EMPLOYMENT AND EARNINGS OF DISADVANTAGED
YOUNG MEN IN A LABOR SHORTAGE ECONOMY

Richard B. Freeman

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ABSTRACT

This study contrasts the economic position of youths across local labor
markets that differ in their rates of unemployment using the annual merged
files of the Current Population Survey and the National Longitudinal Survey
of Youth. The paper finds:
(1) Local labor market shortages raise the employment-population rate
and reduce the unemployment rate of disadvantaged youths by substantial
amounts.
(2) Shortages also raise the hourly earnings of disadvantaged youths.
In the 1980s the earnings gains for youths in tight labor markets offset the
deterioration in the real and relative earnings of the less skilled that
marked this decade.
(3) Youths in labor shortage areas had greater increases in earnings as
they aged than youths in other areas, implying that improved labor market
conditions raise the longitudinal earnings profiles as well as the starting
prospects of youths.
These findings show that despite the social pathologies that plague
disadvantaged youths, particularly less educated black youths, and the 1980s
twist in the American labor market against the less skilled, tight labor
markets still operated to substantially improve their economic position.

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Employment and Earnings of Disadvantaged Young Men in a Labor Shortage Economy

How do disadvantaged young men fare when there is a relative shortage of labor? To what extent does low unemployment improve their employment and earnings prospects? Does a labor shortage bring disadvantaged young black men, many of whom are viewed as part of the "underclass", into the mainstream of the economy or does it pass them by?

This paper examines these questions for out-of-school young men with twelve or fewer years of schooling in the 1980s. Focusing on youths who have left school eliminates consideration of the decison to drop out of school and of the work behavior of students. Focusing on young men eliminates consideration of how family formation, fertility, the welfare system, and so forth affect the labor market activity of women. I treat high school graduates as well as dropouts as disadvantaged because the economic opportunities for young male graduates deteriorated greatly in the 1970s and 1980s.[1]

My research strategy is to contrast the economic position of young men across local labor markets that differ in their rates of unemployment. To reduce the danger of making incorrect inferences because of the sampling and other vagaries of a single data set, I rely on data from two surveys: the annual merged files of the Current Population Survey (CPS) and the National Longitudinal Survey of Youth (NLSY)[2].

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Local Labor Market Shortages

The rate of unemployment was relatively high in the United
States in the 1980s, continuing the decade-by-decade increase that
marked the post-world war II period[3]. But recovery from the 1982-
83 recession created major economic booms and labor shortages in
several areas of the country, largely though not exclusively in the
Northeast. The "Massachusetts Miracle" that achieved considerable
national publicity because of the presidential candidacy of
Michael Dukakis was typical. From 1983 to 1987 unemployment in the
state was 3 percentage points lower than the national average;
personal income per capita and average hourly earnings in
manufacturing rose from below the national average to above it. In
1987 when the rate of unemployment was 6.2 percent in the country
as a whole, the rate in the states' major city, Boston, was just
2.7 percent. From 1983 to 1987 the help wanted index for the city
rose more rapidly than for the U.S. as a whole. Help wanted signs
on store windows, want ads on radio and television, job
applications strategically placed at checkout counters of local
stores, extended waits for the services of skilled craftsworkers;
and wages more than 50 percent above the minimum at fast food
stores confirmed the pervasiveness of the labor shortage. Many
other states and metropolitan areas also had levels of unemployment
that reflected labor shortages. In 1987 thirty-six metropolitan
areas had unemployment rates lower than 4 percent, and several -
including Anaheim-Santa Ana, California; Stamford, Connecticutt;
Nashua, New Hampshire - had rates lower than 3 percent. The

popular view of young blacks as residing in high unemployment
localities notwithstanding, some 22 percent of out-of-school young
black men with twelve or fewer years of schooling were in
metropolitan areas with unemployment rates lower than 4 percent.[4]

Tight Labor Markets and Youth Employment

One expects that in a tight labor market the proportion of
young people who are employed will increase and their unemployment
will decrease, absolutely and relative to adult employment or
unemployment. As new entrants to a labor market, youths constitute
a margin of adjustment for employers that makes hiring them
especially sensitive to the state of demand. Past studies have, in
fact, found that a 1 percentage point drop in adult unemployment
improves the job prospects of youths by more than 1 percentage
point, particularly among men[5]. Whether the employment of the
young with the fewest skills was as sensitive to labor market
conditions in the 1980s, when the national labor market turned
against such workers, is, however, open to question.

