S. citizens of gifts or bequests from expatriates.
3. Eliminate the ability to expatriate on an informal basis.

B. Corporate Tax Shelters

The substitute includes provisions to address the increasing use of aggressive tax avoidance strategies by corporations. Under current law, there is a court-developed doctrine that requires transactions to have economic substance in order to be respected for tax purposes. The proposal would codify and strengthen this court-developed doctrine.

Under current law, there is a substantial understatement penalty equal to 20 percent of the understatement. There are exceptions to that penalty where the taxpayer shows reasonable cause or where the taxpayer has a legal opinion justifying the transaction. The proposal would modify the substantial understatement penalty in two ways. First, it would increase the penalty from 20 to 40 percent unless the transaction was disclosed to the Internal Revenue Service. Secondly, it would provide that the current law exceptions from the penalty are not available where the tax benefits are denied because of lack of economic substance.

The substitute would also impose penalties on promoters of shelters where a court determines that the shelter lacks substance or is a sham. It would also limit the ability to use losses incurred abroad.

C. Estate Tax

Before the Taxpayer Relief Act of 1997, there was a provision that phased out the benefits of the unified credit. A drafting error in the 1997 Act inadvertently repealed that phaseout. That drafting error provided unintended estate tax reductions to estates with assets in excess of \$17 million. The substitute would restore that phaseout, raising approximately \$1.4 billion over 10 years.

Under current law, taxpayers routinely claim valuation discounts when making gifts or bequests of fractional interests in entities such as stock in a corporation or a partnership interest. A common estate tax avoidance device is to transfer marketable assets to a family limited partnership and claim valuation discounts for gifts or bequests of interest in those partnerships. The substitute would include the provision recommended in the President's budget that would eliminate valuation discounts except to the extent that they apply to active business assets. This provision would raise approximately \$7.2 billion over 10 years.

D. Other Revenue Offsets

The substitute includes a provision that would conform the amortization period (currently 5 years) for startup and organizational expenses to the period (15 years) applicable to goodwill. This provision was included in the President's budget and it would raise approximately \$2.4 billion over the 10-year budget window. The provision liberalizes current law by providing immediate write-offs for small businesses.

The substitute also includes the modification to the foreign tax credit carryback period that was passed by the Senate as part of its tax extender bill. That provision would limit the carryback to one year. It would raise approximately \$3.5 billion over the 10-year budget window.

The substitute would also limit the ability to avoid capital gains tax through the use of swap funds.

MINIMUM WAGE

1/17/2000

- **A Higher Minimum Wage Will Help 11.4 Million Americans -- Mostly Adult Workers Trying To Support Their Families.** According to data from the Bureau of Labor Statistics, 11.4 million hourly paid workers earn between \$5.15 and \$6.14 and would directly benefit from this pay raise. Over two-thirds (70%) of the workers who would benefit are adults, age 20 or over, and three-fifths (59%) are women, many of whom are trying to raise the family on \$5.15. Almost half (46%) worked full-time. And the average minimum-wage worker is estimated to bring home half of their household's earnings.
- **Valuing Work: Restoring the Value of the Minimum Wage.** President Clinton's proposal to increase the minimum wage by \$1 -- combined with the previous 90-cent increase -- simply restores the real value of the minimum wage to what it was in 1982. During President Reagan's eight years in office, the real value of the minimum wage *fell* more than 25 percent. This increase -- in percentage terms -- is in line with previous ones that helped low-wage workers without adversely affecting the economy: both this proposal and the last one increase the minimum wage by about 20 percent.
- **Helping Ensure Parents Can Raise Their Children Out of Poverty.** In 1993, President Clinton expanded the Earned Income Tax Credit (EITC), helping to lift hundreds of thousands of working families out of poverty. Today, with the previous minimum wage increase and the expanded EITC, parents who work full-time do not have to bring up their children in poverty. Between 1993 and 1997, the income of families with two children and one minimum wage earner who worked full-time rose by \$2,761 because of these policies. This increase will help ensure that -- as costs continue to rise -- parents who work hard and play by the rules can bring up their children out of poverty.
- **The Impact from Last Minimum Wage Increase Is Clear: 10 Million Workers Got A Raise and There Is No Evidence Jobs Were Lost.** The last minimum wage increase provided a pay raise to 10 million workers, and since the President signed the minimum wage increase into law in August 1996, the economy has created 9.9 million new jobs -- 246,000 per month; and the unemployment rate has fallen to 4.2 percent in 1999 -- its lowest level since 1969. For teenagers, African-Americans, and women, unemployment is down and employment is up.

SOME RECENT EVIDENCE ON THE MINIMUM WAGE

- **A new study by the Economic Policy Institute finds that the minimum wage increase is especially beneficial to women.** They find that 58 percent of the direct beneficiaries of an increase will be women; and of these 75 percent are adults and 33 percent of them will be women with children under age 18. ("The Minimum Wage Increase: a Working Woman's Issue" by Jared Bernstein, Heidi Hartmann, and John Schmitt. Available at www.epinet.org.)

- **Minimum wage contributes to welfare roll reductions.** The welfare rolls have fallen by 39 percent since the minimum wage increased in 1996. A study by the Council of Economic Advisers released in August, "The Effects of Welfare Policy and the Economic Expansion on Welfare Caseloads: an Update," found that the increase in the minimum wage contributed 10 to 16 percent of this reduction.
- **The minimum wage does not hurt training.** Contrary to some claims, a new National Bureau of Economic Research study by MIT economists Daron Acemoglu and Jorn-Steffen Pischke found that raising the minimum wage did not have a negative impact on training in the U.S. labor market. In fact, they argued that a higher minimum wage provides employers with an additional incentive to provide on-the-job training for their workers to ensure that their increased productivity matches their higher wages. ("Minimum Wages and On-the-job-training." *National Bureau of Economic Research Working Paper No. 7184*, June 1999.
- **Yet more evidence that moderate minimum wage increases do not hurt jobs.** Card-Krueger study from June 1999 showing relative effects of minimum wage increases in New Jersey and Eastern Pennsylvania. They find that, if anything, a higher minimum wage increased employment by increasing the labor supply of workers.

ESTIMATED BUDGET EFFECTS OF H.R. 3081,
THE "WAGE AND EMPLOYMENT GROWTH ACT OF 1999,"
AS REPORTED BY THE COMMITTEE ON WAYS AND MEANS

Fiscal Years 2000 - 2010

[Millions of Dollars]

Provision	Effective	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2000-05	2000-10
I. Amendments to the Fair Labor Standards Act of 1938 ----- <i>No Revenue Effect</i> -----														
II. Small Business Provisions														
1. Accelerate 100% self-employed health insurance deduction and extend eligibility to those who choose not to participate in employer-subsidized health plans	tyba 12/31/00	--	-287	-1,093	-697	--	--	--	--	--	--	--	-2,077	-2,077
2. Increase section 179 expensing to \$30,000	tyba 12/31/00	--	-359	-616	-350	-187	-176	-160	-167	-188	-197	-202	-1,688	-2,611
3. Increase business meals deduction (excluding entertainment expenses) to 55% in 2001 and 60% in 2002 and thereafter	tyba 12/31/00	--	-259	-794	-1,090	-1,137	-1,186	-1,239	-1,294	-1,351	-1,412	-1,477	-4,466	-11,212
4. 80% business meals deduction for workers subject to DOT hours of service limitation	tyba 12/31/00	--	-39	-70	-64	-55	-47	-37	-26	-13	--	--	-276	-3
5. Provide that Federal farm production payments are taxable in the year of receipt (ignore election to take the payments in an earlier year unless exercised)	--	<i>Previously Enacted</i> -----												
6. Coordinate farmer income averaging and the AMT and provide the same income averaging relief to commercial fishermen	tyba 12/31/00	--	-1	-2	-2	-2	-3	-3	-4	-5	-6	-7	-9	-
7. Repeal the occupational taxes relating to distilled spirits, wine, and beer	7/1/01	--	-64	-75	-75	-75	-75	-75	-75	-75	-75	-75	-364	-7
Total of Small Business Provisions		--	-1,009	-2,650	-2,278	-1,456	-1,487	-1,514	-1,566	-1,632	-1,690	-1,761	-8,880	-17,0
III. Pension Provisions														
A. Provisions for Expanding Coverage														
1. Increase contribution and benefit limits:														
a. Increase limitation on exclusion for elective deferrals to \$11,000 in 2001, \$12,000 in 2002, \$13,000 in 2003, \$14,000 in 2004; index in \$500 increments thereafter [1]	yba 12/31/00	--	-131	-317	-468	-578	-640	-687	-735	-783	-832	-879	-2,135	-6,0
b. Increase limitation on SIMPLE elective contributions to \$7,000 in 2001, \$8,000 in 2002, \$9,000 in 2003, \$10,000 in 2004; index in \$500 increments thereafter [1]	yba 12/31/00	--	-5	-14	-22	-27	-29	-29	-30	-32	-33	-35	-96	-2
c. Increase defined benefit dollar limit to \$160,000	yba 12/31/00	--	-18	-31	-40	-45	-48	-50	-53	-55	-57	-59	-182	-4
d. Lower early retirement age to 62; lower normal retirement age to 65	yba 12/31/00	--	-3	-4	-4	-4	-5	-5	-5	-5	-5	-5	-21	

