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AREA ECONOMIC CONDITIONS AND
THE LABOR MARKET OUTCOMES OF
YOUNG MEN IN THE 1990S EXPANSION

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## ABSTRACT

The current expansion has shattered the length of the previous longest peace-time boom and

brought unemployment rates below four percent in 44 percent of metropolitan areas. We estimate

the expansion's impact on the labor market outcomes of less-educated men. We find that young men,

especially young African American men in tight labor markets experienced a boost in employment

and earnings. Adult men had no gains, and their earnings barely changed even in areas with

unemployment rates below 4 percent. Youths have higher earnings and employment in low crime

states and poorer labor market outcomes in states where incarcerations are high.

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The 1990's economic boom has made the American job market the envy of the world. The proportion of the adult population that is employed has increased to the highest level in history. Unemployment has fallen far below the 6 to 7 percent that many economists and policy-makers believed was the NAIRU (non-accelerating inflation rate of unemployment) rate. While throughout much of the 1980's and 1990's, real wages of workers stagnated, in the late 1990's real wages began to rise, and at least some workers in the bottom of the distribution had their first gains in real earnings after years of decline (Economic Policy Institute, 1998).

To what extent has the 1990's boom improved the labor market outcomes of young non-college-educated men? How much has the boom helped young African American men who are the most disadvantaged and socially troubled group in the U.S.?

Previous economic booms have raised employment of young men and often raised their earnings as well.[1] Turning to our second issue, there is a large literature that links crime to economic conditions (see the review by Freeman (1999)). Most studies find that unemployment has a moderate effect on crime and that persons who engage in crime have a somewhat lower employment than otherwise comparable young persons not involved in crime. The large increase in incarceration and drop in the crime rate in the 1990s raises two questions: whether the fall in crime is due in part to the tighter labor market as opposed to, or in addition to the rise in incarceration; and whether the incarceration leads to a less employable work force of ex-prisoners.

But the 1990s has been a period when the relation between unemployment and other economic outcomes has surprised many analysts. Low rates of unemployment have generated smaller increases in wages than in previous economic booms. From the perspective of the aggregate economy, this is good news, since it has convinced monetary authorities to forego anti-inflationary policies that would end or dampen the boom. But from the perspective of economic disparity and the well-being of young low paid and less skilled workers, it could be bad news. If the boom of the late 1990's was insufficient to improve substantially the position of young non-college-educated workers, it is difficult to imagine that any expansion could do so, and thus

would dash any hope that economic growth per se could raise their pay and income.

This paper examines the effect of the 1990's boom on young non-college-educated men and the relation between their economic position and crime and incarceration. One factor that differentiates young non-college-educated men in the 1990's compared to the past is their rate of criminal involvement and incarceration. Crime rates peaked at the end of the 1980's but the number of young non-college-educated men who were incarcerated rose, particularly among African Americans, possibly altering the relation between the boom and the employment and earnings of those in the civilian population from what it was in the past.[2] Because time series data on the 1990s boom are necessarily limited, we use variation in the level and change in joblessness across metropolitan areas to assess the contribution of market conditions on the position of young workers. Unemployment rates differ greatly and have changed differentially among areas, providing considerable variation in economic conditions from which to assess the effect of market conditions on youth unemployment. Similarly, there is wide variation in crime rates across areas (Glaeser, Sacerdote, and Scheinkman, 1995) that can be used to assess the link between crime and youth labor market outcomes. While our main focus is on young less educated young men, we present information on older less educated men as well.

The paper finds that:

1. Young men in tight labor markets in the 1990s experienced a noticeable boost in employment and earnings, while adult men had no such gains. Earnings of adults barely changed even in metropolitan areas with unemployment rates below 4 percent, while the earnings of youths, including disadvantaged African American youths improved. Youths do particularly well in areas that started the boom at lower jobless rates, suggesting that they would benefit especially from consistent full employment.

2. Crime rates fell most rapidly in states where unemployment fell most, supporting the notion that unemployment affects crime (Freeman, 1999). At the same time, youths have higher earnings and employment in low crime states and incarcerations per youth are adversely related

to labor market outcomes, which suggests that past criminal activity may affect outcomes, as well, with youths with criminal records having greater difficulties in the job market.

**Data**

We utilize three data sources. The first are the Merged Outgoing Rotation Groups of the Current Population Survey, 1983, 1987, 1989, 1992, 1996, and 1998.  These years cover the beginning and peak of the 1980s expansion (1983-1989) and six years of the 1990s expansion (1992-1998).  Our youth sample includes 16 to 24 year old men; our adults are defined as 25 to 64 year old men.  We exclude youths in school.  In the first four cross sections, our samples are based on responses to the Employment Status Recode (ESR) variable. Every individual whose major activity is in school was dropped.  The unemployment rate is the ratio of the number of people looking for work to the sum of the number looking for work, the number working, and the number with a job but not working.  The statistics for 1996 and 1998 are based on the monthly labor force recode (MLR) variable. Unlike the ESR variable that classified those on layoff as employed, this recode classifies those on layoff as unemployed. The change has no impact on the estimates because the share of workers on layoff is typically less than .5 percent of the civilian population. The employment-population ratio is the ratio of the number of people working and the number with a job but not working to the sum of those two numbers and the number out of the labor force.

We constructed the natural logarithm of real hourly earnings using the respondent's pay status. If the respondent reported that they are paid on an hourly basis, we took the logarithm of their hourly wage. If the respondent was paid on a weekly basis, we took the logarithm of the ratio of their usual weekly earnings and usual hours worked per week. We deflated nominal hourly wages using the CPI-UX-1 deflator.

The area unemployment rates come from various editions of the Bureau of Labor Statistics' Employment and Earnings and Geographic Profile of Employment and Unemployment. For 1983, Metropolitan denotes standard metropolitan statistical areas (SMSAs). In all other years,

Metropolitan corresponds to metropolitan statistical areas (MSAs), primary metropolitan statistical areas, and consolidated metropolitan statistical areas. For the 1983 published data, Metropolitan denotes standard metropolitan statistical areas (SMSAs) and we are only able to identify 44 areas. In all other years, Metropolitan corresponds to metropolitan statistical areas (MSAs), primary metropolitan statistical areas, and consolidated metropolitan statistical areas. For the 1987, 1989 and 1992 published data 212 areas can be identified. For 1996 and 1998, 334 areas are identifiable. In some calculations we categorize the areas as having an unemployment rate below 4 percent, 4 to 5 percent, 5 to 6 percent, 6 to 7 percent and greater than 7 percent.

The 1983, 1987, 1989, 1992 and 1996 national and state crime rates per 100,000 inhabitants come from assorted volumes of the Uniform Crime Reports. The 1997 national value is computed by using the 4 percent decline from 1996 reported in the Uniform Crime Reports: 1997 Preliminary Annual Release. The national and state incarceration rates per 100,000 inhabitants for 1983, 1987, 1989 and 1992 are taken from the Sourcebook of Criminal Justice Statistic: 1996. The national incarceration rate for 1997 comes from Bureau of Justice Statistics Prisoners in 1996. To construct state crime per youth and state incarcerations per youth, we divide the crime and incarceration rates by a state's residents that are 16 to 24 years of age.

**Aggregate Relations**

Before presenting our area analysis, we review briefly the pattern of change in the aggregate national data that represents the phenomenon we want to explain. Figures 1 to 6 (Appendix Table A1) show unemployment rates, employment-population ratios, hourly earnings, crime and incarceration rates in the 1980s expansion (1983 to 1989) and in the 1990s expansion (1992 to 1998). These data show:

-    Substantial falls in unemployment in both recessions. The unemployment rate fell for African Americans at roughly the same rate as for all persons.

-    A smaller rise in the employment-population ratio in the 1990s expansion, presumably due to the higher initial ratio. The e-pop increased by 5 percentage points from 1983 to 1989 and

by 2.6 points from 1992 to 1998.  The rise in the employment-to-population ratio for African Americans was somewhat larger in absolute terms: 7.4 points in the 1980s boom and 4.8 points in the 1990s boom.

- A very different pattern in real hourly earnings.  Real hourly earnings fell in the 1980s recovery and fell from 1992 through 1996, then rose in 1997 and 1998, when the unemployment rate dropped below 5 percent.

- A different pattern in crime rates measured by the FBI's UCR index between the 1980s and 1990s expansions.  During the 1980s expansion, the crime rate per 100,000 increased. During the 1990s expansion, the crime rate fell. Over both periods, the incarceration rate increased.  These trends suggest that, while crime and incarceration may have cyclical components, their movements are largely dominated by other factors (the number of police on the street, enforcement policies, etc).  They can thus be used as independent non-cyclical variables in analysis designed to isolate the effects of economic booms on outcomes.

The most striking evidence in Figures 5 and 6 is the extent of incarceration among African Americans. In both years and at all ages, African Americans have higher incarceration rates than whites.  In 1990 and 1996 non-Hispanic African Americans were about twice as likely as Hispanics and nearly 8 times more likely than non-Hispanic whites to be in State or Federal prison.  At year-end 1996 there were 1,571 sentenced African American inmates per 100,000 African Americans in the United States, compared to 688 sentenced Hispanic inmates per 100,000 Hispanics and 193 white inmates per 100,000 whites.  In 1996, 8.3 percent of African American men age 25 to 29 were in prison compared to approximately 0.8 percent of white males in the same age group.  Even though incarceration rates fall with age, the share of African American men age 45 to 54 in prison in 1996 was almost 3 percent. This value is more than 3 times the size of the highest rate of 0.9 percent among white men age 30 to 34.  Based on 1980s data the Justice Department estimates that 29 percent of **all** African American men will spend time in prison (Bureau of Justice Statistics, 1997).  The high rate of incarceration among African

American men has two effects on our data. First, it removes a substantial number of young African American men from the CPS sample. Second, it implies that an increasing number of African American men have a criminal record, which is likely to adversely affect their labor market outcomes.

Turning from all men to the young less educated men of concern to this study, we have calculated their employment and earnings during the periods 1983 to 1989 and 1992 to1998, using the CPS files.  Figures 7 and 8 (Appendix Table A2) shows that in the 1980s employment rates among the non-college-educated rose but that their earnings fell. From 1992 to 1996 the pattern is similar, though the increase in employment for the younger men is greater.  But from 1996 to 1998, the picture is different.  The employment for all non-college-educated men ceases to grow, but their hourly earnings finally begin to increase, and hourly earnings increases most markedly for young African American men.

The aggregate data thus suggest that in the 1990s the recovery of the economy from its low point showed up first in employment and then, as unemployment fell to extremely low levels, in wages. But these data do not have sufficient variation to allow us to characterize the effect of the recovery to any greater extent. To determine further the effect of the boom on the less educated young men, we turn to data on labor market conditions and outcomes across local labor markets. For the 1990s we have 332 local labor markets, with a wide variety of unemployment experiences, ranging from continuous low unemployment to rapid reductions in unemployment to slow reductions in joblessness. These data provide us with market conditions that go beyond the 1990s boom -- rates of unemployment below 4 percent in many areas -- that allow us to assess what might happen to young workers if the aggregate economy produced even tighter labor market conditions.  Most important, it allows us to assess the effect of continued high unemployment  (below 4 percent for six ears of the expansion) on labor market outcomes and thus to gain some insight as to the effects of a continuous or near continuous boom on these workers.

Generalizing from patterns of change across areas to the nation as a whole has however,

some problems, because there are adjustments that occur across geographic areas that cannot

occur in the nation as a whole.  In particular, migration across areas is a potentially important

response to different area economic conditions.  Migration is likely to ameliorate the effects of

shocks on outcomes, as affected persons move from high to low unemployment locales.   Still,

Topel (1986), Blanchflower, and Oswald (1999) and others find evidence that local labor

markets affect outcomes.  And young non-college-educated workers are less mobile

geographically than other workers.  Another important ameliorative effect is likely to occur

through product markets.  In industries where prices are set nationally, a  booming local market

will be unable to raise prices in response to increases in wages, which should produce a smaller

impact of low unemployment on wages than would be observed in a national boom.  These and

other factors differentiate the labor market dynamics of a boom in local areas from that in the

entire economy, but do not gainsay the insight one can get from analyzing how local markets

respond to booms.  In any case, area data are the only "game" in town with sufficient

observations to permit more than a description of events.

**Area Variation**

Figures 9 and 10 (Appendix Table A3) show the frequency distributions for the

unemployment rates by state and metropolitan area that are the key variables in our analysis.

Because the CPS identifies fewer metropolitan areas in 1983 than in later years, we report fewer

rates of area unemployment for the 1980s boom.  Most areas begin the 1980s expansion with

unemployment rates that exceed 7 percent. By 1989 a sizeable number have unemployment rates

less than 5 percent.  Most areas begin the 1990s boom with unemployment rates in the 6-7 or 7+

range.  By 1996, over 98 metropolitan areas and 7 states have unemployment rates below 4

percent.  Between January to July 1998 these figures jump to 146 metropolitan areas and 21

states.

Panel A of Table 1 shows the transition matrix of metropolitan areas for the 1983 to 1989

and 1992 to 1998 periods. In both periods the matrix is near triangular with 0s dominating the transitions to higher unemployment. During the 1980s boom no area moved from a lower unemployment rate group to a higher unemployment rate group. In the 1990s boom just 2 areas had 1998 unemployment rates above 1992 unemployment rates. Fifty-seven areas had unemployment rates in the same group, while the vast majority of areas witness a decline in unemployment. Of the 167 areas that started with unemployment rates greater than 7 percent, 80 have now moved into the less than 4 percent and 4-5 percent groups.