By contrast, neither theory nor previous empirical studies
tell us whether the pay of young workers will be higher or lower in
labor markets with low unemployment. On one side, the economic
theory of job search suggests that local labor markets with high
rates of unemployment should have high wages. The argument is that
wages in an area are largely determined by union policies, the mix
of industries in the area, or government policies such as a
generous unemployment insurance system or, in the case of young
workers, the minimum wage. Unemployment adjusts to the given wage

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level. An area with high wages attracts migrants from other areas; induces additional persons to participate in the labor force; and creates long durations of unemployment as the jobless search for the high-wage opportunities. In equilibrium these labor supply adjustments equate the present value of working across areas, which requires that rates of unemployment be higher in areas with high wages. Reinforcing this tendency is the fact that the youngest and least skilled gain jobs when unemployment falls so that a disproportionately large number of workers in areas with low unemployment will be young and relatively unskilled, reducing the average wage in those areas.

On the other side, competitive pressures should lead employers to increase wages in tight labor markets. If these pressures are strong and persistent, they can cause wages to be higher in areas with low unemployment.[6] The active labor market hypothesis that current market developments have a greater effect on entering workers than they do on older workers who are relatively insulated by implicit contracts, specific training, and seniority rules in internal labor markets suggests further that the wages of young people will be more responsive to economic changes than will other wages, rising sharply in tight labor markets and declining sharply in loose markets. In the 1970s the wages of the young showed just such flexibility, falling in real and relative terms as the baby boom generation entered the labor market.[7] The tendency for wages in low pay industries and occupations to increase when unemployment falls also suggests that the wages of disadvantaged youths will be

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higher in markets with low unemployment, because these people
invariably begin their working lives in low wage industries and
occupations.

Surprising as it may seem to some, research on the relation
between wages and unemployment in the 1970s found that unemployment
of adult workers was higher in high wage cities such as Detroit in
the industrial North Central region than in low-wage cities such as
Houston in the South or Southwest.[8] This pattern did not, however,
hold for youths, whose unemployment rate was similar between high-
wage and low-wage metropolitan areas and whose ratio of employed
workers to the population was lower in low-wage areas, possibly
because the federal minimum reduced youth employment most in these
areas.[9] As the minimum wage, unionism, and other nonmarket wage-
setting forces became less important in the 1980s, one might expect
demand-side market pressures to dominate the relationship between
wages and unemployment in a way that they did not in the 1970s.

<div align="center">Employment Patterns in 1987</div>

To determine how the employment and earnings of disadvantaged
young men varied with local labor market conditions in the 1980s, I
contrasted the economic position of youths across metropolitan
statistical areas (MSAs), primary metropolitan statistical areas,
and consolidated metropolitan statistical areas with different
rates of unemployment.[10] These three types of MSAs are the most
disaggregate measures of geographic locale in the Current
Population Survey and thus of the local labor market in which a
person resides. In 1987 the CPS identified 202 such areas. Rates

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of unemployment for these areas based on the full year's surveys
are published by the Bureau of Labor Statistics in each year's May
Employment and Earnings and in the various editions of Geographic
Profile of Employment and Unemployment.

In analyzing the CPS data I categorized MSAs into areas with
labor shortages - those with unemployment of 4 percent or less; and
into four additional groups - areas with unemployment rates of 4 to
5 percent, 5 to 6 percent, 6 to 7 percent, and 7 percent or higher.
I contrasted the labor market outcomes for youths among these areas
in 1987 and compared 1987 outcomes with 1983 outcomes in the same
areas. I did this to control for the possibility that differences
in employment or earnings across areas in 1987 reflected the effect
on outcomes of relatively permanent area factors that have been
omitted from the analysis rather than the effect of 1987 local
labor market conditions. Under plausible assumptions the
difference between the 1987 and 1983 outcomes in areas classified
by 1987 unemployment removes persistent omitted factors and thus
helps identify the structural impact of a labor shortage on
outcomes.[11] Unfortunately, extending the analysis back to 1983
limited the sample to the 45 standard metropolitan statistical
areas identified in the 1983 Merged Annual File.[12] Because more
than half of the U.S. work force in this SMSA sample and because
results for the sample of 45 in 1987 are similar to those for the
full 202 MSA sample, I believe that the findings are not distorted.

Table 1 shows the 1987 and 1983 percentage of unemployed and employment-population rates and the 1983-87 changes in those rates for all youths and for black youths in metropolitan areas classified by their 1987 levels of unemployment. The unemployment rates for all youths were markedly lower in areas with low unemployment in 1987. Unemployment rates showed relatively small differences in 1983 youth unemployment by 1987 area unemployment rates. This suggests that the 1987 differences are due more to 1987 labor market conditions than to area characteristics that have been omitted. Consistent with this, the 1983-87 change in rates shows greater decreases in areas with low 1987 unemployment rates. The employment-population ratios tell a similar story: youths had higher chances of employment chances in low-unemployment areas, though here the pattern is more uneven. In each group the increase in the employment-population ratio is comparable to the decrease in the unemployment rate. This implies that <u>most of the growth of employment came from the pool of the unemployed rather than from those outside the labor force</u>. The figures for black youths tell a more dramatic story, particularly for areas having 4 to 5 percent and less than 4 percent unemployment rates. The differences in unemployment rates and employment-population ratios between tight and loose labor markets in 1987 are 15 to 20 percentage points as opposed to the 5 to 10 points for all youths. The 1983-87 changes in unemployment and employment-population ratios show, in addition, an extraordinary improvement in the employment prospects for young blacks in the areas with labor

