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CHAPTER 6

A SMALL RAISE FOR THE BOTTOM

MICHAEL REICH AND PETER HALL

Introduction

Despite the longest economic boom in California's history, a large and increasing number of low-paid workers are not sharing in its prosperity. Indeed, from the mid-1970s to the mid-1990s real hourly wages fell steadily for most workers, by around 25 percent for the lowest fifth of the California workforce and 20 percent for the median worker, and rose only for the top fifth of the workforce. As a result, wage inequality in California is now at record levels and much higher than in the rest of the U.S.

For the vast majority of California wage earners, real hourly pay began to grow again only in 1996, at the beginning of the most recent round of minimum wage increases. By 1999 pay at the tenth percentile reached \$6.04, 12.1 percent higher than in 1995, while pay at the fiftieth percentile grew by 2.8 percent, to \$13 and pay at the ninetieth percentile grew 9.2 percent, to \$32.61.¹ As a result, the rate of growth in wage inequality has slowed. This timing suggests that the 1996-98 minimum wage increases may have played a part in a "*small raise for the bottom.*"

In this chapter, we first discuss the size and growth of low-wage employment in California since 1980 and then examine rising wage inequality in the state in the same period.² We go on to present a sustained examination of the 1996-98 California minimum wage increase, which raised the state minimum by 35 percent, from \$4.25 to \$5.75, or \$.60 above the national minimum.

We focus on the extent to which the 1996-8 minimum wage increases can be given credit for the reduction in wage inequality that occurred in the late 1990s. We find that the minimum wage increases did not negatively affect the strong employment growth over the period. At the same time it did benefit large numbers of low-wage workers. Through a series of statistical tests, we also find evidence that the minimum wage increases did reach the lowest income workers and households and did not spill over to high-paid workers.

We pay particular attention to the impacts of the policy on low-wage sectors of the economy. Precisely because minimum wages target the lowest paid in the labor market, we need to be careful that it does not lead to the displacement of the most vulnerable workers. Compared to the 1988 increases, the employment and wage effects of the increases were both more benign and more durable.

Finally, we discuss the potential impact of increasing the minimum wage further, to \$8 (which is the 1968 level in 1999 dollars). The effects of the latest round of increases provide a useful basis from which to assess the likely effects of a further increase.

I. The Definition of Low Wages and the Number of Low-Wage Workers

For the purposes of this chapter, we use three different definitions of low-wages: less than \$6 per hour, less than \$8 per hour and less than \$10 per hour.³ We use the \$6 figure as a benchmark of the 1998 California real minimum wage (in 1999 dollars) and refer to it as demarcating the lowest-wage workers. The \$8 benchmark is very close to what the federal minimum wage would be today if it had maintained its real value since 1968. The

\$10 benchmark represents an approximate living wage for a single full-time worker with one dependent, according to a number of recent household budget studies. It is also very close to what the 1968 minimum wage would be worth today if it had been indexed to *half* of the growth of labor productivity.

Table 1 shows that the 1999 workforce in these wage groups numbered about 1.5 million, 4 million and 5.7 million California workers, respectively. As a proportion of the work force, they corresponded to 9 percent, 25 percent and 36 percent of California workers, respectively.

Table 1. Number of Low Wage Workers, California 1999

Hourly Wage	Number of Workers (millions)	Percent
Up to \$6	1.48	9.4
\$6-8	2.52	16.0
\$8-10	1.67	10.6
\$10 and up	10.09	64.0

Source: Bureau of Labor Statistics and authors' calculations using CPS ORG data.

Since 1980 the number of low-wage workers increased rapidly both in absolute terms and as a portion of the workforce. As table 2 shows, in 1980 3.5 million workers earned less than \$10 per hour and they amounted to 32.2 percent of the California workforce. By 1990 the number of such workers had increased to 5.4 million, amounting to 37.3 percent of the workforce. During the recession year of 1994 the corresponding figures were 5.2 million and 37.8 percent.

Table 2. Growth in Low-Wage Employment, California 1980-99

Hourly Wage (1999 Dollars)	1980		1985		1990		1994		1999	
	Number (millions)	Percent	Number (millions)	Percent	Number (millions)	Percent	Number (millions)	Percent	Number (millions)	Percent
Up to \$6	1.22	11.4	1.50	12.4	1.62	11.2	1.83	13.0	1.48	9.4
Up to \$8	2.23	20.7	2.79	23.1	3.83	26.5	3.62	25.7	4.00	25.4
Up to \$10	3.47	32.2	4.06	33.6	5.39	37.3	5.18	36.8	5.67	36.0
\$10 and up	7.31	67.8	8.01	66.4	9.07	62.7	8.90	63.2	10.09	64.0
	10.78	100.0	12.07	100.0	14.46	100.0	14.08	100.0	15.76	100.0

Source: Estimates for 1980, 1985 and 1990 were interpolated from hourly wage data (derived from CPS March Annual Demographic Survey) in Reed, Haber and Mameesh (1996), adjusted for the gender composition of the workforce (derived from the 1990 Population Census and authors' analysis of CPS ORG data); and Bureau of Labor Statistics. Estimates for 1994 and 1997 from author's analysis of CPS ORG data and Bureau of Labor Statistics.

The absolute number of low-wage workers has continued to increase even in the current economic boom. As table 2 indicates, the number of workers earning less than \$10 per hour, in real 1999 dollars, increased from 5.2 million in 1994 to 5.7 million workers in 1999. After the 1996-98 minimum wage increases, the proportion and absolute number of workers earning below \$6 per hour fell noticeably. But the growth in absolute employment was concentrated in the \$6-8 and \$8-10 ranges, leaving these low-wage groups' weight in the workforce unchanged.

The low-wage group is projected to continue to constitute an increasing proportion of workers in the state. Table 3 shows that middle-income jobs are set to decline as a proportion of all jobs. The growth in employment in the middle third of jobs as ranked by mean hourly wage rate will lag behind growth in higher and lower-paid jobs. The result is a declining middle in the California labor market.

