



Why College Matters

A Graphical Compendium of Educational Attainment Differentials in the U.S. Labor Market

Prepared by

Robert C. Dauffenbach

Professor Emeritus

Price College of Business, University of Oklahoma

September 2022

This chart-book provides a concise, annotated, summary of dramatic changes in the educational content of work that has impacted the US labor market in the last 25+ years. Major differentials in labor market success by level of educational attainment occurred in this period. For this analysis, variables measuring labor market success include employment trends, earnings levels and trends, inflation-adjusted earnings growth, unemployment rates, labor force utilization, employment-populations ratios, and age/earnings profiles by educational attainment group. Summary results are provided using major group attainment levels (high school graduate or less; some college, no degree; college degree). More detailed groupings, at times up to eight divisions of attainment (less than high school; high school graduate; some college, no degree; associate degree; bachelor's; master's; professional; and PhD), are utilized to better gauge sources of differential gains. Annual averages for the 1992-2022 period are used. The graphics typically refer to the 25+ years of age workers, as this age group is more closely associated with post-education work life. Earnings data, however, are based on the U.S. Bureau of the Census March CPS Supplement, and include workers 18 years and over for years 1994-2020.

General Observations: From the vantage point of the early 1990's, who could have imagined that a single category of educational attainment, college degree recipients, would account for nearly all gains in employment and real earnings? Unfathomable

though it may seem, over 100 percent of the 38.9 million gain in employment from 1992-2022 is attributable to those who have college degrees. Employment of associate, bachelor's and advanced degree expanded by 41.5 million over that 30 year period, while high school graduate and lower fell by 4.2 million. Inflation-adjusted total earnings rose from \$6.1 to \$9.6 trillion from 1994 to 2020. Ninety-eight percent of that 3.5 trillion-dollar gain is attributable to those who have college degrees. Bachelor's and advanced degrees more than doubled in employment, a 2.7 percent compounded annual growth rate. Master's degree growth in the job market has been particularly pronounced, a 3.3 percent annual growth rate. College degrees, including associates, now are the dominant major group at 55 percent of total employment. Tens of thousands of dollars separate the detailed attainment groups in earnings, and fringe benefits, correlated highly with earnings, are not included. Unemployment rates are systematically lower, oftentimes half or better for the more educated groups, and more vulnerable to recessions. Labor force utilization is higher as is full-time/full-year employment for degreed personnel. While average real earnings have been comparatively flat for all groups across time, age-earnings profiles suggest substantial growth in earnings as careers mature for the more educated while for other groups the profiles flatten at relatively early career stages. The trends are firmly in place and it is clear from this analysis that a college degree is baseline for achievement of labor market success. This is truly the "information age."

List of Graphics

- U.S. Employment Trends by Major Group Educational Attainment:25+ Years of Age, 1992 – 2022; p.4
- U.S. Employment Change by Major-Group Educational Attainment: 25+ Years of Age, from 1992 to 2022; p. 5
- Employment Trends by Detailed Educational Attainment: 25+ Years of Age, 1992 - 2022; p. 6
- Shares of Total Employment by Major Group Educational Attainment: 25+ Years of Age, 1992-2022; p. 7
- Average and Inflation-Adjusted Earnings by Major Group Educational Attainment, Full-Time/Full-Year Workers,1994-2020; p. 8
- Earnings Shares by Major Group Educational Attainment: Full-Time/Full-Year, 1994-2020; p. 9
- Earnings Shares by Detailed Educational Attainment: Full-Time/Full-Year Workers, 1994-2020; p. 10
- Real Earnings Change by Major-Group Educational Attainment: 18+ Years of Age, from 1994 to 2020; p. 11
- Total Wage and Salary Earnings by Detailed Educational Attainment: Constant 2020 Dollars, 1994 – 2020; p. 12
- Mean Annual Earnings by Detailed Educational Attainment: Full-Time/Full-Year Workers, Constant Dollars, 1994-2020; p. 13

- **Unemployment Rates by Major Group Educational Attainment: 25+ Year Olds, 1992-2022; p. 14**
- **Unemployment Rates by Detailed Educational Attainment: 25+ Year Olds, 1992-2022; p. 15**
- **Employment-to-Population Rates by Educational Attainment: 25+ Years of Age, 1992-2022; p. 16**
- **Civilian Labor Force Participation Rates by Educational Attainment Group: 1992 - 2022 Annual Averages; p. 17**
- **Mean Age-Earnings Profiles by Detailed Educational Attainment Full-Time/Full-Year, \$2020 Inflation-Adjusted, 1994-2020; p 18**
- **Share of Total Earnings Received by Full-Time/Full-Year Workers:1994 - 2020; p. 19**
- **State Per Capita Personal Income and Bachelor's or Higher Degrees Population Share: 2019; p. 20**

Data Sources:

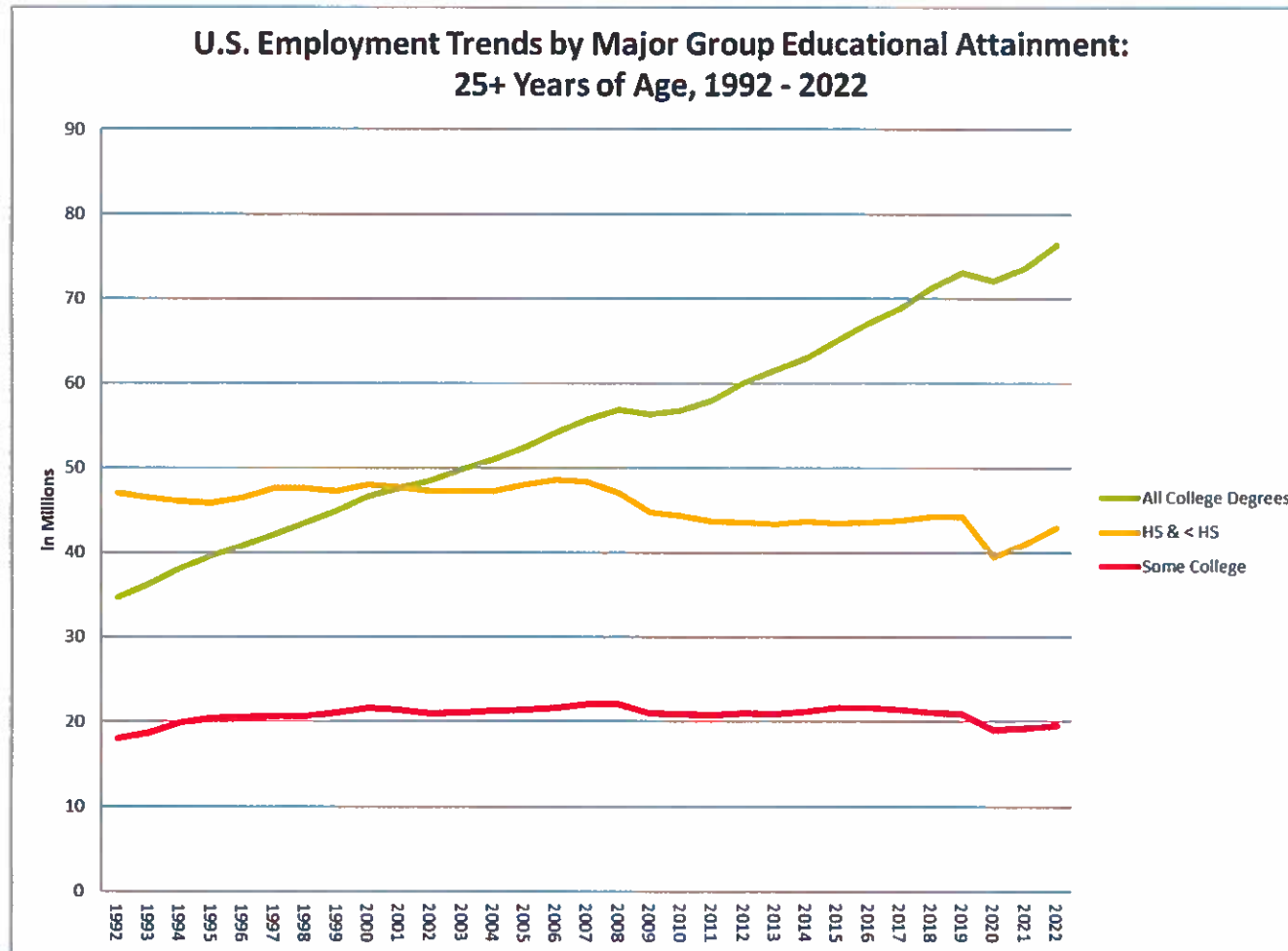
US Census Bureau, Current Population Survey, PINC-04 Tables on Educational Attainment

<http://www.census.gov/data/tables/time-series/demo/income-poverty/cps-pinc/pinc-04.html#.html>