Panel B displays the transition probabilities associated with the 1990s boom. The areas that started in the less than 4 percent group in 1992 remain in that group in 1998 with a very high probability. From 1992 to 1996, 65 percent of 5-6 areas moved to the less than 4 percent category, 60 percent of 6-7 areas moved to 4-5, and 63 percent of 7+ either moved to 5-6 or remained at 7+. By 1998, 81 percent of 5-6 areas have moved to the less than 4percent category, and 48 percent of 6-7 areas have moved to the less than 4 percent category. For the 7+ category, almost 50 percent have moved to either the less than 4 or 4-5 percent category by 1998.

Overall, the reduction in unemployment is about 3 percentage points between 1992 to 1998, but the table displays quite different histories among areas. To examine the various paths, we focus on three types of areas: those with "continuous full employment" -- defined as areas with unemployment rates below 4 percent in **all** years of the recovery (14 metro areas); those with "steady high unemployment" -- defined as areas that had unemployment rates that exceeded 7 percent in all years (28 areas); and those with "rapid reductions in joblessness", -- defined as areas where unemployment rates fell by over 5 points (15 areas). More paths exist, but for simplicity we focus on these cases.

Figure 11 plots the annual average unemployment rate for the three groups. The average for areas with unemployment rates below 4 percent in all years is 3.2 percent in 1992 and falls to 2.0 percent in 1998. Table 2 shows the areas that experiences this continuous full employment. They range from areas in Texas to midwestern metropolitan areas such as Des Moines and Iowa

City.  The jobless rates for the group of areas with continuous high unemployment (rates in excess of 7 percent) also fall, but the group average here remains in double digits: it drops from 14.5 to 12.1 percent. Of these 28 areas, table3 shows that 11 are in California. Finally, areas with reductions in unemployment rates in excess of 5 percentage points start at an average of 10.3 percent in 1992 and fall to 4.6 percent in 1998. Almost half of these metropolitan areas are located in Massachusetts (see table 4).

Figure 12 shows the UCR crime rates for each of these groups in areas in the 1990s recovery and in the preceding decade.  Throughout the period the area with the worst unemployment record have the highest rate of crime, while the areas with continuous low unemployment have a low rate of crime. With the expansion, crime rates for the group with the largest drop in unemployment falls the most, reaching essentially similar (in some years lower) levels in crime as in areas with unemployment below 4 percent.  These results offer one possible emendation to the usual finding that unemployment is inversely related to crime: it suggests there is a limit to the reduction in crime associated with low unemployment -- even 6 years of low unemployment does not reduce the crime rate continuously.  Rather, it simply keeps it at a lower than national level.

**Unemployment and Earnings and Employment**

How much does the employment and earnings of non-college-educated men vary with local labor market conditions?

To answer this question, we compared the economic positions of men across metropolitan areas with different unemployment rates, using the micro CPS files.  We used a logit model for our employment analysis.  The dependent variable is a 0-1 dummy variable for whether the male is employed in a given year; the independent variables are the area unemployment rate and measures of demographic characteristics: age, years of schooling and race. The variable for race is a dummy variable that equals 1 if the respondent is African American and 0 if the respondent is white. To estimate the wage effect, we regress the log

(natural log) of hourly earnings on the same variables used in the employment equations.

Tables 5 and 6 present our main results linking the employment and earnings of non-college-educated young men to area unemployment rates and measures of crime, and comparative analyses for all men (25-64). Although we have wage and employment information for 1998, we do not have crime data for 1998. The results in Tables 5 and 6 are based on CPS samples that exclude the 1998 data. We estimated models that excluded our measures of crime and included the 1998 data, and summarize these results (which were similar to those in the table) during our discussion. The column A regressions give results from cross section regressions that exploit the differences among areas. The column B regressions give results from regressions which include metropolitan area dummy variables: they show how changes in unemployment in an area affect outcomes. We record both the estimated logit coefficients and their effect on the probablities. The upper part of the table measures unemployment as a continuous variable. The lower part divides unemployment rates by group, in an effort to find any non-linearities.

Table 5 shows that area unemployment has a sizeable effect on the employment of young non-college-educated men, both in the cross section and fixed effects specifications. In all of the calculations the coefficients on unemployment for young workers exceed those for all men. For instance the estimated effect of area unemployment on the probability of employment in the cross section is -0.015 versus -0.009 for all men. In the fixed effects estimates in column B, the estimated coefficients for the effect of unemployment on the employment of youths are generally larger and diverge more from those for adults than in the cross section results. Within areas changes in unemployment rates produce gains in employment for younger relative to older workers. The largest logistic coefficient is for African American youths (-0.124) and the next largest for all youths (-0.119), which compare to -0.074 for all men and -0.046 for African American men. Given the different levels of employment for the groups, these figures translate into larger gains in the probability of employment for younger African American youths than all

youths and similar gains in the probability of employment for older African American men and older white men.   In the bottom panel calculations in which we record coefficients on dummy variables for particular levels of unemployment, there is relatively little evidence of any non-linearities. These results do not change when the crime measures are excluded and the 1998 cross section is added.

Table 6 records the estimated effects of unemployment on the natural logarithm of hourly earnings, or the "wage curve" (Blanchflower and Oswald).  Here, we find a striking difference between the results for the young men and for the older men.  In both the cross section and fixed effects analysis, unemployment has a strong effect on the hourly pay of young men but has no effect on the hourly earnings of 25-64 year old men.  Unemployment has a slightly smaller effect on the earnings of young African American men than on young white men (in contrast to Freeman's analysis of the 1983-87 period, which found a higher effect on young African Americans).  However, this result appears to occur because young African American men are in areas that have taken longer for wages to rise.  When we add the 1998 cross section (see appendix A3) the unemployment coefficient for African American youth jumps from –0.019 to -0.031, while the unemployment coefficient for all youth increases from –0.023 to –0.024. The gains for African American youth occur in the less than 4 percent, 4-5 and 5-6 categories. Indeed, the coefficients shown in Table 6 all increase by about 0.03 points when the 1998 cross section is added, which implies that the effect of the boom on earnings increased substantially in the 1996-1998 period. One reason may be that it takes time for the boom to raise demand and eventually the pay for African American youths.

Turning to the bottom part of the table, we find some evidence of non-linear effects of unemployment on the log earnings of young workers.  In areas with unemployment below four percent, the fixed effects (column B) estimates show that the earnings of young non-college-educated men are 0.121 points higher, whereas they are just 0.018 points higher for all non-college-educated men.  The coefficients on areas with 4-5% unemployment and areas with less

than 4% unemployment differ by .04 points for the young men, but differ by only .008 points for all men. The implication is that very tight labor markets may improve the earnings of young non-college-educated workers without creating overall wage inflation.

In addition to unemployment, the regressions in tables 5 and 6 contain one area variable that is not normally part of wage curves-- the rate of crime per young person in the state. We have included it because of the substantial number of young men, particularly African American men, involved in crime and because of the likelihood that their criminal activity will affect labor market outcomes. Youths engaged in crime are likely to participate less in the local labor market, reducing the youth supply, and may have lower human capital than otherwise comparable youths, reducing their skills as well. In the fixed effects regressions, the coefficient on crime is negative in nearly all cases, implying that in areas where crime rose, employment fell and earnings fell. As we have controlled for area unemployment, one interpretation of this relation is that conditional on the labor market, youths in areas with more crime are trading jobs or legitimate earnings for criminal activity. If this were correct, we would expect that the coefficients on crime in the regressions for African-Americans (for whom crime is a more common choice) to be larger than those in the regressions for all men, and indeed this is true in the calculations. But we would also expect the crime coefficients in the young male regressions to exceed those for all men, and this is not the case. As our crime data are for states and our unemployment data are for areas within states, we are not prepared to make too much of this pattern.

Finally, in Table 7 we examine the time pattern of the effect of unemployment on employment and earnings in greater depth by including the unemployment rate at the boom's beginning -- the trough unemployment -- to the regressions for earnings and employment. Panel A shows the effect of area unemployment on employment, including the trough unemployment rate. Panel B shows the effect of area unemployment on earnings, including the trough unemployment rate. The trough unemployment rate enters most of the regressions with a

substantial effect that magnifies the estimated impact of a tight market on youth employment and earnings and increases the differential effect of the labor market on youths as opposed to adults. At the same level of unemployment, a higher trough unemployment rate implies lower employment and earnings for youths; whereas it has only a modest effect for adults. One interpretation is that this is a kind of hysterisis, where the past has an independent effect on young workers, perhaps because it impacts the school-to-work transition. The wages and employment of youths may be determined by a dynamic adjustment process, with some lags, so that focusing solely on the current years' area unemployment as the key independent variable in the analysis is incorrect. Perhaps a Phillips curve type specification is more appropriate than the standard wage curve (Blanchard and Katz, 1999).

To examine the pattern of change in employment and wages across areas with different unemployment histories, we have tabulated in Table 8 the outcome variables for less educated men in the three types of areas that we specified earlier: continuous full employment areas (jobless rates below 4 percent in all years); steady high unemployment (jobless rates that exceed 7 percent in all years), and areas of rapid improvement where jobless rates fell by at least 5 percentage points. On the employment side, what is striking is the sizeable increase in employment for young workers relative to older workers in the tightest labor markets and labor markets with the biggest declines in unemployment. The data for all youths show roughly similar gains in employment across the areas in percentage points (from different starting points). From 1992 to 1998, the gains are 6 points in the continuous full employment areas, 4 points in the high unemployment areas, and 7 points in the rapidly improving areas. All men also have roughly similar gains in employment, but these are relatively modest. By 1998 the young less educated in the continuous full employment areas have rates of employment that actually exceed the employment rates for the older less educated men in the continuous high unemployment areas. All youths in these areas have roughly 80 percent employment rates! The increases in employment rates for less educated young African American men, which are largest in the

continuous full employment local labor markets, close a substantial portion of the gap between them and similarly educated young white men.  The implication is that a long extended boom can go a long way to resolving the African American youth employment problem.

The pattern of change in the earnings across areas tells a similar story: larger gains for the young less educated men than for older less educated men, though here young African American less educated men do no better than other less educated young men.  One possible reason for the absence of any particular wage effect in the continuous high employment areas is that initially in 1992 the wages of young less educated are reasonably close to that of all less educated youth (1.42 vs 1.48 for a 6 ln point difference). This may in part be due to the minimum wage, which tends to compress wages at the bottom of the earnings distribution.

All told, table 8 suggests that the economic boom of the 1990s substantially improved the job market for less educated young men, including young African Americans, and that continuous full employment has the potential for creating full employment and rising wages for these workers. By contrast, the gains for all less educated men are more modest.

**Is the Wage Gain Due to Full Employment or the Minimum Wage?**

In 1996, the federal minimum wage increased from $4.25 to $4.75.  In 1997, it increased from $4.75 to $5.15.  As these changes undoubtedly affected the wages of less educated workers, they are a confounding factor in the estimates of the effect of area unemployment on earnings. One possibility is that at any given unemployment rate, earnings in areas where the minimum wage had greater impact will be higher for young less educated men than in areas where the minimum wage had a smaller impact, and correspondingly employment may less.  This will bias our estimates of area effects if there is a correlation between the minimum wage and the level or change in area unemployment.  One possibility is that the minimum wage raised wages in areas with high unemployment or areas where unemployment fell modestly, which would bias downward our estimate of the impact of area conditions on unemployment.   But if the minimum wage induced increases in wages lowered employment, our estimates of the effect of area

unemployment on employment would be biased upward.  We attribute too much of the employment gains of less-educated in areas of low or declining unemployment to the economic expansion, by ignoring the fact that in those areas the minimum was not as binding as in areas with high unemployment or more modestly declining unemployment.

Table 9 examines whether the federal minimum wage hikes in 1996 and 1997 bias our estimates of the relationship between area unemployment and the employment and earnings of men.  To test for this possibility, we sorted the CPS sample into two groups. The first are respondents that live in states where the federal minimum wage hikes of 1996 and 1997 were binding. These are states in which the federal minimum wage exceeded the state's minimum wage. The second group is comprised of respondents that live in states where the federal minimum wage hikes were not binding. The federal increases remained at or below the state minimum wage.  Table A4 displays the federal and state minimum wages and the ratios used to create the groups.

To model the impact, we added two new variables to our earlier models: a dummy variable that equals 1 if the respondent lives in a state where the hikes were binding, and 0 if they were not binding; and interaction between the binding dummy variable and the area unemployment rate.  It is the coefficient on the interaction term that is most relevant to our analysis.   The evidence in Table 9 suggests that the minimum wage hikes of 1996 and 1997 do not bias our results.  The interaction terms are basically zero in both the employment and earnings equations.  The coefficient on the binding dummy is nonzero, but generally statistically insignificant, with no distinct pattern.[3]

**The Relation Between Outcomes and Crime**

We examine the relation between crime and labor market conditions and outcomes in two ways.  First, in Table 10 we estimate a standard supply of crime equation in which we relate the crime per youth in a given state to unemployment and a measure of the potential disincentive effect of criminal punishment or risk of getting caught and penalized severely. We define our

measure as incarceration/crime. In these regressions we include state dummy variables so that the coefficients are fixed effect estimates that show how changes in crime rates respond to changes in economic conditions or to incarcerations per crime. Column A records the results of regressing the crime rate/number of men aged 16-24 on area unemployment rate, several demographic controls, and dummy variables for year and state. Consistent with the results of Gould, Weinberg and Mustard, we find that changes in unemployment rates affect crime rates at the state level, though the effects are not large relative to the crime rate. Column B records the results with the inclusion of a measure of the potential punishment for crime: incarcerations per crime. Here, too unemployment affects crime. A one percentage point increase in unemployment raises crime per youth by 1.5 percent [0.011 (coefficient) divided by 0.698 (mean crime per youth in our sample)]. This suggests that a drop in U.S. unemployment of 2.6 percentage points (Table A1), as occurred between 1992 and 1997 would have reduced crime per youth by 3.9 percent (-2.6 multiplied by 1.5). Incarceration per crime has a larger and more statistically significant impact on the rate of crime. This is consistent with other studies that find stronger relations between criminal penalties and crime than between labor market factors and crime (Freeman, 1995). While there is some potential ratio bias to this estimate (the number of crimes is on the right side of the equation and on the bottom of the left side), Levitt (1998) has found that any such bias is modest, and we ignore it. Between 1992 and 1997 the incarceration/crime ratio rose by 3.3 percentage points from 5.83 to 9.13 (Table A1), so that the coefficient suggests that increased penalization of criminals reduced crime per youth by 3.7 percent (3.3 multiplied by –1.130).