Table 3. Declining Middle, California 1996-2006

Employment by wage	Projected percentage employment growth, 1996-2006	Examples of Occupations
Lowest paid third of jobs (Up to \$10 approx.)	25.8	Waiters, cooks, packers, cashiers and retail sales, guards, cleaners, laborers
Middle paid third of jobs (\$10-\$17 approx.)	20.3	Drivers, office clerks, operators, maintenance, bookkeepers, mechanics
Highest paid third of jobs (\$17 approx. and above)	27.0	Carpenters, accountants, registered nurses, managers, engineers

Source: Authors' combination of California Employment Development Department data, Occupational Employment Projections 1996-2006, and Occupational Employment and Wage Data 1998.

II. A Profile of the Low Wage Workers

The demographic profile of low-wage workers in California contains few surprises. Lower-wage workers are more likely to be those with less education, younger, women, Latinos, and live in lower-income households.

As table 4 shows, the lowest-wage workers – those earning up to \$6 per hour - are more concentrated at lower education levels. Almost half (45 percent) of those earning less than \$6 per hour have less than a high school diploma, as compared to around 6 percent of those earning \$10 and above. This disparity raises questions of the extent to which mandated pay increases would result in displacement of the less-educated workers and their substitution by more-educated workers or whether public and private policy would respond with increased training and other productivity-enhancing programs.

In general, the lowest-wage workers are younger than better-paid workers (again, see table 4), but most of the lowest-paid are adults. Only 13 percent of those workers earning up to \$6 per hour are 16 to 18 years old, and an even smaller percentage, 8 percent of workers earning \$6 to \$8 per hour are 16 to 18. In other words, nine out of every ten low-wage earners are adults.

While a proportion of minimum-wage workers are very young people just starting out in the labor market and can expect pay increases as they gain experience, these turn out to be a surprisingly small minority of low-wage workers. Table 4 shows that of workers who earn less than \$6 per hour, 65 percent are over age 22 and half are 30 and older. Of workers who earn between \$6 and \$8 per hours, nearly three-fourths are over 22 and a bit over half are 30 and older. These are not workers who are just beginning to gain work experience.

Table 4 shows that women comprise 55 percent of the lowest-wage workers in California, but only 46 percent of all workers. Latinos also disproportionately hold low-wage jobs. Although they constitute 28 percent of the California workforce, Latinos hold almost half of the lowest-wage jobs. Asian-Americans and African-Americans are proportionately distributed across pay classes. White Californian workers are over half of all workers but only a third of the lowest-wage workers.

Table 4. Earnings and Selected Population Characteristics, California 1999

	Up to \$6	\$6 - \$8	\$8 - \$10	\$10 and up	All
YEARS OF SCHOOLING					
0 to 8	22.9	15.6	12.7	2.7	7.7
9 to 11	22.0	17.9	9.6	3.3	8.1
12	26.8	33.3	34.7	21.4	25.2
13 to 15	22.6	27.0	32.4	33.3	31.2
16 or more	5.7	6.2	10.6	39.4	27.9
AGE					
Up to 18	13.1	7.8	1.7	0.3	2.9
19-22	22.0	19.5	14.6	3.0	8.7
23-29	15.4	21.2	23.4	15.9	17.5
30-39	18.3	22.1	26.4	30.4	27.5
40-64	27.8	27.7	30.7	49.1	41.7
65 and older	3.4	1.8	3.2	1.4	1.8
GENDER					
Women	55.0	49.1	51.6	42.6	45.7
Men	45.0	50.9	48.4	57.4	54.3
RACE / ETHNICITY					
White non-Hispanic	33.3	36.4	43.0	61.8	53.1
African-American	4.4	5.8	6.3	7.0	6.5
American Indian	1.9	1.4	1.0	0.7	1.0
Asian-American, Pacific Islander	11.3	10.2	10.0	11.9	11.4
Latino	49.1	46.2	39.7	18.6	28.1
TOTAL	100.0	100.0	100.0	100.0	100.0

Source: Authors' analysis of CPS ORG data.

Finally, the lowest-wage workers are concentrated in low-income households, as table 5 shows.⁴ For example, among lowest-wage workers, 58 percent live in households with incomes of less than \$30,000 per year, compared to 17 percent of those earning \$10 or more. Conversely, three-quarters of those living in households receiving less than \$15,000 per year earn less than \$10 per hour, and over half of those living in households receiving between \$15,000 and \$30,000 per year earn less than \$10 per hour. This pattern implies that a minimum wage policy does successfully target low-income households.

Table 5. Household Income and Earnings, California 1999

Annual household income (cumulative percentages)	Up to \$6	\$6-\$8	\$8-\$10	\$10 and up	All
Less than \$15,000	32.0	25.1	17.2	4.6	11.7
Less than \$30,000	57.7	53.5	43.8	17.0	29.4
Less than \$50,000	81.1	76.6	70.7	41.6	53.9
Less than \$75,000	90.6	89.3	87.2	65.9	74.1
All households	100.0	100.0	100.0	100.0	100.0

Source: Authors' analysis of CPS ORG data.

Although one-fourth of all California wage earners live in households receiving total incomes of \$75,000 or more, only one-tenth of low-wage workers live in such households. These low-wage workers are of some policy interest, but they constitute a small group. A majority of the lowest-wage workers live in low-income households; this observation holds for all age groups but the very youngest workers. For all age groups, except those aged 16 to 18 years, fewer than 10 percent of the lowest-wage workers live in households with incomes greater than \$75,000 per year.

Contrary to assertions that minimum-wage workers live in households that are spread evenly across all income groups (O'Brien and MaCurdy 2000), most of the lowest-wage earners live in low-income households. Policies that raise the income of the lowest-paid, including through mandated wage increases, can effectively target low-income households with relatively little leakage.

III. The Growth of Wage Inequality in California

Measured by household income, California ranks as the third most unequal state in the union. Between the late 1980s and the late 1990s the inflation-adjusted average income of the richest 5 percent of California households grew by 18 percent, while falling by 10 percent for the poorest fifth of households.⁵

As we shall see, wage inequality among individual workers also increased. The pattern of inequality increase was particularly disturbing because it involved substantial decreases in the real wages of the lowest paid workers.

Table 6 shows the trends towards increasing wage inequality in California for both men and women. The table also shows that wage inequality is higher than in the U.S. as a whole and that wage inequality has risen faster in California than in the U.S. as a whole. These patterns are particularly remarkable because wage inequality in the U.S. is higher than in any other industrialized country and because in the same period wage inequality in the U.S. rose faster than in any other country.