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shortages in 1987. Although the small numbers of black youths in the various categories (roughly 150 in each) and the vagaries of the CPS, which often produces sharp changes from year to year, suggests that the magnitudes should be considered cautiously, the pattern is clear and impressive: young blacks are major beneficiaries of tight labor markets. Still, even in areas with the least unemployment the unemployment rates of black youth remain markedly higher and the employment-population ratios markedly lower than comparable rates for whites. In 1987 the black youth employment-population ratio in areas with less than 4 percent unemployment is only marginally better than that for whites in areas with unemployment rates of 6 to 7 percent.

To see whether youth employment is more sensitive than adult male employment to labor market conditions, I also calculated the 1983 and 1987 unemployment and employment-population rates for adult males with twelve or fewer years of education. Those figures show much smaller changes for adult men, implying that youth employment is more sensitive than adult male employment to cyclical swings.[13]

As a concise way to summarize the effect of area unemployment on youth unemployment, I estimated a linear probability model in which the dependent variable was a 0-1 dummy variable for whether a youth was employed in 1987 and the independent variables were the 1987 MSA unemployment rate and measures of demographic characteristics: age, years of schooling, and race. The resultant regression coefficients and standard errors (in parenthesis) on

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area unemployment were -.019 (.002) for all youths and -.043 (.007)
for black youths. Because the area unemployment rate is measured
in percentage points, the implication is that a 1 point decrease in
area unemployment raises youth employment by 1.9 points and black
youth employment by 4.3 points. This supports the inference from
the means in table 1 that tight markets improve employment
prospects more for black youths than for white youths.

Hourly Earnings

To see how tight labor markets affect earnings, I regressed
the log (= natural log) usual hourly earnings (the usual weekly
earnings divided by the usual hours worked per week) of young, less
educated, out-of-school men in 1987 on two separate indicators of
local area unemployment: categorical variables for 1987 area
unemployment or the unemployment rates themselves; and demographic
controls for the characteristics of the individual - age, age
squared, years of schooling, and race. In addition, to assess the
possibility that the results are due to area factors that were
omitted from the regressions, I performed two additional analyses
of the forty-five MSA sample. In one set of calculations I
regressed both 1983 earnings and 1987 earnings on dummy variables
for the category in which the area's unemployment rate fell in
1987. Under plausible assumptions the differences in the
coefficients on 1987 area unemployment between the 1987 and the
1983 regressions reflect the "true" effect of 1987 unemployment on
1987 earnings.[14] In the other set, I regressed log earnings in
1987 and in 1983 on the rate of area unemployment in 1983 and 1987.

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This also provided a control for area variables potentially omitted in the analysis.[15]

One further statistical point about the calculations. Because area unemployment rates relate to groups with common group components in their residuals, the standard errors in the regressions are likely to be biased downward. Intuitively, this is because the area differences reflect 202 or 45 independent treatments rather than the thousands of observations the regression program used to calculate the standard error. The degree of bias depends on the correlation of disturbances within areas and the average number of persons in each area.[16] I have investigated the extent of this bias using a random effects regression design, in which the error term is modeled as $u_{ij} = a_i + v_{ij}$ for area effect a_i and where v_{ij} is a residual with the usual properties.[17] I fit this model in a two stage procedure, first estimating the magnitude of the MSA group correlations and then using generalized least squares to estimate the earnings equation.[18] I obtained results similar to those in the least squares calculations in table 1.[19]

Table 2 presents the coefficients and standard errors for the impact of local labor market conditions on the log earnings of all youths and of black youths in the CPS samples. The upper portion of the table records the coefficients on dummy variables for four of the five unemployment groups differentiated in table 1; the omitted group comprises areas with the highest rates of unemployment. The bottom portion of the table records the coefficients from a regression in which I replace the dummy

