

The Problem of Rising Teenage Unemployment: A Reappraisal

By Steven P. Zell

An anecdote is told about Thomas Alva Edison who had been attempting for some time to develop a practical light bulb. Asked whether he was making any **progress**, Edison replied, "Why certainly. I've learned a thousand ways in which you can't make a light bulb." Like Edison, economists and policymakers have gained much experience in the long and frustrating attempt to solve the problem of high youth unemployment. Yet, although numerous programs have been developed to deal with the problem, little observable progress has been made. Nor does it appear that a solution is imminent. If anything, the problem of high youth unemployment seems to be worsening. In 1975, for example, the average overall teenage unemployment rate reached a postwar high of nearly 20 per cent, a level almost twice the average rate for teenagers in the mid-1950's and late 1960's. Furthermore, in the third quarter of 1977, 10 quarters after the recent recession's trough, the overall rate of teenage unemployment still exceeded 17.6 per cent, a level greater than the highest average rate of any quarter in any prior postwar business cycle.¹

¹ For labor market purposes, teenagers are defined as those persons 16-19 years of age.

Why has it been so difficult to deal with the problem of high youth unemployment? The principal reason is that the problem is far more complex than can be indicated by a single statistic like the teenage unemployment rate. Not only do the size and composition of youth unemployment fluctuate widely as the economy moves through the business cycle, but over time, the structure of the labor market and the causes of unemployment have been changing as **well**.² Furthermore, the problems of teenagers in the labor market extend well beyond unemployment into issues like the types of jobs and training they receive, the differences in the experience of blacks and whites and of males and females, and the relationship between schooling and the youth labor market experience.

This article examines the problems of teenagers in the labor market to put this complex situation in better perspective. Two approaches are used in the analysis. In the first part of the article, an overview of youth labor market characteristics and problems is presented. In the second part, the youth population is divided into eight groups by race,

² See Steven P. Zell, "The Behavior of the Labor Market Over the Business Cycle," *Monthly Review*, Federal Reserve Bank of Kansas City, April 1977, pp. 3-16.

sex, and school status and, through the adaptation of a demographic technique known as direct standardization, these groups are examined to uncover the interrelationship between unemployment growth and changes in unemployment rates, labor force participation rates, and population growth over the 1967-76 period.³

YOUTH LABOR MARKET CHARACTERISTICS: AN OVERVIEW

Of the many problems experienced by teenagers in the labor market, certainly the most dramatic is their high rate of unemployment. This situation is illustrated in Chart 1, which compares the unemployment rate of teenagers, both sexes combined, with that for adult men and adult women. Over the period considered, the first quarter of 1967 through the fourth quarter of 1977, the underlying pattern of the three series is similar: they tend to move up and down together over the business cycle. Nevertheless, the teenage unemployment rate is striking because of its significantly higher level and its wider and more frequent fluctuations than those of the two adult groups.

But this comparison hides almost as much as it reveals. Though extremely high compared with adult rates, the overall teenage unemployment rate conceals a difference between white and black teenagers that is almost as large in ratio terms, and is far greater in percentage point terms, than that between

³ A group's participation rate is the percentage of that group's population that is in the civilian labor force. Persons in the civilian labor force are either employed, or unemployed and looking for work.

teenagers and adults.' For example, in the first quarter of 1967, a period of almost full employment, the overall teenage unemployment rate was 12.2 per cent, compared with an overall adult rate of only 3.0 per cent. Among teenagers, however, white teenagers had an unemployment rate of 10.5 per cent while 26.2 per cent of black teenagers in the labor force were unemployed. At their greatest recent difference, in the second quarter of 1976, the white teenage unemployment rate was 16.5 per cent, while that for black teenagers was 38.8 per cent.⁵

These large differences by population group can be observed in other labor market characteristics as well. As may be seen in Chart 2, within two pairs of major population subgroups (whites and blacks, males and females), substantial differences also exist in the changes between 1967 and 1976 of such characteristics* as population, employment, civilian labor force size, participation rate, and unemployment level. In some series, all groups show growth over this period, though at different rates. Panels 1 through 5 illustrate that, for both whites and blacks, and for males and females, the five characteristics of unemployment rate, population, unemployment, employment, and civilian labor force all grew between 1967 and 1976. On the other hand, in panel 6, some groups show an increase

⁴ As used in this article, the population group "black" refers to all persons not enumerated as "white" in the Labor Department's household survey. Currently referred to in Bureau of Labor Statistics publications as "black and other," approximately 89 per cent of this group were black in the 1970 census. The remainder were American Indians, Eskimos, Orientals, and all other nonwhite groups. Most persons of Spanish origin are enumerated as white.

⁵ The unemployment rate difference between male and female teenagers or between male and female teenagers of the same race has, in general, been relatively small, with the female rate usually the larger of the two.