In this table wage inequality is shown by the 90/10 wage ratios from the mid-1970s to the mid-1990s. The 90/10 wage ratio measures the relative wage level of a worker at the 90th percentile, compared to a worker at the 10th percentile. The greater the 90/10 wage ratio, the greater the gap between those near the top and those near the bottom of the wage distribution, and therefore the higher the measured level of wage inequality. This inequality measure avoids many of the problems of extreme outliers associated with other inequality indicators. At the same time it is relatively well-suited to indicating the effects of minimum wage policies that have had most impact on the lowest-paid 10 percent of workers.

In the period from 1950 to the mid-1970s, wage inequality was sensitive to the economic cycle. In general, wage differentials would narrow during tight labor markets and widen when labor demand diminished, but there was no longer-term trend in either direction. The pattern since the 1970s has been quite different. Earnings inequality in California rose throughout the period 1975 to 1994, and the most dramatic increases occurred during recession years. Moreover, earnings inequality rose during these recessions because of substantial declines in the real wages of the lower-paid workers. For example, between 1989 and 1993, the wage for male California workers at the 20th percentile fell by 27 percent.

We have updated the wage inequality analysis using a closely related data source – the monthly outgoing rotation groups of the Current Population Survey. Our analysis of the data since 1994 suggests that the increase in inequality slowed in the 1997-99 period (see table 7).⁶

Table 6. The Growth of 90/10 Wage Ratios, California and the U.S., 1975-94

Year	Men		Women	
	California	U.S.	California	U.S.
1975	4.31	4.07	4.07	3.81
1976	4.31	4.16	3.73	3.75
1977	4.37	4.26	3.85	3.84
1978	4.55	4.23	3.76	3.77
1979	4.54	4.28	3.66	3.68
1980	4.60	4.37	3.77	3.71
1981	4.97	4.57	3.83	3.82
1982	5.13	4.81	4.00	3.87
1983	5.11	4.99	4.10	4.03
1984	5.25	5.12	4.33	4.17
1985	5.44	5.01	4.32	4.25
1986	5.48	5.13	4.75	4.48
1987	5.67	5.25	4.65	4.50
1988	5.68	5.18	4.49	4.54
1989	5.61	5.20	4.79	4.75
1990	5.76	5.24	4.91	4.59
1991	5.78	5.26	4.72	4.55
1992	5.99	5.30	4.82	4.64
1993	6.19	5.45	5.31	4.80
1994	6.16	5.49	5.34	4.83

Source: Computed from analysis of CPS March Annual Demographic Survey by Reed, Haber and Mameesh, 1996, Table D.5.

Table 7. Wage Inequality in California: 90/10 wage ratios, 1994-99

Year	All workers	Men	Women
1994	6.37	6.72	5.57
1995	6.10	6.46	5.68
1996	6.04	6.35	5.43
1997	5.80	6.27	5.06
1998	5.65	6.01	5.14
1999	5.67	6.22	4.95

Source: Authors' calculations using the CPS Monthly ORG data.

The decline in the 90/10 wage ratio measure of inequality results partly from real wage growth among the lowest-paid workers in the 1997-8 period. As table 8 shows, the real hourly wage at the 5th and 10th percentiles did increase in the late 1990s. At the same time, the median wage – the wage at the 50th percentile - did not increase. In other words, workers at the lowest end of the labor market received wage increases relative to those at the middle of the earnings distribution. It is particularly significant that the wage of the 5th percentile in 1999 was at \$5.75 per hour, the same as the statewide minimum wage.

A key policy question is to what extent this increase is a result of the minimum wage increase, and to what extent it results from the natural trickle-down of the extended economic boom. We consider this question in the next section.

Table 8. Real Hourly Wage at 5th, 10th and 50th Percentiles, California 1994-99

Year	\$ per hour of workers at:		
	5 th percentile	10 th percentile	50 th percentile
1994	4.75	5.49	12.63
1995	4.85	5.39	12.64
1996	4.99	5.35	12.68
1997	5.22	5.70	12.53
1998	5.60	6.08	12.91
1999	5.75	6.04	13.00

Source: Authors' calculations using the CPS Monthly ORG data.

IV. The Impact of Recent Minimum Wage Increases in California

From October 1996 to March 1998, a series of federal and state increases raised the minimum wage in California from \$4.25 to \$5.75 an hour. Combined together, these changes represent a 35 percent increase in the minimum wage. They constituted the first increases since July of 1988, when the state's minimum wage was increased by 27 percent, from \$3.35 to \$4.25. The March 1998 increase raised the California minimum wage to 60 cents above the federal level of \$5.15 an hour. The statewide increases have raised the real value of the minimum wage back to its July 1988 level, although it is still below the 1968 real value of almost \$8 per hour. The new minimum wage level is also below the federal poverty level.

We analyze the impact of the increase by examining first the employment effects and then the direct and indirect effects on wages. We go on to examine the impact on low-wage sectors more closely, followed by the issue of whether low-skilled workers were displaced and, finally, the impact upon inflation.

To begin our analysis of the employment effects of a higher minimum wage, we first examine trends in employment-to-population ratios for various age groups before and after the wage increase. These ratios are preferable to unemployment rates because they also reflect labor force participation, which can increase when there are fewer discouraged workers, or when older workers, women and students decide to offer more hours in the workforce.

We would expect the employment-to-population ratios to fall if the minimum wage had resulted in layoffs or other negative employment effects. Table 9 shows that this did not occur. Over the period 1995-99, the employment-to-population ratios remained the same or increased in all age groups.⁷

Economic growth might have affected the figures in table 9 and masked any negative effects of the minimum wage increase. As is well known, macroeconomic conditions remain the most important determinant of overall employment trends. To distinguish the employment effects of macroeconomic conditions from minimum wage impacts we experimented with different measures of macroeconomic activity. We found that the sum of manufacturing and construction employment constitutes an excellent indicator of the business cycle or overall economic conditions. We will refer to this indicator as the MCE index.