Provision	Effective	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2000-05	2000-1
e. Increase annual addition limitation for defined contribution plans to \$40,000 [1]	yba 12/31/00	---	-6	-12	-14	-15	-16	-17	-19	-20	-21	-23	-63	-16
f. Increase qualified plan compensation limit to \$200,000 [1]	yba 12/31/00	---	-43	-74	-84	-91	-99	-107	-115	-122	-131	-139	-391	-1,00
g. Increase limits on deferrals under deferred compensation plans of State and local governments and tax-exempt organizations to \$11,000 in 2001, \$12,000 in 2002, \$13,000 in 2003, and \$14,000 in 2004 [1]	yba 12/31/00	---	-53	-93	-108	-119	-128	-136	-145	-153	-162	-170	-500	-1,26
2. Plan loans for subchapter S owners, partners, and sole proprietors	lma 12/31/00	---	-18	-30	-33	-35	-37	-39	-42	-44	-47	-49	-153	-37
3. Modification of top-heavy rules	pyba 12/31/00	---	-4	-9	-11	-12	-14	-16	-17	-19	-21	-23	-50	-14
4. Elective deferrals not taken into account for purposes of deduction limits	yba 12/31/00	---	-40	-75	-87	-94	-101	-108	-115	-122	-129	-135	-396	-1,00
5. Repeal of coordination requirements for deferred compensation plans of State and local governments and tax-exempt organizations	yba 12/31/00	---	-16	-22	-22	-22	-22	-23	-24	-25	-26	-27	-104	-22
6. Elimination of user fee for certain requests regarding employer pension plans; waiver applies only for request made during first 5 plan years [2]	rma 12/31/00	---	-9	-5	-5	---	---	---	---	---	---	---	-19	-
7. Definition of compensation for purposes of deduction limits [1]	yba 12/31/00	---	-1	-2	-3	-3	-3	-3	-3	-3	-3	-3	-12	-4
8. Option to treat elective deferrals as after-tax contributions	tyba 12/31/00	---	50	100	131	144	89	-2	-104	-218	-345	-485	514	-64
9. Reduce PBGC premium for new plans of small employers [2]	pea 12/31/00	---	---	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	-2	---
10. Phase-in of additional PBGC premium for new plans; include additional variable premium relief for small employers [2]	pea 12/31/00 & pyba 12/31/00	---	---	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	-12	-4
Subtotal of Provisions for Expanding Coverage		---	-297	-591	-773	-904	-1,056	-1,225	-1,410	-1,604	-1,815	-2,035	-3,622	-11,71
B. Provisions for Enhancing Fairness for Women														
1. Additional catch-up contributions for individuals age 50 and above - increase in maximum contribution limits for pension plans by 10% annually beginning in 2001, not to exceed 40%	yba 12/31/00	---	-74	-152	-131	-99	-95	-97	-100	-101	-103	-103	-550	-1,00
2. Equitable treatment for contributions of employees to defined contribution plans [1]	yba 12/31/00	---	-51	-78	-84	-91	-97	-104	-111	-118	-124	-131	-401	-94
3. Faster vesting of certain employer matching contributions	pyba 12/31/00	----- Negligible Revenue Effect -----												
4. Simplify and update the minimum distribution rules by modifying post-death distribution rules, reducing (to 10%) the excise tax on failures to make minimum distributions, and directing the Treasury to simplify and finalize regulations relating to the minimum distribution rules	yba 12/31/00	---	-118	-212	-239	-268	-297	-330	-366	-402	-441	-484	-1,135	-3,1
5. Clarification of tax treatment of division of section 457 plan benefits upon divorce	tdapma 12/31/00	----- Negligible Revenue Effect -----												
6. Modification of safe harbor relief for hardship withdrawals from 401(k) plans	yba 12/31/00	----- Negligible Revenue Effect -----												
Subtotal of Provisions for Enhancing Fairness for Women		---	-243	-442	-454	-458	-489	-531	-577	-621	-668	-718	-2,086	-5,2

Provision	Effective	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2000-05	2000-1
C. Provisions for Increasing Portability for Participants														
1. Rollovers allowed among governmental section 457 plans, section 403(b) plans, and qualified plans	dma 12/31/00	---	26	-5	-5	-5	-5	-5	-5	-6	-6	-6	6	-2
2. Rollovers of IRAs to workplace retirement plans	dma 12/31/00	Negligible Revenue Effect												
3. Rollovers of after-tax retirement plan contributions	dma 12/31/00	Negligible Revenue Effect												
4. Waiver of 60-day rule	dma 12/31/00	Negligible Revenue Effect												
5. Treatment of forms of qualified plan distributions	yba 12/31/00	Negligible Revenue Effect												
6. Rationalization of restrictions on distributions	da 12/31/00	Negligible Revenue Effect												
7. Purchase of service credit in governmental defined benefit plans	ta 12/31/00	Negligible Revenue Effect												
8. Employers may disregard rollovers for cash-out amounts	da 12/31/00	Negligible Revenue Effect												
9. Minimum distribution and inclusion requirements for section 457 plans	dma 12/31/00	Considered in Other Provisions												
Subtotal of Provisions for Increasing Portability for Participants		---	26	-5	-5	-5	-5	-5	-5	-6	-6	-6	6	-2
D. Provisions for Strengthening Pension Security and Enforcement														
1. Phase-in repeal of 150% of current liability funding limit; extend maximum deduction rule	yba 12/31/00	---	-3	-14	-20	-36	-36	-38	-38	-39	-41	-42	-109	-30
2. Missing plan participants [4]	[4]	Negligible Revenue Effect												
3. Periodic pension benefits statements	pyba 12/31/00	No Revenue Effect												
4. Civil penalties for breach of fiduciary responsibility [5]	voo/a DOE	No Revenue Effect												
5. Excise tax relief for sound pension funding	yba 12/31/00	---	-2	-3	-3	-3	-3	-3	-3	-3	-3	-3	-14	-2
6. Notice of significant reduction in plan benefit accruals	pateo/a DOE	Negligible Revenue Effect												
7. Investment of employee contributions to 401(k) plans	aiii TRA'97	Negligible Revenue Effect												
8. Repeal 100% of compensation limit for multiemployer plans	yba 12/31/00	---	-2	-4	-4	-4	-4	-4	-5	-5	-5	-5	-19	-4
9. Technical correction to Saver Act	DOE	No Revenue Effect												
10. Model spousal consent language and qualified domestic relations order	DOE	No Revenue Effect												
11. Elimination of ERISA double jeopardy	aaocpo/a DOE	Negligible Revenue Effect												
Subtotal of Provisions for Strengthening Pension Security and Enforcement		---	-7	-21	-27	-43	-43	-45	-46	-47	-49	-50	-142	-31
E. Provisions for Reducing Regulatory Burdens														
1. Modification of timing of plan valuations	pyba 12/31/00	Negligible Revenue Effect												
2. ESOP dividends may be reinvested without loss of dividend deduction	tyba 12/31/00	---	-19	-44	-56	-61	-63	-66	-69	-71	-74	-77	-243	-61
3. Repeal transition rule relating to certain highly compensated employees	pyba 12/31/00	---	-2	-3	-3	-3	-3	-3	-4	-4	-4	-4	-13	-4
4. Employees of tax-exempt entities [6]	DOE	Negligible Revenue Effect												
5. Treatment of employer-provided retirement advice	yba 12/31/00	Negligible Revenue Effect												
6. Pension plan reporting simplification [6]	1/1/01	Negligible Revenue Effect												
7. Improvement to Employee Plans Compliance Resolution System [6]	DOE	Negligible Revenue Effect												
8. Substantial owner benefits in terminated plans [2]	DOE	Negligible Revenue Effect												
9. Clarification of exclusion for employer-provided transit passes	tyba 12/31/00	---	-6	-10	-13	-14	-15	-15	-16	-16	-16	-16	-58	-1
10. Repeal of multiple use test	yba 12/31/00	Considered in Other Provisions												
11. Flexibility in nondiscrimination and line of business rules [6]	DOE	Negligible Revenue Effect												