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categories with the area unemployment rate in the 202 MSA sample
and with 1987 and 1983 area unemployment in the 45 MSA sample. The
results for all youths show a significant inverse relation between
unemployment and log earnings in 1987 that runs counter to the
positive relation between area unemployment and earnings found for
all workers in the 1970s. Earnings are markedly higher in areas
with less than 4 percent unemployment: the .18 coefficient on log
earnings suggests a 20 percent differential in youth earnings in
1987 between, say, Boston (with low unemployment) and Detroit (in
the highest-unemployment group). The results are much the same for
the smaller MSA sample. By contrast, the regression of 1983 ln
earnings on the same variables shows only modest differences among
youths in the same areas. This implies that the area pattern in
hourly earnings - like that in unemployment rates - arose during
the economic recovery. Indeed, the difference between the
coefficients on 1987 area unemployment from the 1987 and 1983
earnings regressions show that, corrected for the potential effect
of omitted area characteristics, youths in areas with especially
low 1987 unemployment had markedly higher 1987 earnings. Looking
at the underlying data, the geometric mean earnings for young men
in areas with less than 4 percent unemployment rose by 21 percent
between 1983 and 1987 compared to an increase of 10 percent for
those in areas with 7 percent or greater unemployment in 1987.
With a rate of inflation of 14 percent for the period, this implies
a sizeable real wage gain for youths in areas with labor shortages
compared with real pay losses in areas with high joblessness. In

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the late 1980s McDonald's and other fast food employers paid $5.00
to $6.00 per hour in markets with labor shortages but minimum or
near minimum wages in areas with high rates of unemployment.

The bottom portion of the table records the results of
regressing the log earnings of young men on the rate of area
unemployment in the 202 MSA sample and on the 1987 rate of
unemployment and the 1983 rate of unemployment in the 45 MSA
sample. The estimated coefficient on 1987 unemployment in the 202
MSA sample indicates that a 1 percentage point increase in
unemployment rates is associated with a substantial 2.9 percent
decrease in hourly earnings. In the 45 MSA sample the estimated
coefficient on 1987 unemployment is -.025 on 1987 log earnings but
.012 on 1983 log earnings, implying a -.037 effect of unemployment
on log earnings corrected for the assumed omitted area factor. At
the same time, however, the coefficient on 1983 unemployment is
nearly identical in the two regressions, implying that differences
in unemployment rates across areas had relatively little effect on
area earnings, possibly because aggregate unemployment was so high
in that year.

The estimated coefficients show that tight labor markets had
an even greater effect on the earnings of young blacks. In the
upper part of table 2, however, the hourly earnings of blacks
appear to rise sharply even in areas with more than 6 percent
unemployment. Because the sample size for blacks is relatively
small and the standard errors for the coefficients on the area
dummies in the 1983 regressions are sizeable, however, the more

useful estimates for black youths are from the bottom part of the
table. Here, the coefficient on 1987 unemployment in the 1987
regression is roughly the same as for all young men but the
coefficient on 1987 unemployment in the 1983 regression is a
substantial .039. Taking the difference between these coefficents
as the best estimate of the effect of 1987 unemployment on the
earnings of black youth, I obtained -.060, which is markedly
greater than the effect of 1987 unemployment on the earnings of all
youths. For black as well as for all young men, however, 1983
unemployment is estimated to have had a relatively modest effect on
hourly earnings.

The higher coefficients on local area unemployment for black
youths than for all youths implies that racial differentials in
earnings are smaller in tight than in loose labor markets. For
example, the estimated coefficients on area unemployment of -.029
for all youths and of -.043 for black youths in the 202 MSA sample
imply that when the area unemployment rate is 3 percentage points
lower black-white earnings differential are 4.2 percentage points
lower: = 3 x (.043-.029). Because the national unemployment rate
fell by roughly 3 points from 1983 to 1987 one would expect a 4
point improvement in the earnings of blacks relative to those of
whites. In fact, the mean differential between the earnings of
black and all youths was virtually constant from 1983 to 1987. The
modest increase in the coefficient on the 0-1 black dummy variable
between the 1983 and 1987 earnings regressions (with area

unemployment held fixed) counterbalanced the effect of economic
recovery.

All told, tables 1 and 2 show that tight local labor markets
substantially benefited less educated young men, particularly
blacks.

Longitudinal Progress

Do tight labor markets increase the growth of young men's
wages or do they simply improve prospects for being hired and raise
initial wage levels?

Economic theory provides little guidance on what to expect.
Companies may find it profitable to offer additional promotion and
training opportunities to attract labor in a tight market, or they
may postpone training, producing slower increases in earnings as
workers age, because the market demands immediate production. To
verify the CPS finding that decreases in area unemployment increase
on youth employment and earnings, and to see what happens to the
growth of individual earnings in a tight labor market, I examined
data from the National Longitudinal Survey of Youth (NLSY) on the
employment and hourly earnings of out-of-school young men with
twelve or fewer years of education. The age group covered by the
NLSY differs slightly from that in the CPS: the young men are 17 to
25 years old in 1983 and 21 to 29 in 1987. The geographic areas
covered also differ somewhat: because the NLSY file contains
unemployment rates both inside and outside metropolitan areas, I
treated both areas in this analysis. To control for any
differences in the economic position of youths caused by their

place of residence, I included a dummy variable for urban status in all regressions. Finally, to obtain the largest possible sample of disadvantaged youths, I included young men from both the national representative sample and from the special targeted subsample of blacks, Hispanics, and economically disadvantaged whites. Because the targeted subsample is not randomly drawn from the population, coefficients on dummy variables for race may not reflect population differences in outcomes by race. There is, however, no reason to expect any bias in the estimated effects of area unemployment on the employment and earnings of the disadvantaged.