Chart 1
SELECTED UNEMPLOYMENT RATES
1967-77, QUARTERLY

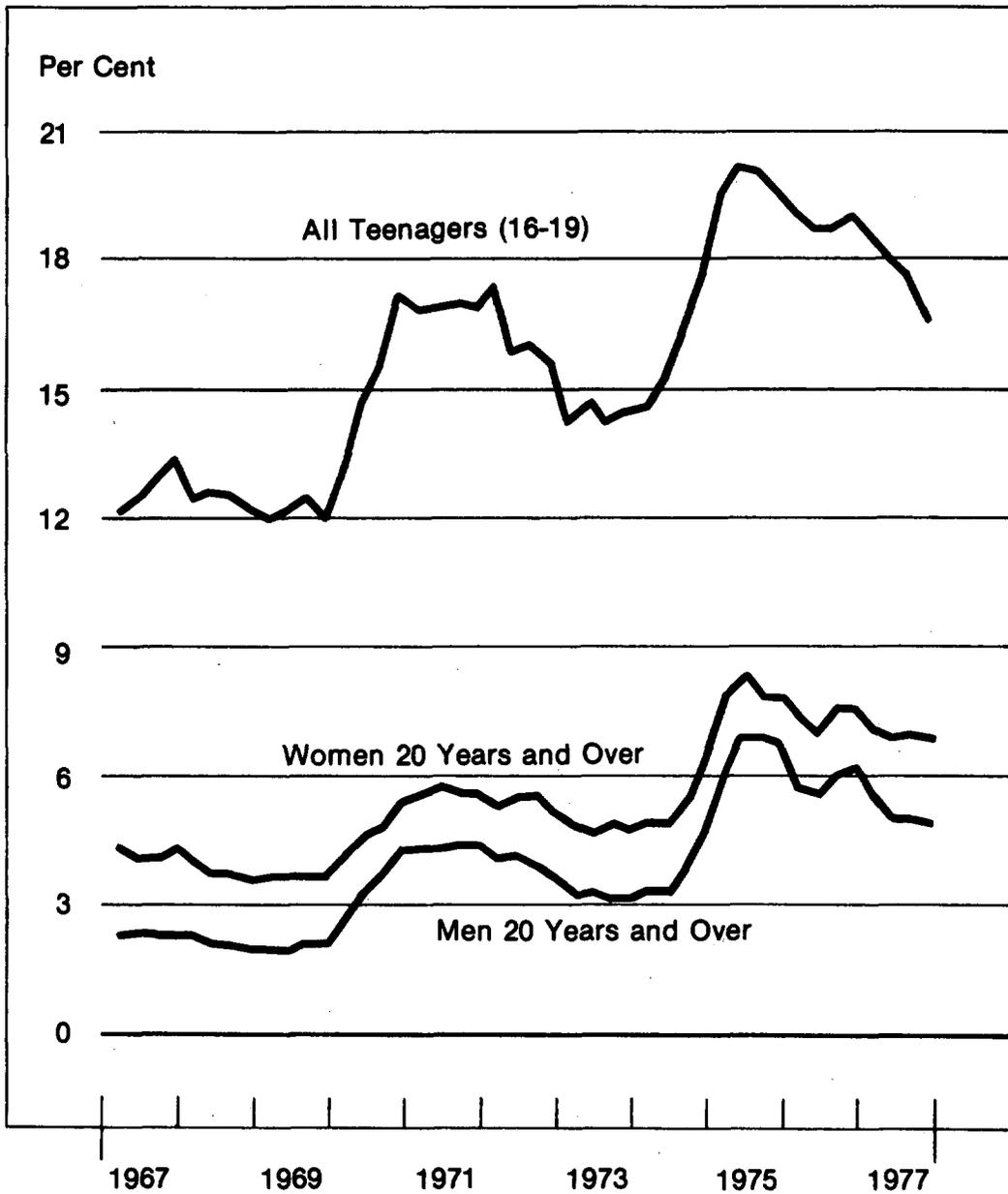
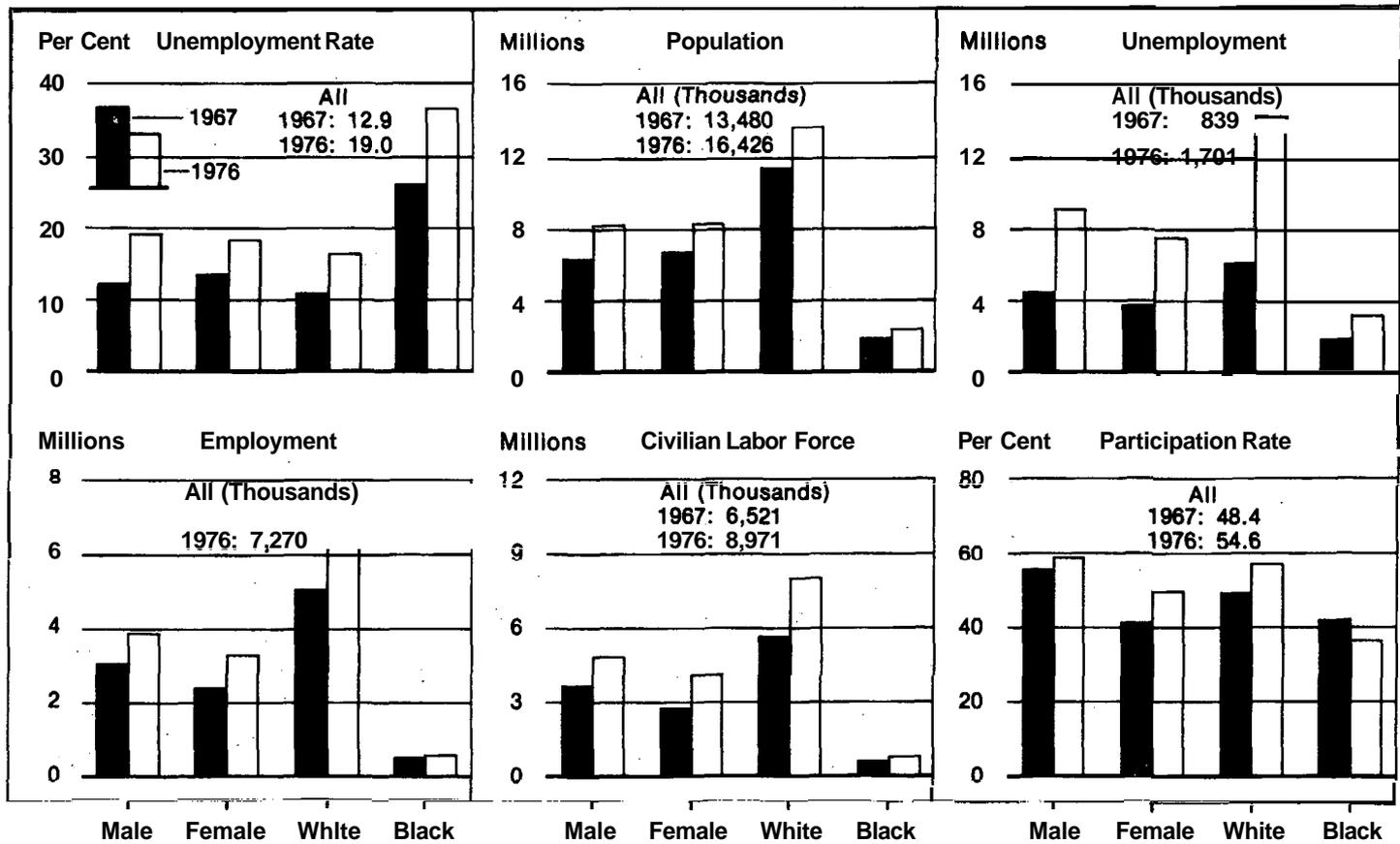