Provision	Effective	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2000-05	2000-
12. Extension to international organization of moratorium on application of certain nondiscrimination rules applicable to State and local government plans	yba 12/31/00													
13. Notice and consent period regarding distributions	yba 12/31/00													
14. Annual report dissemination	rl yba 12/31/98													
15. Excess benefit plans	yba 12/31/99													
16. Benefit suspension notice	pyba 12/31/99													
17. Clarification of church welfare plan status under State insurance law	DOE													
Subtotal of Provisions for Reducing Regulatory Burdens		--	-27	-57	-72	-78	-81	-84	-89	-91	-94	-97	-314	-7
F. Provisions Relating to Plan Amendments	DOE													
Total of Pension Provisions		--	-548	-1,116	-1,331	-1,488	-1,674	-1,890	-2,127	-2,369	-2,632	-2,906	-6,158	-18,0
IV. Extension of Expiring Provisions														
1. Work opportunity tax credit; credit cannot be claimed until after 9/30/00 (through 12/31/01)	---													
2. Welfare-to-work tax credit; credit cannot be claimed until after 9/30/00 (through 12/31/01)	---													
Total of Extension of Expiring Provisions		--	--	--	--	--	--	--	--	--	--	--	--	--
V. Estate and Gift Tax Relief Provisions														
1. Reduction in estate, gift, and generation-skipping transfer taxes: beginning in 2001, convert the unified credit into a true exemption, repeal the 5% "bubble" (which phases out the lower rates); repeal rates in excess of 53%; in 2002, repeal rates in excess of 50%; in 2003 through 2004, reduce all rates by 1 percentage point a year; proportionately reduce State tax credit rates	dda & gma 12/31/00	--	--	-4,738	-6,358	-7,247	-8,465	-9,134	-9,674	-10,173	-10,916	-11,635	-26,808	-78,3
2. Provide deemed allocation of GST exemption	ta 12/31/99	--	-1	-3	-4	-4	-4	-4	-4	-4	-4	-4	-16	
3. Provide retroactive allocation of GST for unnatural orders of death	generally ea 12/31/99	--	-4	-5	-6	-6	-6	-6	-6	-6	-6	-6	-27	
4. Allow severances of trusts holding property having an inclusion ratio of greater than zero	---													
5. Modify certain valuation rates	---													
6. Provide relief from late elections	---													
7. Provide rule of substantial compliance	---													
8. Expand estate tax rule for conservation easements - increase the 25-mile limit to 50 miles; increase 10-mile limit to 25 miles, and clarify that the date for determining easement compliance	dda 12/31/99 & dda 12/31/97	--	-11	-15	-21	-22	-23	-24	-25	-26	-29	-31	-92	-4
Total of Estate and Gift Tax Relief Provisions		--	-16	-4,761	-6,389	-7,279	-8,498	-9,168	-9,709	-10,209	-10,955	-11,676	-26,943	-78,1

Provision	Effective	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2000-05	2000-1
VI. Distressed Communities and Industries Provisions														
A. "American Community Renewal Act of 1999"														
1. Designate 15 renewal communities within 36 months; provide various incentives (zero capital gains tax on certain 5-year investments; special deduction for real estate revitalization expenditures; special expensing for certain business property; work opportunity tax credit; environmental remediation expenses; family development accounts) beginning 1/1/01 and ending 12/31/07	DOE	---	-102	-197	-202	-201	-220	-247	-325	-141	-35	-76	-922	-1,74
B. Timber Incentives														
1. Increase maximum reforestation expenses qualifying for amortization and credit from \$10,000 to \$25,000; remove cap on amortization of reforestation costs in 2001 through 2003	tyba 12/31/00	---	-5	-15	-22	-27	-29	-32	-34	-33	-29	-25	-98	-25
Total of Distressed Communities and Industries Provisions		---	-107	-212	-224	-228	-249	-279	-359	-174	-64	-101	-1,020	-1,95
VII. Real Estate Provisions														
A. Improvements in the Low-Income Housing Credit - increase per capita credit by \$0.10 per year through 2004; thereafter COLA; \$2 million small State minimum beginning in 2001; COLA beginning in 2005; modify stacking rules and credit allocation rules; certain Native American housing assistance disregarded in determining whether building is Federally subsidized for purposes of the low-income housing credit	tyba 12/31/00	---	-4	-24	-68	-140	-234	-345	-467	-601	-750	-913	-470	-3,5
B. Real Estate Investment Trust (REIT) Provisions														
1. Impose 10% vote or value test	---													
2. Treatment of income and services provided by taxable REIT subsidiaries	---													
3. Personal property treatment for determining rents from real property for REITs	---													
4. Special foreclosure rule for health care REITs	---													
5. Conformity with RIC 90% distribution rules	---													
6. Clarification of definition of independent operators for REITs	---													
7. Modification of earnings and profits rules	---													
C. Accelerate 5-Year Phasein of Private Activity Bond Volume Cap	cyba 12/31/00	---	-10	-41	-83	-127	-163	-179	-179	-174	-167	-159	-425	-1,2
D. Exclusion from Gross Income for Certain Forgiven Mortgage Obligations	doia 12/31/00	---	-2	-6	-6	-6	-7	-7	-7	-7	-8	-8	-27	-
Total of Real Estate Provisions		---	-16	-71	-157	-273	-404	-531	-653	-782	-925	-1,080	-922	-4,8
NET TOTAL		---	-1,696	-8,810	-10,379	-10,724	-12,312	-13,382	-14,414	-15,166	-16,266	-17,524	-43,923	-120,6

Joint Committee on Taxation

NOTE: Details may not add to totals due to rounding.

[Legend and Footnotes for Table #00-1 034 appear on the following page]

Legend and Footnotes for Table #00-1 034:

Legend for "Effective" column:

aaocpo/a = any action or claim pending on or after
 aiii TRA'97 = as if included in the Taxpayer Relief Act of 1997
 cyba = calendar years beginning after
 da = distributions after
 doia = discharges of indebtedness after
 dda = decedents dying after
 dma = distributions made after
 DOE = date of enactment
 ea = events after
 gma = gifts made after
 ima = loans made after

pateo/a = plan amendments taking effect on or after
 pea = plans established after
 pyba = plan years beginning after
 rf = reports for
 rma = requests made after
 ta = transfers after
 tdapma = transfers, distributions, and payments made after
 tyba = taxable years beginning after
 voo/a = violations occurring on or after
 yba = years beginning after

- [1] Provision includes interaction with other provisions in Provisions for Expanding Coverage.
- [2] Estimate provided by the Congressional Budget Office.
- [3] Loss of less than \$5 million.
- [4] Effective for distributions from terminating plans that occur after the PBGC has adopted final regulations implementing provision.
- [5] Department of Labor penalties.
- [6] Directs the Secretary of the Treasury to modify rules through regulations.

High wage firms

Too many charts -

$$W = \beta X + \boxed{\delta Z}$$

educ. ind.

Theory $SD \Rightarrow \delta E$

Stayer, more recent $\Rightarrow$ employment effects small.
maybe no effect.

reason -

firms are price

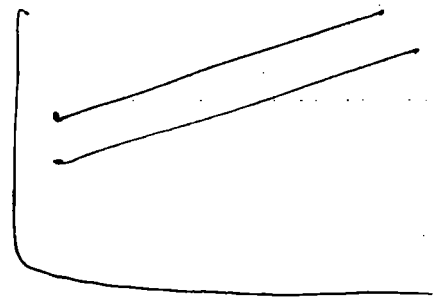
firms adjust wages to reduce turnover, to select workers, to
 $\Rightarrow$

~~no adults, no family inc.
grants, etc.~~

The right numbers are there ~~any~~ other ...

• rising eqig. was caused by $\downarrow$ min wage.