But incarceration does not only affect the rate of criminal activity. As noted earlier, mass incarceration reduces the labor supply in some communities and probably affects the human capital and employment or earnings of persons once they are released from prison or jail and return to their home community. As a first step toward seeing the relationship between incarceration and the outcomes for youths, we re-estimated the employment and earnings

equations in tables 5 and 6 by replacing the crimes per young man variable with incarcerations per young man. As the unemployment rate coefficients are unaffected by this, we report in Table 11 simply the coefficient on incarcerations/crime. It is strong and negative in the fixed effects regressions in columns B though not in the cross-section calculations in columns A for youths and for adults. The coefficients are especially large in the earnings equations for African American young and all men. Areas with the most rapidly rising rates of incarceration are areas in which youths, particularly, African American youths have had the worst earnings and employment experience, and where men aged 25-64 have also done poorly. Whether this association is due to the depressing effect of criminal records on labor market outcomes cannot be ascertained from the aggregate data.

**Conclusion**

The US economy has experienced nine post-World War II expansions.4 The current expansion, which started in March 1991, and continues as of this writing, March 1999, has shattered the length of the previous longest peace-time boom from November 1982 to July 1990 expansion. The national unemployment rate started at 6.8 percent and currently sits at 4.3 percent. The unemployment rates in many metropolitan areas sit well below 4 percent. In 1998, 44 percent of metropolitan unemployment rates were below four percent, implying that roughly half of the US was enjoying extremely tight labor markets.

The NAIRU has seemingly shifted, as low rates of unemployment have not generated the same increases in wages as in previous economic booms. If the boom of the late 1990's was insufficient to improve substantially the position of young non-college-educated workers, it is difficult to imagine that any expansion could do so, and thus would dash any hope that economic growth per se could raise their pay and income. Our analysis has shown that the 1990s boom has substantially improved the labor market outcomes of young non-college-educated men; and helped the young African American men who are the most disadvantaged and socially troubled group in the U.S.. Young men in tight labor markets in the 1990s experienced a noticeable boost

in employment and earnings, while adult men had no such gains. Earnings of adults barely changed even in metropolitan areas with unemployment rates below 4 percent, while those of youths, including disadvantaged African American youths improved. Youths do particularly well in areas that started the boom at lower jobless rates, suggesting that minimizing the impact of recessions allows youths to make real gains instead of making up ground lost during the recession. Further, our results demonstrate that crime and labor market conditions and outcomes are closely linked. Crime rates have fallen most rapidly in states where unemployment has fallen most; while conditional on area unemployment youths in low crime states have higher earnings and employment. The extent to which these associations reflect the effects of area economic conditions on crime versus the effect of crime on youth labor market outcomes is difficult to assess. However, there is an adverse relation between incarcerations per youth and labor market outcomes, which may be attributed to the link between past criminal activity and outcomes.

Figure 1

# U.S. and African American Unemployment Rates

Percent of Labor Force
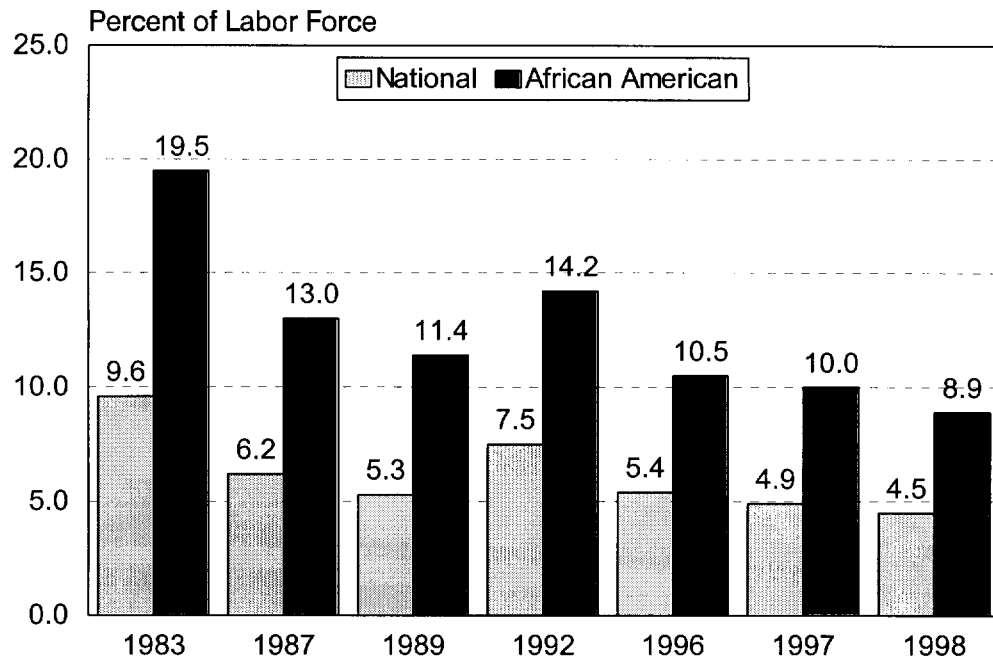
Source: Bureau of Labor Statistics.

# U.S. and African American Employment Population Ratios

Percent
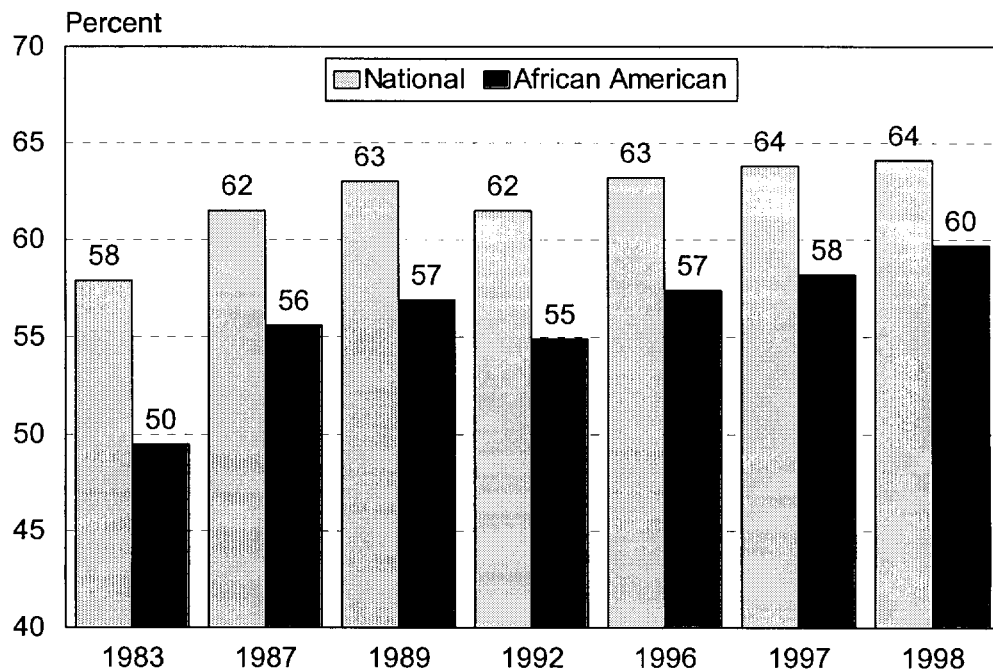


Source: Bureau of Labor Statistics.

**Figure 3:**

# Average Real Hourly Earnings ($1998)

## Private Nonagricultural Workers



| | 1983 | 1987 | 1989 | 1992 | 1996 | 1997 | 1998 |
|---|---|---|---|---|---|---|---|
| | $13.14 | $12.90 | $12.71 | $12.30 | $12.29 | $12.43 | $12.77 |
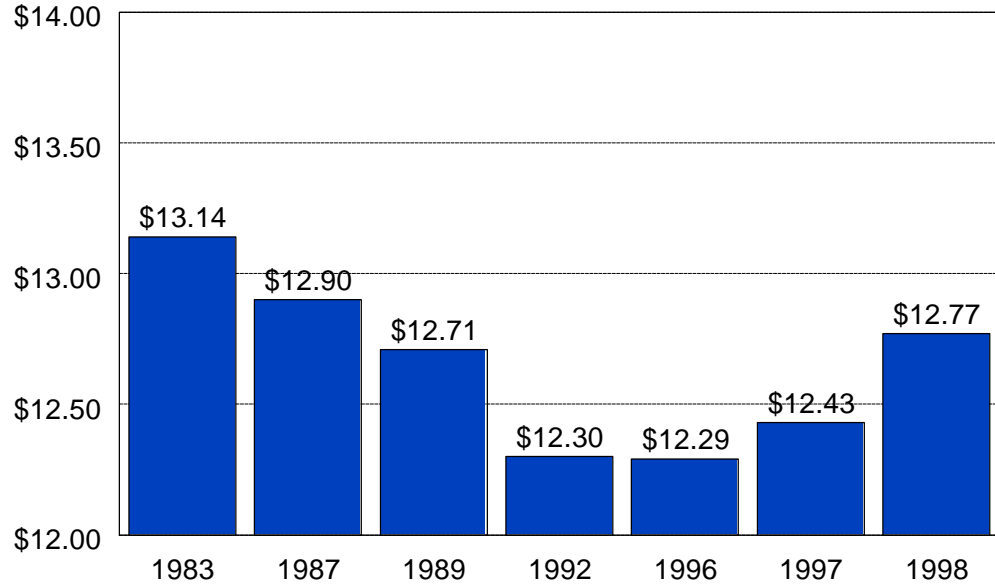
Source: Bureau of Labor Statistics.

**Figure 4:**

# Crime and Incarceration Rates per 100,000



| | 1983 | 1987 | 1989 | 1992 | 1996 | 1997 |
|---|---|---|---|---|---|---|
| Crime Rate per 100,000 | 5159 | 5550 | 5741 | 5660 | 5079 | 4876 |
| Incarceration Rate per 100,000 | 179 | 228 | 271 | 330 | 427 | 445 |
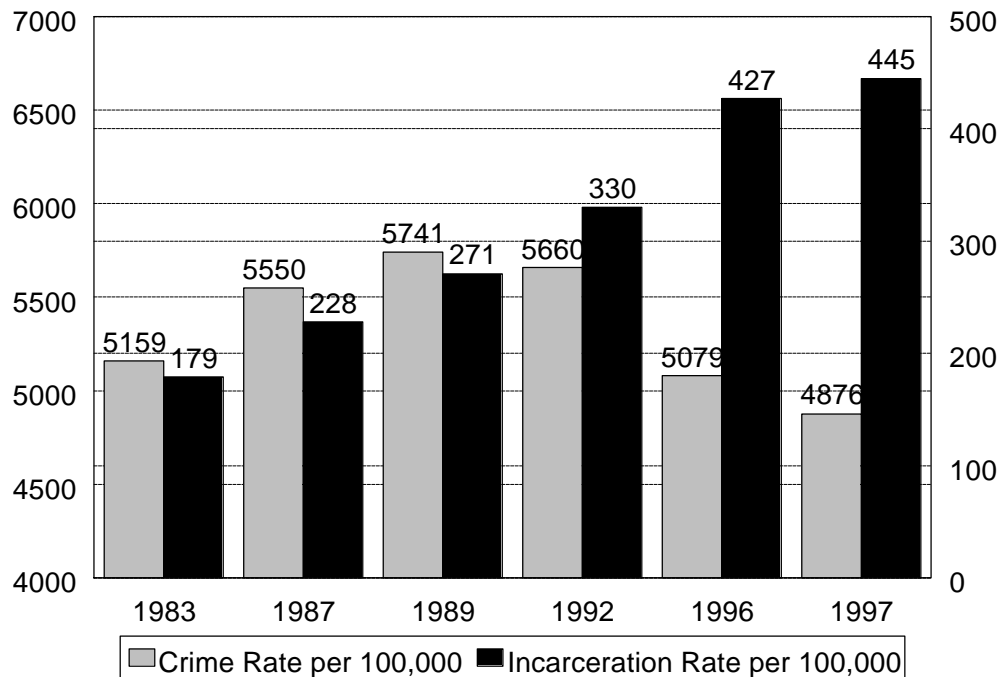
Source: Selected Volumes of the Uniform Crime Reports.