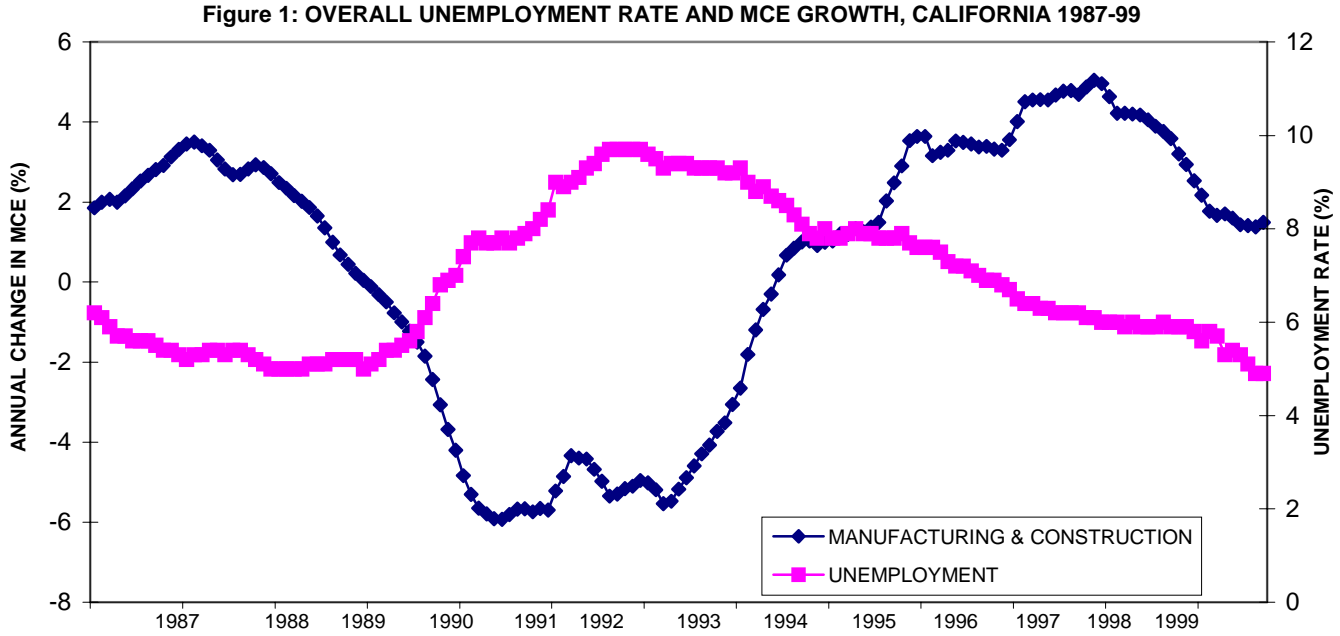
Table 9. Employment-to-Population ratios, all age groups, California 1994-99

Age	1994	1995	1996	1997	1998	1999
16-18	28.2	26.6	25.1	24.6	27.7	27.4
19-22	56.4	57.5	59.6	59.7	60.2	65.3
23-29	68.7	69.0	72.3	75.0	72.4	76.0
30-39	73.4	74.8	74.9	77.6	77.5	77.8
40-65	67.5	69.5	69.7	71.1	71.3	73.4
All ages	66.2	66.9	68.0	69.5	69.4	71.2

Source: Authors' calculations using the CPS Monthly ORG data.

Figure 1 shows the relationship between MCE growth and the unemployment rate. As we would expect, these curves generally move in opposite directions. When MCE growth is up, unemployment is down. (Note however that the unemployment rate did not rise in response to the sharp fall in the MCE growth rate in 1998, when the Asian financial crisis particularly affected manufacturing.)

We find that the close fit between overall unemployment trends and macroeconomic conditions in the state (as measured by MCE) was unaffected by the minimum wage changes. This finding suggests that the wage rates of the lowest paid workers could be raised without undermining the state’s strong growth. However, this finding can only be provisional as it is possible to control more carefully for the employment effects of economic growth. We present such a “difference-in differences” test in the appendix and reach the same conclusion.



Source: Labor Market Information, Employment Development Department, State of California

The first column of table 10 shows the trend in the proportion of California workers that earned less than the new minimum wage of \$5.75 per hour. Although not shown in this table, it is well known that a noticeable spike in the wage distribution is usually found at and just above the minimum wage. This table shows how the spike moved to higher wage rates with increases in the minimum.

Table 10. Effects of Minimum Wage Increases in California, 1994-99

	Percentage earning below:		
	\$5.75	\$6.50	\$7.25
1994	11.7	15.0	21.2
1995	12.8	17.9	21.7
1996	11.8	18.2	21.8
1997	10.9	16.9	20.4
1998	5.8	14.9	20.8
1999	3.9	13.7	20.6
Change 1995-99	8.9	4.2	1.1

Source: Authors' analysis of CPS ORG data.

In 1995, one year before the increase, 12.8 percent of the workforce earned less than \$5.75. A few of these workers are not covered by the minimum wage, but most could be expected to benefit. Indeed, in 1999, one year after the increase, the proportion earning less than \$5.75 fell sharply, from 12.8 percent to 3.9 percent, or a change of 8.9 percentage points. The magnitude of this decline thus approximates the percentage of the over 15 million employed Californians who directly benefited from the \$1.50 per hour minimum wage increases. Multiplying 8.9 percent by about 15 million implies that about 1.33 million California workers benefited from the minimum wage increases.⁸

The mean hourly wage in the less than \$5.75 wage class in 1995 was \$5.09 (not shown in the table). These workers averaged about 1,650 hours per year, including both full-time and part-time workers⁹. Consequently, the total monetary value of the direct wage increases to these workers amounted to over \$1.4 billion dollars. This represents an increase of around 0.3 percent in the total wage and salary bill in the state.

It is useful to compare our results with the Card and Krueger's (1995) finding regarding the 27 percent increase in the 1988 California minimum wage. The 27 percent increase resulted in a five percentage-point drop in the proportion of workers earning below the new minimum wage in California, relative to other control states that did not increase their minimum wage. Overall, the 1996-8 increases in the California minimum wage had a larger effect than a smaller minimum wage increase in 1988.

A minimum wage increase not only benefits those earning below the new minimum wage level. In order to restore pay differentials, those earning above the new level may also receive an increase, although a smaller one than those given to lower-paid workers. The higher above the new minimum we go, the less we expect relative wages to change.

We refer to this equalization process as wage compression.¹⁰ A strong or complete wage compression effect would occur if wages above the newly mandated minimum did not increase at all. On the other hand, a weak or zero compression effect implies that all the *relative* benefits of the policy for low-wage workers would disappear as all wages get ratcheted upwards, and in the end earnings differentials would not have narrowed. We show in this section that the compression effects of the 1996-8 minimum wage increases were significant, although not complete.