• Recent theory suggests amb. effects -



MINIMUM WAGE

1/17/2000

- **A Higher Minimum Wage Will Help 11.4 Million Americans -- Mostly Adult Workers Trying To Support Their Families.** According to data from the Bureau of Labor Statistics, 11.4 million hourly paid workers earn between \$5.15 and \$6.14 and would directly benefit from this pay raise. Over two-thirds (70%) of the workers who would benefit are adults, age 20 or over, and three-fifths (59%) are women, many of whom are trying to raise the family on \$5.15. Almost half (46%) worked full-time. And the average minimum-wage worker is estimated to bring home half of their household's earnings.
- **Valuing Work: Restoring the Value of the Minimum Wage.** President Clinton's proposal to increase the minimum wage by \$1 -- combined with the previous 90-cent increase -- simply restores the real value of the minimum wage to what it was in 1982. During President Reagan's eight years in office, the real value of the minimum wage *fell* more than 25 percent. This increase -- in percentage terms -- is in line with previous ones that helped low-wage workers without adversely affecting the economy: both this proposal and the last one increase the minimum wage by about 20 percent.
- **Helping Ensure Parents Can Raise Their Children Out of Poverty.** In 1993, President Clinton expanded the Earned Income Tax Credit (EITC), helping to lift hundreds of thousands of working families out of poverty. Today, with the previous minimum wage increase and the expanded EITC, parents who work full-time do not have to bring up their children in poverty. Between 1993 and 1997, the income of families with two children and one minimum wage earner who worked full-time rose by \$2,761 because of these policies. This increase will help ensure that -- as costs continue to rise -- parents who work hard and play by the rules can bring up their children out of poverty.
- **The Impact from Last Minimum Wage Increase Is Clear: 10 Million Workers Got A Raise and There Is No Evidence Jobs Were Lost.** The last minimum wage increase provided a pay raise to 10 million workers, and since the President signed the minimum wage increase into law in August 1996, the economy has created 9.9 million new jobs -- 246,000 per month; and the unemployment rate has fallen to 4.2 percent in 1999 -- its lowest level since 1969. For teenagers, African-Americans, and women, unemployment is down and employment is up.

SOME RECENT EVIDENCE ON THE MINIMUM WAGE

- **A new study by the Economic Policy Institute finds that the minimum wage increase is especially beneficial to women.** They find that 58 percent of the direct beneficiaries of an increase will be women; and of these 75 percent are adults and 33 percent of them will be women with children under age 18. ("The Minimum Wage Increase: a Working Woman's Issue" by Jared Bernstein, Heidi Hartmann, and John Schmitt. Available at www.epinet.org.)

- **Minimum wage contributes to welfare roll reductions.** The welfare rolls have fallen by 39 percent since the minimum wage increased in 1996. A study by the Council of Economic Advisers released in August, “The Effects of Welfare Policy and the Economic Expansion on Welfare Caseloads: an Update,” found that the increase in the minimum wage contributed 10 to 16 percent of this reduction.
- **The minimum wage does not hurt training.** Contrary to some claims, a new National Bureau of Economic Research study by MIT economists Daron Acemoglu and Jorn-Steffen Pischke found that raising the minimum wage did not have a negative impact on training in the U.S. labor market. In fact, they argued that a higher minimum wage provides employers with an additional incentive to provide on-the-job training for their workers to ensure that their increased productivity matches their higher wages. (“Minimum Wages and On-the-job-training.” *National Bureau of Economic Research Working Paper No. 7184*, June 1999.)
- **Yet more evidence that moderate minimum wage increases do not hurt jobs.** Card-Krueger study from June 1999 showing relative effects of minimum wage increases in New Jersey and Eastern Pennsylvania. They find that, if anything, a higher minimum wage increased employment by increasing the labor supply of workers.

REFERENCES

- Bernstein, Jared, Heidi Hartmann, and John Schmitt. 1999. "The Minimum Wage Increase: A Working Woman's Issue." EPI Issue Brief 133.
- Bhaskar, V. and Ted To. 1999. "Minimum Wages for Ronald McDonald Monopsonies: A Theory of Monopsonistic Competition." *The Economic Journal* 109 (April), 190-203.
- Brown, Charles, Curtis Gilroy, and Andrew Kohen. 1982. "The Effect of the Minimum Wage on Employment and Unemployment." *Journal of Economic Literature* 20(June): 487-528.
- Brown, Charles. 1988. "Minimum Wage Laws: Are They Overrated?" *Journal of Economic Perspectives* 2(3): 133-145.
- Card, David and Alan B. Kreuger. 1995. *Myth and Measurement*. Princeton: Princeton University Press.
- _____. 1999. "A Reanalysis of the Effect of the New Jersey Minimum Wage Increase on the Fast-Food Industry with Representative Payroll Data." NBER???
- Dickens, Richard, Stephen Machin, Alan Manning. 1999. "The Effects of Minimum Wages on Employment: Theory and Evidence from Britain." *Journal of Labor Economics* 17(1): 1-22.
- Lang, Kevin and Shulamit Kahn. 1998. "The Effect of the Minimum-Wage Laws on the Distribution of Employment: Theory and Evidence." *Journal of Public Economics* 69: 67-82.
- Manning, A. 1995. "How Do We Know Real Wages Are Too High?" *Quarterly Journal of Economics* 110(4): 1111-25.
- Neumark, David. 1999. "The Employment Effects of Recent Minimum Wage Increases: Evidence from a Pre-Specified Research Design." National Bureau of Economic Research Working Paper 7171, June.
- Rebitzer, J. and L. Taylor. 1995. "The Consequences of Minimum Wage Laws: Some New Theoretical Ideas." *Journal of Public Economics* 56(2): 245-55.
- Stigler, George J. 1946. "The Economics of Minimum Wage Legislation." *American Economic Review* 36:358-65.

responsibilities to consider as they try to maintain a delicate balance between work and family. With parents living longer, and with their daughters --the traditional providers of their care-- now largely in the paid labor force, the costs of parental care are likely to become even greater in the 21st century. However, Social Security and other retirement benefits, as well as the availability of assisted living facilities, also permit more elderly people to live independently for longer.

The last 10 years have witnessed an explosion of home-based care for the elderly, provided largely by women. From 1987 to 1996 the number of U.S. households that provided unpaid care to elderly adults more than tripled, from 7 million to 22.4 million, or from 8 percent to 21 percent of households. The average caregiver, then and now, is a married middle-class woman in her 40s with a high school education, and the average care recipient is most likely her mother or mother-in-law. However, even as more women are providing in-home care, they are spending somewhat less time on that care. Today the average caregiver spends fewer hours per week, is less likely to be residing with the recipient, and is more likely to use paid services than caregivers a decade ago.

The explosion in caregiving responsibility for parents is contributing to the time crunch that the American family is facing: 43 percent of surveyed caregivers for the elderly say that caregiving has left them with less time for other family members. These changes surely arise in part because today's average caregiver is balancing work and family: half of all caregivers are working full-time outside the home. Another study noted that 41 percent of daughters and 30 percent of sons involved in caregiving said that they had either quit their jobs or made significant ^{DD} work adjustments to accommodate care demands. Surveys of caregivers underestimate the demand for parental care, however, because they cannot measure the frequency with which employed potential caregivers choose not to provide care.

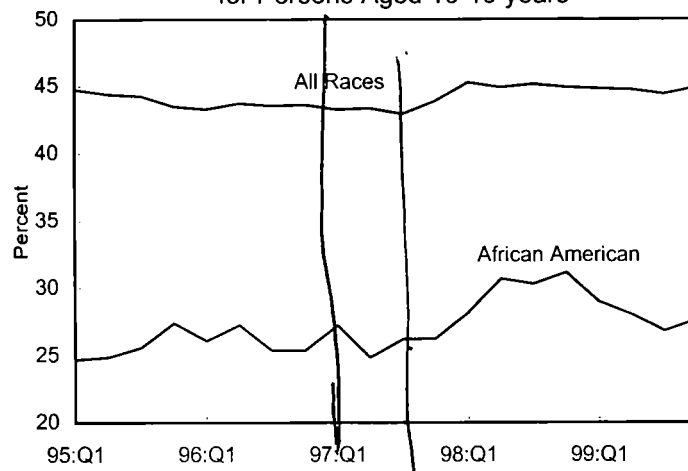
In the future, the time and money commitments associated with parental care may become even more confining, given the trends identified above. The increase in the labor supply of women has raised their wages and thus the opportunity cost of their time. As employed women age and their parents require more care, those higher wages may make it even more increasingly reluctant to curtail their paid employment--thus they will face a greater time crunch as they care for their parents. To the extent that these women have had children later in life, they

DD
[fact-check]

f.c. is the adjustment worthy of being in the same class as quitting, or ~~quit~~ it be relatively trivial?

Are we using home based to mean by individuals in the home or by anyone in the home?

Chart 3: Employment to Population Ratios
for Persons Aged 16-19 years



Source: Department of Labor (Bureau of Labor Statistics).

per year to attend parent-teacher conferences or to accompany a child, spouse, or elderly parent for routine medical and dental care.