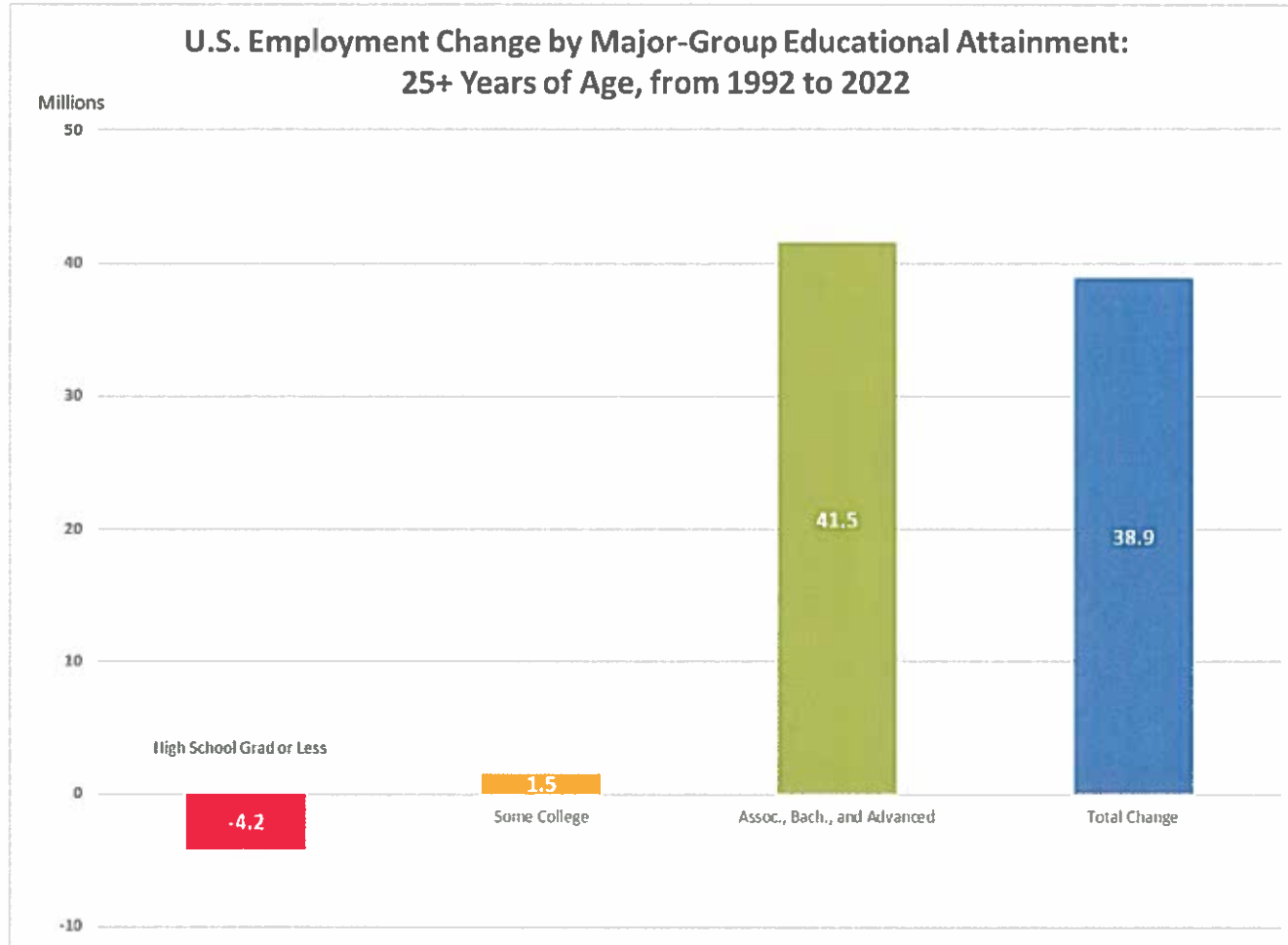
US Department of Labor, Bureau of Labor Statistics, Labor Force Statistics from the Current Population Survey, web query:

Labor Force Status: <https://data.bls.gov/pdq/querytool.jsp?survey=ln>

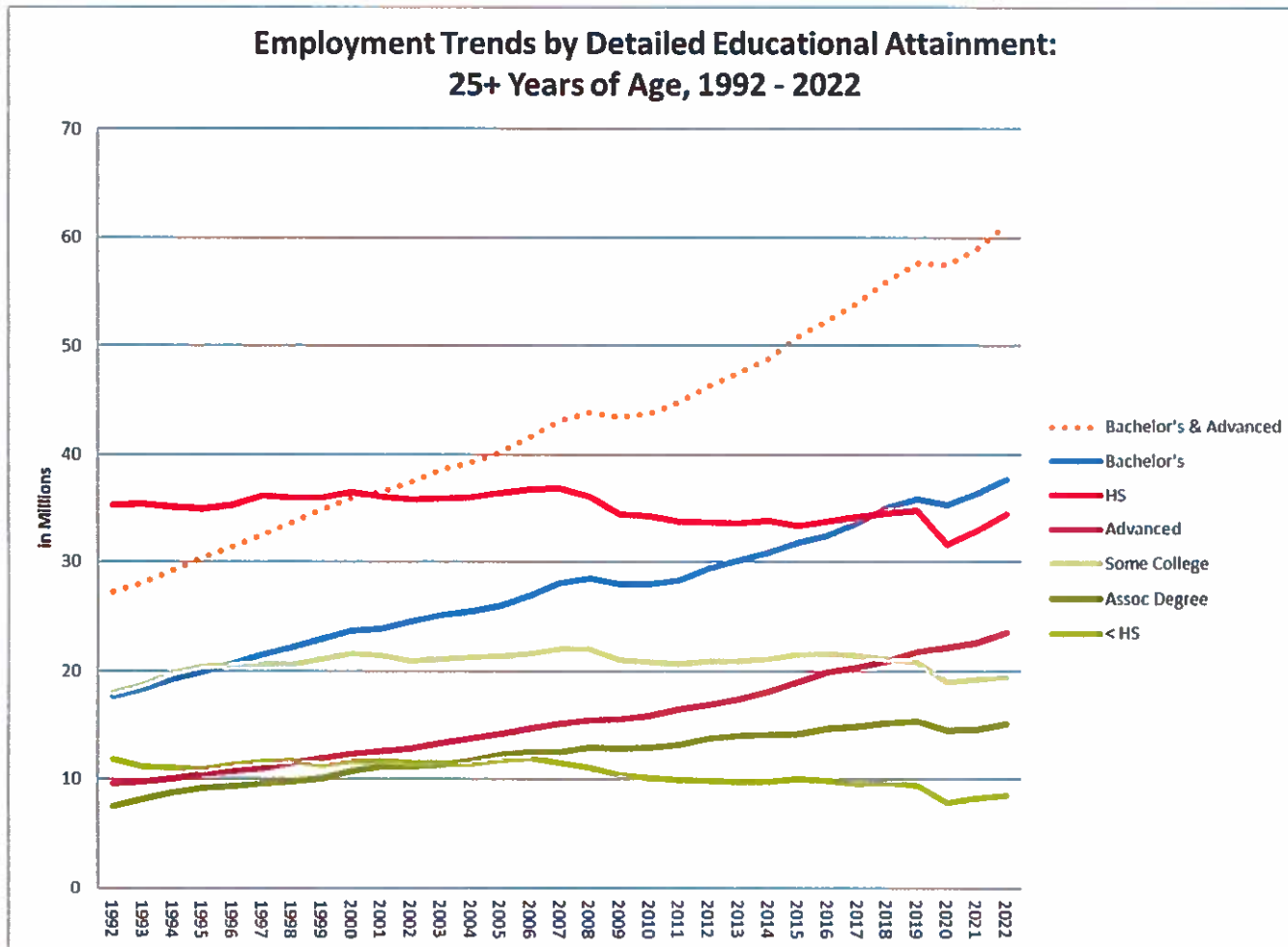
Inflation-Adjustment: BLS CPI-All Urban Index, adjusted to base 2020=100.



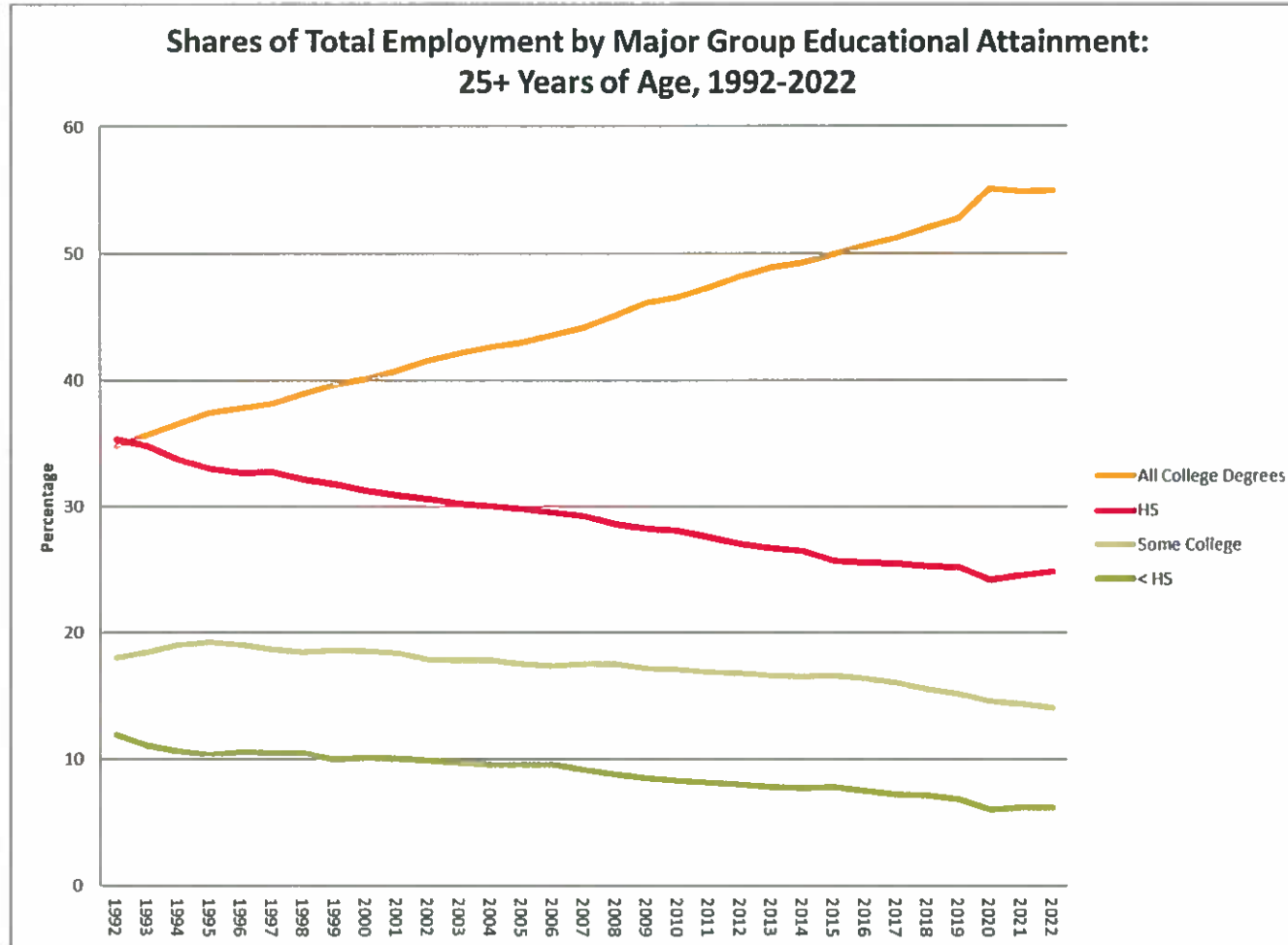
Comments: There are fewer total jobs today for high school graduates and workers with lower educational achievement than there were in 1992 in the adult population. High school graduates and less fell from 47.1 to 43.0 million. Workers with some college rose from 18 to 19.5 million. Employment in college degree categories increased from 34.8 to 76.3 million workers.