If workers at a given wage do experience wage compression, we should observe a decrease in the proportion that are below that given wage following the enactment of the minimum wage. We use this method to determine the wage levels at which wage compression attenuates and then disappears.¹¹

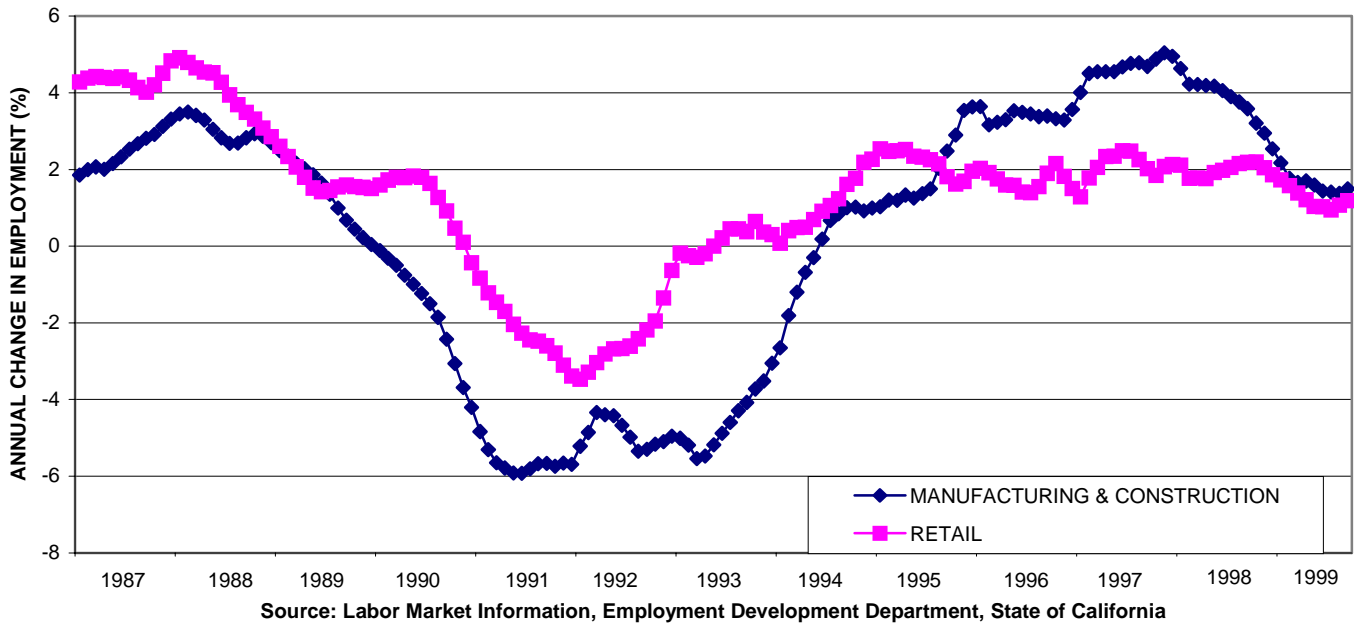
As table 10 indicates, at \$6.50 per hour – which represents an increase of \$0.75, or 50 percent of the mandated increase of \$1.50 – a significant number of workers benefited from wage increases. The proportion earning below \$6.50 fell from 17.9 percent in 1995, before the increase, to 13.7 percent in 1999, after the increase, or a 4.2 percent reduction. This means that 4.2 percent of all workers received wage increases that lifted them above \$6.50. Table 10 also shows that 8.9 percent of workers received wage increases that lifted them to \$5.75.

If there had been no compression effect, the proportion of those earning below every wage threshold would have fallen in the same proportion, but this did not occur. Our results imply a compression effect of nearly half (4.2 versus 9.8) within 50 percent of the mandated increase. The partial compression effect indicates that the minimum wage increases contributed to reduced wage inequality.

We also examined wage compression effects for workers at higher wage levels. At \$7.25 per hour – an increase of \$1.50 above the new minimum wage, a distance equivalent to 100 percent of the increase – only very small wage changes are noticeable. The proportion of workers earning below \$7.25 per hour fell marginally, from 21.7 percent to 20.6 percent after the minimum wage increases (see table 10), indicating that wages above this level were not ratcheted up. These results concur with previous findings that most of the compression effects are concentrated immediately at or just above the new minimum wage level.

Although Card and Krueger (1995) report similar compression effects for the 1988 minimum wage increase round, our tables in the previous section indicate that wage inequality rose again soon after 1988. Inflation in those years was significantly higher than in the late 1990s and may have contributed to a ratcheting up of wages above the minimum. Inflation also eroded the real gains of the 1988 minimum wage increase relatively quickly. The larger increase in 1996-98 proved to have more benign and more durable effects.

Figure 2: MCE & RETAIL EMPLOYMENT GROWTH, CALIFORNIA 1987-99



Our finding that the compression effects of the 1996-98 California minimum wage increase were relatively large has important implications for thinking about wage inequality. Table 10 showed that the real wage of the lowest percentiles did increase in the period 1994-99. With a constant wage at the 50th percentile, it is clear that the minimum wage increases had a noticeable effect in reducing wage inequality in the state. At the same time, the most affluent California earners – for example, those at the 90th percentile – experienced a real increase in wages. If the 1996-98 minimum wage increases had not been enacted, wage inequality in California would be even greater than it is today.

We also examine the retail industry, and especially the restaurant sub-sector. If the minimum wage increases have negative effects, we would expect these to appear most clearly in these low-wage, relatively labor-intensive sectors. We find that the negative impacts are relatively small in these sectors, thus supporting our contention that the overall negative employment impacts of the minimum wage increases are minimal.

In 1999, 35 percent of Californians earning less than \$6 per hour were employed in the retail sector. Hourly earnings and hours per week in the retail trade sector are below those in most other economic sectors; mean earnings were just above \$10 per hour statewide in the period 1995-1999. Over the longer term, we find a close relationship between MCE growth and growth in the retail sectors (see figure 2). In general retail employment growth rates from 1987-99 have been well-tracked by MCE growth rates.

Turning to the period of the 1996-8 minimum wage increases, we find no noticeable changes in employment growth in the low wage sectors (see figure 2). The retail sector has experienced stable employment growth in the period 1995-1999. Annual employment growth ranged between 1 percent and 2.5 percent over the entire period. Employment in the restaurant sub-sector also remained positive over the entire period, ranging between 0.5 percent and 4 percent.

