



CURRENT POPULATION REPORTS
Population Characteristics

P20-476

by
Robert Kominski
and
Andrea Adams

Educational Attainment in the United States: March 1993 and 1992



U.S. Department of Commerce
Economics and Statistics Administration
BUREAU OF THE CENSUS

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U.S. Department of Commerce
Ronald H. Brown, Secretary

Economics and Statistics Administration
Paul A. London, Acting Under Secretary
for Economic Affairs

BUREAU OF THE CENSUS
Harry A. Scarr, Acting Director



**Economics and Statistics
Administration**
Paul A. London, Acting Under Secretary
for Economic Affairs



BUREAU OF THE CENSUS
Harry A. Scarr, Acting Director

William P. Butz, Associate Director
for Demographic Programs

POPULATION DIVISION
Arthur J. Norton, Chief

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Educational Attainment in the United States: March 1993 and 1992

(NOTES: The estimates for 1993 and 1992 in this report are inflated to national population controls by age, race, sex, and Hispanic origin. The population controls are based on results of the 1980 census carried forward to 1992 and 1993. The estimates in this report, therefore, may differ from estimates that would have been obtained using the 1990 census results brought forward to the survey date. Population controls incorporating 1990 census results will be used for survey estimation beginning in 1994. All demographic surveys including the CPS suffer from undercoverage of the population. This undercoverage results from missed housing units and missed persons within sample households. Compared to the level of the 1980 Decennial census, overall CPS undercoverage is about 7 percent. Undercoverage varies with age, sex, and race. For some groups such as 20 to 24 year old black males, the undercoverage is as high as about 35 percent. The weighting procedures used by the Census Bureau partially correct for the bias due to undercoverage. However, its final impact on estimates is unknown. For details, see appendix D.)

INTRODUCTION

This report contains data on the educational attainment of persons in the United States from the Current Population Surveys (CPS) conducted by the Bureau of the Census in March 1992 and 1993. Summary data on educational attainment by age, sex, race and Hispanic origin are shown for 1992 and 1993 in table 1. Other detailed data are shown for 1993 in tables 2 through 16. These data allow for the continuation of the biennial series of detailed tables as presented in previous reports. Tables 17, 18, and 19 contain time series of data collected from 1940 to 1993 in the decennial censuses and CPS (1947-1993). This report is designed to provide published detailed tabulations of the data along with a short discussion of basic trends and attainment levels across many segments of the population.

The detailed tables present data on educational attainment for persons 15 years old and over, by age, sex, race, Hispanic origin, marital status, household relationship, education of spouse, labor force status, occupation, income, earnings, and region of residence. Summary data are also presented for all states and large metropolitan areas, as well as detailed data for the 25 largest states and 15 largest metropolitan areas.

This report marks the first report using the new question for measuring educational attainment in the CPS. Beginning in January 1992, a new question measuring degrees beyond high school, instead of years of college completed, was instituted in the CPS. Tabulations in this report have been redesigned to take advantage of this new question. An extended discussion of the development of the new question, and how it compares with the old attainment question, is presented in the section, "The New Educational Attainment Item in the CPS".

HIGHLIGHTS

(Figures shown in parentheses define 90 percent confidence intervals. For details of calculation, see "Appendix B, Source and Accuracy of the Estimates.")

- Four-fifths (80.2 ± .3) of all adults age 25 and over have completed high school; over one-fifth (21.9 ± .3) have completed a Bachelor's degree or more. Both levels represent all-time national highs.

- The high school completion level for young adults (ages 25 to 29) in 1993 was not different from that recorded a decade earlier, while the college completion level rose slightly. High school: 86.7 (± .6) vs. 86.0 (± .6) College: 23.7 (± .8) vs. 22.5 (± .7)
- Among persons 25 and over, there is no statistical difference in the proportion of men and women who have completed high school (80.5 (± .4) vs. 80.0 (± .3) percent). However, a larger proportion of men 24.8 (± .4) than women 19.2 (± .3) have a Bachelor's degree or more.
- While Whites have the highest level of high school completion for those age 25 and above, persons of races other than White or Black have the highest Bachelor's degree completion level. High school: White 81.5 (+.3), Black 70.4 (± 1.0), other races 79.0 (± 1.7) College: White 22.6 (± .3), Black 12.2 (± .7), other races 33.9 (± 1.9).
- Annual mean earnings for those age 18 and over vary considerably by the level of educational attainment. High school graduates had mean earnings in 1992 of \$18,737 (± \$181), while persons with Bachelor's degrees made \$32,629 (± \$474), and advanced degree holders averaged \$48,653 (± \$686).

TRENDS IN EDUCATIONAL ATTAINMENT

The educational level of the adult population continued to rise in 1993, following a general trend that has been noted in the Current Population Survey data since educational attainment was first estimated in 1947. Four-fifths (80.2 percent) of all adults age 25 or older reported completing at least high school, the highest level measured in the history of the survey. The level of high school completion in 1993 reached a peak not only for the entire population but also for each sex, and for Whites and Blacks. For Hispanics a detectable statistical difference last occurred in 1990.

Another basic measure of educational attainment is the proportion of persons who have completed a Bachelor's degree. As with high school completion, this figure is also at a record-high level. Over one-in-five adults (21.9 percent) age 25 or above have a Bachelor's degree or more.