Chart 2
A COMPARISON OF THE LABOR MARKET CHARACTERISTICS
OF TEENAGERS BY RACE AND BY SEX, 1967 AND 1976



in their participation rate while others experienced a decline.

The many changes shown in Chart 2 are, of course, not strictly independent. The 38 per cent growth in the teenage civilian labor force over this **period** is due to several factors including changing group participation rates and differential group population growth rates. Similarly, the increase in teenage unemployment, from an annual average of **839,000** in 1967 to **1,701,000** in 1976, is the result of the interaction of the factors that increased the civilian labor force as well as changes in group specific unemployment rates.

The second section of this article uses the interrelationships among these various labor market characteristics to explain the increase in teenage unemployment. For this purpose, the teenage population is divided into eight subgroups by sex, race, and school **status**.⁶ For each subgroup, the increase in unemployment is attributed to specific changes in that group's labor market characteristics, and then related to the total change in teenage unemployment.

YOUTH, SCHOOLING, AND THE LABOR MARKET EXPERIENCE

From October 1967 to October 1976, the number of unemployed teenagers in the **U.S.** labor force nearly doubled. Rising from a relatively low **828,000** in October 1967, teenage

⁶ The school **status delineation** turns out to be particularly important and is permitted by the availability of data from two special labor force studies on the employment of school-age youth in October 1967 and October 1976. See Ann **McDougall** Young, Students, Graduates, and Dropouts in the **Labor** Market, October 1976, Special Labor Force Report 200, Bureau of Labor Statistics, and Forrest A. **Bogan**, Employment of School Age Youth, Special Labor Force Report 98, Bureau of Labor Statistics. The author thanks **Mrs.** Young for providing copies of these reports as well as some unpublished tables.

unemployment climbed by **739,000** in these 9 years to reach a level of **1,567,000** in October 1976. This tremendous increase in youth unemployment was, of course, the result of many factors. Of central interest to this article is the identification of those factors—those sources of growth of teenage **unemployment**—that can be attributed to changes in the behavior of specific subgroups of the teenage population.⁷

For this analysis, the teenage population was first divided into four groups by race and sex (black and white males, and black and white females), and then further divided into those members of each group who, at the time of the survey, were either still enrolled in the regular school system, or had either graduated or dropped out of school (not in **school**).⁸ The reason for this further distinction is important. Students who seek jobs during the school year tend to seek part-time jobs. In addition, students tend to live with their families and the income they earn in part-time employment is generally supplemental. Yet, the broad statistics of the **U.S.** Bureau of Labor Statistics make no distinction between the employment of full- or part-time workers nor, more

⁷ The methodology used in this analysis is an adaptation of that used by Ralph E. Smith in "Sources of Growth of the Female Labor Force, 1971-75," Monthly **Labor** Review, August 1977. Thanks are due Dan M. Bechter, Federal Reserve Bank of Kansas City, for his helpful suggestions toward the development of this approach. Note that the data used in the remainder of this article all refer to the specific months of October 1967 and October 1976.

⁸ Enumerators for the special surveys were instructed to count as enrolled anyone who had been enrolled at any time during the current term or school year in day or night school in any type of public, private, or parochial school in the regular school systems. Such schools included elementary, junior and senior high schools, and colleges and universities. Those enrolled only in trade, business, or correspondence courses outside the school system were counted as "not in school."

importantly for this analysis, in their unemployment. Certainly it is true that some in-school teenagers and their families badly need the supplemental income. Similarly, the inability to find employment is potentially damaging to the work experience of in-school **teenagers**.⁹ Nevertheless, there is a fundamental difference between the unemployment of students and that of teenagers who have entered the full-time labor force to earn their living. Partly for this reason, most foreign countries do not count as unemployed those teenagers in full-time education who are seeking jobs during the school year. In this context, some American economists have suggested that the needs of many of the unemployed in-school youth could be met through education and income maintenance policies rather than through job policies. Another suggestion is that "paid services within the schools or community [might] also be used for this purpose [as well as] to reduce the competition for jobs between in- and out-of-school youth."¹⁰

Methodology

How may the increase in teenage unemployment be explained? This article explains the increase in total teenage unemployment by first examining the sources of unemployment growth for each of the eight population subgroups. For each group, the increase in unemployment is attributed to changes over the period in question in several other labor market characteristics. The influence of each of these factors on the total

⁹ For a development of this argument, see *Manpower Report of the President*, March 1972, p. 81.

¹⁰ Beatrice G. Reubens, "Foreign Experience," *The Teenage Unemployment Problem: What are the Options?*, Congressional Budget Office, October 14, 1976, pp. 53-61.

level of teenage unemployment is then taken as the sum of each effect over the eight groups."

The sources of unemployment growth for each of the teenage subgroups fall into three major categories. First, even if its unemployment rate had remained constant, each group's unemployment would have increased solely because the **size of its labor force grew** over the period in question. Between October 1967 and October 1976, these labor force increases totaled 2.5 million. The overall level of teenage unemployment increased by **286,000** from this source because, for each group, some percentage of these new, labor force participants became unemployed. Labor force growth thus accounted for 39 per cent of the total unemployment **increase**.¹²

The level of unemployment of each population group also changed as a result of the second major source of growth, **changing group unemployment rates**. Even if no group had experienced an increase in the size of its

¹¹ An alternative approach is to look first at the total increase in teenage unemployment and explain this increase by changes in several of the labor market characteristics of the **overall** teenage population. Changes in each of these overall characteristics may then be attributed to changes in the same characteristics for the population groups of interest. The two approaches yield similar, but not identical, results. While the latter method is that used by Smith, the first method was chosen for this article because it is both simpler mathematically and its results are much easier to interpret.

¹² For each population group, the increase in unemployment due to labor force growth is calculated by holding the group's unemployment rate at its October 1967 level and multiplying the labor force growth by the fixed unemployment rate. A similar method is used throughout this article in calculating the contribution of the various sources to unemployment. The source of unemployment (e.g., changing labor force **size**) is allowed to vary while the other relevant factors are held constant at their 1967 levels. Using 1967 "weights" in all the calculations yields an unambiguous meaning to the statement "holding other things constant" that is not provided by other possible weighting procedures.