Table 3 records the estimated effect of 1983 and 1987 area unemployment rates on youth employment, unemployment, and log hourly earnings in 1983 and 1987. The results on employment and unemployment for all youths yield a pattern much like that in table 1: a positive cross-section relation between 1987 area unemployment rates and 1987 youth unemployment. It also shows no relation between 1987 area unemployment and 1983 youth unemployment, supporting the interpretation of the 1987 cross-section pattern as reflecting the effect of 1987 local labor markets on outcomes. More important, the coefficient on 1987 area unemployment in the 1983 regression is a bare -.006, implying the absence of any significant omitted area effect. In this case the estimate of the effect of local market conditions based on the difference between the 1987 and 1983 coefficients on 1987 unemployment is -.014. By contrast, the estimated effect of 1983 area unemployment on the youth employment-population rate based on differences in

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coefficients between the 1987 and 1983 equations is of a similar
magnitude, .016. This implies that 1983 area unemployment has
virtually the same effect on 1983 employment-population rates,
controlling for 1987 employment-population rates, as 1987 area
unemployment had on 1987 employment-population rates, controlling
for 1983 rates: the reversal of sign reflects the fact that the
table reports both statistics in terms of the difference between
1987 and 1983. Similarly, when the outcome variable is youth
unemployment the estimates in columns 4 and 5 show that youth
unemployment in a given year depends almost entirely on that year's
area unemployment rate. Here, the difference in coefficients
estimate for 1987 area unemployment is .016; while the comparable
estimate for 1983 area unemployment on 1983 youth unemployment is
.017 (the sign reversal again occurs because I report the statistic
in terms of the difference between 1987 and 1983). As in the CPS
calculations, the similarity in coefficients between the emplyment
and unemployment regressions implies that the bulk of the response
to a tight labor market comes in the form of jobs for those looking
for work rather than from an influx of youth into the labor force.
Finally, the regressions of 1983 and 1987 log earnings on 1983 and
1987 area unemployment rates also confirm the CPS finding that
tight markets substantially raise the earnings of disadvantaged
youths. In fact, the estimated coefficients are surprisingly
similar to those in the CPS calculations of table 2: the -.023
effect of 1987 area unemployment on 1987 log hourly earnings in the

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NLSY is roughly the same as the -.029 and -.025 coefficients at the bottom of table 2.

The table shows that tight labor markets also raised blacks' employment and reduced their unemployment. But it does not show the markedly greater effect of local labor market conditions on outcomes that are found in the CPS data. Where the NLSY data finds greater sensitivity of the black economic position to market conditions is in earnings: the coefficients on area unemployment in the log earnings regressions for blacks are much larger than those for the sample as a whole. As in the CPS-based regressions, however, the coefficient on the 0-1 black dummy variable in the earnings equations is larger in absolute value in 1987 than in 1983. In part this may be the result of the general pattern of rising between races in earnings as workers age. It also may reflect the 1980s shift in earnings against lower paid workers in general (that is, one would expect lower 1983-87 changes in earnings for blacks simply because they were at lower wages in 1983)[20]; and the gradual erosion of the earnings of young blacks relative to young whites that characterized the late 1970s and the 1980s.[21]

Finally, I exploited the longitudinal aspect of the NLSY by regressing changes in the log earnings of youths on 1987 and 1983 unemployment rates, using the same control variables as in table 3. This regression reduced the sample size moderately because some youths had earnings in 1983 and not in 1987 and conversely but had the virtue of allowing us to examine the same individuals in both

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years. The estimated coefficients, given in table 4, confirm the
implication of the cross-section analyses that youths in areas with
low 1987 unemployment rates received noticeably larger increases in
pay in the 1983-87 recovery than youths in areas with higher 1987
unemployment rates. In addition, the difference in coefficients
between blacks and all youths indicates that, as in the CPS, black
youths enjoyed especially rapid increases in earnings in tight
labor markets. However, although these results show that improved
market conditions affected longitudinal earnings profiles, they do
not indicate how youth earnings grew in a persistent labor
shortage.

Summary and Implications

The analysis of this study has found that:

Local labor market shortages greatly improve the employment
opportunities of disadvantaged young men, substantially raising the
percentage employed and reducing their unemployment rate.
Employment of black youths is particularly sensitive to the state
of the local labor market.