**Figure 5:**

# 1996 Incarceration Rate per 100,000
## by Race and Age

Thousands

| Age | White | African American |
|-----|-------|------------------|
| 18-19 | 0.143 | 1.337 |
| 20-24 | 0.406 | 3.385 |
| 25-29 | 0.442 | 4.131 |
| 30-34 | 0.469 | 3.671 |
| 35-39 | 0.412 | 3.398 |
| 40-44 | 0.322 | 2.431 |
| 45-54 | 0.198 | 1.347 |
| 55+ | 0.044 | 0.218 |

☐ White ■ African American
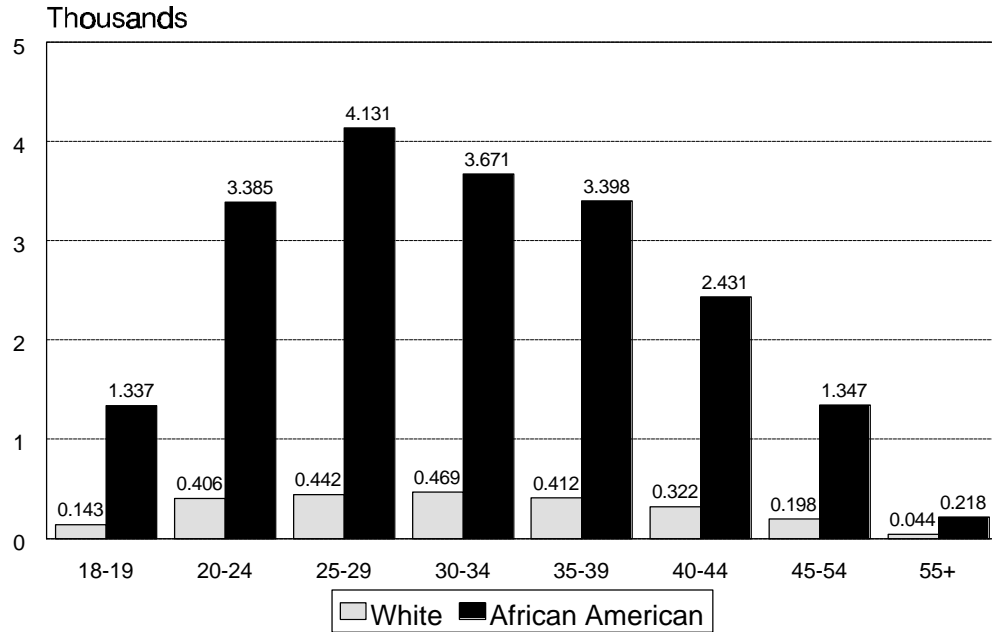
Source: Uniform Crime Reports and Sourcebook on Criminal Justice Statistics.

**Figure 6:**

# Growth in Incarceration Rate per 100,000
## (1996 - 1990)

African American Change                    White Change

| Age | African American | White |
|-----|------------------|-------|
| 18-19 | 253 | 53 |
| 20-24 | 1089 | 111 |
| 25-29 | 1182 | 88 |
| 30-34 | 1031 | 133 |
| 35-39 | 1425 | 167 |
| 40-44 | 998 | 126 |
| 45-54 | 757 | 61 |
| 55+ | 50 | 12 |

☐ White ■ African American
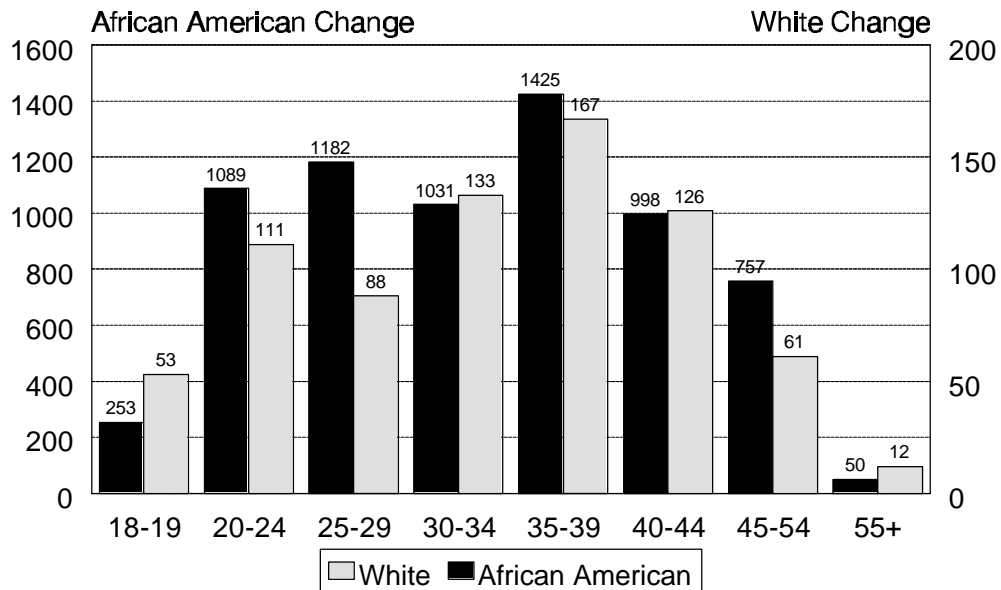
**Figure 7:**

# Real Earnings of Less-Educated Men
## by Race and Age

Log Points

| Year | Adult White | Adult African American | Youth White | Youth African American |
|------|-------------|------------------------|-------------|------------------------|
| 1983 | 2.16 | 2.02 | 1.63 | 1.51 |
| 1989 | 2.08 | 1.88 | 1.56 | 1.44 |
| 1992 | 2.03 | 1.84 | 1.50 | 1.42 |
| 1996 | 1.96 | 1.79 | 1.47 | 1.34 |
| 1998 | 1.96 | 1.81 | 1.53 | 1.45 |

■ Adult White  □ Adult African American
□ Youth White  ■ Youth African American
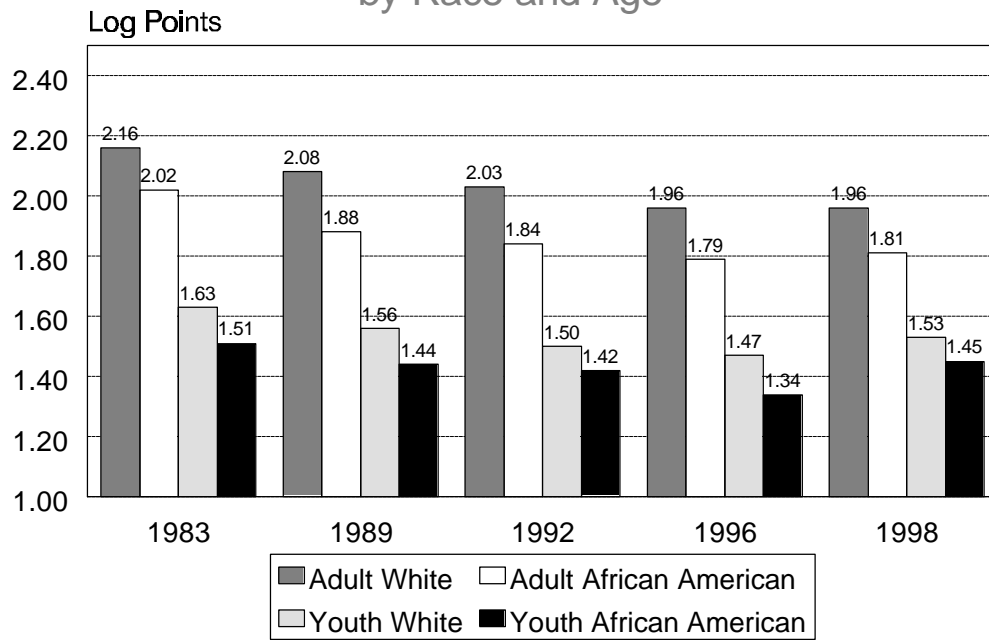
**Figure 8:**

# Employment Population Ratios of Less-Educated Men
## by Race and Age

Percent

| Year | Adult White | Adult African American | Youth White | Youth African American |
|------|-------------|------------------------|-------------|------------------------|
| 1983 | 77 | 65 | 73 | 44 |
| 1989 | 81 | 68 | 77 | 57 |
| 1992 | 79 | 65 | 73 | 46 |
| 1996 | 82 | 66 | 77 | 49 |
| 1998 | 83 | 68 | 77 | 54 |

□ Adult White  ■ Adult African American
□ Youth White  ■ Youth African American
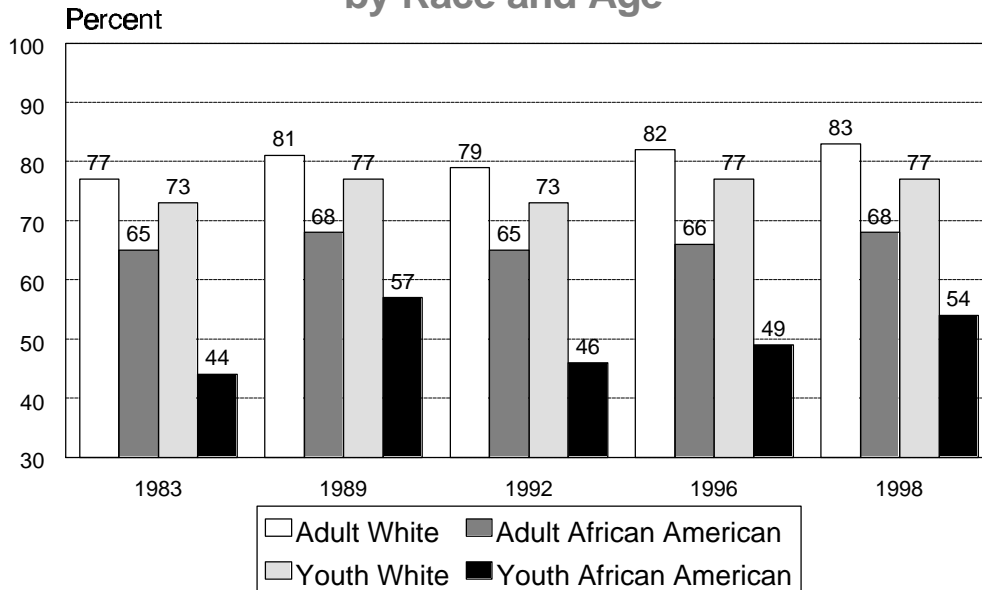
**Figure 9:**

# State Frequency Distributions of Unemployment Rates

Frequency



Legend: ■ Less than 4%  □ 4-5  ■ 5-6  ■ 6-7  □ Greater than 7

**Figure 10:**

# Metropolitan Area Frequency Distributions of Unemployment Rates

Frequency



Legend: ■ Less than 4%  □ 4-5  ■ 5-6  ■ 6-7  □ Greater than 7

**Figure 11:**

# Area Unemployment Comparisons
## Group Averages

Percent

| Year | Top | Worst | Best Improvement |
|------|-----|-------|------------------|
| 1992 | 3.2 | 14.5 | 10.3 |
| 1993 | 3.0 | 14.3 | 8.4 |
| 1994 | 2.8 | 13.2 | 7.5 |
| 1995 | 2.5 | 12.9 | 6.5 |
| 1996 | 2.6 | 12.6 | 5.7 |
| 1997 | 2.2 | 11.8 | 5.0 |
| 1998 | 2.0 | 12.1 | 4.6 |

□ Top  ▨ Worst  ■ Best Improvement

Source: Bureau of Labor Statistics

**Figure 12:**

# MSA Crime Rates per 100,000 Inhabitants
## by Type of Recovery in Unemployment

Thousands

Worst: Unemployment Rate >7% in all Years

Biggest Decline in Unemployment

Top Unemployment Rate <4% in all Years

1983  1987  1989  1992  1993  1994  1995  1996  1997

■ Worst  ▨ Biggest Decline  ● Top

2
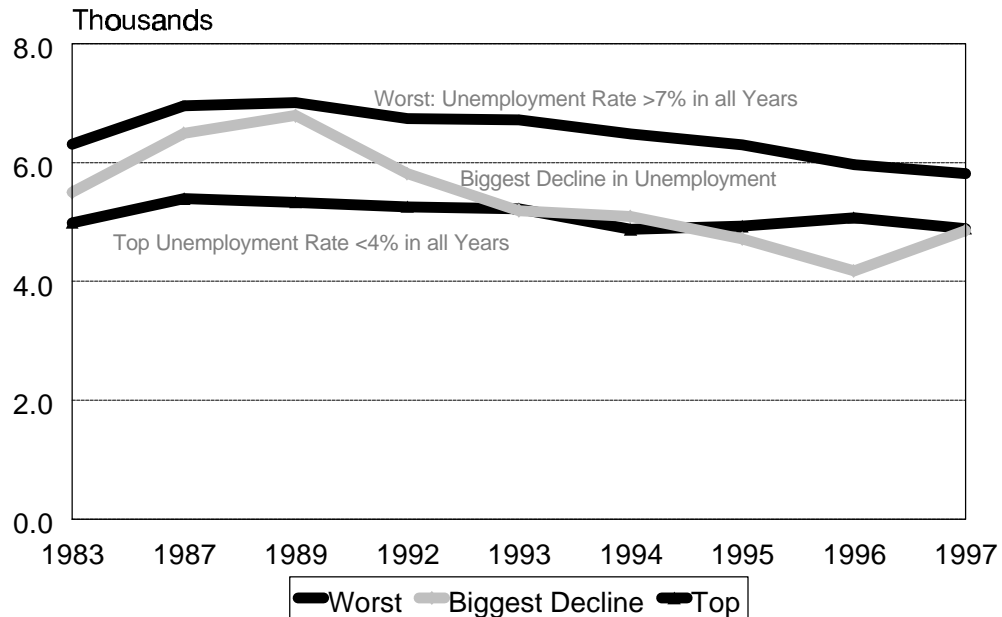
Source: Authors' tabulations from assorted years of Crime in the United States.