Table 1
TEENAGE CIVILIAN LABOR FORCE COMPOSITION
AND UNEMPLOYMENT RATES
October 1967 and October 1976

Group	Labor Force Share (Per Cent of Teenage Labor Force)		Unemployment Rate (Per Cent)	
	1967	1976	1967	1976
Total	100.0	100.0	13.5	18.2
White	87.5	90.2	11.5	16.0
Male	47.6	47.9	10.7	16.2
In School	28.9	26.0	10.5	16.1
Out of School	18.7	21.9	11.0	16.3
Female	39.9	42.3	12.3	15.9
In School	18.4	23.1	9.5	13.9
Out of School	21.5	19.2	14.8	18.3
Black	12.5	9.8	28.0	38.0
Male	6.9	5.4	28.2	37.4
In School	3.4	2.8	36.4	34.7
Out of School	3.5	2.6	20.4	40.3
Female	5.5	4.3	27.6	38.5
In School	2.4	1.9	23.1	36.4
Out of School	3.2	2.5	31.1	40.1
Male	54.5	53.3	12.9	18.3
Female	45.5	46.7	19.2	18.0

SOURCE: Ann McDougall Young, **Students, Graduates, and Dropouts in the Labor Market, October 1976**, Special Labor Force Report 200, Bureau of Labor Statistics; and Forrest A. Bogan, **Employment of School Age Youth**, Special Labor Force Report 98, Bureau of Labor Statistics.

labor force, all but one—black male students—would have increased their number of unemployed solely because their unemployment rates increased (Table 1). Between October 1967 and October 1976, the overall rate of

teenage unemployment rose from 13.5 per cent to 18.2 per cent. This large increase reflects similarly sharp unemployment rate increases for most of the teenage groups. As a result of these unemployment rate changes, the eight

teenage groups experienced a total rise in unemployment of **332,000**, or 45 per cent of the total increase.

The third major contribution to the growth in teenage unemployment is related to the first two. The unemployment effect of the first two sources of growth, labor force size and unemployment rates, were each calculated by assuming the other factor was held constant at its 1967 level. A third, major source of unemployment growth, which may be thought of as a residual term, arises because both the labor force size and unemployment rate of each group changed simultaneously. This interaction **effect** is thus calculated as the product of both changes, and is usually substantially smaller than the other two sources of growth. Summed over all eight groups, this interaction effect explains the remaining **121,000** increase in teenage unemployment.

Sources of Labor Force Growth: Participation Rate and Population Changes

Greater insight into the sources of unemployment growth may be gained by a closer examination of the factors responsible for the changing size of the labor force.

The change in the size of the labor force of any population group arises from two sources and their interaction. First, the **participation rate** of each group—the percentage of each group's population in the labor **force**—**tends** to change over time. For any given population size, a change in a group's participation rate, either up or down, will change the size of its labor force in the same direction. As a group's labor force size changes from this source, some percentage of the new participants—given by the group's unemployment rate—become

unemployed, and the number of unemployed teenagers changes.¹³ Table 2 shows the participation rate of each group of teenagers in October **1967** and October 1976. Over this period, all four groups of white teenagers experienced an increase in participation rates, thereby increasing the **size** of their respective labor forces and their number of unemployed. On the other hand, all four groups of black teenagers experienced a decline in their rates of participation, and thus, from this factor, actually reduced the size of their labor forces and their unemployment.

The second source of change in the size of a group's labor force is its population growth. Over time, all eight population groups grew, though at different rates and by different amounts. Given each group's participation rate, an increase in the size of its population was translated into a proportional increase in the size of its labor force. This, in turn, given group unemployment rates, resulted in an increase in each group's unemployment. What were the relative contributions to rising teenage unemployment of these two sources of growth in labor force size? As will be discussed later, the relative contributions of these two sources of unemployment varied widely over the eight groups. When summed over all groups, however, the total increase in unemployment due to group population growth equaled 74 per cent of the total unemployment increase due to changing labor force size. Changing group participation rates explained another 24 per cent of this total "changing labor force effect" while the interaction of these two sources explained the remaining 2 per cent.

¹³ Of course, if a group's participation rate declines, its labor force shrinks, and a percentage of this reduction, again given by the unemployment rate, leaves unemployment.