Labor market shortages also significantly increased the hourly
earnings of disadvantaged youths, particularly blacks. In the
1980s the increase for young men in tight labor markets were large
enough to offset the deterioration in the real and relative
earnings of the less skilled that marked these years.[22]

Youths in areas with labor shortages had greater increases in
earnings as they aged than those in other areas, implying that
improved labor market conditions raise the longitudinal earnings

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profiles as well as the starting prospects of youths. Again, the greatest gains were achieved by young blacks.

These findings show that despite the social pathologies that plague disadvantaged young men, particularly less educated black youths, and despite the 1980s twist in the American labor market against less skilled workers, tight labor markets substantially improved their economic position. Although a strong job market may not be a panacea for all the problems of the disadvantaged, it does improve their employment and earnings. In addition, the strong link between area unemployment and the economic position of black youths lends support to William J. Wilson's claim in The Truly Disadvantaged that many of the problems of the inner city are the direct result of the loss of jobs in local labor markets. If demographic changes produce the labor market shortages that many expect in the next decade, the employment and earnings of young, less educated male entrants into the labor market will improve markedly, and disadvantaged blacks will be special beneficiaries of these market conditions. For the country as a whole to attain the levels of unemployment in those areas that have shortags, however, would require the national unemployment rate, from the 5.5 percent of the late 1980s to the 3 to 4 percent that made the Boston and Anaheim areas of opportunity for disadvantaged youths. Whether this is possible without setting off a round of massive inflation, as most macroeconomists fear, is another.

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Table 1: Percent Unemployment Rates and Employment-Population Ratios for
Out-of-School Young Men With Twelve or Fewer Years of Schooling, 1983, 1987

	Rate of Unemployment				Employment-Population Ratio			
area unemp rate, 1987	202 MSAs 1987	45 MSAs 1987	45 MSAs 1983	Change 1983-87	202 MSAs 1987	45 MSAs 1987	45 MSAs 1983	Change 1983-87
				All Youths				
Less than 4	5.1	5.8	15.4	-9.6	81	79	72	7
4-5	5.2	5.7	14.5	-8.8	80	78	71	7
5-6	8.6	9.9	17.6	-7.7	73	72	65	7
6-7	10.1	11.1	12.8	-1.7	71	69	68	1
More than 7	10.1	9.7	13.8	-4.1	69	68	64	4
				Black Youths				
Less than 4	9.1	7.2	40.5	-33.3	71	73	43	30
4-5	12.2	12.1	37.1	-25.0	65	65	46	19
5-6	19.6	21.6	33.3	-12.3	56	54	47	7
6-7	23.4	24.3	37.0	-12.7	52	49	39	10
More than 7	20.2	24.6	33.3	- 8.7	48	44	41	3

Source: Calculated from the Current Population Survey annual merged file,
1983 and 1987. The statistics are based on the ESR variable on the public
CPS Annual Merged File. Everyone whose major activity is in school was
dropped. Youths include blacks and whites only. 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. Employment is the number working and the number with a job but
not working.

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Table 2: **Effect of 1987 Area Unemployment Rates on Log Hourly Earnings of Young Men, by Race, 1983, 1987[a]**

area unemp rate, 1987	All youths				Black Youths			
	205 MSAs 1987	48 MSAs 1987	48 MSAs 1983	Change 1983-87	205 MSAs 1987	48 MSAs 1987	48 MSAs 1983	Change 1983-87
Less than 4	.18 (.02)	.18 (.02)	.03 (.02)	.15	.22 (.05)	.19 (.06)	-.03 (.09)	.22
4-5	.11 (.02)	.09 (.02)	-.01 (.02)	.10	.18 (.05)	.17 (.06)	-.09 (.08)	.26
5-6	.08 (.02)	.06 (.02)	-.00 (.02)	.06	.17 (.05)	.12 (.06)	-.09 (.08)	.21
6-7	.02 (.02)	.02 (.03)	.03 (.02)	-.01	.05 (.05)	.03 (.06)	-.02 (.09)	.05
More than 7	—	—	—		—	—	—	
Black	-.14 (.02)	-.15 (.02)	-.13 (.02)	-.02	—	—	—	
R^2	.22	.21	.22		.16	.17	.09	

Unemployment Variable								
1987 Une	-.029 (.002)	-.025 (.004)	.012 (.004)	-.037	-.043 (.008)	-.019 (.010)	.039 (.014)	-.058
1983 Une	—	-.011 (.004)	-.013 (.003)	.002	—	-.017 (.009)	-.027 (.012)	.010
Black	-.15 (.02)	-.15 (.02)	-.13 (.02)	-.02	—	—	—	
R^2	.22	.21	.22		.16	.16	.10	
Sample size	5,912	3,342	3,571		687	497	414	

Source: Calculated from the Current Population Survey Annual Merged Files, 1983 and 1987.

a   All regressions include variables for age, age-squared, years of schooling, sex and race.   Standard errors are in parenthesis.