Figure 1.
Percent of Persons Who Have Completed High School or College:
Selected Years 1940 to 1993

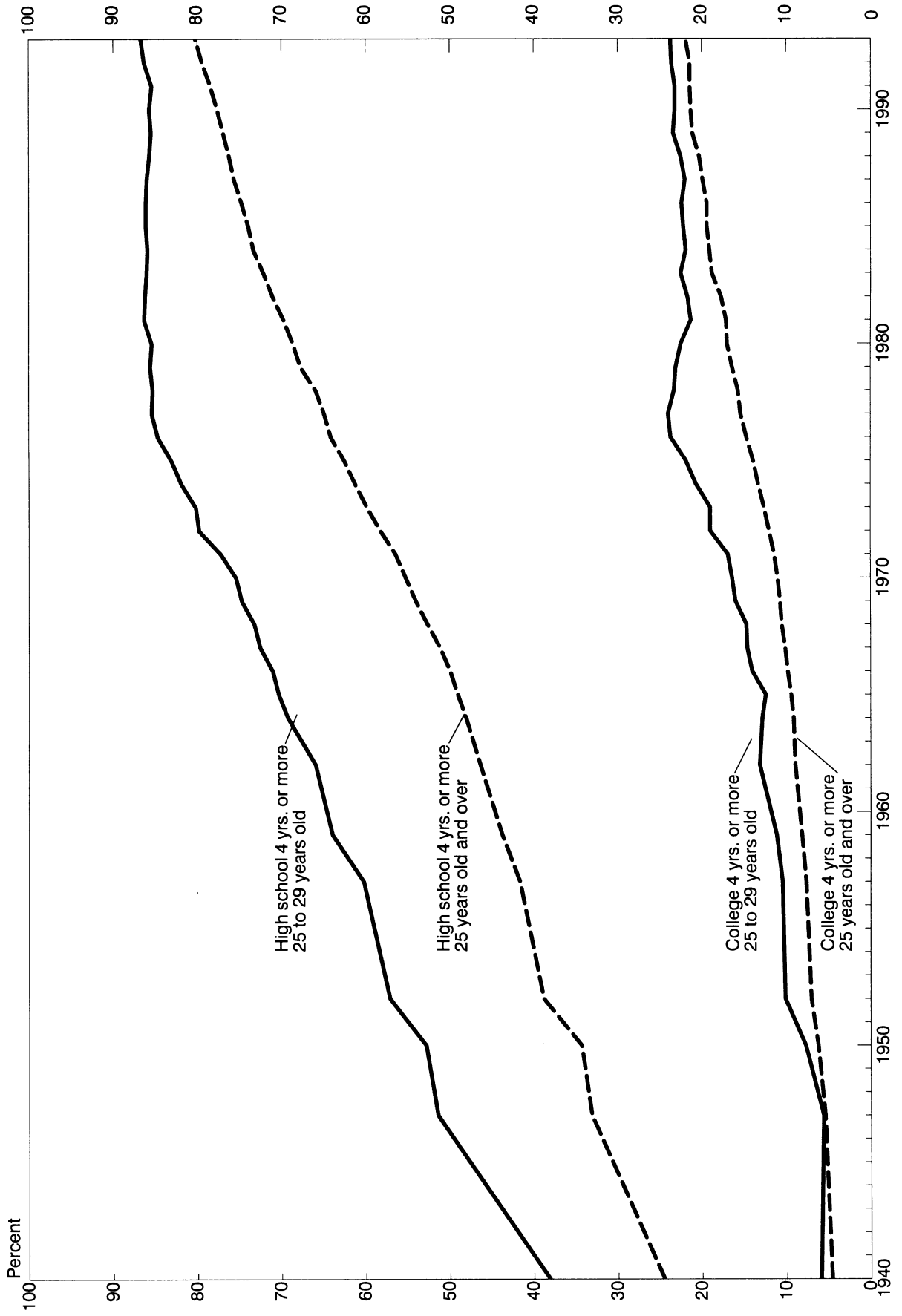


Figure 1 (based on table 18) shows the proportions of persons having completed high school and those completing a college degree for both the population age 25 and over, and for persons ages 25 to 29. The latter group is often used to get a better idea of recent attainment levels. In general, the long-term rise in educational attainment for the general adult population is driven principally by the replacement of older less-educated persons by younger persons who have completed substantially more education.

This graph documents the general trend of rising educational attainment levels for the population, but also indicates that the increase in attainment among younger persons has slowed considerably, and may be levelling off. For example, the proportion of 25 to 29 year olds who had completed high school for 1993 was no different from that recorded a decade earlier (86.0

percent). While there has been some variation over this period, yearly point estimates have been in the range of 85-86 percent. Similarly, the estimated proportion of young persons completing a Bachelor's degree has been in the low 20's since the mid-1970's. Given the very large differences in education between young and old age groups (table A), however, the attainment level of the total adult population will continue to rise for some time, as younger, more educated, age groups replace older, less educated, age groups, even if attainment levels for young persons remain constant.