Employment growth rate in both the retail sector and the restaurant sub-sector did not fall after early 1998, while the MCE growth rate fell from almost 4 percent to almost 1.5 percent in late 1999. This buoyancy supports our contention that the minimum wage increases did not have a negative impact on low-wage employment. In appendix A we present a more formal "differences-in-differences" test of the employment effects of the minimum wage increases. That test confirms the findings presented here.

Since many retail sector workers are employed on a part-time basis, another response to the rising minimum wage could be a reduction in the hours worked. Data from the state's Employment Development

Department show that this adjustment did not occur. During and after the period of rising minimum wages, the average weekly hours worked by retail workers stayed around 30 hours per week. In each of the years 1995-9, average hours worked per week ranged from a summer high of 30.5-30.9 hours, to a winter low of 29.3-29.6 hours. Employment displacement thus did not take the form of reduced hours of work.

One concern with increasing the minimum wage is that firms might respond by replacing their low-skilled workers with higher-skilled workers. This substitution is less likely to occur with a federal or state minimum wage increase than many individual employers might expect, since all employers are faced with the same wage increase. Given the fixed costs of hiring and initial training, a firm is more likely to prefer to retain and upgrade the existing workforce and add more skilled workers incrementally.¹² It is nonetheless important to examine the significance of such effects.

To gauge how much displacement might occur, we computed the average years of schooling at different wage levels. Table 11 shows trends from 1994 to 1999 in average years of schooling at the old (\$4.00-4.99) and new (\$5.50-6.49) California minimum wage levels.¹³ We find that the average number of years of schooling at the different wage levels fell very slightly but did not change in any statistically significant amount during this period. This result suggests that displacement and substitution did not occur in response to the statewide minimum wage increase.

Table 11. Average Years of Schooling by Wage Level, California 1994-99

	\$4.00 - 4.99	\$5.50 - 6.49	\$7.50 - 8.49
1994	10.2	11.4	11.9
1995	10.1	11.2	11.6
1996	10.9	11.0	11.9
1997	n/a	10.8	11.9
1998	n/a	10.7	11.7
1999	n/a	10.7	11.6

Source: Authors' analysis of CPS monthly ORG.

Note: \$4.00-4.99 series not reported after 1996 due to insufficient sample size.

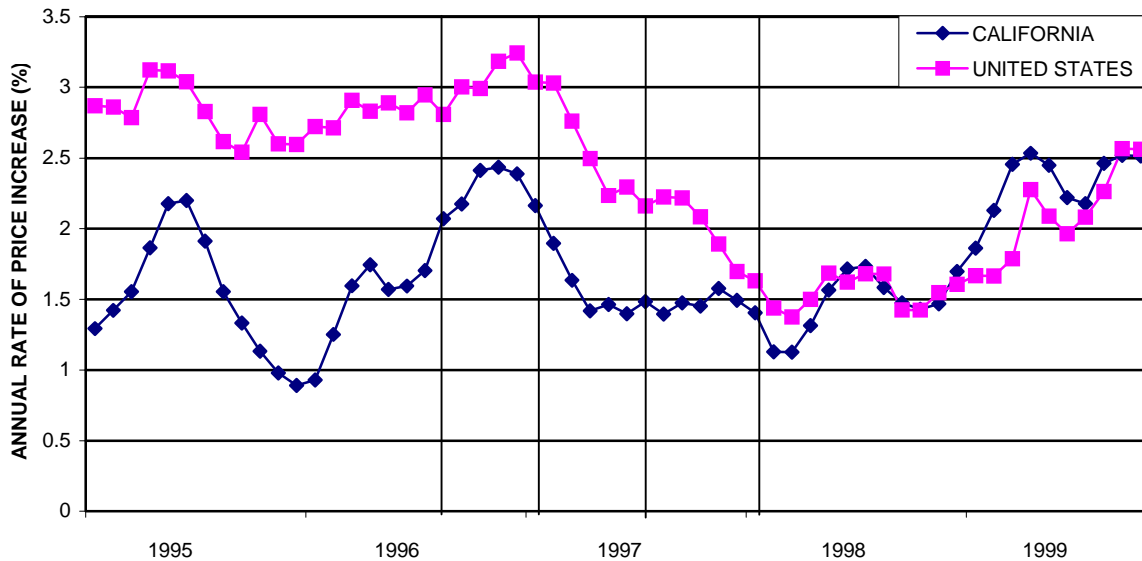
We can use the same data to suggest the maximum likely displacement effects of a larger wage increase. The average schooling for workers earning the current statewide minimum wage level (\$5.50-6.49 per hour) is 10.7 years. At wage levels closer to recent minimum wage proposals, the average years of schooling is somewhat higher. For example, for workers in the \$7.50-8.49 per hour wage class, the average years of schooling is 11.6, equivalent to slightly less than a high school diploma. This result represents a real but small degree of pressure to increase the average skill level of workers in response to a higher minimum wage. It can be the role of policy to enhance the probability that this adjustment occurs through expanded training rather than displacement.

Minimum wage increases could result in higher prices insofar as firms pass the costs of the wage increases to consumers. Recent studies have looked at price effects, but by using input-output models of the economy rather than empirical observation of actual price trends. For example, Lee and O'Roark (1998) examined the impact of the fifty-cents increase in the 1996 federal minimum wage by using an input-output model. They found that with a full cost pass-through, prices at eating and drinking establishments would rise by no more than one percent.

O'Brien-Strain and MaCurdy (2000) applied a similar methodology to model the potential impacts of the 1996 federal increase in California. They argue that increased prices are less likely to occur than employment displacement. Yet, they also suggest that many low-wage service industries do not face out-of-state competition and therefore can raise prices to meet higher labor costs. However, their method only simulates the magnitude of such effects without testing whether they actually occurred.