Table 1: State and Metropolitan Frequency Distributions of Unemployment Rates

Panel A: Movement of Metropolitan Area Unemployment Rates during Economic Expansions

| | 1989 Unemployment Rate | | | | | |
|---|---|---|---|---|---|---|
| 1983 Rate | <4% | 4-5 | 5-6 | 6-7 | >7 | Total |
| Less than 4 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4-5 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5-6 | 2 | 1 | 3 | 0 | 0 | 6 |
| 6-7 | 2 | 1 | 1 | 0 | 0 | 4 |
| Greater than 7 | 8 | 14 | 9 | 1 | 2 | 34 |
| Total | 12 | 16 | 13 | 1 | 2 | 44 |
| | 1996 Unemployment Rate | | | | | |
| 1992 Rate | <4% | 4-5 | 5-6 | 6-7 | >7 | Total |
| Less than 4 | 16 | 0 | 2 | 0 | 1 | 19 |
| 4-5 | 27 | 4 | 1 | 0 | 0 | 32 |
| 5-6 | 34 | 14 | 4 | 0 | 0 | 52 |
| 6-7 | 12 | 37 | 7 | 5 | 1 | 62 |
| Greater than 7 | 9 | 23 | 54 | 29 | 52 | 167 |
| Total | 98 | 78 | 68 | 34 | 54 | 332 |
| | 1998 Unemployment Rate | | | | | |
| 1992 Rate | <4% | 4-5 | 5-6 | 6-7 | >7 | Total |
| Less than 4 | 17 | 1 | 0 | 0 | 1 | 19 |
| 4-5 | 30 | 2 | 0 | 0 | 0 | 32 |
| 5-6 | 42 | 10 | 0 | 0 | 0 | 52 |
| 6-7 | 29 | 28 | 5 | 0 | 0 | 62 |
| Greater than 7 | 28 | 52 | 25 | 24 | 38 | 167 |
| Total | 146 | 93 | 30 | 24 | 39 | 332 |

Notes: Authors' tabulations from data taken from various editions of the Bureau of Labor Statistics' Employment and Earnings and Geographic Profile of Employment and Unemployment. For 1983, Metropolitan denotes standard metropolitan statistical areas (SMSAs). In all other years, Metropolitan corresponds to metropolitan statistical areas (MSAs), primary metropolitan statistical areas, and consolidated metropolitan statistical areas.

Table 1 cont: State and Metropolitan Frequency Distributions of Unemployment Rates

Panel B: Metropolitan Area Transition Probabilities

| 1992 Rate | <4% | 4-5 | 5-6 | 6-7 | >7 | Total |
|---|---|---|---|---|---|---|
| | | | 1996 Unemployment Rate | | | |
| <4% | 0.84 | 0.00 | 0.11 | 0.00 | 0.05 | 1.00 |
| 4-5 | 0.84 | 0.13 | 0.03 | 0.00 | 0.00 | 1.00 |
| 5-6 | 0.65 | 0.27 | 0.08 | 0.00 | 0.00 | 1.00 |
| 6-7 | 0.19 | 0.60 | 0.11 | 0.08 | 0.02 | 1.00 |
| >7 | 0.05 | 0.14 | 0.32 | 0.17 | 0.31 | 1.00 |
| Total | 0.30 | 0.23 | 0.20 | 0.10 | 0.16 | 1.00 |
| | | | 1998 Unemployment Rate | | | |
| 1992 Rate | <4% | 4-5 | 5-6 | 6-7 | >7 | Total |
| <4% | 0.89 | 0.05 | 0.00 | 0.00 | 0.05 | 1.00 |
| 4-5 | 0.94 | 0.06 | 0.00 | 0.00 | 0.00 | 1.00 |
| 5-6 | 0.81 | 0.19 | 0.00 | 0.00 | 0.00 | 1.00 |
| 6-7 | 0.47 | 0.45 | 0.08 | 0.00 | 0.00 | 1.00 |
| >7 | 0.17 | 0.31 | 0.15 | 0.14 | 0.23 | 1.00 |
| Total | 0.44 | 0.28 | 0.09 | 0.07 | 0.12 | 1.00 |

Notes: Authors' tabulations from data taken from various editions of the Bureau of Labor Statistics' Employment and Earnings and Geographic Profile of Employment and Unemployment. Each entry represents the probability of 1996 (1998) unemployment conditional on 1992 Unemployment.

Table 2: The Top Metropolitan Areas During the 1990s Expansion
(Unemployment has remained Less than 4% in every year)

| Area | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 |
|---|---|---|---|---|---|---|---|
| Bryan, TX | 2.9 | 2.7 | 2.7 | 3.0 | 2.5 | 2.2 | 1.8 |
| Columbia, MO | 2.5 | 3.2 | 2.0 | 1.9 | 1.7 | 1.6 | 1.7 |
| Des Moines, IA | 3.7 | 3.4 | 2.8 | 2.6 | 2.8 | 2.4 | 2.1 |
| Fargo, ND-MN | 3.6 | 3.1 | 2.7 | 2.6 | 2.5 | 1.8 | 1.5 |
| Fayetteville, AR | 3.7 | 2.9 | 2.5 | 2.4 | 2.9 | 3.1 | 3.4 |
| Iowa City, IA | 3.3 | 2.7 | 2.6 | 2.7 | 2.9 | 2.4 | 2.1 |
| Lafayette, IN | 3.8 | 3.4 | 3.5 | 3.1 | 2.8 | 2.4 | 2.3 |
| Lincoln, NE | 2.7 | 2.3 | 2.4 | 2.3 | 2.6 | 1.8 | 1.6 |
| Madison, WI | 2.2 | 2.2 | 2.3 | 1.8 | 1.7 | 1.7 | 1.6 |
| Omaha, NE-IA | 3.6 | 3.1 | 3.2 | 2.8 | 3.0 | 2.5 | 2.1 |
| Raleigh-Durham-Chapel Hill, NC | 3.8 | 3.1 | 2.7 | 2.6 | 2.4 | 2.0 | 1.9 |
| Rapid City, SD | 3.2 | 3.8 | 3.4 | 3.0 | 3.3 | 2.7 | 2.7 |
| Rochester, MN | 3.0 | 3.3 | 3.5 | 2.9 | 3.0 | 2.1 | 1.8 |
| Sioux Falls, SD | 2.4 | 2.5 | 2.4 | 2.0 | 2.1 | 1.8 | 1.7 |
| Average | 3.2 | 3.0 | 2.8 | 2.5 | 2.6 | 2.2 | 2.0 |

Source: Bureau of Labor Statistics.

Table 3: The Worst Metropolitan Areas During the 1990s Expansion
(Unemployment has remained above 7% in every year)

| Area | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 |
|---|---|---|---|---|---|---|---|
| Atlantic-Cape May, NJ | 11.1 | 10.4 | 9.9 | 9.6 | 9.4 | 8.6 | 9.5 |
| Bakersfield, CA | 15.5 | 15.8 | 14.7 | 13.8 | 12.7 | 11.8 | 12.6 |
| Beaumont, TX | 9.3 | 11.4 | 10.1 | 9.8 | 9.1 | 8.0 | 7.2 |
| Brownsville, TX | 14.7 | 13.5 | 12.8 | 12.6 | 12.6 | 12.5 | 12.7 |
| Chico-Paradise, CA | 11.7 | 11.9 | 10.2 | 10.0 | 9.0 | 8.7 | 9.2 |
| Cumberland, MD-WV | 12.4 | 10.6 | 8.8 | 8.6 | 8.0 | 7.9 | 8.0 |
| El Paso, TX | 11.7 | 10.8 | 10.4 | 10.5 | 11.6 | 11.1 | 10.0 |
| Fort Pierce, FL | 13.9 | 11.9 | 12.4 | 10.7 | 10.2 | 9.2 | 8.3 |
| Fresno, CA | 15.9 | 15.5 | 14.0 | 14.3 | 13.2 | 13.5 | 14.8 |
| Jersey City, NJ | 11.2 | 10.0 | 9.3 | 9.3 | 9.2 | 8.0 | 8.0 |
| Laredo, TX | 11.0 | 10.5 | 9.6 | 15.4 | 12.7 | 10.5 | 9.5 |
| Las Cruces, NM | 7.8 | 8.5 | 8.6 | 8.6 | 10.2 | 8.4 | 9.7 |
| McAllen, TX | 22.3 | 20.6 | 19.5 | 19.8 | 18.9 | 18.1 | 17.5 |
| Merced, CA | 16.5 | 17.1 | 15.6 | 16.9 | 16.2 | 15.2 | 17.1 |
| Modesto, CA | 16.5 | 16.7 | 15.7 | 15.3 | 14.1 | 13.1 | 13.4 |
| New Bedford, MA | 12.7 | 10.6 | 10.3 | 9.8 | 8.5 | 7.5 | 7.3 |
| New York, NY | 10.2 | 9.6 | 8.1 | 7.6 | 8.0 | 8.4 | 7.6 |
| Pine Bluff, AR | 11.4 | 9.5 | 8.8 | 7.6 | 7.7 | 7.5 | 8.0 |
| Redding, CA | 13.2 | 12.6 | 11.9 | 11.3 | 9.9 | 9.1 | 10.0 |
| Salinas, CA | 12.4 | 12.9 | 12.1 | 12.5 | 11.1 | 10.7 | 12.2 |
| Santa Cruz, CA | 9.8 | 10.4 | 9.7 | 9.2 | 8.3 | 7.6 | 7.9 |
| Stockton-Lodi, CA | 14.0 | 14.0 | 12.6 | 12.3 | 11.2 | 10.7 | 11.5 |
| Texarkana, TX-AR | 9.0 | 8.6 | 9.2 | 7.9 | 7.4 | 7.4 | 7.5 |
| Vineland, NJ | 12.1 | 11.3 | 10.5 | 9.7 | 9.9 | 8.9 | 10.0 |
| Visalia, CA | 16.6 | 17.9 | 16.0 | 16.6 | 15.9 | 15.3 | 16.1 |
| Yakima, WA | 13.8 | 14.6 | 11.8 | 12.7 | 13.6 | 10.2 | 10.6 |
| Yuba City, CA | 18.2 | 18.6 | 16.2 | 16.3 | 15.1 | 14.4 | 16.7 |
| Yuma, AZ | 26.5 | 27.6 | 31.5 | 28.2 | 30.5 | 26.7 | 25.3 |
| Average | 14.5 | 14.3 | 13.2 | 12.9 | 12.6 | 11.8 | 12.1 |

Source: Bureau of Labor Statistics.

Table 4: The Metropolitan Areas with the Greatest Improvement During 1990s Expansion
(Unemployment fell by at least 5 Percentage Points)

| Area | Full-Period 1998-92 | Annual Changes | | | | | |
|---|---|---|---|---|---|---|---|
| | | 1993-92 | 1994-93 | 1995-94 | 1996-95 | 1997-96 | 1998-97 |
| Brockton, MA | -6.84 | -2.71 | -1.47 | -0.79 | -0.76 | -0.52 | -0.60 |
| Lowell, MA | -6.62 | -1.84 | -1.49 | -1.12 | -1.45 | -0.22 | -0.49 |
| Pittsfield, MA | -6.20 | -2.27 | -0.46 | -1.51 | -1.45 | -0.18 | -0.32 |
| Houma, LA | -5.67 | -1.79 | -0.33 | -1.07 | -0.82 | -1.16 | -0.49 |
| Fort Pierce, FL | -5.63 | -2.03 | 0.48 | -1.68 | -0.44 | -1.01 | -0.95 |
| Flint, MI | -5.62 | -2.38 | -1.62 | -1.22 | -0.50 | -0.89 | 0.99 |
| Jackson, MI | -5.62 | -2.06 | -1.18 | -0.92 | -0.36 | -0.61 | -0.49 |
| Detroit, MI | -5.46 | -1.88 | -1.54 | -0.75 | -0.54 | -0.68 | -0.06 |
| Naples, FL | -5.38 | -1.12 | -0.21 | -1.19 | -1.17 | -0.60 | -1.09 |
| New Bedford, MA | -5.36 | -2.04 | -0.32 | -0.52 | -1.24 | -0.99 | -0.24 |
| Lakeland, FL | -5.34 | -1.14 | -1.04 | -1.50 | -0.56 | -0.23 | -0.88 |
| Worcester, MA | -5.30 | -2.11 | -1.47 | -0.28 | -0.93 | -0.37 | -0.13 |
| Lawrence, MA | -5.20 | -0.83 | -1.45 | -1.32 | -0.54 | -0.63 | -0.42 |
| Fitchburg, MA | -5.18 | -2.14 | -0.45 | -0.44 | -0.85 | -0.43 | -0.86 |
| Manchester, NH | -5.11 | -1.38 | -1.54 | -0.72 | -0.30 | -1.09 | -0.08 |
| Average | -5.63 | -1.85 | -0.94 | -1.00 | -0.79 | -0.64 | -0.41 |

Source: Bureau of Labor Statistics.