EDUCATIONAL ATTAINMENT IN 1993

Traditionally, differences in educational attainment have been noted across many different dimensions; in 1993 this continued to be true. Tables A and B show three basic measures of educational attainment: high

Table A. Summary Measures of the Educational Attainment of the Population, Ages 25 and Over: March 1993

(Numbers in thousands)

Age, sex, race, region, residence, and Hispanic origin	Number of persons	Percentage with—		
		High school graduate or more	Some college or more	Bachelor's degree or more
All persons	162,826	80.2	44.9	21.9
Sex:				
Male	77,644	80.5	47.3	24.8
Female	85,181	80.0	42.6	19.2
Race:				
White	139,019	81.5	45.9	22.6
Black	17,786	70.4	34.2	12.2
Other	6,021	79.0	52.4	33.9
Hispanic origin: ¹				
Hispanic	12,100	53.1	26.3	9.0
Non-Hispanic	150,726	82.4	46.3	22.9
Age group:				
25 to 34 years old	41,864	86.6	50.9	23.8
35 to 44 years old	40,342	88.6	54.6	26.7
45 to 54 years old	28,503	84.7	48.9	25.3
55 to 64 years old	21,247	74.3	36.4	18.6
65 to 74 years old	18,362	65.8	28.4	13.2
75 years or older	12,508	52.1	22.6	10.2
Marital status:				
Never married	23,045	81.9	50.7	27.2
Married spouse present	103,968	83.3	47.0	23.5
Married spouse absent	5,791	69.7	35.7	13.1
Separated	4,342	71.3	35.2	11.4
Widowed	13,668	55.4	22.1	8.8
Divorced	16,354	82.9	45.3	17.7
Region:				
Northeast	33,609	81.5	43.6	24.3
Midwest	38,506	82.1	42.2	19.9
South	55,957	76.7	42.4	19.9
West	34,753	82.5	52.9	24.7
Metropolitan residence:				
Metropolitan area	126,665	81.6	47.8	24.2
Nonmetropolitan area	36,161	75.5	34.6	13.5

¹May be of any race.

school graduate or more; some college or more; Bachelor's degree or more. These measures are presented for the population ages 25 and older, cross-classified by a series of sociodemographic factors, in order to illustrate some of these differences. Data shown in these tables summarize the more detailed tabulations in this report.

Gender: Educational attainment levels are higher for men than for women for two of the three measures shown in table A. In terms of high school completion, there is no statistical difference between men and women (80.5 vs. 80.0 percent). Differences are present at the college level, where 24.8 percent of men but only 19.2 percent of women have a Bachelor's degree or more. About 42.6 percent of women and 47.3 percent of men have completed some college or more.

Race: Comparison of educational attainment among Whites, Blacks, and persons of other races shows sizable differences. Among Whites, 81.5 percent are high school graduates or more, statistically different from the 79.0 percent recorded for persons of other races (which includes Asians and Pacific Islanders, and American Indians, Eskimos and Aleuts). The proportion for each of these groups is higher than the Black proportion of 70.4 percent.

Differences are also evident at the college completion level, with the highest levels reported by persons of other races: 33.9 percent have a Bachelor's degree or more, compared to 22.6 percent of Whites, and 12.2 percent of Blacks. A similar ordering exists among these groups in the completion of some college.

Hispanic origin: At all three levels of attainment shown, persons of Hispanic origin (who may be of any race) have the lowest proportions of completed education, in comparison to Whites, Blacks, and persons of other races. More than one-half (53.1 percent) of Hispanic adults are high school graduates or more, 26.3 percent have completed some college, and about one in eleven (9.0 percent) have completed a Bachelor's degree or more.

Age: One dimension which shows great variability in measures of educational attainment is age. Whereas more than half (52.1 percent) of those age 75 and above have completed high school, 88.6 percent of persons ages 35 to 44 have attained this level. In terms of postsecondary schooling, 10.2 percent of the age 75 and older population, as opposed to 26.7 percent of persons ages 35 to 44, have a Bachelor's degree. In general, for each education measure, attainment levels are lowest for the oldest age group, and rise across successively younger groups. Only the youngest age group shown in table A (ages 25 to 34) deviates from this pattern, primarily because some of these individuals have not completed their schooling, particularly at the postsecondary level.

Marital Status: Differences in educational attainment across marital statuses reflect to a large extent differences in the age composition of marital status groups. For example, the high level of high school completion among never married persons (81.9 percent) reflects the fact that this group is relatively young. Conversely, the low level among widowed persons (55.4 percent) is in part because this group consists primarily of older persons. A similar pattern is seen in college completion.

Region: Among the four Census regions (Northeast, Midwest, South and West) the proportion of persons who completed high school ranges from 76.7 in the South to 82.5 in the West. The percentage in the South is significantly lower than in the other three regions. In terms of college attainment, the West is highest in the completion of some college or more (52.9 percent) but is not statistically different from the Northeast in the completion of a Bachelor's degree or more (24.7 vs. 24.3 percent). The data also show that attainment levels are higher for each of the three measures in metropolitan areas than in nonmetropolitan areas.

Labor force: The first panel of table B presents educational attainment measures for the civilian labor force, ages 25 and older. Among employed persons, educational attainment is quite high, with 88.9 percent of those employed reporting high school completion, and 27.8 percent having completed a Bachelor's degree. For all three summary measures, attainment is higher for the employed than for the unemployed population, who in turn generally have higher attainment than those persons who are not in the labor force.

Occupation: Table B also shows the educational attainment of employed persons ages 25 to 64, by major occupational groups. There is great variation in educational attainment even across this small set of summary occupational categories. While 99.1 percent of the workers in professional specialty occupations have completed high school, 62.4 percent of private household workers have achieved this level of education. With respect to higher education, 75.2 percent of persons in professional specialty occupations have completed a Bachelor's degree or more, the highest level across the major occupation groups. For many occupations, however, fewer than ten percent of the workers have completed college; this includes categories such as precision production workers and machine operators.