Work Arrangements That Promote Flexibility

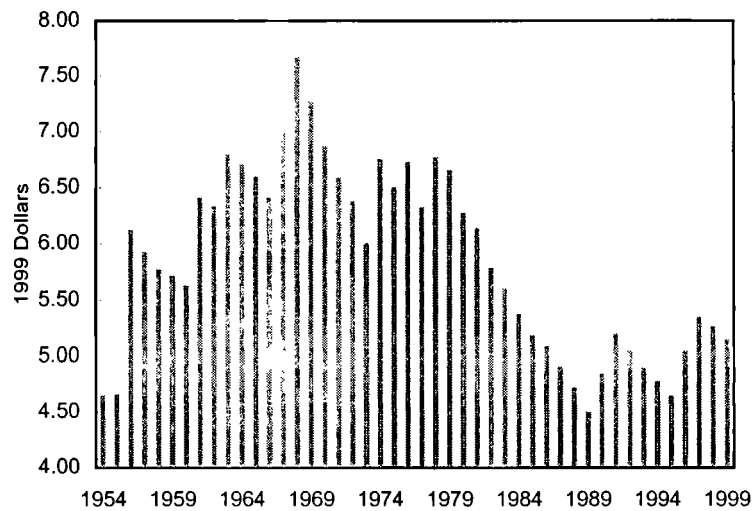
The desire of workers for greater job flexibility is also leading to new work arrangements between them and their employers regarding when and where paid work is performed. An increasingly popular work arrangement is "flextime," which allows workers to vary the time they begin and end work. In 1997, 28 percent of full-time wage and salary workers had flexible work schedules. This was up sharply from 12 percent in 1985. The Federal Government has led by example in instituting flextime, allowing employees greater discretion in when they work. The President has also proposed a flextime initiative that would allow *all* workers who get time-and-a-half pay for working overtime to be compensated in the form of time off for family and medical leave purposes or vacation instead of in cash.

Another approach to allowing greater flexibility on the job is working at home for pay. This arrangement is used by a small but growing share of workers. In 1997, for example, 3.3 percent of all wage and salary workers on company payrolls were working at home for pay, up from 1.9 percent in 1991. Another way parents share child care is by working different shifts. In order for shift work to make it easier to combine paid work and child care, however, the choice of shifts must be the worker's. In 1997, 83 percent of full-time wage and salary workers were on regular daytime schedules, 4.6 percent were on evening shifts, 3.9 percent were on irregularly arranged irregular schedules, 3.5 percent were on night shifts, and 2.9 percent were on rotating shifts.

Improving Access to High-Quality, Affordable Child Care

Most parents adjust to an increase in their paid work time by increasing their use of nonparental child care providers. The availability, cost, and quality of child care are critical to the well-being of children and to the ability of parents to balance the needs of work and family. Primary child care arrangements for preschool-age children of employed mothers in the fall of 1994 were divided roughly equally among care in the child's home (by a relative or nonrelative),

Chart 1: Real Level of the Minimum Wage



changes in the economy have opened up great opportunities as well as great challenges. As people aspire to take advantage of those opportunities, well-designed Federal policies can help them overcome the challenges.

changes in workplace arrangements and

Table 2

	Number (in thousands)			Percent		
	\$5.00	\$5.15-6.14	\$6.15-7.14	\$5.00	\$5.15-6.14	\$6.15-7.14
Total, 16 years and over	921	10,093	8,370	1.3	14.0	11.6
16 to 24	487	5,249	3,279	2.9	31.6	19.7
16 to 19	305	3,133	1,482	4.6	47.5	22.5
25 and over	434	4,845	5,091	0.8	8.7	9.1
Men, 16 years and over	369	4,076	3,405	1.0	11.3	9.4
Women, 16 years and over	552	6,018	4,965	1.5	16.6	13.7
White	730	8,027	6,668	1.2	13.6	11.3
Black	146	1,602	1,336	1.4	15.8	13.2
Hispanic	166	1,989	1,447	1.8	21.2	15.4
Full-time workers	354	4,563	5,301	0.6	8.3	9.7
Part-time workers	563	5,512	3,048	3.3	32.0	17.7



James M. Treadway
01/15/2000 12:52:44 PM

Record Type: Record

To: Kathryn L. Shaw/CEA/EOP@EOP, Charles F. Stone/CEA/EOP@EOP, Douglas V. Almond/CEA/EOP@EOP

cc:

Subject: Revisions to Chapter 5 (families)

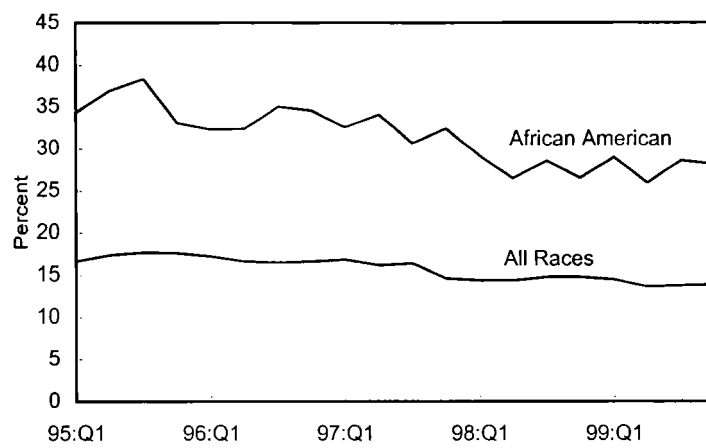
I've entered the revisions to Chapter 5 that Chad gave me yesterday, and I'll distribute the current version (*families 2000 post-WH cl1*). There were a number of marginalia that were comments rather than text to be entered; I've carried those to the current version in the form of bracketed footnotes; there are also a few footnoted questions of my own.

Does anyone else need a copy? Doug, do you need a copy that shows the changes from the previous (White House) version?

I still have not edited the tables pending Kitty's input.

Mike

Chart 2: Civilian Unemployment Rates for
Persons Aged 16-19 years



Source: Department of Labor (Bureau of Labor Statistics).

care in another home (by a relative or nonrelative), and care in an organized child care facility. Since comparable data were first collected in 1986, the trend ^{share} has been toward a slight increase in the proportion of children receiving care in their own homes, relatively fewer children receiving care in another home, and relatively more children receiving care in an organized facility.

Set Current Policy

The Administration has consistently emphasized the importance of child care availability, affordability, and quality. Since 1993, child care funding for low-income families has more than doubled. The budget for fiscal 2000 includes \$3.5 billion for this purpose. In addition, the Administration's budget proposal for fiscal 2001 includes over \$5 billion. As discussed in Chapter 4, funding for Head Start has likewise more than doubled during this Administration, and the program is well on its way to serving 1 million needy children by 2002.

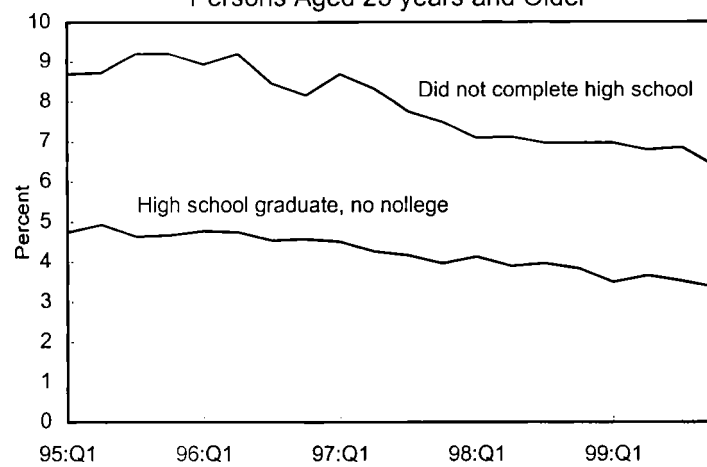
Set Current Policy

After-school care for children is another concern of working parents. In 1993, 24.5 percent of married couples were ones in which both parents worked full time, year-round and had school-age children; that was almost double the 1970 figure of 18.7 percent. Today over 26 million school-age children are in either married-couple families where both parents are employed or single-parent families where the parent works outside the home. An additional 10 million children are in married-couple families where one parent is employed. This has led to strong demand for quality programs to ensure that children are safe and learning during the hours when they are not supervised by a parent. In fact, experts estimate that every day roughly 5 million school-age children are left unattended at home. This Administration has responded to this demand by increasing its investment in after-school programs from \$40 million in 1993 to \$453 million in fiscal 2000. This funding provides support for up to 675,000 students, or 675,000 more than in fiscal 1999. [UPDATE WITH BUDGET AND SOURCES]

CONCLUSION

The American family in the 21st century faces a different world and a different set of challenges than the family of 100 years ago. It would be a mistake, however, to imagine that the general problems of too little time and too few resources are new. Thanks in part to greater participation of women in paid employment, families today enjoy a much higher standard of living than did families a century ago. But expectations also appear to be different today. Parent

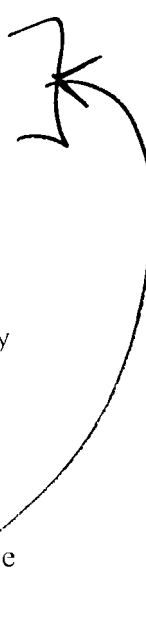
Chart 4: Civilian Unemployment Rates for
Persons Aged 25 years and Older



Source: Department of Labor (Bureau of Labor Statistics).