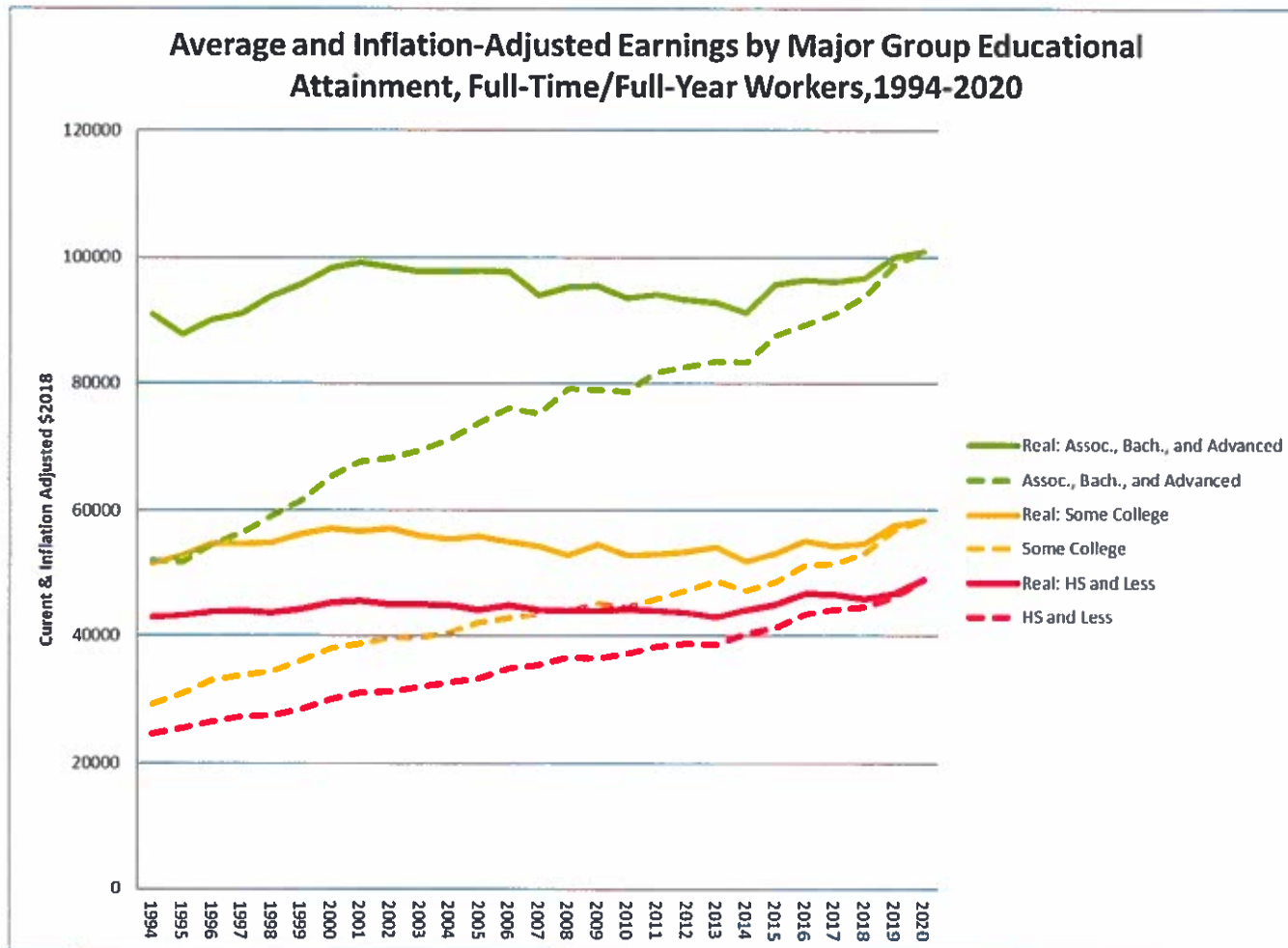
Comments: Employment of 25+ years of age workers, over the 1992 to 2022 period, rose from 99.9 million to 138.8 million, a total change of 38.9 million workers. Growth in college degrees (associate, bachelor's and advanced degrees) dominated the total gain of 41.5 million in adult-aged employment, a more than doubling 119 percent gain. Growth in employment of associate degrees or higher educational attainment rose by over 100 percent of the total employment gain. Employment of college-degreed adult workers increased at an average annual compounded rate of 2.7 percent over the 1992-2022 period.



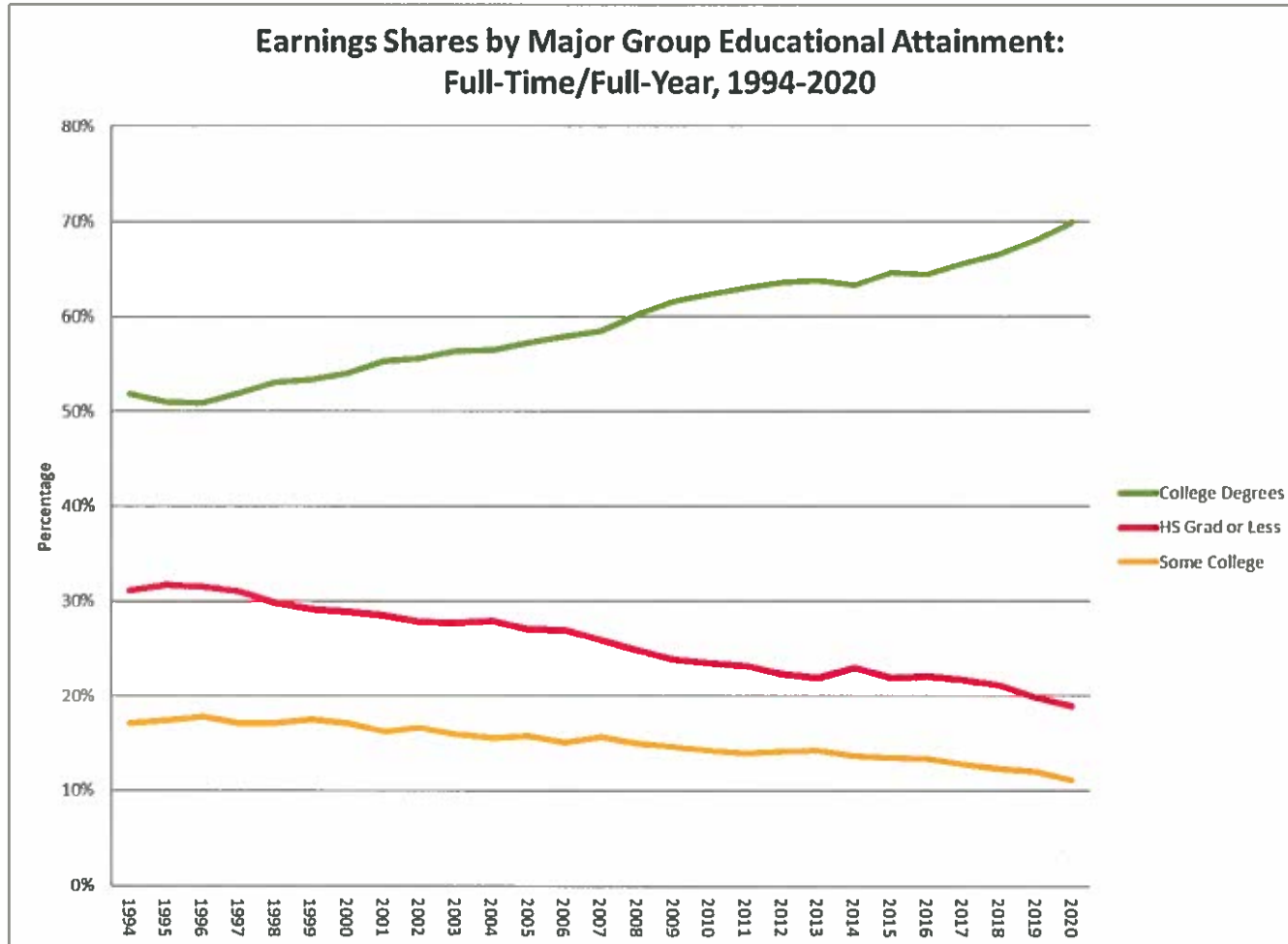
Comments: Expanding the educational attainment categories to include more detailed categories, the most significant trend is in bachelor's and advanced degrees (master's, professional, and PhD's), a growth from 27.3 to 61.2 million. Advanced degrees have more than doubled over this 30-year period, a 3.3 percent compounded annual growth rate. Associate degrees have grown substantially from 7.5 to 15.1 million. Employment of those with less than high school education has fallen from 11.8 to 8.5 million. High school graduates presence among the employed have been essentially flat.