Earnings: Table C shows estimates of mean earnings in 1992 for all persons reporting earnings for that year, detailed by several general levels of educational attainment, sex, race and Hispanic origin. As can be seen, the relationship of education and earnings is strongly positive; earnings are higher at each progressively higher level of education. This relationship holds true not only for the total population but for each of the subgroups examined as well.

Variation in earnings by gender, race and Hispanic origin within each specific education level is also apparent, and may result from a variety of factors, such as occupational composition, age structure, labor force experience, and other forces. The relationship between education and earnings is a well-studied phenomenon; the data shown in table C are intended only to summarize the current level of that relationship, and do not address the more detailed issue of variation in earnings due to other social and demographic forces.

SYNTHETIC ESTIMATES OF WORKLIFE EARNINGS

One of the most frequently-asked questions about educational attainment is what a given level of education is "worth" in economic terms over the course of one's life. The answer to this question can be arrived at in a variety of ways, taking into account many different

factors. For example, one might want to consider the expected number of years one will work or live, or changes that might occur in the economy over time, such as inflation or recessions. In fact, an analysis of lifetime earnings using March 1978-1980 Current Population Survey datafiles attempted to incorporate many of these factors.¹ More recently, the report, *What's It Worth?* (P70-32), has looked at earnings with respect to degree level and the field of study in which the highest degree was obtained.

In this section, we construct synthetic estimates of the earnings in a typical worklife for different levels of educational attainment. In doing so, several simplifying assumptions have been made about the estimates. First "worklife" is defined as the period between the ages of 25 and 64, inclusive. While many persons stop working

¹Lifetime Earnings Estimates for Men and Women in the United States: 1979. Current Population Reports Series P-60, No. 139.

Table B. Educational Attainment by Labor Force Status and Occupation: March 1993

(Numbers in thousands)

Occupations	Number of persons	Percentage with—		
		High school degree or more	Some college or more	Bachelor's degree or more
Civilian labor force, 25 years and over				
Employed.....	100,152	88.9	54.1	27.8
Not employed.....	6,716	76.3	36.1	13.6
Not in the labor force.....	55,268	64.7	28.9	11.9
Occupation of employed persons, 25 to 64 years old.....	96,908	89.3	54.5	28.0
Executive, admin., and managerial.....	14,125	97.4	75.0	47.8
Professional specialty occupations.....	15,373	99.1	92.7	75.2
Technicians and related support occ.....	3,439	98.1	78.0	30.9
Sales occupations.....	10,777	94.0	58.3	29.2
Administrative support occupations including clerical.....	14,894	96.1	52.3	14.7
Private household occupations.....	555	62.4	25.4	7.2
Other service occupations.....	11,188	79.5	33.7	7.8
Farming, forestry, and fishing.....	2,280	68.7	27.7	9.5
Precision prod., craft, and repair.....	10,965	82.5	34.2	6.3
Machine operators, assemblers, and inspectors.....	6,208	73.1	21.0	4.3
Transportation and material moving.....	4,218	77.8	25.0	4.4
Handlers, equip. cleaners, helpers, and laborers.....	2,888	73.1	20.4	4.2

Table C. Mean 1992 Earnings by Education Attainment, Sex, Race and Hispanic Origin, for Persons Ages 18 and Over

Characteristic	Total	Not a high school graduate	High school graduate	Some college or Associate degree	Bachelor's degree	Advanced degree
Total.....	\$23,227	\$12,809	\$18,737	\$20,866	\$32,629	\$48,653
Male.....	\$28,448	\$14,934	\$22,978	\$25,660	\$40,039	\$58,324
Female.....	\$17,145	\$9,311	\$14,128	\$16,023	\$23,991	\$33,814
White.....	\$23,932	\$13,193	\$19,265	\$21,357	\$33,092	\$49,346
Black.....	\$17,416	\$11,077	\$15,260	\$17,768	\$27,457	\$39,088
Hispanic Origin ¹	\$16,824	\$11,836	\$16,714	\$19,215	\$28,260	\$41,296

¹May be of any race.

at an age other than 65, or start before age 25, this range of forty years provides a practical benchmark for many persons. Second, we have restricted the estimates to all persons, ignoring differences across dimensions of race and gender. Clearly, the kind of differences that are evident in table C across these dimensions are likely to be reinforced over the period of one's worklife. The intent here is not to address the compounding effect of these factors over an entire lifetime but to illustrate the disparities that can be expected due to simple differences in education alone.

Table D and figure 2 show the dramatic effects of different levels of educational attainment over the course of a working life. While persons with some college might expect lifetime earnings in the range of a million dollars (in 1992 dollars), individuals who earn a Doctorate degree would be expected to earn more than twice as much over their worklife. Those who obtain a Professional degree are likely to earn about 3 million dollars. The large difference in expected lifetime earnings has to do not only with differential starting salaries for different levels of education, but also with the trajectory of the earnings, the path of earnings over one's life. As figure 2 shows, the earnings path of persons with Professional degrees and Ph.D.'s looks very different from those at other levels of education. In short, differential returns to education persist throughout one's life, as these illustrative lifetime earnings estimates demonstrate.