Table 3: **Effect of area unemployment on youth employment, unemployment, and log hourly earnings of young men, by Race, 1983, 1987a**

ind. variables	Employment			Unemployment			Log Hourly Earnings		
	1987	1983	diff	1987	1983	diff	1987	1983	Diff
All youths[b]									
1987 Area Une	-.020 (.003)	-.006 (.004)	-.014	.018 (.005)	.002 (.004)	.016	-.023 (.008)	.012 (.008)	-.035
1983 Area Une	-.002 (.003)	-.018 (.004)	.016	.003 (.002)	.020 (.003)	-.017	.005 (.006)	-.012 (.006)	.017
Black	-.15 (.02)	-.18 (.02)	.03	.089 (.016)	.139 (.022)	-.05	-.35 (.04)	-.28 (.04)	-.07
Black youths[c]									
1987 Area Une	-.018 (.008)	-.002 (.004)	-.016	.022 (.007)	-.007 (.008)	.029	-.072 (.017)	.002 (.017)	-.074
1983 Area Une	.002 (.003)	-.018 (.004)	.020	.001 (.006)	.040 (.009)	-.039	-.001 (.014)	-.002 (.015)	.001

Source: Calculated from the National Longitudinal Survey of Youth

a - Employment and unemployment regressions include age, years of schooling and an urban dummy. The ln earnings regressions also include an age-squared term.
Standard errors are in parenthesis.

b - The sample sizes for all youths were 1,818 in employment regressions, 1,648 in the 1983 unemployment regression; 1,672 in the 1987 unemployment regression, 1,649 in the 1983 unemployment regression; 1,542 in the 1987 earnings equation; and 1,519 in the 1983 earnings equation.

c - The sample sizes for black youths were 601 in employment regressions, 515 in the 1983 unemployment regression; 522 in the 1987 unemployment regression; 464 in the 1987 earnings equation; and 468 in the 1983 earnings equation.

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Table 4: **Effect of Area Unemployment on the 1983-87 Longitudinal Earnings**
Growth   **of Young Men, by Race**[a]

	All youths	Black youths
1987 area unemployment	-.038 (.009)	-.067 (.022)
1983 area unemployment	.013 (.007)	.011 (.020)
Black	.03 (.05)	—
sample size	1,360	396

Source: Calculated from the National Longitudinal Survey of Youtyh.
a All regressions include age, years of schooling, and an urban dummy.
Standard errors are in parenthesis.

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ENDNOTES

1. Blackburn, Bloom, and Freeman (1990).

2. The Current Population Survey is the regular monthly survey of about 59,500 households from which the national unemployment rate is derived. The CPS gathers data on average weekly earnings and average hours worked from a subsample of households in each month and gathers diverse other data.
    The National Longitudinal Survey of Youth is a detailed survey of over 12,000 young people from 1979 through 1987. The orginal 1979 sample contained 12,686 youths aged 14 to 21, of whom 6,111 represent the entire population of youths while 5,295 represent an oversampling of civilian Hispanic, black and economically disadvantaged non-Hispanic, non-black youth. An additional 1,280 were in the military. The survey had a remarkably low attrition rate -- 4.9 percent through 1984 -- and thus represents the largest and best available longitudinal data set on youths in the period under study.

3. The unemployment rate averaged 4.5% in the 1950s, 4.8% in the 1960s, 6.1% in the 1970s, and 7.2% in the 1980s. While demographic factors explain some of the upward trend, there is no doubt but that the economic recession of 1982-83 created the highest rates of joblessness since the Great Depression. Data from the Council of Economic Advisors 1988.

4. This figure is from my tabulations of the annual demographic files of the Current Population Survey that provide most of the data in this paper.

5. Clark and Summers (1981); and Freeman (1982)

6. This gives the "wage curve" that Blanchflower and Oswald (1989) have found for several European countries.

7. Freeman (1979)

8. Hall (1976); Reza (1978); Marston (1980); and Browne (1978).

9. Freeman (1982).

10. An MSA is defined by the Census Bureau as "an urban area that meets specified size criteria -- either it has a city of at least 50,000 inhabitants ... or it contains an urbanized area of at least 50,000 inhabitants and has a total population of at least 100,000." Primary and Consolidated MSAs are larger urban metropolitan areas. For their precise definition see appendix C of the Bureau of Labor Statistics, (1988).
    For ease of discussion I use MSA to refer to metropolitan statistical areas, primary metropolitan statistical areas, and consolidated metropolitan statistical areas.