Table 5: The Effect of Area Unemployment Rates on the Employment of Men

| Item | All Youths A Coef. | dP/dX | B Coef. | dP/dX | All Men A Coef. | dP/dX | B Coef. | dP/dX | African American Youths A Coef. | dP/dX | B Coef. | dP/dX | African American Men A Coef. | dP/dX | B Coef. | dP/dX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unemployment Rate | -0.078 | -0.015 | -0.119 | -0.023 | -0.058 | -0.009 | -0.074 | -0.012 | -0.144 | -0.035 | -0.124 | -0.030 | -0.081 | -0.017 | -0.046 | -0.010 |
| | (0.007) | (0.001) | (0.015) | (0.003) | (0.004) | (0.001) | (0.008) | (0.001) | (0.020) | (0.005) | (0.039) | (0.009) | (0.010) | (0.002) | (0.019) | (0.004) |
| African American | -1.028 | -0.194 | -1.061 | -0.201 | -0.743 | -0.120 | -0.779 | -0.126 | | | | | | | | |
| | (0.037) | (0.007) | (0.041) | (0.008) | (0.020) | (0.003) | (0.022) | (0.004) | | | | | | | | |
| Crime per Youth | 0.081 | 0.015 | -0.284 | -0.054 | -0.018 | -0.003 | -0.447 | -0.073 | 0.269 | 0.066 | -0.466 | -0.114 | 0.013 | 0.003 | -0.768 | -0.164 |
| | (0.072) | (0.014) | (0.190) | (0.036) | (0.036) | (0.006) | (0.093) | (0.015) | (0.146) | (0.036) | (0.338) | (0.083) | (0.068) | (0.015) | (0.155) | (0.033) |
| Log Likelihood | -14369 | | -14094 | | -56152 | | -55581 | | -2586 | | -2406 | | -9735 | | -9406 | |
| Less than 4% | 0.521 | 0.099 | 0.425 | 0.080 | 0.443 | 0.072 | 0.360 | 0.058 | 0.839 | 0.205 | 0.133 | 0.133 | 0.529 | 0.112 | 0.077 | 0.077 |
| | (0.050) | (0.010) | (0.084) | (0.016) | (0.026) | (0.004) | (0.042) | (0.007) | (0.115) | (0.028) | (0.051) | (0.051) | (0.057) | (0.012) | (0.022) | (0.022) |
| 4-5 | 0.436 | 0.083 | 0.397 | 0.075 | 0.304 | 0.049 | 0.243 | 0.039 | 0.564 | 0.138 | 0.092 | 0.092 | 0.315 | 0.067 | 0.027 | 0.027 |
| | (0.049) | (0.009) | (0.070) | (0.013) | (0.025) | (0.004) | (0.034) | (0.006) | (0.115) | (0.028) | (0.041) | (0.041) | (0.061) | (0.013) | (0.018) | (0.018) |
| 5-6 | 0.268 | 0.051 | 0.280 | 0.053 | 0.235 | 0.038 | 0.199 | 0.032 | 0.321 | 0.078 | 0.068 | 0.068 | 0.281 | 0.060 | 0.034 | 0.034 |
| | (0.044) | (0.008) | (0.059) | (0.011) | (0.023) | (0.004) | (0.029) | (0.005) | (0.099) | (0.024) | (0.033) | (0.033) | (0.051) | (0.011) | (0.014) | (0.014) |
| 6-7 | 0.223 | 0.042 | 0.172 | 0.033 | 0.171 | 0.028 | 0.123 | 0.020 | 0.290 | 0.071 | 0.030 | 0.030 | 0.336 | 0.072 | 0.048 | 0.048 |
| | (0.050) | (0.009) | (0.065) | (0.012) | (0.026) | (0.004) | (0.033) | (0.005) | (0.117) | (0.028) | (0.038) | (0.038) | (0.063) | (0.013) | (0.017) | (0.017) |
| African American | -1.016 | -0.192 | -1.058 | -0.200 | -0.741 | -0.120 | -0.779 | -0.126 | | | | | | | | |
| | (0.037) | (0.007) | (0.041) | (0.008) | (0.020) | (0.003) | (0.022) | (0.004) | | | | | | | | |
| Crime per Youth | 0.097 | 0.018 | -0.359 | -0.068 | 0.000 | 0.000 | -0.464 | -0.075 | 0.231 | 0.056 | -0.137 | -0.137 | -0.016 | -0.003 | -0.170 | -0.170 |
| | (0.073) | 0.014 | (0.192) | 0.036 | (0.037) | 0.006 | (0.093) | 0.015 | (0.149) | (0.036) | (0.083) | (0.083) | (0.070) | 0.015 | (0.033) | (0.033) |
| Log Likelihood | -14368 | | -14107 | | -56120 | | -55588 | | -2583 | | -2407 | | -9725 | | -9401 | |

Notes: Calculated from the Current Population Survey Annual Merged Outgoing Rotation Group files, 1987, 1989, 1992 and 1996. The entries are logit coefficients, followed by the probability effect (logit coefficients multiplied by $p*(1-p)$, where $p$ is the share of the sample that are employed). All logit models include year dummy variables, age, age squared, years of schooling dummy variables, and a race dummy variable. Standard errors are in parentheses. Column A excludes MSA dummy variables. Column B includes MSA dummy variables. We also estimated models where we exclude crimes per youth and include the 1998 cross section. We are forced to do this because the 1998 crime rates are not available. The coefficients from the linear specifications that include the MSA dummy variables are -0.023 (0.003) for all youth, -0.011 (0.001) for all men, -0.027 (0.008) for African American youth and -0.010 (0.004) for African American men. Standard errors are in parentheses.

Table 6: Effect of Area Unemployment Rates on the Earnings of Men

| Item | All Youths | | All Men | | African American Youths | | All African American Men | |
|---|---|---|---|---|---|---|---|---|
| | A | B | A | B | A | B | A | B |
| Unemployment Rate | -0.018 | -0.023 | -0.003 | -0.001 | -0.020 | -0.019 | 0.006 | -0.001 |
| | (0.001) | (0.003) | (0.001) | (0.002) | (0.004) | (0.008) | (0.003) | (0.005) |
| African American | -0.136 | -0.146 | -0.184 | -0.195 | | | | |
| | (0.008) | (0.009) | (0.005) | (0.005) | | | | |
| Crime per Youth | -0.011 | -0.098 | -0.045 | -0.070 | 0.082 | -0.148 | 0.012 | -0.056 |
| | (0.013) | (0.032) | (0.008) | (0.020) | (0.029) | (0.067) | (0.017) | (0.040) |
| $R^2$ | 0.202 | 0.198 | 0.145 | 0.144 | 0.138 | 0.111 | 0.088 | 0.085 |
| Less than 4% | 0.125 | 0.121 | -0.005 | 0.018 | 0.110 | 0.059 | -0.032 | 0.001 |
| | (0.009) | (0.014) | (0.006) | (0.009) | (0.025) | (0.045) | (0.015) | (0.026) |
| 4-5 | 0.068 | 0.081 | -0.010 | 0.010 | 0.071 | 0.051 | -0.026 | 0.003 |
| | (0.009) | (0.012) | (0.006) | (0.007) | (0.026) | (0.037) | (0.016) | (0.021) |
| 5-6 | 0.049 | 0.074 | -0.020 | 0.010 | 0.046 | 0.041 | -0.061 | -0.008 |
| | (0.008) | (0.011) | (0.005) | (0.006) | (0.023) | (0.031) | (0.014) | (0.018) |
| 6-7 | 0.010 | 0.038 | -0.027 | 0.006 | 0.016 | 0.046 | -0.038 | 0.031 |
| | (0.009) | (0.012) | (0.006) | (0.007) | (0.027) | (0.035) | (0.016) | (0.020) |
| African American | -0.136 | -0.146 | -0.183 | -0.195 | | | | |
| | (0.008) | (0.009) | (0.005) | (0.005) | | | | |
| Crime per Youth | 0.000 | -0.099 | -0.051 | -0.067 | 0.078 | -0.165 | 0.014 | -0.059 |
| | (0.013) | (0.032) | (0.008) | (0.020) | (0.029) | (0.066) | (0.017) | (0.039) |
| $R^2$ | 0.204 | 0.200 | 0.145 | 0.144 | 0.139 | 0.106 | 0.090 | 0.085 |
| Sample Size | 18607 | 18607 | 73294 | 73294 | 2088 | 2088 | 9499 | 9499 |

Notes: Calculated from the Current Population Survey Annual Merged Outgoing Rotation Group files, 1987, 1989, 1992 and 1996. All regressions include year dummy variables, age, age squared, years of schooling dummy variables, and a race dummy variable. Standard errors are in parentheses. Column A excludes MSA dummy variables. Column B includes MSA dummy variables. We also estimated models where we exclude crimes per youth and include the 1998 cross section. We are forced to do this because the 1998 crime rates are not available. The coefficients from the linear specifications that include the MSA dummy variables are -0.024 (0.002) for all youth, -0.002 (0.002) for all men, -0.031 (0.007) for African American youth, and -0.004 (0.004) for African American men. Standard errors are in parentheses.

Table 7: The Effect of Current and Past Unemployment on Earnings and Employment

**Panel A: Employment**

| Item | Young Adults A Coef. | Young Adults A DP/dX | Young Adults B Coef. | Young Adults B dP/dX | All Men A Coef. | All Men A dP/dX | All Men B Coef. | All Men B dP/dX | Young African American Men A Coef. | Young African American Men A dP/dX | Young African American Men B Coef. | Young African American Men B dP/dX | African American Men A Coef. | African American Men A dP/dX | African American Men B Coef. | African American Men B dP/dX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unemployment Rate | -0.041 | -0.007 | -0.047 | -0.008 | 0.007 | 0.001 | -0.092 | -0.014 | -0.130 | -0.029 | -0.069 | -0.016 | -0.004 | -0.001 | -0.103 | -0.021 |
|  | (0.022) | (0.004) | (0.046) | (0.008) | (0.011) | (0.002) | (0.023) | (0.003) | (0.055) | (0.013) | (0.097) | (0.022) | (0.028) | (0.006) | (0.053) | (0.011) |
| Trough Unemployment Rate | -0.045 | -0.007 | -0.096 | -0.016 | -0.051 | -0.008 | 0.013 | 0.002 | -0.070 | -0.016 | -0.154 | -0.035 | -0.080 | -0.016 | 0.046 | 0.009 |
|  | (0.018) | (0.003) | (0.040) | (0.007) | (0.010) | (0.001) | (0.019) | (0.003) | (0.040) | (0.009) | (0.083) | (0.019) | (0.021) | (0.004) | (0.047) | (0.009) |
| African American | -0.980 | -0.164 | -1.008 | -0.168 | -0.778 | -0.116 | -0.781 | -0.117 |  |  |  |  |  |  |  |  |
|  | (0.065) | (0.011) | (0.071) | (0.012) | (0.034) | (0.005) | (0.036) | (0.005) |  |  |  |  |  |  |  |  |
| Crime per Youth | -0.044 | -0.007 | -0.437 | -0.073 | -0.022 | -0.003 | -0.605 | -0.091 | 0.123 | 0.028 | -0.621 | -0.141 | -0.141 | -0.029 | -0.816 | -0.166 |
|  | (0.133) | (0.022) | (0.290) | (0.048) | (0.061) | (0.009) | (0.140) | (0.021) | (0.234) | (0.053) | (0.462) | (0.105) | (0.097) | (0.020) | (0.195) | (0.040) |
| Log Likelihood | -4332 |  | -4179 |  | -19119 |  | -18858 |  | -932 |  | -830 |  | -3827 |  | -3663 |  |

Notes: Calculated from the Current Population Survey Annual Merged Outgoing Rotation Group files, 1989 and 1996. The entries are logit coefficients, followed by the probability effect (logit coefficients multiplied by p*(1-p), where p is the share of the sample that are employed). All logit models include variables for age, age squared, years of schooling, and race. Unemployment rate refers to the 1996 and 1989 rates, while trough unemployment rate refers to the 1983 and 1992 rates. Column A excludes MSA dummy variables. Column B includes MSA dummy variables.  Standard errors are in parentheses.

**Panel B: Earnings**

| Item | Young Adults A | Young Adults B | All Men A | All Men B | Young African American Men A | Young African American Men B | African American Men A | African American Men B |
|---|---|---|---|---|---|---|---|---|
| Unemployment rate | -0.011 | -0.021 | -0.021 | -0.011 | -0.012 | -0.020 | -0.023 | -0.016 |
|  | (0.004) | (0.007) | (0.002) | (0.005) | (0.011) | (0.020) | (0.007) | (0.013) |
| Trough Unemployment Rate | -0.011 | -0.032 | 0.011 | -0.007 | -0.003 | -0.017 | 0.020 | 0.003 |
|  | (0.003) | (0.006) | (0.002) | (0.004) | (0.008) | (0.017) | (0.005) | (0.011) |
| African American | -0.154 | -0.163 | -0.162 | -0.172 |  |  |  |  |
|  | (0.013) | (0.014) | (0.008) | (0.008) |  |  |  |  |
| Crime per Youth | -0.028 | -0.016 | -0.055 | -0.032 | 0.055 | -0.012 | 0.037 | 0.016 |
|  | (0.022) | (0.047) | (0.014) | (0.030) | (0.038) | (0.074) | (0.025) | (0.048) |
| R$^2$ | 0.210 | 0.188 | 0.173 | 0.168 | 0.209 | 0.189 | 0.123 | 0.117 |
| Sample Size | 5796 | 5796 | 22562 | 22562 | 764 | 764 | 3388 | 3388 |

Notes: Calculated from the Current Population Survey annual merged files, 1989 and 1996. All regressions include variables for age, age squared, years of schooling, and race. Unemployment rate refers to the 1996 and 1989 rates, while trough unemployment rate refers to the 1983 and 1992 rates. Column A excludes MSA dummy variables. Column B includes MSA dummy variables. Standard errors are in parentheses.

Table 8: Mean Employment Rates and Log Hourly Earnings by Type of Expansion

| | Jobless Rate <4% | | Jobless Rate above 7% | | Decline > 5 Points | |
|---|---|---|---|---|---|---|
| All Youth | Employment | LnWage | Employment | LnWage | Employment | LnWage |
| 1992 | 0.74 | 1.48 | 0.57 | 1.49 | 0.65 | 1.50 |
| 1998 | 0.80 | 1.58 | 0.61 | 1.46 | 0.72 | 1.59 |
| Change | 0.06 | 0.10 | 0.04 | -0.03 | 0.07 | 0.09 |
| All Men | | | | | | |
| 1992 | 0.83 | 1.97 | 0.71 | 1.98 | 0.75 | 2.11 |
| 1998 | 0.85 | 1.99 | 0.76 | 1.86 | 0.80 | 2.07 |
| Change | 0.02 | 0.02 | 0.05 | -0.12 | 0.05 | -0.04 |
| African American Youths | | | | | | |
| 1992 | 0.52 | 1.42 | 0.36 | 1.58 | 0.42 | 1.38 |
| 1998 | 0.64 | 1.53 | 0.53 | 1.53 | 0.51 | 1.53 |
| Change | 0.12 | 0.11 | 0.17 | -0.06 | 0.05 | 0.15 |
| All African American Men | | | | | | |
| 1992 | 0.72 | 1.75 | 0.66 | 1.90 | 0.61 | 2.02 |
| 1998 | 0.72 | 1.82 | 0.64 | 1.85 | 0.61 | 1.96 |
| Change | 0.00 | 0.07 | -0.02 | -0.05 | 0.00 | -0.07 |

Notes:

Jobless Rate <4%: Sample of respondents who reside in metropolitan areas in which the unemployment rate was below 4% in every year from 1992 to 1998.