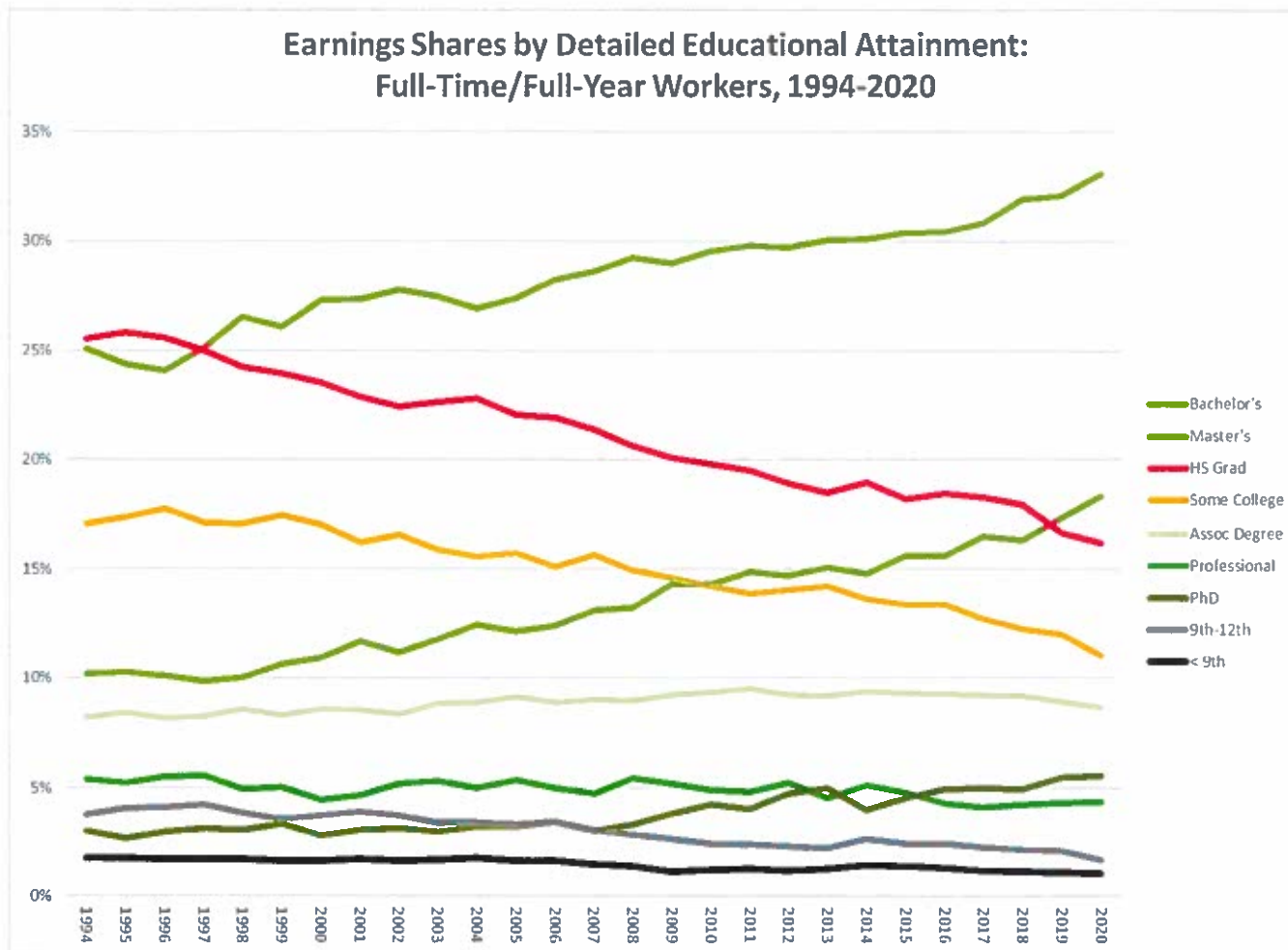
Comments: Employees with college degrees are now the dominant group with employment shares rising from 35 percent to 52 percent. High school graduates have seen their share fall from about 35 percent to slightly over one-fourth of adult employment. Workers with some college fell about 3-4 percentage points and those with less than a high school diploma fell by 5 percentage points.



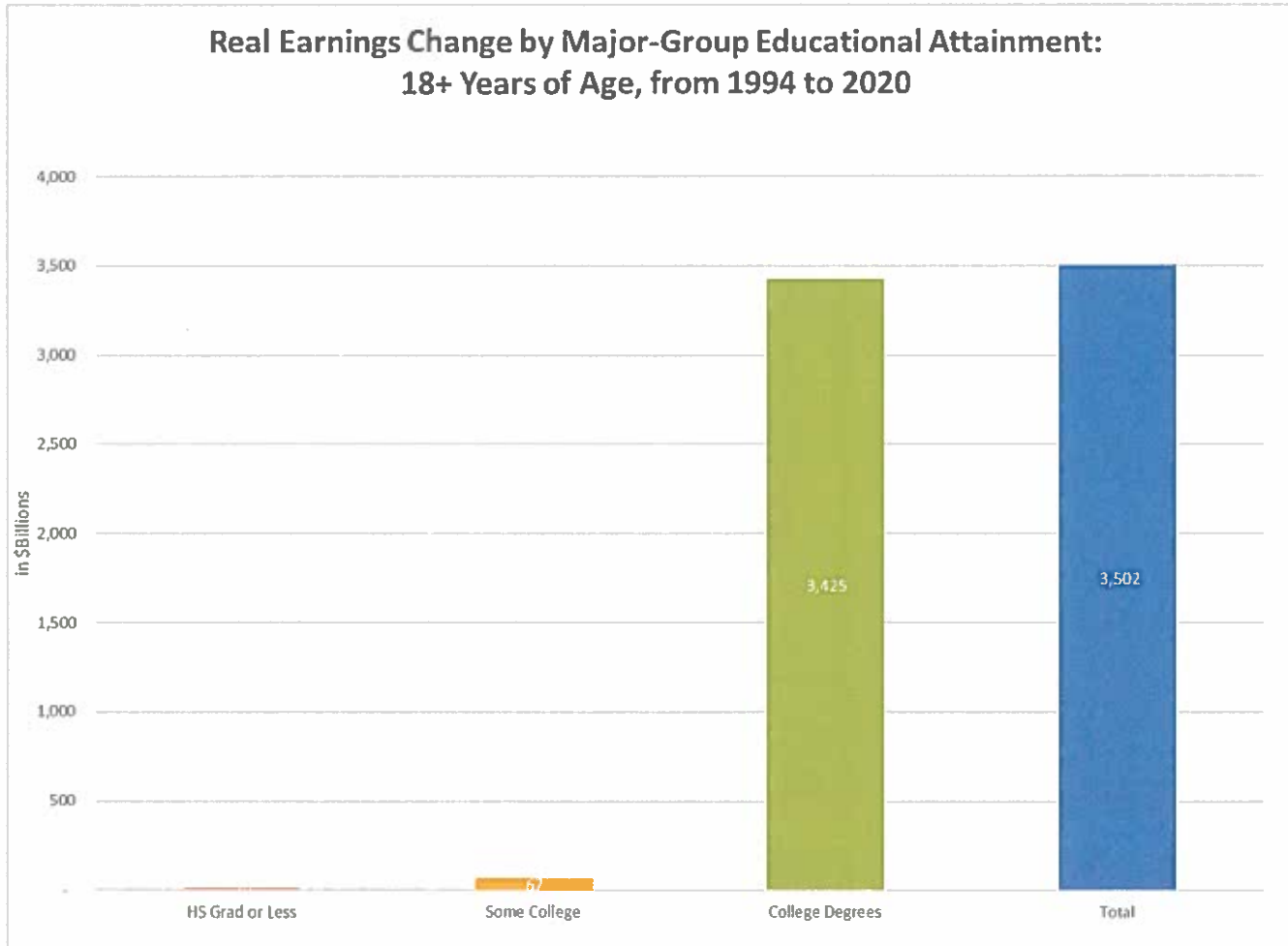
Comments: Average and inflation-adjusted (2020=100) earnings for major educational attainment groups (HS graduate and less; Some College; and Associate Degrees+) are displayed in this graphic. Earnings are for workers who usually work full-time/full-year. The dashed lines are nominal (unadjusted for inflation) mean earnings. The solid lines reveal relative consistency in inflation-adjusted earnings across time. The “real wage” was essentially preserved for all groups. College degreed employees earn on average about \$43 thousand per year more than those with high school or lower education. Employees with some college earn about \$9,500 more than HS or less attainment.