Table 2
TEENAGE POPULATION COMPOSITION AND PARTICIPATION RATES
October 1967 and October 1976

<u>Group</u>	<u>Population Share (Per Cent of Teenage Population)</u>		<u>Participation Rate (Per Cent)</u>	
	<u>1967</u>	<u>1976</u>	<u>1967</u>	<u>1976</u>
Total	100.0	100.0	45.7	52.4
White	86.5	84.9	46.2	55.7
Male	41.7	42.3	52.1	59.4
In School	31.7	29.3	41.6	46.5
Out of School	10.0	13.0	85.4	88.5
Female	44.7	42.7	40.7	52.0
In School	28.7	28.0	29.3	43.4
Out of School	16.0	14.7	61.3	68.3
Black	13.5	15.1	42.2	33.9
Male	6.5	7.3	48.8	38.8
In School	4.6	5.4	33.8	27.1
Out of School	1.9	1.9	85.4	72.2
Female	7.0	7.8	36.1	29.3
In School	4.2	5.3	26.1	18.8
Out of School	2.8	2.5	51.2	51.1
Male	48.2	49.6	51.7	56.4
Female	51.7	50.5	40.1	48.5

SOURCE: See Table 1.

AN OVERVIEW OF TOTAL UNEMPLOYMENT CHANGES

From October 1967 to October 1976, the number of unemployed teenagers increased by 739,000. Part of this increase was the result of a substantial growth in the teenage population, with its consequent impact on the size of the

teenage labor force. The remainder was due to changes in the labor market behavior of the several **subgroups** of the teenage population. For each teenage subgroup, Table 3 shows the influence on unemployment growth of both population growth and changes in group participation rates and unemployment rates. Most of the remaining discussion in this article is based upon data in Table 3.

Table 3
SOURCES OF GROWTH IN TEENAGE UNEMPLOYMENT
October 1967 to October 1976
(In Thousands)

Group	IMPACT ON UNEMPLOYMENT OF CHANGE IN:						
	Participation Rate (PR)	Population (Pop)	Interaction (Δ PR Δ Pop)	Labor Force Size (CLF)*	Unemployment Rate (UR)	Interaction (Δ UR Δ CLF)	All Sources†
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Total	68.83	212.20	5.02	286.03	332.03	120.72	738.78
White	100.34	144.23	18.38	262.94	255.68	115.58	634.20
Male	26.46	99.01	5.59	131.06	159.92	65.70	356.68
In School	21.88	24.52	2.89	49.29	99.18	26.32	174.79
Out of School	4.58	74.49	2.70	81.77	60.74	39.38	181.89
Female	73.88	45.22	12.78	131.88	95.76	49.88	277.52
In School	51.62	20.71	9.97	82.30	49.63	38.15	170.08
Out of School	22.26	24.51	2.81	49.58	46.13	11.73	107.44
Black	-31.51	67.97	-13.35	23.09	76.35	5.14	104.59
Male	-21.88	43.92	- 8.30	13.73	39.43	1.43	54.60
In School	-15.07	33.64	- 6.68	11.88	- 3.55	- 0.56	7.77
Out of School	- 6.81	10.28	- 1.62	1.85	42.98	1.99	46.83
Female	- 9.63	24.05	- 5.05	9.36	36.92	3.71	49.99
In School	- 9.51	18.03	- 5.04	3.47	19.55	2.00	25.02
Out of School	- 0.12	6.02	- 0.01	5.89	17.37	1.71	24.97
Male	4.58	142.93	- 2.71	144.79	199.35	67.13	411.28
Female	64.25	69.27	7.73	141.24	132.68	53.59	327.51

NOTE:

*Column 4 = Columns 1 + 2 + 3.

†Column 7 = Columns 4 + 5 + 6.

SOURCE: See Table 1.

Unemployment Rate Changes

By far the largest part of the increase in total teenage unemployment was the result of changes in the unemployment rates of specific groups (Table 3, column 5). Almost 45 per cent of the overall unemployment increase was due to this source.¹⁴ This increase may reflect more accurately the lingering impact of the recent recession than does the official unemployment **rate change**. It may be shown that the rise of 4.68 percentage points in the official teenage unemployment rate between October 1967 and October 1976 reflects not only group unemployment rate changes but changes in labor force shares as **well**.¹⁵ Because the participation rates and population of the various teenage groups changed over this period, generally by different amounts, group labor force size varied as did the share of the labor force represented by each group (Table 1). If labor force shares had not changed, the total unemployment rate would have risen by 5.41 percentage points. The lower official unemployment rate rise is largely the result of groups with high unemployment rates reducing their shares of the labor force. In particular, all four black groups reduced their labor force shares, partly because of the increased difficulty of finding employment.¹⁶

¹⁴ Another 16 per cent of the unemployment rise is explained by the interaction of changing unemployment rates with growing labor force size.

¹⁵ Each group's *labor force share*, presented in Table 1, is that group's percentage of the total teenage labor force. The change in the total unemployment rate is the sum of the weighted average of group unemployment rate changes, holding labor force shares constant, plus the sum of group labor force share changes, holding unemployment rates constant.