STATE AND METROPOLITAN AREA ESTIMATES

Several years ago, this report began a series of new tabulations showing summary educational attainment measures for all states and metropolitan areas.² Data for these areas are shown in tables 13 through 16 of this report. In using the data in these tables, readers are reminded that all estimates in the report are based on

the CPS sample, and as such, have sampling variability associated with them. For this reason, the quantity needed to construct the 90-percent confidence interval is included with each estimate provided in tables 13 through 16, and readers are strongly encouraged to use these values. While each CPS file is weighted to national population controls of age, race, sex, Hispanic origin and total state population, the nature of the CPS sample within any given state (or metropolitan area) can mean that year-to-year estimates may fluctuate simply due to the changes in sample in that area over time, as well as the fact that the population weighting is not controlled in the higher-order cross-classifications of the control factors. In short, readers are cautioned that year-to-year comparisons of educational attainment within areas may show moderately large fluctuations in point estimates. The relative position of areas (that is, high, moderate or low attainment levels), however, should be fairly stable.

Table 13, for example, shows the state with the highest point estimate for high school completion to be Utah at 90 percent. Although this state has the highest point estimate, its value is not statistically different from the group of 4 states immediately below it in a ranked list.³ Many of the states at the top of this list were in a similar (high) position in the 1991 data. At the bottom of the list, West Virginia with the lowest point estimate at 68.5 percent, is not statistically different from Mississippi, which is ranked immediately above it. One can also see that many of the states in the lower end of the list are in the South, just as in the 1991 list.

The pattern is somewhat different with regard to levels of Bachelor's degree completion. Washington, D.C., ranked first at 37.6 percent, is significantly higher than any of the fifty states. Colorado, at 30.2 percent, is the next highest point estimate but is not statistically different from the 4 states ranked immediately below it. At the bottom of the list, West Virginia, with the smallest

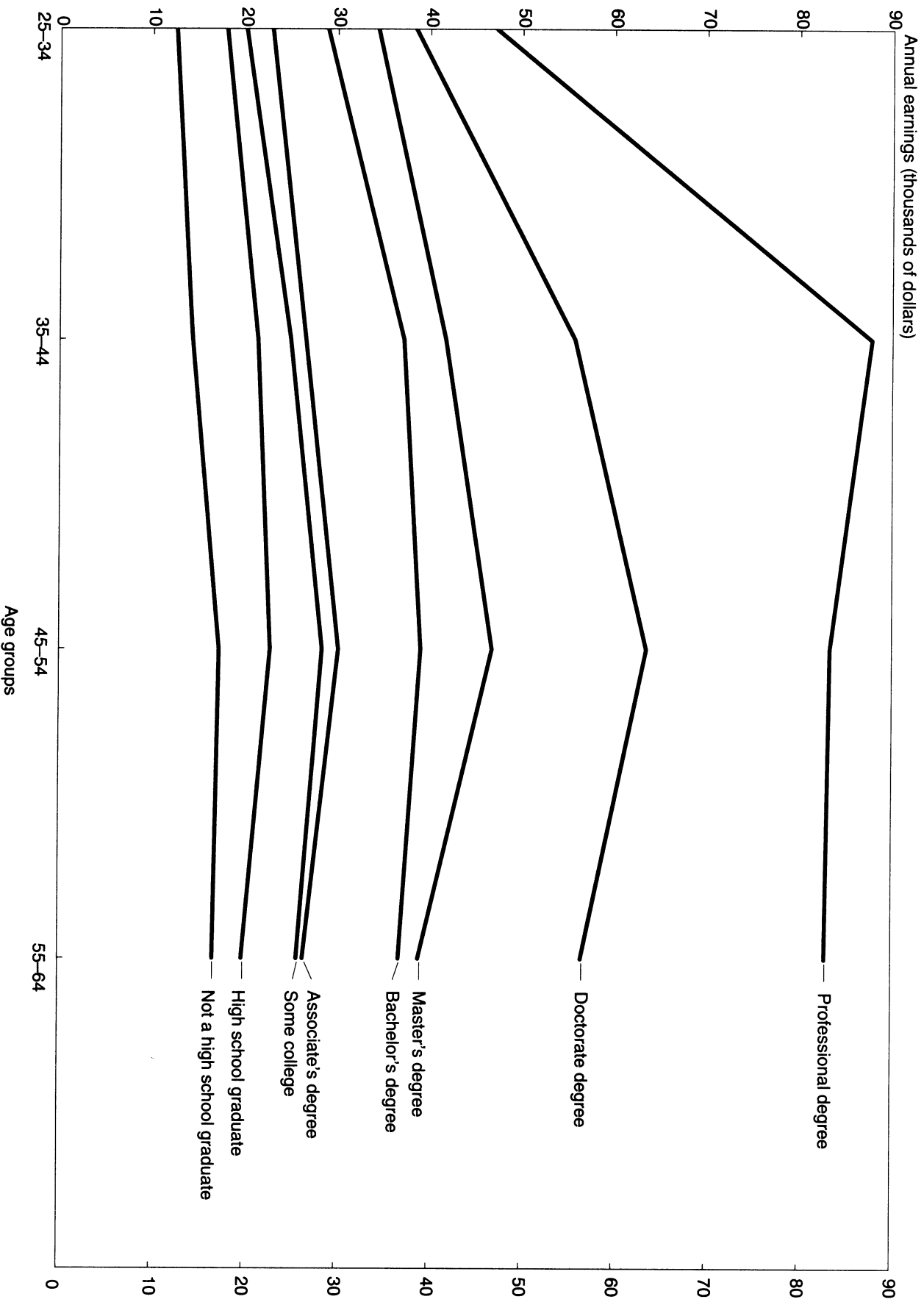
²Educational Attainment in the United States: March 1989 and 1988. Current Population Reports, Series P-20, No. 451.