Jobless Rate above 7%: Sample of respondents who reside in metropolitan areas in which the unemployment rate exceeded 7% in every year from 1992 to 1998.

Decline >5 Points: Sample of respondents who resided in metropolitan areas in which the unemployment rate fell by at least 5 percentage points from 1992 to 1998.

Table 9: Do the Minimum Wage Hikes of the 1990s Contribute to Gains?

| Panel A: Employment Logit Coefficients | Young Adults | | Adult Men | | African American Young Men | | All African American Men | |
|---|---|---|---|---|---|---|---|---|
| | A | B | A | B | A | B | A | B |
| Binding | 0.191 | -0.099 | 0.217 | 0.185 | 0.249 | 0.435 | 0.046 | 0.212 |
| | (0.072) | (0.164) | (0.036) | (0.080) | (0.193) | (0.384) | (0.094) | (0.188) |
| Binding*Unemployment Rate | -0.043 | 0.023 | -0.035 | -0.014 | -0.046 | 0.017 | -0.002 | 0.013 |
| | (0.011) | (0.020) | (0.006) | (0.010) | (0.033) | (0.047) | (0.016) | (0.023) |
| Unemployment Rate | -0.056 | -0.134 | -0.038 | -0.066 | -0.106 | -0.121 | -0.076 | -0.054 |
| | (0.008) | (0.016) | (0.004) | (0.008) | (0.025) | (0.044) | (0.012) | (0.021) |
| African American | -1.011 | -1.047 | -0.762 | -0.803 | | | | |
| | (0.035) | (0.038) | (0.019) | (0.020) | | | | |
| Log Likelihood | -16274 | -15995 | -66544 | -65955 | -2997 | -2809 | -11724 | -11377 |
| Sample Size | 33110 | | 150923 | | 4937 | | 20415 | |
| **DP/dx (Partial Derivatives)** | | | | | | | | |
| Binding | 0.035 | -0.018 | 0.034 | 0.029 | 0.060 | 0.104 | 0.010 | 0.045 |
| | (0.013) | (0.030) | (0.006) | (0.013) | (0.046) | (0.092) | (0.020) | (0.040) |
| Binding*Unemployment Rate | -0.008 | 0.004 | -0.005 | -0.002 | -0.011 | 0.004 | 0.000 | 0.003 |
| | (0.002) | (0.004) | (0.001) | (0.002) | (0.008) | (0.011) | (0.003) | (0.005) |
| Unemployment Rate | -0.010 | -0.024 | -0.006 | -0.010 | -0.025 | -0.029 | -0.016 | -0.011 |
| | (0.001) | (0.003) | (0.001) | (0.001) | (0.006) | (0.011) | (0.002) | (0.004) |
| African American | -0.184 | -0.191 | -0.120 | -0.127 | | | | |
| | (0.006) | (0.007) | (0.003) | (0.003) | | | | |
| **Dep. Var. Mean** | | | | | | | | |
| Binding | 0.75 | | 0.80 | | 0.58 | | 0.70 | |
| Non-Binding | 0.77 | | 0.80 | | 0.61 | | 0.70 | |

| Panel B: Earnings Item | Young Adults | | Adult Men | | African American Young Men | | All African American Men | |
|---|---|---|---|---|---|---|---|---|
| | A | B | A | B | A | B | A | B |
| Binding | 0.002 | -0.013 | 0.018 | 0.033 | -0.091 | -0.215 | -0.116 | -0.039 |
| | (0.012) | (0.027) | (0.008) | (0.016) | (0.039) | (0.083) | (0.024) | (0.044) |
| Binding*Unemployment Rate | -0.005 | 0.002 | 0.001 | 0.001 | 0.017 | 0.016 | 0.028 | 0.008 |
| | (0.002) | (0.003) | (0.001) | (0.002) | (0.007) | (0.010) | (0.004) | (0.006) |
| Unemployment Rate | -0.015 | -0.025 | -0.006 | -0.002 | -0.026 | -0.040 | -0.011 | -0.008 |
| | (0.001) | (0.003) | (0.001) | (0.002) | (0.005) | (0.009) | (0.003) | (0.005) |
| African American | -0.131 | -0.142 | -0.184 | -0.194 | | | | |
| | (0.007) | (0.008) | (0.004) | (0.005) | | | | |
| R2 | 0.196 | 0.193 | 0.149 | 0.148 | 0.134 | 0.105 | 0.092 | 0.087 |
| **Dep. Var. Mean** | | | | | | | | |
| Binding | 1.51 | | 2.03 | | 1.43 | | 1.89 | |
| Non-Binding | 1.54 | | 1.99 | | 1.43 | | 1.84 | |
| Sample Size | 21677 | 21677 | 86813 | 86813 | 2438 | 2438 | 11259 | 11259 |

Notes: For detailed descriptions of specifications see Tables 5 and 6. These models sort the respondents by whether they resided in a state where the federal minimum wage increase exceeds the state's minimum wage. We create a dummy variable (Binding) that equals 1 if the ratio of the state's minimum wage to the federal minimum wage is less than 1.0 in 1997 and 1998, or less than 1.0 in either year. The dummy variable equals 0 if the ratio is greater than or equal to 1.0 in 1997 and 1998.

Table 10: The Determinants of Crime per Youth

| Panel A: Linear Specification | | | |
|---|---|---|---|
| Item | A | B | C |
| Unemployment Rate | 0.015 | | 0.011 |
| | (0.006) | | (0.005) |
| Incarceration per Youth/Crime per Youth | | -1.178 | -1.130 |
| | | (0.055) | (0.051) |
| $R^2$ | 0.93 | 0.95 | 0.95 |
| Sample Size | 255 | 255 | 255 |

| Panel B: Dummy Variable Specification | | |
|---|---|---|
| Item | A | B |
| Less than 4% | -0.063 | -0.101 |
| | (0.021) | (0.038) |
| 4-5 | -0.021 | -0.056 |
| | (0.018) | (0.034) |
| 5-6 | -0.010 | -0.041 |
| | (0.020) | (0.033) |
| 6-7 | 0.002 | -0.019 |
| | (0.017) | (0.025) |
| Incarceration per Youth/Crime per Youth | … | -1.096 |
| | | (0.143) |
| $R^2$ | 0.93 | 0.92 |
| Sample Size | 255 | 255 |

Notes: Calculated using data from the Uniform Crime Reports: 1996. Release Date Sunday, September 28, 1997, and the volumes from 1992, 1989, 1987, and 1983, Table 6.22 in the Sourcebook of Criminal Justice Statistic: 1996, and the Web site "Bureau of Justice Statistics Prisoners in 1996" http://www.ojp.usdoj.gov/bjs/abstract/p96.htm. Crime per youth is the ratio of the crime index to the number of men ages 16 to 24. Incarceration per youth/Crime per youth is the ratio of incarceration per men ages 16 to 24 to the crime per men ages 16 to 24. Also included are demographic controls for age, race, and gender. The regressions also include year and state dummy variables. In both Panels the standard errors have been corrected for potential interdependence of observations within each state.

Table 11: Incarceration's Impact on Employment and Earnings

| Panel A: Employment | Youth | | | | Adults | | | | Youth | | | | Adults | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coefficients | A | | B | | A | | B | | A | | B | | A | | B | |
| Incarceration per Youth | 1.247 | 0.236 | -0.836 | -0.158 | -0.056 | -0.009 | -1.628 | -0.264 | 0.729 | 0.178 | -3.596 | -0.879 | -1.028 | -0.218 | -3.441 | -0.730 |
| | (0.741) | (0.140) | (1.069) | (0.202) | (0.345) | (0.056) | (0.516) | (0.084) | (0.968) | (0.236) | (1.548) | (0.378) | (0.412) | (0.087) | (0.723) | (0.153) |
| Log Likelihood | -14368 | | -14095 | | -56152 | | -55588 | | -2587 | | -2404 | | -9731 | | -9407 | |

| | | Youth | | Adults | | African American Youth | | African American Adults | |
|---|---|---|---|---|---|---|---|---|---|
| Panel B: Earnings | | A | B | A | B | A | B | A | B |
| Incarceration per Youth | | -0.169 | -0.781 | -0.304 | -0.618 | 0.369 | -0.618 | 0.301 | -0.221 |
| | | (0.132) | (0.188) | (0.078) | (0.114) | (0.190) | (0.313) | (0.110) | (0.186) |

Notes: Panel A: The entries are logit coefficients, followed by the probability effect (logit coefficients multiplied by p*(1-p), where p is the share of the sample that are employed). Panel B: Entries in first row are coefficients and standard errors from regressions of log earnings on incarceration per young men. Also included is the area unemployment rate, age, age squared, years of schooling, race, and year. Specification A excludes MSA dummy variables. Specification B includes MSA dummy variables. Standard errors are in parentheses.

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Table A1: Selected Aggregate Summary Statistics of the U.S. Economy

Panel A:

| Year | Nominal Hourly Earnings | Real Hourly Earnings (July $1998) | Crime Rate per 100,000 | Incarceration Rate per 100,000 |
|------|-------------------------|-----------------------------------|------------------------|--------------------------------|
| 1983 | 8.02 | 13.14 | 5,159 | 179 |
| 1987 | 8.98 | 12.90 | 5,550 | 228 |
| 1989 | 9.66 | 12.71 | 5,741 | 271 |
| 1992 | 10.57 | 12.30 | 5,660 | 330 |
| 1996 | 11.82 | 12.29 | 5,079 | 427 |
| 1997 | 12.26 | 12.43 | 4,876 | 445 |
| 1998 | 12.77 | 12.77 | na | na |

Panel B:

| Year | Unemployment Rate | | Employment-Population Ratio | |
|------|-------------------|--|-----------------------------|--|
| | National | African American | National | African American |
| 1983 | 9.6 | 19.5 | 57.9 | 49.5 |
| 1987 | 6.2 | 13.0 | 61.5 | 55.6 |
| 1989 | 5.3 | 11.4 | 63.0 | 56.9 |
| 1992 | 7.5 | 14.2 | 61.5 | 54.9 |
| 1996 | 5.4 | 10.5 | 63.2 | 57.4 |
| 1997 | 4.9 | 10.0 | 63.8 | 58.2 |
| 1998 | 4.5 | 8.9 | 64.1 | 59.7 |

Sources and Definitions: Average Nominal Hourly Earnings come from the Economic Report of the President: February 1998, U.S. Government Printing Office, Washington, D.C.  To create average Real Hourly Earnings we deflate Nominal Hourly Earnings using the CPI-U-X1, also from the Economic Report of the President: February 1998. The monthly values are seasonally adjusted. Crime Rate per 100,000 inhabitants comes from the Uniform Crime Reports: 1996. Release Date Sunday, September 28, 1997, and the volumes from 1992, 1989, 1987, and 1983. The 1997 value is computed by using the 4 percent decline from 1996 reported in the Uniform Crime Reports: 1997 Preliminary Annual Release. Release Date May 17, 1998. The incarceration Rate per 100,000 inhabitants for 1983, 1987, 1989 and 1992 come from Table 6.22 in the Sourcebook of Criminal Justice Statistic: 1996.  The data for 1997 come from the Web site titled "Bureau of Justice Statistics Prisoners in 1997" <http://www.ojp.usdoj.gov/bjs/abstract/p96.htm. The "na" indicates not available. The unemployment rates and employment population ratios for the 1980's, 1992, 1996, and 1997 come from the Economic Report of the President 1998. The unemployment rates and employment population ratios for 1998 come from "Selective Access" <http://www.bls.gov.

Table A1 cont.: Selected Aggregate Summary Statistics of the U.S. Economy

Panel C: U.S. Incarceration Rates per 100,000 by Race and Age, 1990 and 1996

| | White | | | African American | | |
|---|---|---|---|---|---|---|
| | 1990 | 1996 | 1996-1990 | 1990 | 1996 | 1996-1990 |
| Total | 139 | 193 | 54 | 1,067 | 1,571 | 504 |
| 18-19 | 90 | 143 | 53 | 1,084 | 1,337 | 253 |
| 20-24 | 295 | 406 | 111 | 2,296 | 3,385 | 1,089 |
| 25-29 | 354 | 442 | 88 | 2,949 | 4,131 | 1,182 |
| 30-34 | 336 | 469 | 133 | 2,640 | 3,671 | 1,031 |
| 35-39 | 245 | 412 | 167 | 1,973 | 3,398 | 1,425 |
| 40-44 | 196 | 322 | 126 | 1,433 | 2,431 | 998 |
| 45-54 | 137 | 198 | 61 | 590 | 1,347 | 757 |
| 55+ | 32 | 44 | 12 | 168 | 218 | 50 |

Source: Table 14: Number of sentenced prisoners under State or Federal jurisdiction per 100,000 residents, by sex, race, Hispanic origin, and age, 1996. Prisoners in 1997, U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Statistics, Bulletin, August 1998, NCJ 170014.