11. To see the logic of this procedure, assume that there are two groups of cities: those with high unemployment and those with low unemployment. Outcomes depend on whether the youth lives in a high- or low-unemployment area and on unobserved city characteristics that happen to be correlated with the 1987 group in which a city is found. If there is no correlation between the 1987 category and 1983 category in which a city falls, then the only reason for differences in 1983 youth outcomes between cities that differ in their 1987 unemployment category is the effect of the unobserved city factor on outcomes. Hence, taking the 1983-87 change in outcomes for cities in the same 1987 category eliminates the effect of the omitted factor. If, more realistically, there is a positive correlation between a city's 1983 and 1987 category, the difference estimator is likely to understate the true effect of 1987 market conditions on outcomes.

12. Standard metropolitan statistical areas are the geographic equivalent of the MSAs used to identify areas in the 1983 CPS. They are based on 1970 Census of Population definitions, whereas the MSAs are based on 1980 Census of Population definitions. I matched the relevant areas for comparability.

13. The 1983-87 changes in percent unemployed and in employment-population ratios for men aged 25-64 with twelve or fewer years of schooling were

area unemployment (percent)	Change in employment-population ratio (percentage points)	Change in unemployment rate (percentage points)
Less than 4	5	-2.0
4-5	3	-2.3
5-6	5	-2.8
6-7	4	-1.8
More than 7	2	-2.0

Source: Calculated from the Current Population Survey annual merged files, 1983 and 1987.

14. Let the true relation between area unemployment (U) and the outcome variable (Y) be $Y = B \, U + B_a \, A + e$, where A is the omitted area variable. The expected value of the regression coefficient of Y on U is then $B + B_a \, b_{au}$, where b_{au} is the regression coefficient of the omitted area variable on area unemployment.

Now consider the regression of Y' on U, where Y' is the outcome in a different period of time t'. In this regression I have omitted A and U', the unemployment rate in t' period. Assuming that U has no true effect on Y', the regression coefficient of Y' on U is: $0 + B_a \, b_{au} + B \, b_{u'u}$, where B reflects the influence of the omitted variable U' on Y'.

Then, if $bu'_u = 0$, the difference between the regression coefficient of Y on U and of Y on U' is just B. If bu_u is not zero but rather positive (unemployment across areas is correlated

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over time), the difference in coefficients underestimates B by 1-$b_{u'u}$.

15. In this analysis one can obtain an estimate of the effect of area unemployment on outcomes by subtracting the coefficient on the 1987 unemployment in a 1983 outcome equation from the coefficient in a 1983 outcome equation. One can also obtain an estimate of the effect of area unemployment on outcomes by subtracting the coefficients on 1987 and 1983 unemployment in the two separate outcome equations.

In the first case, consider the regression coefficients of the outcome variables Y or Y' on U and U' in regressions in which there is an omitted area variable A. The coefficients in the regression of Y on U and U' are

$$b_{yu.u'} = b_{yu.u'a} + b_{ya.uu'} \, b_{au.u'} \text{ and}$$
$$b_{yu'.u} = b_{yu'.ua} + b_{ya.uu'} \, b_{au'.u}$$

Similarly, the coefficients in the regression of Y' on U and U' are

$$b_{y'u.u'} = b_{y'u.u'a} + b_{y'a.uu'} \, b_{au.u'} \text{ and}$$
$$b_{y'u'.u} = b_{y'u'.ua} + b_{y'a.uu'} \, b_{au'.u}$$

The true equation in each period is $Y = BU + B_a A + e$. The expected value of the coefficient of U in the regression of Y on U and U' is $B + b_{ya.uu'} \, b_{au.u'}$. The expected value of the coefficient of U in the regression of Y' on U and U' is $b_{y'a.uu'} \, b_{au.u'}$ because U does not enter the equation for Y' except as a proxy for the omitted area variable. Hence the difference between the coefficient on U in the regression of Y on U and U' and the coefficient on U in the regression of Y' on U and U' should be B.

Alternatively, since the expected value of the coefficient of U' in the regression of Y on U and U' is $b_{ya.uu'} \, b_{au'.u}$ if $b_{au'.u} = b_{au.u'}$ the difference between the coefficients of U and U' in this regression should also be B. I have not exploited this estimate in the paper. I have also not combined all of the information in the four estimated coefficients to obtain a single B and a single "omitted variable" effect.

16. Moulton (1988).

17. To do this I used a program written by Alan Kreuger that handles the unbalanced design of the data, with differing numbers of people in different MSA cells.

18. Johnston (1983), pp.410-415.

19. In addition I estimated the effects of area unemployment on outcomes using a two-stage procedure in which I added area dummies to the individual outcome regressions and then regressed

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the coefficients on the dummies on the area unemployment rates. These results are similar to those reported in the paper.

20. Juhn, C., Murphy, K. and Pearce, B. (1989).

21. Bound and Freeman (1989).

22. Murphy and Welch (1988); Katz and Revanga (1989); and Blackburn, Bloom, and Freeman (1990).