³That is, Utah, at 90.0 percent is not statistically different from ordered point estimates down through Washington, at 88.5 percent.

Table D. Synthetic Estimates of Worklife Earnings By Education Levels: 1992

Education	Mean Annual Earnings				Lifetime estimates	Standard error
	Age group					
	25 to 34 years	35 to 44 years	45 to 54 years	55 to 64 years		
Not a high school graduate.....	\$12,517	\$14,341	\$17,303	\$16,720	\$608,810	\$7,627
High school graduate.....	\$17,967	\$21,413	\$22,842	\$19,865	\$820,870	\$5,379
Some college.....	\$20,067	\$24,969	\$28,451	\$25,802	\$992,890	\$10,528
Associate's degree.....	\$22,892	\$26,616	\$30,224	\$26,481	\$1,062,130	\$16,694
Bachelor's degree.....	\$28,896	\$37,214	\$39,122	\$36,853	\$1,420,850	\$15,614
Master's degree.....	\$34,351	\$41,737	\$46,837	\$38,972	\$1,618,970	\$24,882
Doctorate degree.....	\$38,443	\$55,716	\$63,536	\$56,549	\$2,142,440	\$73,334
Professional degree.....	\$47,192	\$87,816	\$83,358	\$82,887	\$3,012,530	\$86,169

Figure 2. Earnings Trajectories by Education Level



point estimate of 12.2 percent, is not statistically different from Alabama or Indiana, which are immediately above it.

In short, when using the state and metropolitan estimates provided from the CPS, users must keep in mind the sampling variability associated with these estimates, which is somewhat higher than for estimates based on the nation as a whole. While one cannot make precise statements about exact rank or changes in rank over time, the data do provide a general indication of the relative level of educational attainment across states.

THE NEW EDUCATIONAL ATTAINMENT ITEM IN THE CPS

Readers familiar with this report may have noticed some changes in terminology from previous editions. Specifically, measures such as “four or more years of college completed” have been replaced with “Bachelor’s degree or higher”, and the general term, “years of schooling” is now referred to as “educational attainment.” The reason behind these shifts is a change in the basic item used to collect data about education in the Current Population Survey. This section discusses the form of the new question, examines some of the factors motivating the change, and presents data from a national test in the February 1990 CPS that show the empirical relationship between the old educational attainment item and the new one.

The Old and New Items

The educational attainment question used in the CPS through 1991 was virtually unchanged since the 1940’s. The question appeared on the control card of the interview and consisted of two parts (figure 3). The first part asked, “What is the highest grade or year of regular school ... has ever attended?” This was followed with the question, “Did ... complete the grade?” Response codes ranged from 00 to 26, where the series 21 through 26 was used to represent college grades. Persons having attended more than 6 years of college were coded as ‘26’. The two-part question allowed the respondent to indicate a grade that was attended but not completed. This would include many persons who were currently enrolled in that grade.

The new item introduced in January 1992 (figure 4) makes several changes to the old item. A single question is now asked: “What is the highest level of school ... has completed or the highest degree ... has received?” Response categories range from 31 to 46, an intentional change to prevent field staff from attempting to code the old years of schooling answers to the new question. In the new item, response categories for lower levels of schooling have been collapsed into several summary categories. In addition, a new category, “12th grade, No Diploma”, has been added.

Figure 3.
CPS Educational Attainment Question Prior to 1992

23a What is the highest grade or year of regular school ... has ever attended? 00 - Never attended or kindergarten 01-08 - Elementary 09-12 - High school 21-26 - College (Academic)				23b Did ... complete that grade (year?)	
First code	Update code			Yes	No
				1 <input type="checkbox"/>	2 <input type="checkbox"/>
				1 <input type="checkbox"/>	2 <input type="checkbox"/>
				1 <input type="checkbox"/>	2 <input type="checkbox"/>
				1 <input type="checkbox"/>	2 <input type="checkbox"/>
				1 <input type="checkbox"/>	2 <input type="checkbox"/>
				1 <input type="checkbox"/>	2 <input type="checkbox"/>

The major change in the question occurs in the categories for high school completion and beyond. Beginning with the response, “High School Graduate - high school diploma or the equivalent (for example GED)”, the categories identify specific degree completion levels, rather than years of schooling. This modification is the fundamental change in the question. The focus of these questions remains “regular” schooling, that is, schooling which is a part of the collegiate system. No attempt has been made to incorporate postsecondary educational attainment from institutions other than the regular college system. Five different levels of degree attainment are identified - Associate, Bachelor’s, Masters, Professional and Doctorate degrees. Associate degrees are further distinguished between those awarded in academic programs and those given in an occupational or vocational program. A residual category of “some college but no degree” is used to identify those who have not completed a degree program.

Factors Behind the Change

Why was the educational attainment item changed? The answer is a combination of factors, most motivated by a series of analyses of the old item and possible new

ability to represent other kinds of educational credentials was poor from the start. Most notable was the inability to identify holders of Associate (generally 2-year) degrees from years of schooling data. During the early era of growth in the 2-year college system, Associate degrees were often seen as stepping stones to a 4-year credential. However, during the 1970's and 1980's, the Associate degree became recognized as a degree in its own right. The development of many occupational and job-specific programs in 2-year colleges offered students who did not wish or could not afford a 4-year degree the opportunity to obtain a postsecondary credential useful in obtaining employment. The structure of the old years of schooling question makes it impossible to identify these persons.