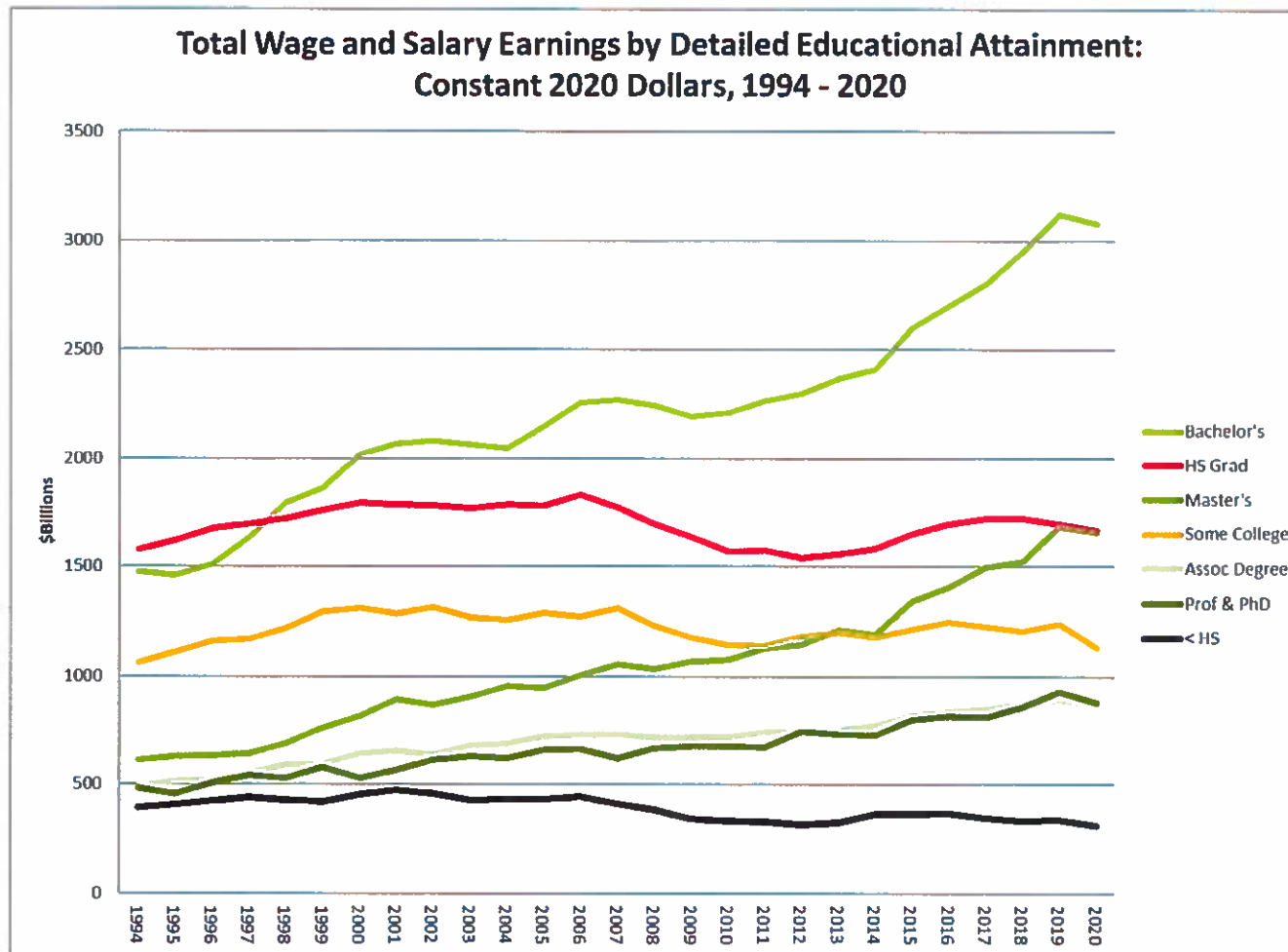
Comments: Earnings shares for college degree holders, full-time/full-year workers, has risen from low 50 percent levels to 70 percent. Workers with high school or lower achievement have seen their share of earnings fall from 31 percent to just 19 percent. Those who have some college, but no degree fell from 18 percent to about 11 percent of total earnings.



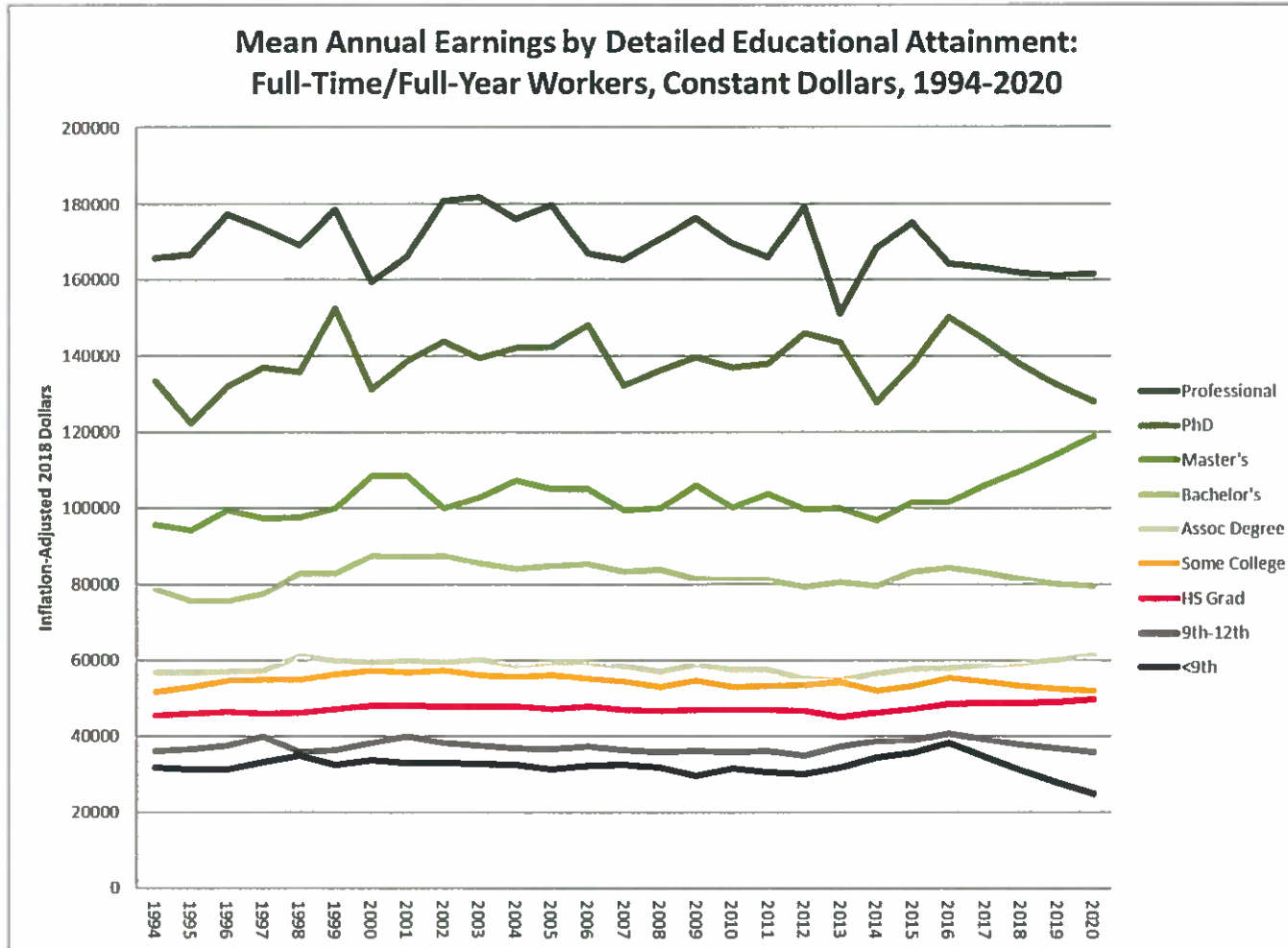
Comments: Examining earnings shares for detailed educational categories, full-time/full-year workers, the bachelor's and master's degree categories achieved substantial increases, rising from a 25 to 33 percent share for bachelor's degree holders and from 10 to 18 percent for master's degree recipients. Significant losses in shares were recorded for high school graduates (25.5 to 16.2 percent) and the some college category (17 to 11 percent). The professional degree holders saw their share of earnings rise from 3.0 to 5.5 percent.