¹⁶ The unemployment increase reported in Table 3 under "unemployment rate" effect, reflects for each group the increase in unemployment due solely to unemployment rate changes, holding constant the impact upon unemployment

Labor Force Growth

Population. The second largest impact on unemployment arose from the effect of the growth of the teenage population on the size of the teenage labor force (Table 3, column 2). Other things equal, if all population groups had grown at the same rate, the labor force and unemployment of all groups would also have risen at the same rate and their population shares at the end of the period would have been unchanged. But part of the total population growth reflects the fact that all groups grew at different rates. Because of the differential rates of growth, each group represented a different share of the population in 1977 than in 1976. Groups that grew faster than average increased their share of the population and labor force and, thereby, contributed to rising unemployment. Groups that grew more slowly than average reduced their unemployment from this effect. As Table 2 shows, the major shifts in shares of the population took place from white females and white male students to black students and out-of-school white males. Overall population growth contributed 212,000 to unemployment growth, of which about 20,000 is attributable to share shifts between specific groups.¹⁷

Labor Force Participation. Finally, the remaining impact on unemployment growth

of other, possibly offsetting, changes in group labor market **characteristics**. In this sense, it provides a more accurate picture of the continuing impact of the recession on unemployment and unemployment rates than the **official** measure.

¹⁷ The net impact of population share **shifts** on the total level of unemployment depends on the unemployment rate and participation rate characteristics of the various groups. If groups with low participation and unemployment rates become a smaller share of the population while groups with high rates increase their population shares, a net increase in unemployment will result.

arose from the changing labor force participation of the various teenage groups (Table 3, column 1). Because certain groups of the population chose to substantially increase their participation in the labor market between 1967 and 1976, the overall level of teenage unemployment rose by **69,000**, despite the fact that all black groups reduced their participation. The sum of the unemployment increases resulting from the population growth changes and the participation rate changes constitutes the total effect of changing labor force size on teenage unemployment.

SPECIFIC GROUP EFFECTS

Whites

How have changes in the characteristics of different population groups affected total unemployment? Of the eight teenage population groups, white out-of-school males had the largest net impact on unemployment (Table 3). Although they represented only 10 per cent of the teenage population in **1967**, and 13 per cent in 1976, the changing labor market characteristics and growing population of this group explain almost 25 per cent of the total teenage unemployment increase. Not only were out-of-school white males the one group of white teenagers to increase their share of the population, but their 3 percentage point increase in population share was the largest of any of the eight **groups**.¹⁸ Population growth,

especially that part due to rising population share, contributed most strongly to the large unemployment gain of this group. The **74,000** unemployment contribution from this total source was augmented by a **61,000** increase due to their rising unemployment rate. Interaction effects made up most of the remaining increase in unemployment, as the small participation rate increase of these teenagers contributed only slightly to their total unemployment gain of **182,000**.

White female students and white male students had the next two largest impacts on the total increase in teenage unemployment. Together they contributed 47 per cent of the total unemployment increase. The unemployment gains of these two groups were approximately equal, and each group's gain was just slightly smaller than the contribution of out-of-school white males.

White female students alone experienced an unemployment increase of **170,000**, almost one-third of which can be explained by an exceptionally large increase of over 14 percentage points in their rate of labor force participation (Table 2). No other group had anything near this participation rate increase nor its impact on the level of teenage unemployment. Of the total white unemployment increase of **100,000** that was due to rising participation rates alone, white female students explain over one-half. Almost another third of their unemployment increase was the result of a climb in their unemployment rate from 9.5 per cent in 1967 to 13.9 per cent in 1976. In spite of this large increase, the unemployment rate of in-school white females remained below that of any other group and apparently had little discouraging impact on their labor market participation.

White in-school males also contributed strongly to the total growth in unemployment. The largest source of their unemployment

¹⁸ See Table 2. Part of the reason for the large increase among white males in the nonstudent share of the teenage population, and the declining population share of white male students, is found in the changing age distribution of white males. Between 1967 and 1976, the cohort of 18-19 year old white males grew almost twice as fast as that of 16-17 year olds. Thus, the 1976 white male population should have included relatively more persons no longer in school.

growth of 175,000 was an increase in their rate of unemployment, followed by much smaller contributions of participation rate change, population growth, and their interactions with rising unemployment rates. Their declining population share, discussed earlier, lowered the net impact on unemployment of the change in this group's population.