Similarly, the years of schooling question could not provide direct evidence about the growing pool of persons holding degrees beyond the Bachelor's degree level. The February 1990 CPS test provides estimates showing that over 10 million U.S. adults hold an advanced degree of some sort, based on the answers given to the new, degree-based question. These individuals represent a critical national resource, the size of which formerly could only be approximated in the CPS by the number of persons with 5 or more years of college completed. Under the old procedures, an estimate from the February 1990 data would incorrectly attribute advanced degrees to nearly 4 million more persons.

- Use of the old item led to uncertainty in the classification of high school graduates.

Many people, although they did not complete 12 years of schooling, hold a high school diploma because of programs like the GED, night school, and other equivalency mechanisms. Individuals who hold a high school equivalent were supposed to be coded as having completed 12 years of school in the format of the old question. Analysis of selected data sources indicated that this was not always the case. Be it due to respondent or interviewer failure, there are numerous instances (about 1 million persons in the February 1990 test) where years in school (that is, something less than 12) were recorded instead of the earned high school equivalent.

An associated problem is the growing number of persons who have completed 12 years of school but do not have a high school diploma. This problem is especially common in areas that require a final graduation test or certification. Individuals who fail this test but have completed their 12 years are free to leave school, but are not awarded a high school diploma. Instead, they are often given a "certificate of completion" or other document to indicate they have "served their time". The February 1990 test showed that nearly 4 million people fell into this category.

- The old item did not meet agency and programmatic data needs.

As part of the content development for the 1990 Decennial Census, interagency working groups were formed for each substantive topic area in the census. These groups met to discuss specific agency data needs, reflecting not only programmatic and legislative data requirements, but a full array of research and analytic needs. The Education working group identified the need for degree-specific data as the highest priority item and suggested potential item response categories. This process also revealed that detailed attainment information was not legislatively required (or generally needed) below the fifth grade. The group suggested that the collapsing of lower levels of schooling would not be a serious loss. Faced with the addition of new categories beyond the high school level, and a serious space constraint in the decennial instrument, the decision was made to use collapsed categories of 1st to 4th and 5th to 8th grades; discussions with the Bureau of Labor Statistics in the development of the attainment item for the CPS led to the further refinement of separating categories for 5th or 6th grade from 7th or 8th grade.

Potential Problems With the New Item

The switch to the new attainment item is not without some costs. One objection that has been raised is the loss in continuity with time series that date back as much as 50 years. On one level this argument must be accepted; the new item, after all, is different in terms of both structure and wording of the response categories. However, the meaning of the old question itself has not remained constant over the past fifty years - that is a primary reason why it needed to be changed. Reports of "years of schooling completed" do not mean the same thing now as they did in 1940. Whereas in 1940 it could be said with a high degree of certainty that a person with 4 years of college completed had a Bachelor's degree, that same assertion cannot be made in 1990. To use the old item today and attribute the 1940 meaning is misleading, with the problem becoming more serious with each passing year.

The new item, on the other hand, does allow comparable construction of many of the educational attainment concepts and benchmarks that are frequently used in research, analysis and legislation. Persons with less than a high school degree, for example, can be easily identified, including the 12th grade "completers" who are not graduates. Persons with college less than (or more than) a Bachelor's degree can also be determined, as can those who have attained a Bachelor's as their highest degree. In this respect, the new item provides better year-to-year comparability, since it relies on known degree levels, not an inference of degrees from years of schooling completed.

A second source of concern is voiced by some researchers who feel that one of their independent variables of choice for regression models has been lost. While it is true that the apparent continuous form of the years of schooling item made a handy (and empirically useful) addition to many regression models of phenomena like earnings and income, most analysts recognize that the interval-level variable does not reflect the reality of credentialing and the rewards based thereon. In fact, a perusal of the journal literature shows that years of schooling is frequently summarized into a small set of convenient educational benchmarks, generally represented by binary (dummy) variables. Analyses such as these are commonplace, particularly in the context of categorical data methods that have become far more frequent during the past decade.

A related concern of some analysts is the elimination of summary measures such as the median or average years of schooling completed. While these measures will no longer be derivable in the same metric, this may not be a major analytic loss. During the entire decade of the 1980's, median years of schooling for persons ages 25 and above changed by two-tenths of a year (going from 12.5 to 12.7 years), emphasizing the fact that the median is not a very good summary measure of the pace of change in educational attainment. The table below shows four different summary measures, including the median. The three proportionate measures of educational completion all tell a much stronger story than the median of how the population changed during the sixteen year period from 1975 to 1991.

Measure	1975	1991
Median years of schooling	12.3	12.7
Percent high school graduates	62.5	78.4
Percent with 1 or more years college ..	26.3	39.8
Percent with 4 or more years college ..	13.9	21.4

The change in the attainment question will cause the loss of the time series of median years of schooling, but the measure is of limited utility because it does not capture most of the dynamic change in the educational structure of the United States.