The Family and Medical Leave Act (FMLA) of 1993 requires employers with 50 employees or more to provide up to 12 weeks of unpaid, job-protected leave a year to eligible employees under certain defined circumstances. These include the need to care for a newborn, newly adopted, or foster child; for a child, spouse, or parent with a serious health condition; or for a serious health condition of the employee himself or herself, including maternity-related disability. The FMLA also requires employers to continue the employee's health benefits during leave. Employees are eligible to take such leave if they have worked for a covered employer for at least 1 year and have worked for at least 1,250 hours over the previous 12 months. Since 1993, millions of workers have taken advantage of the FMLA to spend necessary time with their families.

The experiences of both employers and employees with the FMLA were documented in a national survey sponsored by the Department of Labor. The survey found that most employers (and two-thirds of employers in larger worksites) believed that the FMLA had had positive effects on their employees' ability to care for family members. Most employers also reported that compliance costs were small or negligible and that there was no noticeable effect on either business or employee performance. Among employees, the survey found that the majority of those who took family or medical leave found it relatively easy to arrange; few reported concerns about job-related consequences of taking leave. The survey also found that employees with annual family incomes under \$30,000 were more likely to take leave than employees with higher incomes. This highlights the importance of FMLA to lower-income workers ^{FF}.



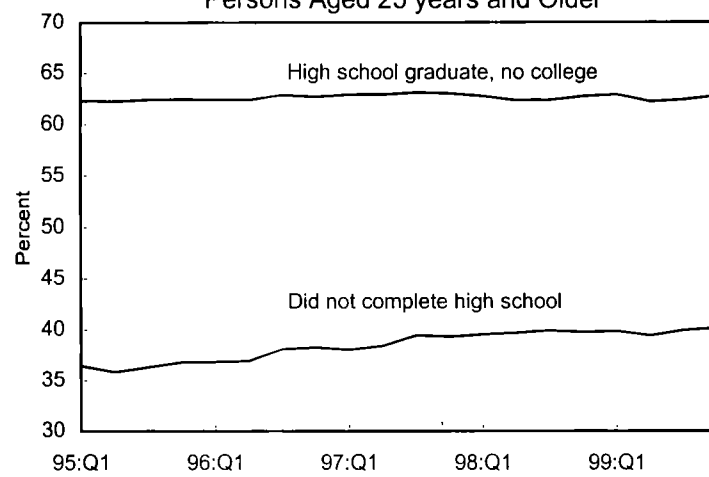
Today, 91 million workers are covered by the FMLA. It has proved to be a significant advance in helping a larger cross section of working Americans meet their medical and family caregiving needs while maintaining their jobs and their economic security.

The President has proposed expanding the FMLA to cover businesses with 25 to 50 employees. This would extend coverage to an additional 10 million workers. He has also proposed requiring employers to allow FMLA-covered workers to take up to 24 hours of leave

^{FF} [OMB says it cannot find this in the DOL material]

f-c

Chart 5: Employment to Population Ratios for
Persons Aged 25 years and Older



Source: Department of Labor (Bureau of Labor Statistics).

may also experience the double generational crunch of caring for both children and parents simultaneously. And among those women whose children are already adults, many will have grandchildren to care for. One estimate is that over 40 percent of individuals aged 50-59 were members of families with at least four generations (this includes in-laws for married people). During the 21st century, the increasing cost of elderly care will also fall on fewer children; the declining fertility rates of the baby-boom generation will result in half as many children available to take care of their elderly parents. This looming increase in the time crunch may result in more substitution toward formal care, as the greater wealth of the baby-boom generation and their children may make such care more affordable. However, if the cost of that care continues to rise at above-average rates, these same baby-boomers are likely to experience a tightening money crunch as well.

The preceding section documented that although the care of elderly parents may exacerbate the time crunch and the money crunch that many families now experience, the increasing health and longevity of the elderly suggest that the elderly may be a potential resource that can help families balance these other pressures. Recognizing the delicate balance that many American families are trying to maintain, the Administration has proposed a number of ways to help. Some of these are highlighted in the section below.

Increasing the Flexibility of Paid Work to Lessen the Time Crunch

With a record high share of the population employed,
EE. ~~In shifting from work in the home to work in the market, many women find~~
~~many workers find themselves struggling to balance work and~~
~~themselves with less flexibility to respond to family needs. This shift has also called upon men to~~
~~take a greater role in child care and in helping with other family needs. The result is that~~
~~flexibility on the job is becoming increasingly important to families.~~
Women have less flexibility to respond to family needs than they once did, and men are increasingly being called upon to take a greater role in child care and other responsibilities. Policy
family recognizing that flexibility
The Family and Medical Leave Act

EE [OMB alternative to make it more a family than a woman's problem: "With a record high share of the population employed, many workers find themselves struggling to balance work and family. This is called flexibility on the job is becoming increasingly important to families."] (your call, but I prefer this

*Administration has suggested
increasing flexibility
to involve families other
in helping with the crunch.
Recognizing these changes, the*

Appendix A

	Number (in thousands)			Percent		
	\$5.00	\$5.15-6.14	\$6.15-7.14	\$5.00	\$5.15-6.14	\$6.15-7.14
Total	921	10093	8370	1.3	13.9	11.6
Alabama	11	202	146	1.0	18.1	13.1
Alaska	2	9	13	1.0	5.5	7.6
Arizona	24	200	157	1.8	15.2	11.9
Arkansas	15	130	101	2.4	20.9	16.2
California	108	1463	1023	1.3	17.4	12.1
Colorado	10	79	92	0.9	7.3	8.4
Connecticut	9	62	70	1.0	7.5	8.6
Delaware	3	22	21	1.5	10.8	10.0
DC	1	12	12	1.1	10.0	10.7
Florida	50	597	530	1.3	15.5	13.8
Georgia	29	267	248	1.4	13.1	12.3
Hawaii	3	47	29	1.0	15.0	9.4
Idaho	6	58	45	1.6	15.6	12.3
Illinois	43	428	354	1.3	13.2	10.8
Indiana	18	180	209	1.0	9.8	11.4
Iowa	10	103	91	1.1	11.2	9.9
Kansas	9	123	96	1.1	15.6	12.3
Kentucky	14	157	161	1.2	14.2	14.7
Louisiana	19	297	123	1.7	25.9	10.7
Maine	3	45	39	0.8	11.8	10.4
Maryland	12	125	137	0.9	9.5	10.5
Massachusetts	15	161	162	0.9	9.6	9.7
Michigan	28	341	312	0.9	11.3	10.3
Minnesota	17	115	121	1.2	8.0	8.4
Mississippi	10	146	74	1.5	22.7	11.5
Missouri	20	172	169	1.4	11.9	11.8
Montana	4	54	32	1.6	21.5	12.7
Nebraska	5	67	68	1.0	13.2	13.6
Nevada	6	60	60	1.0	11.2	11.3
New Hampshire	3	29	31	0.9	8.2	8.5
New Jersey	30	205	187	1.6	10.6	9.8
New Mexico	4	75	39	0.8	18.0	9.1
New York	67	566	395	1.8	14.8	10.3
North Carolina	29	247	223	1.5	12.4	11.2
North Dakota	4	34	29	2.0	18.3	15.9
Ohio	40	427	356	1.2	12.7	10.6
Oklahoma	6	170	126	0.6	19.6	14.5
Oregon	5	35	184	0.5	3.7	19.7
Pennsylvania	48	454	338	1.5	13.8	10.3
Rhode Island	5	37	25	1.8	13.4	9.3
South Carolina	16	153	116	1.5	14.9	11.3
South Dakota	2	33	29	1.1	15.2	13.7
Tennessee	24	208	216	1.5	13.6	14.2
Texas	85	929	653	1.7	18.5	13.1

CHAPTER 5

The Changing American Family

For most of the 20th century, the typical American family was a married couple with children in which the wife did not work for pay. But for decades now this traditional one-breadwinner, one-homemaker family has made up a declining share of families, as more wives have entered the paid labor force and as single-parent families have become more widespread. At the beginning of the 21st century, only about a third of all families are married couples in which the wife does not work outside the home. This means that a majority of American families face-- and in consequence the Nation faces-- different opportunities and different challenges from those of a society of "traditional" families.