Blacks

An interesting result of the analysis is that, despite their extremely large unemployment rate increases and their increasing population, black teenagers contributed only 14.2 per cent of the total teenage unemployment rise, approximately equal to their share of the population (13.5 per cent in 1967). However, if their population and participation rates had not changed, blacks would have accounted for 23 per cent of the unemployment increase due to rising unemployment rates alone (Table 3, column 5). The reason for this surprising result is that the higher unemployment that would have resulted from their rising unemployment rates alone was sharply reduced **because** blacks also experienced declining participation rates over the 9-year period. This result is an illustration of the discouraged worker phenomenon. The worsening economic opportunities for black workers, indicated in part by their rising unemployment rates, significantly reduced the degree to which they participated in the labor force. This reduced **participation, in turn, reduced the apparent impact of labor market conditions on black workers by lowering their measured unemployment.**¹⁹

Of the four black **groups, out-of-school males had by far the largest impact on the total unemployment gain. It is noteworthy that this relatively small group (1.9 per cent of the**

population) explained 13 per cent of the total teenage unemployment increase due to higher unemployment rates alone (Table 3, column 5), but only 6 per cent of the total unemployment increase (Table 3, column 7). This discrepancy between the 13 per cent and 6 per cent of the unemployment increase explained is the principal example of the discouraged worker phenomenon.

Unlike out-of-school black males, black male students actually decreased their level of unemployment due to unemployment rates alone. Like all other black groups, however, these students lowered their rate of participation. Thus, their small total unemployment increase was solely the result of rising population and a rising population share.

Like their male counterparts, black female students also increased their share of the population. But black females not in school reduced their population share, and the share of black males out of school remained constant (Table 2). An interesting hypothesis for this apparent shifting of black population shares from nonstudents to students is that, as with reduced participation rates, the population share shifts are another response to the perceived worsening of labor market conditions. One partial test of this hypothesis may be made by examining the population growth of the black groups, divided into 16-17 and 18-19 year old cohorts. If the younger age

¹⁹ If no other changes had taken place in the labor market characteristics of blacks, their rising unemployment rates alone would have raised their unemployment by over 76,000. However, their reduced participation rates, holding population constant, lowered the size of the black labor force by 116,000 and, through this, lowered their unemployment by 31,500. The interaction of falling participation with rising population lowered unemployment by another 13,000. Rising population and population shares raised black unemployment by 68,000, for a net increase of 105,000.

group had been growing more rapidly, this might explain the share shifts toward more students without any reference to labor market conditions. In fact, however, the opposite is true. For both black male and black female teenagers, the **18-19** year old cohort has grown about **7** percentage points faster than the younger group. This would tend to favor nonstudents becoming a larger share of the population instead of the actual student growth that took place.

SUMMARY AND CONCLUSION

By most measures, teenagers have had a difficult time in the labor market over the past decade. The most dramatic illustrations, of course, have been the near doubling of their unemployment and the **50** per cent increase in their unemployment rate. The interpretation of these broad statistics, however, is not completely clear. Like all averages, they hide almost as much as they reveal. Which groups of teenagers have contributed most to this unemployment gain? What were the proximate causes of these increases? That is, how much of the unemployment gain was due to population growth and how much to factors like increased labor force participation?

This article has attempted to answer these and similar questions by dividing the teenage unemployment increase for each of eight groups into that part caused by population growth and that which resulted from changes in labor market behavior.

By this approach, it was shown that several complex changes have contributed to the teenage unemployment increase. Among blacks, the discouraged worker phenomenon is apparent. Had worker discouragement not significantly reduced labor force participation, rising unemployment rates alone would have

resulted in much greater unemployment of black teenagers than that conventionally measured. Black teenagers out-of-school actually reduced their share of the teenage population. The increase in the total black share of the population was entirely due to the rising number of black students. This increase may, in turn, have been partly due to a perceived worsening of conditions in the labor market.

Among all teenagers, white female students had one of the largest total impacts on unemployment, primarily as the result of their increasing labor force participation, but also due to higher unemployment rates. White male students also had a major unemployment impact due to these two factors. Together, these two groups account for almost **47** per cent of the total increase in teenage unemployment. This result is an important finding. As discussed earlier, the appropriate economic policy to combat youth unemployment is probably quite different for student (especially white student) unemployment than for that of out-of-school teenagers. The large proportion of the total unemployment increase explained by students should certainly be taken into consideration in assessing the appropriate scope and direction for such economic policies.

This conclusion, of course, does not imply the absence of a teenage unemployment problem. White males out-of-school have become an increasing share of the teenage population and their unemployment rates are quite high. Indeed, white out-of-school males had the largest net impact on unemployment growth from **1971** to **1976** of all groups studied. Similarly, out-of-school white females have experienced fairly large increases in their unemployment rates. The unemployment rates of even these two groups, however, are small when compared with those of any of the four black groups. Furthermore, because of the

discouragement effect, even these high rates understate the black unemployment problem, especially for out-of-school males. Rather than the absence of a problem, then, these findings appear to point to a need to view the high

unemployment of teenagers as a situation arising from a variety of factors, some of which may call for no attention and others of which may require a similarly varied set of more clearly targeted policy procedures.