February 1990 CPS Results

In the February 1990 Current Population Survey, a test of the new attainment item was conducted. The conventional years of schooling question, still on the control card, was updated at the beginning of the interview for all persons. After completion of the regular CPS-1 labor force interview, each person was asked the

“new” attainment question. Interviewers had explicit instructions not to attempt to reconcile apparent discrepant answers given for the two items. While it is possible that some individuals may have tried to give answers that would concur with each other (thus changing one of the responses they might give if only one question was asked), the data show that there are still important areas of inconsistency between the two sets of answers given.

Table E shows weighted estimates of the full crosstabulation of the old and new items for all persons ages 15 and above. Overall, there is a great deal of consistency between the levels reported for the old and new items; 84.3 percent of all responses were consistent, with this level somewhat higher for levels below college (86.3 percent). Most of the inconsistent responses below college are off by one category; this may be due to the elimination of the “attending/ completed” follow-up item that was a part of the old question. About half of the responses that were a higher level in the new item were persons who were classified as high school graduates in the old item, but chose “some college no degree” in the new item. One possibility is that many individuals, having spent only a small amount of time in college, opted not to report this experience in the old item, and reported their highest credential (the high school diploma) instead.

The portion of the table showing levels above college draws into clearer detail the comments that have been made about the ability of the new question to better classify individuals with respect to the specific degrees they hold. For example, the new item identifies 8.5 million Associate degree holders, formerly distributed primarily among the categories of 1-6 years of college. The table also shows that just 81 percent of persons who hold a Bachelor's as their highest degree have completed exactly four years of college. Overall, the new question counts over 75 million persons with some college experience, as opposed to just under 70 million identified with the old item. In general, while the old and new items demonstrate a high level of consistency, it is the inconsistent responses, particularly for high school completion and beyond, which give the new item a decided advantage in accuracy and usefulness.

Changing patterns of enrollment and perceptions of education as human capital required a serious reexamination of the conventional attainment question. The growing importance of postsecondary education and the increasing credentialing of individuals dictate that more direct measures be used. The new educational attainment item is a departure from the past, but it provides more relevant and useful data for current and future analyses.

Table E. Educational Attainment by Highest Grade Completed or Degree Received, Persons 15 and Over, February 1990 Current Population Survey

(In thousands)

Highest grade or year completed	Total	No response	No school completed	Nursery school	Kindergarten	1st-4th grade	5th-8th grade	9th grade	10th grade	11th grade	12th grade, no diploma	12th grad diploma or GED	Some college, no degree	Occupation associate degree	Academic associate degree	Bachelors degree	Masters degree	Professional degree	Doctoral degree
Total	190,730	2,633	1,066	-	14	2,651	15,659	8,434	10,476	8,658	3,918	61,702	33,220	4,338	4,263	23,127	7,533	1,854	1,163
None	1,121	31	1,007	-	10	46	17	-	-	-	1	1	-	6	-	-	-	1	0
Elementary 1	239	-	4	-	197	2	2	10	10	10	3	3	3	4	-	2	-	-	0
Elementary 2	663	15	3	-	2	567	10	-	-	-	40	13	13	-	3	-	1	-	0
Elementary 3	881	5	1	-	841	27	27	3	3	2	-	-	2	-	-	-	-	-	0
Elementary 4	1,012	14	-	-	865	124	3	3	-	-	-	2	-	-	-	4	-	-	0
Elementary 5	1,260	18	4	-	40	1,185	40	5	5	-	3	3	2	-	-	4	-	-	0
Elementary 6	2,727	77	1	-	42	2,533	29	29	11	7	5	10	2	-	2	2	5	-	2
Elementary 7	3,045	35	11	-	10	2,891	34	34	16	7	6	23	6	1	-	3	2	-	2
Elementary 8	9,531	111	11	-	2	13	8,406	717	75	25	25	119	12	13	-	-	-	3	0
High school 1	9,084	92	-	-	10	10	213	7,304	1,220	56	31	111	31	4	-	4	5	-	4
High school 2	10,766	140	8	-	4	4	84	224	8,719	1,252	40	240	49	6	-	1	5	2	4
High school 3	9,792	91	3	-	5	5	25	36	234	7,020	1,500	765	80	17	5	6	4	-	4
High school 4	70,667	987	12	-	6	6	123	76	175	262	2,248	59,102	7,011	352	89	131	38	42	15
College 1	13,020	182	2	-	3	3	11	2	6	13	26	704	11,482	327	168	61	8	23	1
College 2	15,644	216	-	-	-	-	6	2	-	3	13	368	9,461	2,580	2,732	213	12	37	0
College 3	6,033	80	-	-	-	-	1	-	1	3	4	93	4,187	584	722	292	24	40	3
College 4	21,268	326	3	-	1	1	1	-	2	-	4	94	716	351	443	18,835	378	98	18
College 5	3,655	49	-	-	-	-	-	-	-	-	3	3	109	44	42	2,013	1,321	51	20
College 6	10,313	185	-	-	-	-	-	6	-	-	2	23	57	48	57	1,558	5,730	1,558	1,090

DATA FILES AVAILABLE

The time series tabulations of attainment shown in Tables 17, 18, and 19 of this report are also available on one floppy diskette. The tables are available as either three ASCII print files, or three LOTUS 1-2-3 © files (version 2.1). Users wishing to purchase files should specify which data format they prefer (ASCII or LOTUS),

include a check for \$15 (make checks payable to "Commerce-Census") and send to:

Education and Social Stratification Branch
Population Division
U.S. Bureau of the Census
Washington, D.C. 20233
(301)-763-1154