The changes in the American family, viewed over the entire span of the 20th century, have been dramatic (Table 5-1). In 1900, for example, about 80 percent of children lived in two-parent families with a mother or stepmother who worked on the farm or at home. Fewer than 10 percent of all Americans lived in one-parent families. The typical home had few of today's conveniences (only 8 percent of dwelling units had electricity in 1907), and many households still made their own soap, sewed their own clothes, and gave birth in the home rather than in a

Table 5-1 – *Contrasting American Families Then and Now*

Item	1900	1999
% of persons living in a one-parent family	8.5	27
% of households with 7 or more people	20.4	1.2
Age at Marriage of Women	21.9	25
Age at Marriage of Men	25.9	26.8
% of women aged 35-44 widowed	9	1.3g
% of women aged 35-44 divorced	1	14.7f
% of people born in current state of residence	78.2	61.8f
% of people born in current region of residence	90.8	73.3e
Infant Mortality Rate, percent	10.0b	0.7
Number of polio cases, per 100,000	5.5a	0
Life Expectancy of Women at birth	48.3	79.4e
Life Expectancy of Men at birth	46.3	73.6e
Labor force participation rate of women, percent	20	60.2

Notes: due to data availability, not all series range from 1900 to 1999 -- (a) 1912; (b) 1915; (d) 1990; (e) 1997;

Utah	6	61	84	1.0	10.1	14.0
Vermont	1	21	20	0.7	12.4	11.5
Virginia	13	218	207	0.8	13.6	12.8
Washington	10	180	158	0.6	10.9	9.6
West Virginia	6	106	60	1.2	22.2	12.8
Wisconsin	14	157	177	0.8	8.9	10.0
Wyoming	2	25	19	1.4	17.8	13.8

hospital. Women in 1900 married younger, had more children, and died younger than women today. Ten percent of children died in infancy, and average life expectancy for both men and women was less than 50 years. The average family had more than two children, and a fifth of all households had seven or more members. Job opportunities for women who did not live on farms were limited as much by custom and law as by physical demands: only a fifth of all women worked for pay, and those who did were mainly from poor and immigrant families.

The average family today enjoys many advantages that its counterpart of a century ago did not. As we have seen in earlier chapters, the material standard of living of the average family is much higher now than it was then. People are more likely not only to live longer but to remain healthy into retirement as well. It is partly because of these very advances, however, that families today face a different set of challenges than did families 100 years ago. In particular, the expansion of opportunities for women to work for pay, and the greater willingness of women to accept such work^A, have brought a twofold challenge for families to the fore. The first is that of making ends meet in an economy where a single worker's income may not satisfy all of a contemporary family's material needs; the second is that of balancing the demands of work against the need to reserve time for the responsibilities and enjoyments of family life.^B

This chapter examines these challenges. It begins with an overview of some of the key trends that have created the modern American family: the rise in female labor force participation, changes in family formation and dissolution, and improvements in health and longevity. It then explores the economic implications of the emergence of a diverse set of family types, focusing on differences in incomes and time spent at work. The remainder of the chapter explores the challenges these different kinds of families face and the policy implications of those challenges. This discussion is organized in two parts. The first discusses the "money crunch": the financial constraints that still burden many families despite the remarkable growth in the American standard of living. This challenge is more likely to confront single-mother families and one-earner couples than among two-earner couples. The second part discusses the "time crunch:" the

^A change on edited copy here is illegible

^B [NEC wants paragraph on post-93 or the 90s] (bracketed footnotes are marginalia from reviewed edited copy)
[In part the challenge is that apparent needs keep growing even for some dual-earner families]

Appendix A

	Number (in thousands)			Percent		
	\$5.00	\$5.15-6.14	\$6.15-7.14	\$5.00	\$5.15-6.14	\$6.15-7.14
Total	921	10093	8370	1.3	13.9	11.6
Alabama	11	202	146	1.0	18.1	13.1
Alaska	2	9	13	1.0	5.5	7.6
Arizona	24	200	157	1.8	15.2	11.9
Arkansas	15	130	101	2.4	20.9	16.2
California	108	1463	1023	1.3	17.4	12.1
Colorado	10	79	92	0.9	7.3	8.4
Connecticut	9	62	70	1.0	7.5	8.6
Delaware	3	22	21	1.5	10.8	10.0
DC	1	12	12	1.1	10.0	10.7
Florida	50	597	530	1.3	15.5	13.8
Georgia	29	267	248	1.4	13.1	12.3
Hawaii	3	47	29	1.0	15.0	9.4
Idaho	6	58	45	1.6	15.6	12.3
Illinois	43	428	354	1.3	13.2	10.8
Indiana	18	180	209	1.0	9.8	11.4
Iowa	10	103	91	1.1	11.2	9.9
Kansas	9	123	96	1.1	15.6	12.3
Kentucky	14	157	161	1.2	14.2	14.7
Louisiana	19	297	123	1.7	25.9	10.7
Maine	3	45	39	0.8	11.8	10.4
Maryland	12	125	137	0.9	9.5	10.5
Massachusetts	15	161	162	0.9	9.6	9.7
Michigan	28	341	312	0.9	11.3	10.3
Minnesota	17	115	121	1.2	8.0	8.4
Mississippi	10	146	74	1.5	22.7	11.5
Missouri	20	172	169	1.4	11.9	11.8
Montana	4	54	32	1.6	21.5	12.7
Nebraska	5	67	68	1.0	13.2	13.6
Nevada	6	60	60	1.0	11.2	11.3
New Hampshire	3	29	31	0.9	8.2	8.5
New Jersey	30	205	187	1.6	10.6	9.8
New Mexico	4	75	39	0.8	18.0	9.1
New York	67	566	395	1.8	14.8	10.3
North Carolina	29	247	223	1.5	12.4	11.2
North Dakota	4	34	29	2.0	18.3	15.9
Ohio	40	427	356	1.2	12.7	10.6
Oklahoma	6	170	126	0.6	19.6	14.5
Oregon	5	35	184	0.5	3.7	19.7
Pennsylvania	48	454	338	1.5	13.8	10.3
Rhode Island	5	37	25	1.8	13.4	9.3
South Carolina	16	153	116	1.5	14.9	11.3
South Dakota	2	33	29	1.1	15.2	13.7
Tennessee	24	208	216	1.5	13.6	14.2
Texas	85	929	653	1.7	18.5	13.1

Utah	6	61	84	1.0	10.1	14.0
Vermont	1	21	20	0.7	12.4	11.5
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Washington	10	180	158	0.6	10.9	9.6
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Wisconsin	14	157	177	0.8	8.9	10.0
Wyoming	2	25	19	1.4	17.8	13.8

Effects of Minimum Wages on Employment

A simple model of the competitive labor market would suggest that when a minimum wage is imposed, employers would lower their demand for workers because workers are more costly. However, as we look at the empirical evidence and at alternative theories of the labor market, we find that the evidence suggests weak or nonexistent effects of minimum wages on employment.

Empirical Effects

To determine the effect of minimum wages on employment, we would ideally like to gather data from firms when a minimum wage is imposed and see whether firms cut their employment. The work of Card and Kruegar (forthcoming) comes closest to doing this. In 19xx, New Jersey imposed a higher minimum wage, and yet the neighboring state of Pennsylvania did not. Card and Kruegar gather data from fast food restaurants in these two states for this period, and find that employment did not fall in New Jersey compared to Pennsylvania, and may have even risen. Lang and Kahn (1998) take a similar approach—they study the effects of state differences in minimum wages on employment of food service workers in 1988-91 and find that employment effects are minimal (after introducing econometric corrections factoring affecting employment that are other than minimum wages).

Studies that move away from fast food to more general job categories tend to also find little negative effect on employment. Dickens, Machin, and Manning (1999) find that minimum wage changes in Britain do not have a negative effect on employment. An earlier review of the empirical evidence on minimum wages, Brown, Gilroy, and Kohen (1982) concludes that teen employment may fall modestly in response to minimum wages, but employment of adults is little changed. However, regarding the employment of teenagers, the more recent literature that examines the responses of firms to minimum wage increases, as in Card and Kruegar described above, may provide more accurate evidence and finds little negative effect for teenagers.