We have examined these possibilities using price increase data from the BLS. Figure 3 compares price increases in the U. S. and California over the period 1995-9. Until 1997, the rate of price increase was about one percentage point *lower* in California than in the rest of the U.S. In 1997 the national inflation rate began to fall, from around 3 percent to below 2 percent, but inflation did not fall as much in California. Thus, the rates of price increase converged over the period of the minimum wage increase. Although this timing suggests that the higher

Figure 3: PRICE TRENDS, U.S. AND CALIFORNIA, 1995-99

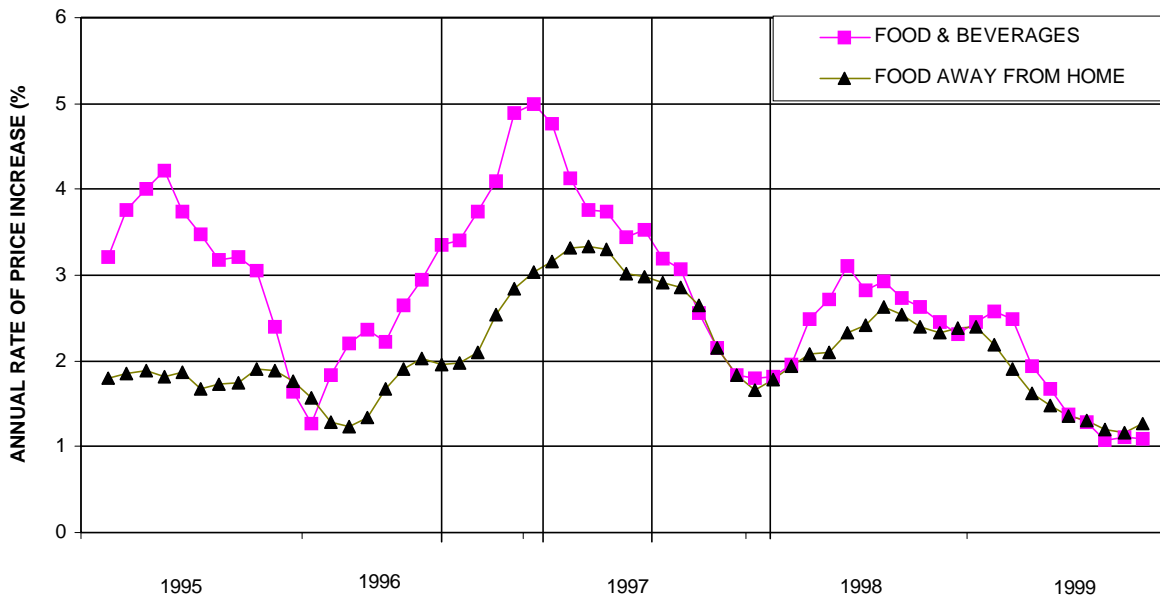


Note: Vertical lines denote Minimum Wage Increase. Source: US and Los Angeles All Items, All Urban Consumers Price Index, Bureau of Labor Statistics

minimum wage in California coincided with higher inflation relative to U.S. inflation, there are of course many other suspects as well. For example, a boom in housing costs accelerated during this same period in California.

To examine this question more closely, we examined California price increases for food eaten away from home with price increases for food eaten at home. The difference between these two categories is likely to be attributable to trends in labor costs in eating and drinking establishments. As we have already seen, such establishments employ large proportions of minimum wage workers.

Figure 4: PRICE TRENDS IN CALIFORNIA, FOOD & BEVERAGES AND FOOD AWAY FROM HOME, 1995-99



Note: Vertical lines denote Minimum Wage Increase. Source: Los Angeles All Urban Consumers Price Index, Bureau of Labor Statistics

Figure 4 shows that the rate of increase in the price of food eaten away from home was higher than the overall consumer price index during and immediately following the 1996-98 minimum wage increases. However, the rate of increase in the price of food eaten away from home consistently has been below the rate of increase in food and beverage prices. Since agricultural products constitute up to a quarter of all inputs to the eating and drinking industry (Lee and O’Roark, 1998), it is possible that price increases of these inputs were pushing up the higher prices for food eaten away from home. If higher wages were also driving up restaurant prices, then we would expect an even higher rate of increase in restaurant prices. This did not happen. The results suggest that, at least in the restaurant sector, employers did not pass increased labor costs on to consumers.

V. Conclusions and Implications

In a world in which “everything else remains equal,” an increase in one important business cost, the cost of labor, can generate undesired results. Someone has to pay for this cost; workers are fired, prices are raised and/or profits are slashed. In a prospective study of the 1998 California minimum wage increase, Macpherson (1998) suggested that this increase would cause more than 25,000 people to lose job opportunities. In a similar vein, O’Brien-Strain and MaCurdy (2000) argued that price increases resulting from federal minimum wage increases will take away more from California families than it will give back to them. It is now two years since the last increase, and we have been able to test these assertions empirically. We have found no evidence to confirm these dire predictions.

How then do we explain our finding that the minimum wage increases have had no discernable negative impact on overall and low-wage employment in California? When evaluating the impact of a policy, an economist asks what would have happened without the policy. It is unlikely that the unemployment rate could have fallen more rapidly than it did over the period under consideration; the downward fall indeed continued, from 6.9 percent in October 1996 to 6 percent in March 1998 and on to 4.8 percent in late 1999. The minimum wage increase does not appear to have slowed, and certainly did not reverse, this downward trend.

A second possible explanation is that the minimum wage increase had relatively little impact upon labor costs. In other words, if minimum wage rates are low and increases are relatively small, they have less impact on employment and it is economic growth that might have moved many of these workers above the minimum wage level. To explore this issue further we examined the low-wage retail sector, and here too we found no negative employment effects. Although the 1996-8 minimum wage increases had relatively little negative employment impact, negative effects were not noticeable even in the sectors where they should have been most visible.

A third possible explanation is that the minimum wage increases occurred during a period of unusually strong economic expansion, and that under other conditions it might have led to more negative employment effects. This argument does not constitute a criticism of the 1996-98 minimum wage increases. Minimum wage increases typically are enacted during a context of growth, and they did not derail the expansion. Rather, the minimum wage policy slowed some of the increasing wage inequality that was, until recently, a feature of the expansion.

We do know that employment conditions continued to become more favorable both in terms of the number of jobs and in terms of the wage levels of the lowest paid. We would argue that firms can and do adjust to minimum wage increases in a variety of positive ways, including raising productivity, reducing employee turnover and other positive steps. Indeed, economic theory would suggest that firms would make such adjustments in response to changes in incentives to do so, that “everything else does not remain constant.” From this perspective, it is not surprising that the increases did not generate negative employment consequences.