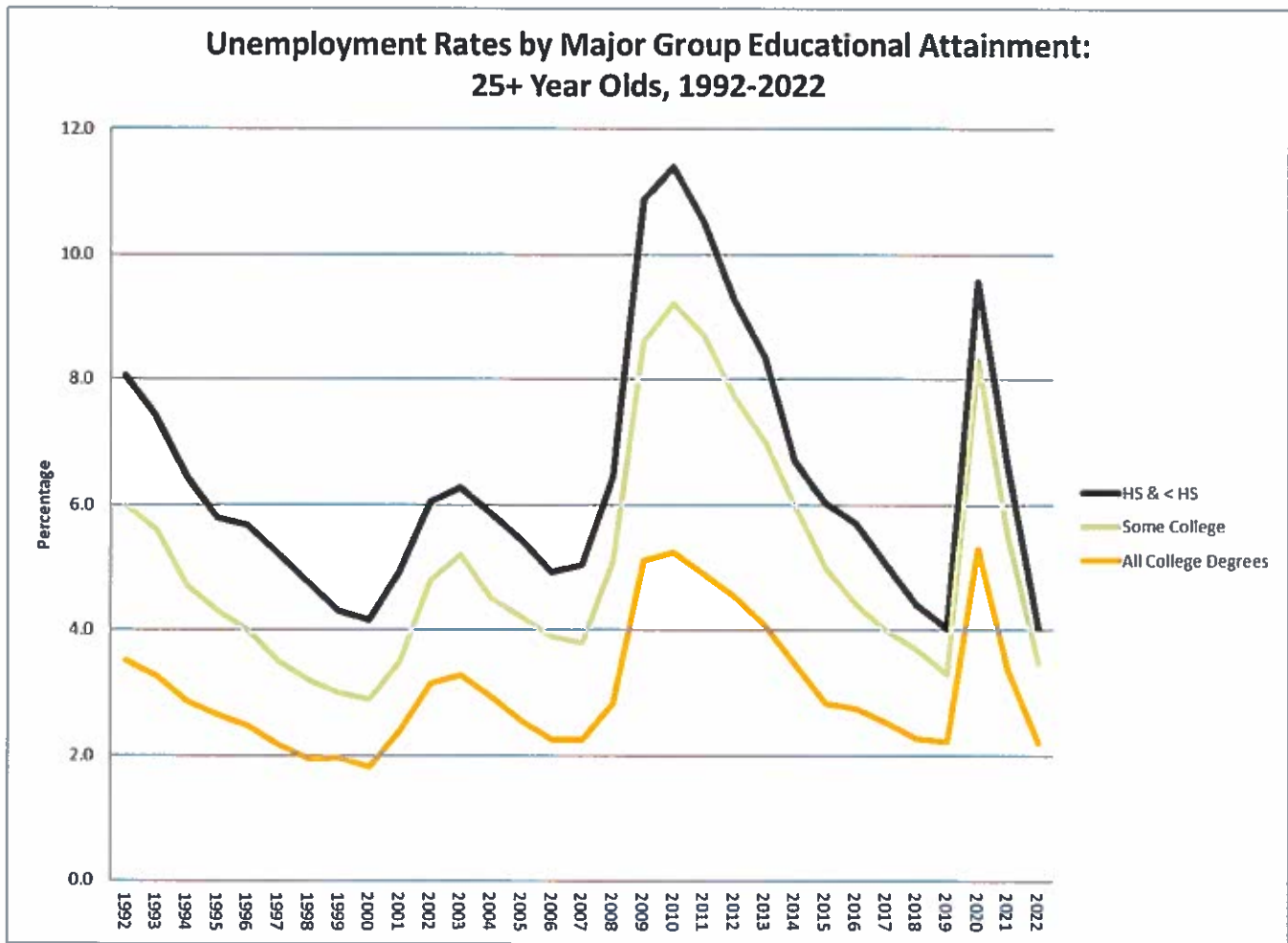
Comments: This graphic reflects real earnings change for workers with any work experience, full-time, part-time, full or part year work, 18 years of age or older. Inflation-adjusted total earnings rose from 6.1 to 9.6 trillion dollars from 1994 to 2020. The gain of 3.5 trillion dollars was dominated by growth for those who had college degrees, 98 percent of the total gain. The gain by workers with high school or less attainment was on 0.5 percent while the Some College group real earnings rose by 6.3 percent.



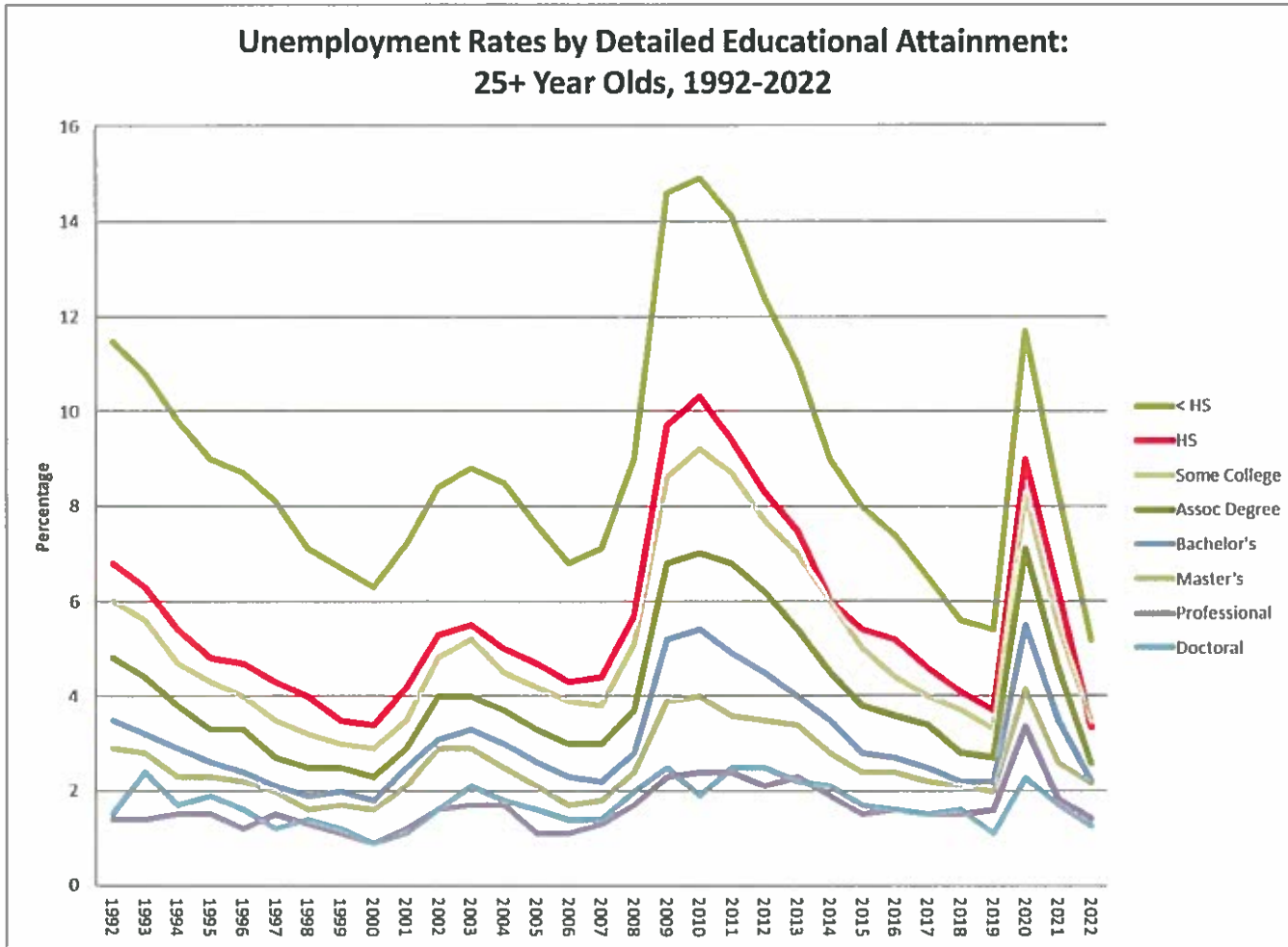
Comments: Bachelor's degree workers and high school graduates in 1994 represent about one-half of total earnings in 1994. Bachelor's degree holders have increased their earnings in real terms by \$1.6 trillion while the high school graduate category was essentially flat. Surprisingly, master's degree recipients have the large gains, increasing their earnings by over \$1 trillion. Associate degree workers increase by \$374 billion while Professional and PhD's gained nearly \$400 billion. Less than high school education workers lost about \$80 billion while and the some college category gained \$67 billion.



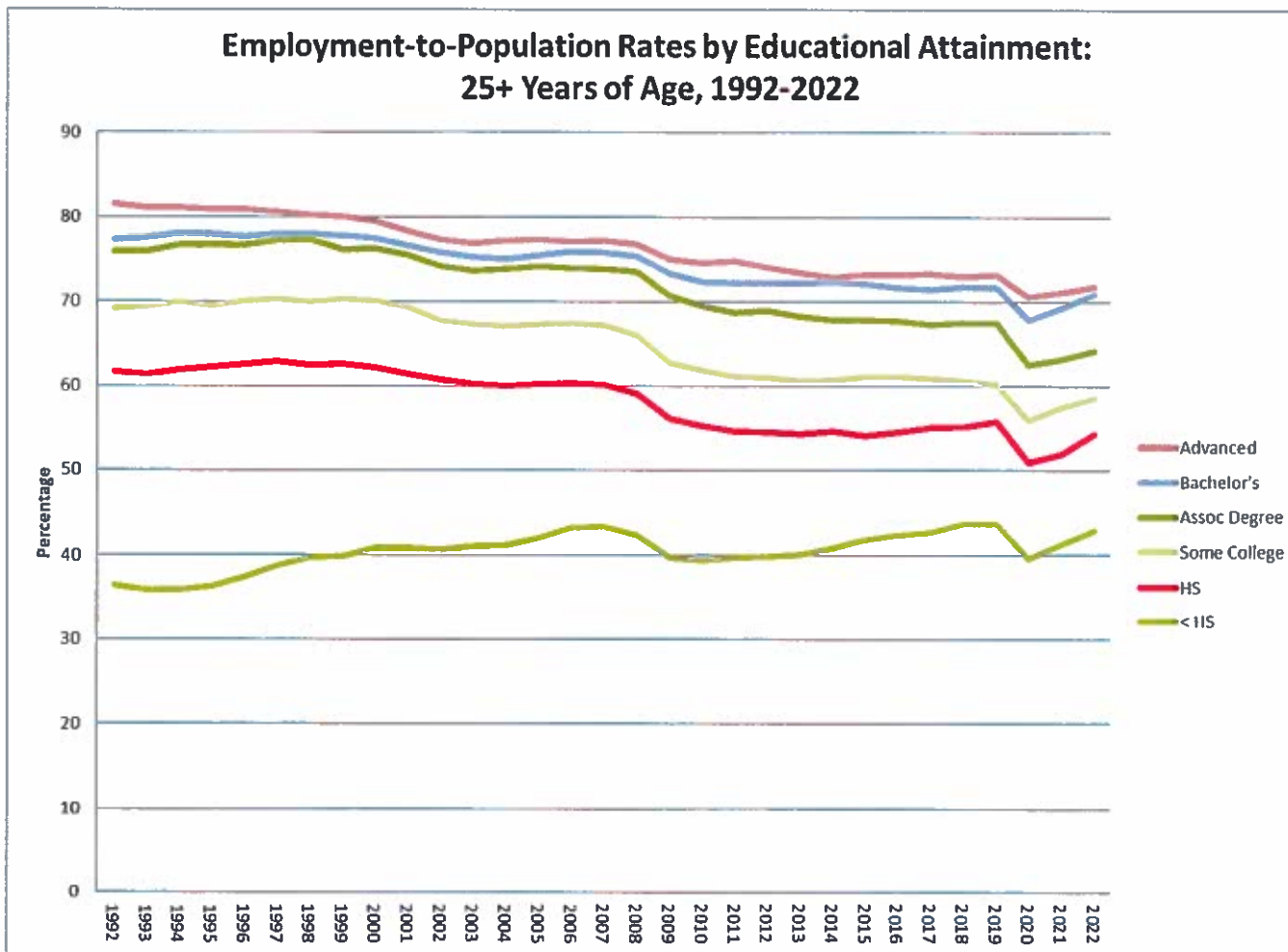
Comments: Inflation-adjusted mean earnings for full-time/full-year workers are shown here by detailed educational attainment. The comparative “flatness” indicates that real earnings have remained roughly constant over this period, indicating that the “real wage” was relatively constant. Professional degree holders achieve the highest mean earnings followed by PhD recipients. Master’s degree holders are in the \$100,000+ range, but showed some increase in the 2020 Covid year, while bachelor’s degree recipients are in the \$80,000+ range. High school graduates are slightly above the \$46,000 mark.