Thus, overall, empirical evidence that examines the effects of modest minimum wages changes finds little change in employment. The literature that finds negative employment effects might not control successfully for factors affecting employment other than minimum wages. More recent research has attempted to get around this problem by looking cross-state differences in the minimum wage, or by focusing more narrowly on particular industries or firms. These more rigorous studies have often failed to find negative employment effects of the minimum wage

What Explains These Empirical Results?

The empirical results suggesting few negative employment effects of modest minimum wage increases may seem puzzling in light of the standard competitive model of labor demand mentioned above. These empirical results can, however, be better explained if we alter our model of perfectly competitive labor markets.

There is ample evidence that labor markets are not perfectly competitive for all workers—that employers are not simply wage takers, who hire labor given the prevailing wage. Instead, employers set wages, and a number of factors enter employers wage decisions. For example, firms that wish to hire higher quality workers, or to monitor their behavior less, or experience

Strong
economy
we don't
see unemployment

No major
very small.

more recent
for typically teenager.

add

shortage of time to devote to family needs that results from the increased participation of parents, especially mothers, in the paid labor market. This problem affects a vast number of families, including many for whom the money crunch is less pressing. The chapter also discusses recent favorable trends in family incomes and reviews some of the Administration's policies designed to address the money and time crunches.

KEY TRENDS SHAPING THE AMERICAN FAMILY

Among the many trends that have affected the American family over the course of the century, three have been particularly important. The first is the rise in female participation in the labor force as more opportunities have opened up for women to work and as more women have taken advantage of those opportunities. The second is not a single trend but a set of related changes in how families form and dissolve, which have contributed to the growing prevalence of single-parent families. The third is improvements in health and life expectancy that have made care for older relatives—and providing for their own retirement-- increasingly important issues for heads of families today. Many other kinds of households are also part of American society and face challenges of their own, but this chapter focuses primarily on these three challenges as they affect families with children.

Female Labor Force Participation

Women have always worked—whether on the family farm, in the home, or in the paid labor force. What distinguishes the 20th century has been the enormous increase in the proportion of women who work for pay. In 1999 about three-fifths of the female population aged 16 and over were in the labor force (either employed or looking for work). This is three times higher than the female labor force participation rate in 1900. And the participation rate of women aged 25-44--those most likely to be balancing work and child rearing--has risen severalfold, from less than 20 percent in 1900 to nearly 80 percent today (Chart 5-1). The participation rate of women in this age group with children under age 18 has been somewhat lower than the overall rate but has shown a similar pattern of increase. Over the past 25 years the share of working

lower worker turnover, may set wages above the perfectly competitive levels. Alternatively, other firms may set wages too low..... Data on wages shows that industries pay very different wages for similarly skilled workers, suggesting that factors other than perfect competition affect wages and hiring. Thus, existing compensation data shows that workers or employers may often be earning economic rents.

If it is the case that workers or firms are earning economic rents, then theoretical models of the effects of minimum wages on employment suggest that employment need not fall when minimum wages rise.

In sum, some markets exhibit evidence that a

mothers in this age group who were employed full-time has fluctuated between 68 and 74 percent.

Many factors have contributed to this growth in women's participation in the paid labor market, including increases in education and wages for women, the opening up of more opportunities for women to work, and changes in family structure. As a result of higher labor force participation rates and later marriages, a larger proportion of women than ever before experience a period of independent living and employment before marriage. This gives them greater attachment to the labor force and increases the chances that they will continue to work, or return to work, after they marry and start a family.

Family Formation and Dissolution

Marriage remained a fairly universal experience throughout the 20th century. Only 6 percent of women aged 45-64 in 1998 and 12 percent of women aged 35-44 had never been married. However, people today are spending a smaller fraction of their adult lives married than did their counterparts in 1900, and a much larger proportion of children are being born to unmarried mothers. As a result, the share of the population living in one-parent families increased from 8.5 percent in 1900 to 27 percent in 1999^C.

There are several explanations for the fact that Americans today spend a smaller fraction of their lives married. First, people are marrying slightly later. In 1900 the typical first marriage was between a woman of 22 and a man of 26; now the typical bride is 3 years older and the groom nearly a year older. Second, divorce rates are much higher today than at the beginning of the century. In 1900, among those aged 35-54, the death of a spouse was far more likely than divorce to end a marriage. Over the century, the probability of being a widow in this age range declined markedly, while the probability of being divorced rose (Chart 5-2). The divorce rate, which jumped from less than 10 per 1,000 married females per year in the mid-1960s to more than 20 per 1,000 in the mid-1970s, has drifted down slightly since then but remains high. Nevertheless, the median duration of a marriage (7.3 years in 1994) is close to its all-time high.

^C [fact-check: people or children?]

DOL

DRAFT

March xx, 2000

Dear xx,

I am writing this letter to encourage you to pass a straightforward minimum wage bill that raises the minimum wage by \$1 over two years [not exactly over two years since proposal is to take affect in 30 days so workers will get full increase just 13 months from passage – maybe substitute “in two steps”.] If Congress puts politics over work and family and sends me a bill that delays the minimum wage increase by spreading it out over 3 years and attaches it to costly and regressive tax cuts that threaten our fiscal discipline and threatens overtime pay, I will veto it. [this is a veto threat on a combination of issues but in paragraph 4 there is a standalone threat. Suggest being consistent.]

In 1996, the Congress and I worked together to raise the minimum wage by 90 cents over 2 years. Since then, the American economy has created more than 10 million new jobs – with more than 1 million of them in the retail sector where many minimum-wage workers are employed. The unemployment rate has fallen from the already low rate of 5.2 percent to 4.1 percent – around the lowest in 30 years. We have enjoyed larger real wage increases for more consecutive years than at any time in more than two decades, while underlying inflation is the lowest it has been in more than three decades. The minimum wage increase has contributed to the 44 percent decline in the welfare caseload since the last minimum wage increase – bringing the welfare rolls down to their lowest level in three decades. And the minimum wage increase has been a crucial factor in contributing to rising wages for the lowest income groups, reversing the wage stagnation and declines of the previous decade, ~~contributing to rising wages for even the lowest income groups~~. Our recent experience clearly demonstrates that what is good for America’s working families is good for America’s economy.

We must ~~to~~ do more to ensure that all Americans continue to benefit from the longest economic expansion in our Nation’s history. In 1992, a full-time working parent with two children that earned the minimum wage was well below the poverty line. Today, as a result of the expansion of the Earned Income Tax Credit in 1993 and the increase in the minimum wage, no full-time working parent with two children has to raise his or her family in poverty. To further reward work and family, I have proposed to raise the minimum wage by \$1 an hour over ~~the next two years~~ from \$5.15 to \$6.15 in two steps. This modest increase would simply restore the real value of the minimum wage to what it was in 1981 ~~1982~~. For a full-time worker at the minimum wage, this would provide a \$2,000 raise – enough for such [“or low-income” as only applies to families earning between \$10K and 15K] a ~~typical~~ family of four to buy groceries for 7 months or pay rent for 5 months. More than ~~11~~ 10 million workers would benefit under this proposal, the majority of them women.

Unfortunately, some in Congress have proposed a more gradual increase in the minimum wage. That delay would cost a full-time, year-round worker more than \$900. ~~roughly [\$900] over [two] years compared with my proposal~~. They have also added provisions that would

repeal important overtime protections for American workers. I will veto any bill that forces hard-working American families to wait three years for their full pay raise .

At the same time, some in Congress have been playing politics with the minimum wage bill, using it as a vehicle for costly, regressive and unnecessary tax cuts that would threaten our fiscal discipline. Our key priorities should be to meet our long-term fiscal challenges: eliminating the debt, strengthening Medicare, and strengthening Social Security. My budget addresses these priorities. If you pass a tax cut that threatens Social Security, Medicare, and debt reduction, I will veto it. [what about “and attaches it to costly and regressive tax cuts that threaten our fiscal discipline and threatens overtime pay”]

If fiscally responsible tax cuts are attached to the minimum wage bill, they should reflect our priorities and address urgent national needs like deteriorating schools and the communities that have been left behind during this time of prosperity. In contrast, the bulk of the provisions attached to the minimum wage bill in the House are directed away from working families and would do little ~~for~~ to help most small businesses. Some of these provisions could even reduce the retirement benefits enjoyed by millions of working Americans.

America’s workers show up to work every day and get the job done. Congress should do the same this year. I urge Congress to pass a minimum wage bill that increases the minimum wage by \$1 over two years and does not at the same time threaten the overtime pay of working families ~~add poison pills that bypass the priorities of working families.~~

Sincerely,

WJC