Table A2: Earnings and Employment Statistics for Less-Educated Men
in the Current Population Survey, Selected Years

Log Hourly Earnings

| | Adults 25-64 | | | Youth 16-24 | | |
|---|---|---|---|---|---|---|
| Year | Total | White | African American | Total | White | African American |
| 1983 | 2.13 | 2.16 | 2.02 | 1.62 | 1.63 | 1.51 |
| 1987 | 2.06 | 2.09 | 1.93 | 1.55 | 1.57 | 1.44 |
| 1989 | 2.06 | 2.08 | 1.88 | 1.55 | 1.56 | 1.44 |
| 1992 | 2.00 | 2.03 | 1.84 | 1.49 | 1.50 | 1.42 |
| 1996 | 1.93 | 1.96 | 1.79 | 1.46 | 1.49 | 1.34 |
| 1998 | 1.94 | 1.96 | 1.81 | 1.52 | 1.53 | 1.45 |

Employment-Population Ratios

| | Adults 25-64 | | | Youth 16-24 | | |
|---|---|---|---|---|---|---|
| Year | Total | White | African American | Total | White | African American |
| 1983 | 0.75 | 0.77 | 0.65 | 0.68 | 0.73 | 0.44 |
| 1987 | 0.79 | 0.81 | 0.70 | 0.75 | 0.77 | 0.60 |
| 1989 | 0.79 | 0.81 | 0.68 | 0.74 | 0.76 | 0.57 |
| 1992 | 0.77 | 0.79 | 0.65 | 0.68 | 0.73 | 0.46 |
| 1996 | 0.80 | 0.82 | 0.66 | 0.72 | 0.77 | 0.49 |
| 1998 | 0.81 | 0.83 | 0.68 | 0.74 | 0.77 | 0.54 |

Notes: Calculated from the Current Population Survey annual merged files, 1983, 1987, 1989, 1992, and 1996. The values for 1998 come from the outgoing rotation group interviews from January to July. The statistics for the 1983, 1987, 1989 and 1992 cross sections are based on the ESR variable in the public use CPS annual merged file. All respondents whose major activity is in school were dropped. Youths are 16 to 24 year old African American and white men only who have completed no more than 12 years of schooling or received no more than a high school diploma or GED. Adults are 25 to 64 year old African American and white men. The unemployment rate is the ratio of the number of people looking for work to the sum of the number looking for work, the number working, and the number with a job but not working. The statistics for 1996 and 1998 are based on a new variable called the monthly labor force recode (MLR) and a school enrollment variable. The ESR variable classified respondents on layoff as employed and those enrolled in school as being out of the labor force. The enrollment question is given only to 16 to 24 year old respondents. The new MLR variable classifies on layoff as unemployed and does not contain information about school enrollment. To maintain as much continuity with previous surveys, we classified respondents on layoff as employed and used the school enrollment information to determine whether the respondents major activity was attending high school or college. If true, then the respondents were excluded from our sample.

Table A3: State and Metropolitan Frequency Distributions of Unemployment Rates

| State | 1983 | 1987 | 1989 | 1992 | 1996 | 1998 |
|---|---|---|---|---|---|---|
| Less than 4 | 0 | 7 | 9 | 2 | 7 | 21 |
| 4-5 | 0 | 9 | 15 | 3 | 14 | 17 |
| 5-6 | 4 | 8 | 15 | 8 | 19 | 9 |
| 6-7 | 8 | 10 | 6 | 13 | 6 | 3 |
| Greater than 7 | 40 | 18 | 7 | 26 | 6 | 2 |
| Metropolitan | 1983 | 1987 | 1989 | 1992 | 1996 | 1998 |
| Less than 4 | 0 | 39 | 52 | 19 | 98 | 146 |
| 4-5 | 0 | 37 | 56 | 32 | 79 | 94 |
| 5-6 | 6 | 46 | 55 | 52 | 69 | 31 |
| 6-7 | 4 | 37 | 21 | 62 | 34 | 24 |
| Greater than 7 | 34 | 53 | 28 | 167 | 54 | 39 |

Notes:  Authors' tabulations from data taken from various editions of the Bureau of Labor Statistics' Employment and Earnings and Geographic Profile of Employment and Unemployment. For the 1983 published data, Metropolitan denotes standard metropolitan statistical areas (SMSAs) and we are only able to identify 44 areas. In all other years, Metropolitan corresponds to metropolitan statistical areas (MSAs), primary metropolitan statistical areas, and consolidated metropolitan statistical areas.  For the 1987, 1989 and 1992 published data 212 areas can be identified.  For the 1996 and 1998 published data, 334 areas are identifiable.

Table A4: Federal and State Minimum Wages

| | 1996 | | 1997 | | 1998 | | State-Federal Ratio | | |
|---|---|---|---|---|---|---|---|---|---|
| | Federal | State | Federal | State | Federal | State | 1996 | 1997 | 1998 |
| Alabama | 4.25 | . | 4.75 | . | 5.15 | . | . | . | . |
| Alaska | 4.25 | 4.75 | 4.75 | 5.25 | 5.15 | 5.65 | 1.12 | 1.11 | 1.10 |
| Arizona | 4.25 | . | 4.75 | . | 5.15 | . | . | . | . |
| Arkansas | 4.25 | 4.25 | 4.75 | 4.25 | 5.15 | 5.15 | 1.00 | 0.89 | 1.00 |
| California | 4.25 | 4.25 | 4.75 | 4.75 | 5.15 | 5.15 | 1.00 | 1.00 | 1.00 |
| Colorado | 4.25 | 3.00 | 4.75 | 4.75 | 5.15 | 5.15 | **0.71** | 1.00 | 1.00 |
| Connecticut | 4.25 | 4.27 | 4.75 | 4.77 | 5.15 | 5.18 | 1.00 | 1.00 | 1.01 |
| Delaware | 4.25 | 4.65 | 4.75 | 5.00 | 5.15 | 5.15 | 1.09 | 1.05 | 1.00 |
| Florida | 4.25 | . | 4.75 | . | 5.15 | . | . | . | . |
| Georgia | 4.25 | 3.25 | 4.75 | 3.25 | 5.15 | 3.25 | **0.76** | **0.68** | **0.63** |
| Hawaii | 4.25 | 5.25 | 4.75 | 5.25 | 5.15 | 5.25 | 1.24 | 1.11 | 1.02 |
| Idaho | 4.25 | 4.25 | 4.75 | 4.25 | 5.15 | 5.15 | 1.00 | **0.89** | 1.00 |
| Illinois | 4.25 | 4.25 | 4.75 | 4.75 | 5.15 | 5.15 | 1.00 | 1.00 | 1.00 |
| Indiana | 4.25 | 3.35 | 4.75 | 3.35 | 5.15 | 3.35 | **0.79** | **0.71** | **0.65** |
| Iowa | 4.25 | 4.65 | 4.75 | 4.75 | 5.15 | 5.15 | 1.09 | 1.00 | 1.00 |
| Kansas | 4.25 | 2.65 | 4.75 | 2.65 | 5.15 | 2.65 | **0.62** | **0.56** | **0.51** |
| Kentucky | 4.25 | 4.25 | 4.75 | 4.25 | 5.15 | 4.25 | 1.00 | **0.89** | **0.83** |
| Louisiana | 4.25 | | 4.75 | | 5.15 | . | . | . | . |
| Maine | 4.25 | 4.25 | 4.75 | 4.75 | 5.15 | 5.15 | 1.00 | 1.00 | 1.00 |
| Maryland | 4.25 | 4.25 | 4.75 | 4.75 | 5.15 | 5.15 | 1.00 | 1.00 | 1.00 |
| Massachusetts | 4.25 | 4.25 | 4.75 | 5.25 | 5.15 | 5.25 | 1.00 | 1.11 | 1.02 |
| Michigan | 4.25 | 3.35 | 4.75 | 3.35 | 5.15 | 5.15 | **0.79** | **0.71** | 1.00 |
| Minnesota | 4.25 | 4.25 | 4.75 | 4.25 | 5.15 | 5.15 | 1.00 | **0.89** | 1.00 |
| Mississippi | 4.25 | | 4.75 | | 5.15 | . | . | . | . |
| Missouri | 4.25 | 4.25 | 4.75 | 4.75 | 5.15 | 5.15 | 1.00 | 1.00 | 1.00 |
| Montana | 4.25 | 4.25 | 4.75 | 4.75 | 5.15 | 5.15 | 1.00 | 1.00 | 1.00 |
| Nebraska | 4.25 | 4.25 | 4.75 | 4.25 | 5.15 | 5.15 | 1.00 | **0.89** | 1.00 |
| Nevada | 4.25 | 4.25 | 4.75 | 4.75 | 5.15 | 5.15 | 1.00 | 1.00 | 1.00 |
| New Hampshire | 4.25 | 4.25 | 4.75 | 4.75 | 5.15 | 5.15 | 1.00 | 1.00 | 1.00 |
| New Jersey | 4.25 | 5.05 | 4.75 | 5.05 | 5.15 | 5.05 | 1.19 | 1.06 | **0.98** |
| New Mexico | 4.25 | 4.25 | 4.75 | 4.25 | 5.15 | 4.25 | 1.00 | **0.89** | **0.83** |
| New York | 4.25 | 4.25 | 4.75 | 4.25 | 5.15 | 4.25 | 1.00 | **0.89** | **0.83** |
| North Carolina | 4.25 | 4.25 | 4.75 | 4.25 | 5.15 | 5.15 | 1.00 | **0.89** | 1.00 |
| North Dakota | 4.25 | 4.25 | 4.75 | 4.75 | 5.15 | 5.15 | 1.00 | 1.00 | 1.00 |
| Ohio | 4.25 | 4.25 | 4.75 | 4.25 | 5.15 | 4.25 | 1.00 | **0.89** | **0.83** |
| Oklahoma | 4.25 | 4.25 | 4.75 | 4.75 | 5.15 | 5.15 | 1.00 | 1.00 | 1.00 |
| Oregon | 4.25 | 4.75 | 4.75 | 5.50 | 5.15 | 6.00 | 1.12 | 1.16 | 1.17 |
| Pennsylvania | 4.25 | 4.25 | 4.75 | 4.75 | 5.15 | 5.15 | 1.00 | 1.00 | 1.00 |
| Rhode Island | 4.25 | 4.45 | 4.75 | 5.15 | 5.15 | 5.15 | 1.05 | 1.08 | 1.00 |
| South Carolina | 4.25 | . | 4.75 | . | 5.15 | . | . | . | . |
| South Dakota | 4.25 | 4.25 | 4.75 | 4.25 | 5.15 | 5.15 | 1.00 | **0.89** | 1.00 |
| Tennessee | 4.25 | . | 4.75 | . | 5.15 | . | . | . | . |
| Texas | 4.25 | 3.35 | 4.75 | 3.35 | 5.15 | 3.35 | **0.79** | **0.71** | **0.65** |
| Utah | 4.25 | 4.25 | 4.75 | 4.75 | 5.15 | 5.15 | 1.00 | 1.00 | 1.00 |
| Vermont | 4.25 | 4.75 | 4.75 | 5.00 | 5.15 | 5.25 | 1.12 | 1.05 | 1.02 |
| Virginia | 4.25 | 4.25 | 4.75 | 4.75 | 5.15 | 5.15 | 1.00 | 1.00 | 1.00 |
| Washington | 4.25 | 4.90 | 4.75 | 4.90 | 5.15 | 4.90 | 1.15 | 1.03 | **0.95** |
| West Virginia | 4.25 | 4.25 | 4.75 | 4.25 | 5.15 | 4.75 | 1.00 | **0.89** | **0.92** |
| Wisconsin | 4.25 | 4.25 | 4.75 | 4.25 | 5.15 | 5.15 | 1.00 | **0.89** | 1.00 |
| Wyoming | 4.25 | 1.60 | 4.75 | 1.60 | 5.15 | 1.60 | **0.38** | **0.34** | **0.31** |

Source: Book of States (98-99), Table 8.22.

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# ENDNOTES

[1]Past studies have found that changes in unemployment have greater effects on young persons than on adults.  Clark and Summers (1981) found this to be the case in their time series study of the dependence of youth joblessness and employment on adult unemployment; Freeman (1991) found this to be the case in his cross area study of youth employment and earnings in the 1980s. For a survey on estimates for the 1960's and 1970's, see DeFreitas (1986). For more recent work see DeFreitas (1991), Freeman and Holzer (1986), Myers (1989), Stratton (1993), and Farber (1998). Studies that use various waves of the displaced worker survey also speak to this issue (Kletzer, 1991, and Hipple, 1997).

[2] The removal of a substantial number of young men from the civilian population might increase employment rates and earnings for those who remain in the work force.  But when the incarcerated leave prison and return to the labor market, their employability may be lower. Employers may choose some form of statistical discrimination against a group with high criminal activity.

[3]We also estimated models for the largest 30 metropolitan areas.  We were concerned that their employment and wage relationships may be different since few of these areas showed up in our three-group taxamony. To test for differences, we estimated the equations used to generate the results in Tables 5 and 6, but added a dummy variable that denoted whether the individual resided in one of the top 30 metropolitan areas and an interaction between this variable and the area unemployment rate. The latter is our coefficient of concern.  In none of the regressions was the interation's coefficient statistically significant.  Further, the coefficient ranges from .0002 to .004 for all youth, all men and African American men. The coefficient equals .015 for African American youth, but the standard error is also .015.

[4] The longest expansion which was from February 1961 to December 1969 lasted 106 months during the Vietnam war. If we restrict the analysis to peacetime expansions then the 92 month expansion from November 1982 to July 1990 is the longest on record. During that expansion, the unemployment rate fell from 10.8 percent to 5.5 percent. At that time, many policy makers and researchers felt that the 1980s expansion provided the most optimistic view of macroeconomic growth's ability to vastly improve the labor market outcomes of non-college educated and less-skilled workers, especially African Americans.