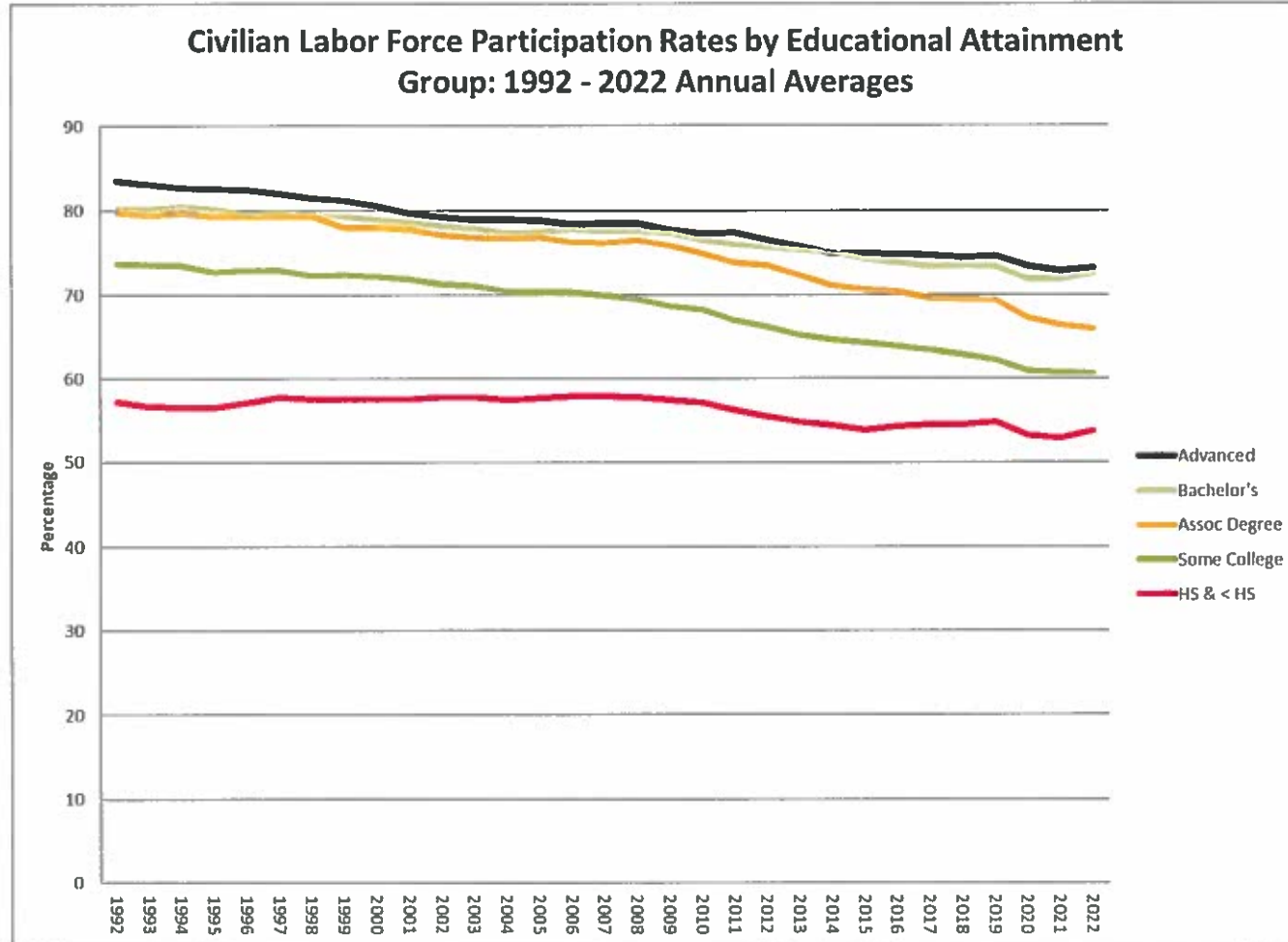
Comments: Those adults with higher degree attainment levels have substantially lower unemployment rates. The “All College Degrees” category typically experience unemployment rates that are one-half or better that of the high school and less category. Differentials widen significantly in times of economic stress, such as the Great Financial Crisis (2008-2009) and the Covid era.



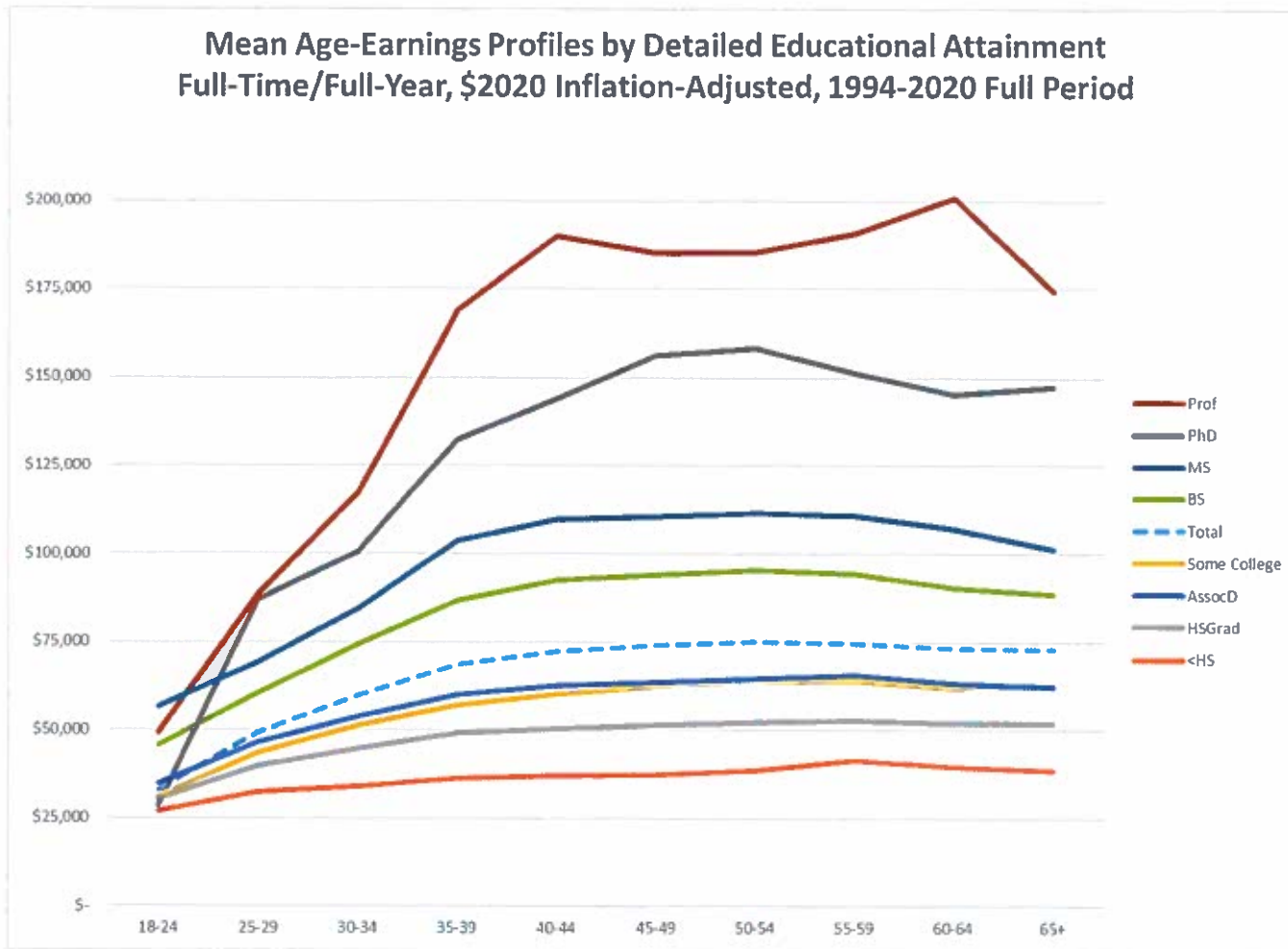
Comments: Unemployment differentials for detailed educational attainment follow a consistent, inverse pattern with the highest levels of attainment experiencing the lowest unemployment rates.