What are the implications for further increases in the minimum wage, say to \$8 per hour? The beneficial effects of increasing the minimum wage must themselves reach diminishing returns at some point. At present we do not know the level at which negative effects would begin to set in, but there are useful lessons from the previous two rounds of minimum wage increases in California.

An increase to \$8 over the current \$5.75 would amount to a 39 percent increase, which seems large and is greater than the previous increases. However, the 1988 increase amounted to 27 percent and the 1996-98 phased increase added up to 35 percent. A *phased* increase to \$8 over several years therefore would not be very different in magnitude from recent increases.

According to our results, an \$8 minimum wage put into place in an unphased manner would mean that about 25 percent of employed Californians would get pay increases up to \$8 and that a much smaller percent would get increases above the minimum. Again, this figure seems large but it would be smaller if phased in over several years. It would still be well-targeted; well over three-fourths of California workers receiving less than \$8 per hour live in households with below-median incomes. Such an increase would go a long way, but not the entire way, toward a return to the wage levels and measures of wage inequality in the state in 1980. It would also further incentivize low-wage employers to find ways to improve the productivity of their employees.

On the negative side, some employment growth might be curtailed among the youngest minimum wage workers. Since employment to population rates among those under 18 are already quite high by historical standards, some decline might be acceptable and well worth the overall benefits.

All in all, the evidence presented here from the 1996-98 round, and previous research on the 1988 round before it, suggests that the state can absorb another round of minimum wage increases much more easily than many commentators have suggested.

**Appendix A:
Difference-in-difference Test for Employment Effects of 1996-8 California Minimum Wage Increases**

When we study an increase in the minimum wage, a central methodological question is how to identify the effect of the change. If we see changing employment growth after a minimum wage increase, how can we ascertain that the change is related to the increase itself and not to some other factors? One way of addressing this problem involves a test called differences-in-differences.

The difference-in-difference test compares the change in employment growth before and after the increase in the minimum wage rate, in different sectors. We look at the difference-in-difference statistic for each sector, and in comparison to other sectors. If the change in employment growth is more positive after the increase than beforehand, this suggests that the increase had a positive effect. If the difference-in-difference is more positive in one sector compared to another, this suggests that the effect in this sector was more positive. In our test we have compared two potentially high-impact sectors, the low-wage retail and restaurant sectors, with the low-impact, high-wage manufacturing and construction (MCE) sector.

Within the low-wage restaurant and retail sectors, we found that the overall effect was positive. In both sectors the change in the employment growth rate was positive. In the case of the retail sector, change in employment growth rose from -2.2 percent to almost no change. In the case of the restaurant sub-sector, change in employment growth switched from around -1 percent to almost 1 percent. In comparison to the overall economy, these low-wage sectors did surprisingly well: the MCE growth rate fell sharply. As noted earlier, workers in these sectors generally earn much higher wages, and thus we would not expect these sectors to be as affected by the minimum wage increases. Rather, these sectors are indicative of overall economic conditions in the state.

We conclude that in relation to overall economic conditions, employment in the low-wage sectors was not harmed by the minimum wage increases, and in fact may have been improved by them.

Table A. Test of Differences-in-Differences for the October 1996 to March 1998 Minimum Wage Increases

SECTOR	ANNUALIZED EMPLOYMENT GROWTH RATE		DIFF. BEFORE INCREASE	ANNUALIZED EMPLOYMENT GROWTH RATE		DIFF. AFTER INCREASE	DIFF. IN DIFF.
	13 months before increase	1 month before increase		Month of increase	12 months after increase		
Retail	3.71	1.55	-2.16	1.77	1.58	-0.19	1.97
Restaurant	3.45	2.37	-1.09	1.81	2.63	0.82	1.90
Manufacturing & Construction	2.03	3.38	1.35	4.23	1.77	-2.45	-3.80

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Endnotes:

¹ Our primary data source in this chapter consists of hourly and weekly wage data that are derived from the Merged Outgoing Rotation Group of the monthly Current Population Surveys, conducted by the U.S. Bureau of the Census. For most of our purposes the California sample is large enough for annual statistical analysis. We use these data sources because they provide larger sample sizes and better indicators of hourly wages and labor market conditions than do the annual earnings data in the March Demographic files of the CPS that are used in other studies. Details are presented in Reich and Hall (2000).

² We omit here a discussion of the recent research literature and refer readers to our more detailed essay (Reich and Hall 2000).

³ Throughout this chapter all wage rates are expressed in 1999 dollars, unless otherwise indicated.

⁴ The CPS data on households report total income, with a topcode at \$75,000. Income comprises all labor and non-labor sources, including government transfer payments. See the data appendix in Reich and Hall 2000 for details on the limitations of household analyses in this report.

⁵ Reed, Haber and Mameesh, 1996; Economic Policy Institute and Center on Budget and Policy Priorities, 2000.

⁶ A comparison of the inequality measures for 1994, the overlapping year, suggests that our data provide a slightly higher estimate of earnings inequality than Reed, Haber and Mameesh (1996). Reed (1999) also finds a slowdown in the increase in inequality in the late 1990s.

⁷ In our more detailed essay we also examine whether the minimum wage resulted in reduced employment of particular categories of workers, for example, younger workers, or those still enrolled at school. The employment-to-population ratios of younger workers did not change over the period, regardless of school enrollment status.

⁸ The calculation is a bit more complex since employment grew over this period. Using as a base the number of workers employed in California in July 1995, we estimate that 1,257,000 were likely to benefit. Based on the number of California employees in July 1999 we estimate that 1,403,000 workers might have benefited. The number in the text represents the midpoint between these estimates. The estimate also depends upon a counterfactual assumption regarding the effects of economic growth upon employment. See Appendix A for an estimate of this effect.

⁹ On average, wage and salary earners in California work almost 2,000 hours per year. However, low-wage workers work considerably fewer hours per year than high-paid workers.

¹⁰ This compression effect is equivalent to what others have called “ripple,” “spillover” or “wage push” effects.

¹¹ Note that the results presented below are for real hourly wages, and thus do not need to be adjusted for a growth trend in the economy.

¹² This is exactly the pattern found by Acemoglu and Pischke (1999), who compared on-the-job training rates among low-wage workers in states with different minimum wages over the period 1987-92. Higher minimum wages were associated with higher training levels.

¹³ We use one-dollar wage bands in order to obtain significant sample sizes in each cell.