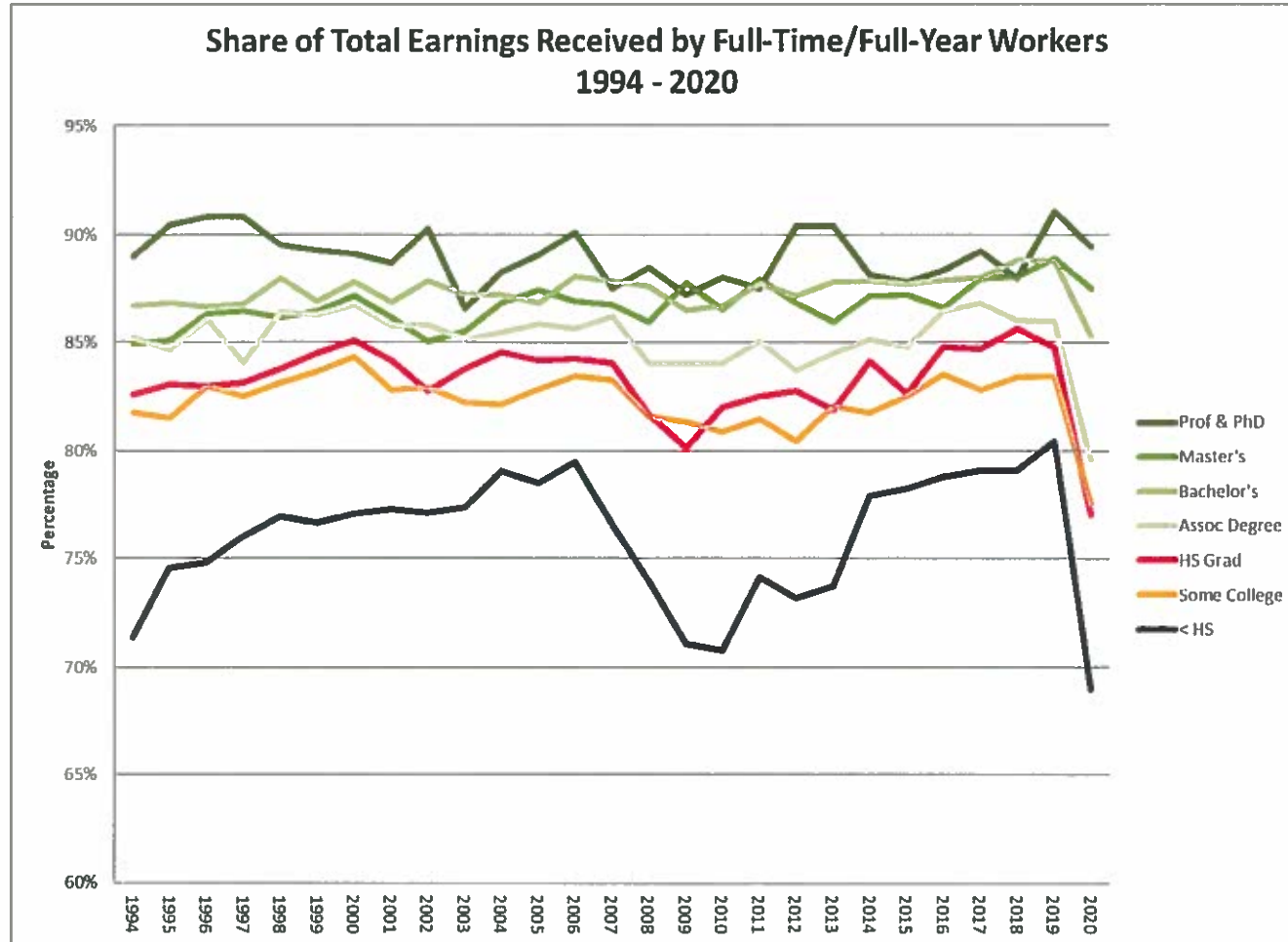
Comments: Employment-to-population ratios are preferred measures of work force utilization. As is apparent, these rates have been falling for almost all groups since 1992, although some recovery has occurred in 2021-22. Still, rates are highest among the more educated. Further, about a 16 percent differential typically separates high school graduates from bachelor's and higher degree recipients. Those with less than high school diplomas experienced some gain in work force utilization, but from a very low base of 38 percent, rising to 43.6 percent.



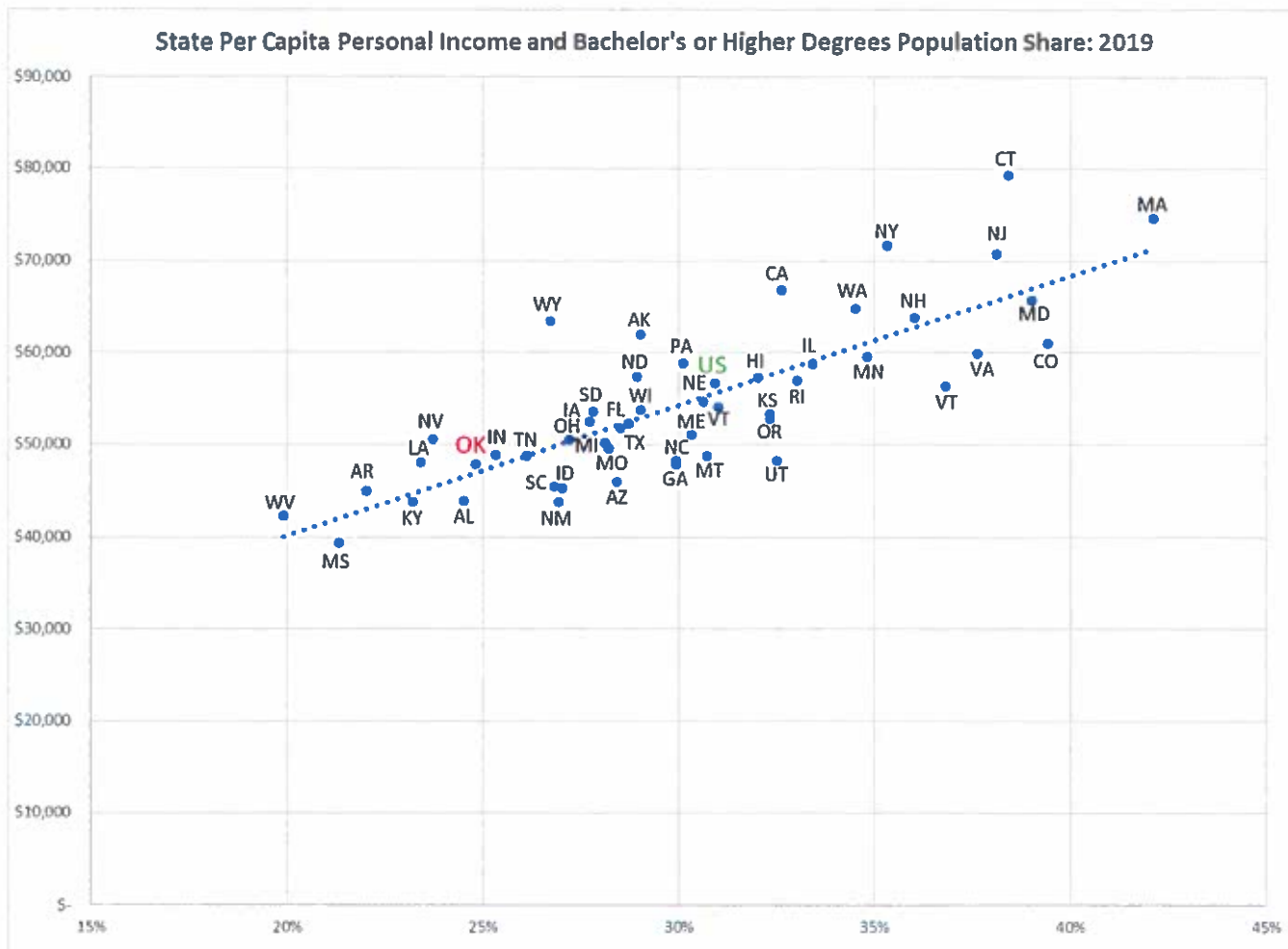
Comments: Labor force participation has been in a fairly consistent negative trend, falling by 10 percentage points or more for many groups. The sheer size of the “boomer” generation along with their advancing age explains much of the decline in participation rates.



Comments: Age-earnings profiles capture how earnings change with increasing work experience. Higher education categories not only offer higher initial earnings, but also significant increases as careers mature, as indicated by the age-earnings profile above for the full period. Peak earnings tend to be in the 45-54 years of age range. Gains are present in all categories. However, percentage gains are particularly pronounced for bachelor's and higher degree categories while, for lower attainment categories, the profile flatten-out at about the 35-39 years of age category.



Comments: The US Census in the March CPS supplement reports earnings for workers who usually work full-time/full-year, but also earnings in total. The higher the ratio of full-time/full-year earnings to total earnings, the lesser is the extent of part-time/part-year work. The graphic shows that higher education yields about an 87.5% ratio; some college and high school grad, 82-85 percent ratio; and that part-time/part-year work is extensive among those with less than high school. The Great Financial Crisis of 2008-09 had a dramatic effect on this group, and the COVID lockdown witnessed substantial drawdowns in full-time/full-year earnings share for all but the bachelor's and higher groups. This is but one of many indicators that lower educational attainment groups are considerably more vulnerable to weakness of the economy.



Comments: As illustrated in this graphic, there is, among the states, a consistent positive relationship between the level of per capita personal income and the share of the population with bachelor's or higher degrees. Oklahoma ranks among the lowest 20 percent of states on such measures.