

The Labor Force Behaviors, Labor Market Experiences, and Labor Market Outcomes of the Nation's Adults with No Post-Secondary Education, 2000-2010: Differences in Outcomes Between High School Dropouts, GED Holders, and High School Graduates

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“When you drop out of high school, you quit not only on yourself but also on your country.”
President Barack Obama, 2010

“Dropping Out of High School is the equivalent of economic suicide.”
Andrew Sum

Introduction

During the past few decades in the United States, labor market and social success has become increasingly associated with formal educational attainment, literacy/numeracy proficiencies, and one’s occupational skills. Better educated adults, especially those with a Bachelor’s or higher degree, have achieved substantially better employment, wage, and annual earnings outcomes than their less educated peers.¹ More than 16 years ago, then President Clinton addressed a national convention of newspaper editors. In his address, he made the following remarks”

“The technology revolution and the global economy. These are dividing opportunity at home and abroad. The middle class is splitting apart, and the fault line is education.”²

The last decade in the U.S. (2000-2010) has been termed “a lost decade” by a number of labor market and economic analysts.³ The nation’s real Gross Domestic Product grew at a relatively slow rate, per capita real GDP grew at only a single digit rate (8%) for the first time in the past 80 years including the Great Depression decade of the 1930s, total payroll employment actually declined over the decade, the unemployment rate went from a 4% full employment situation in 2000 to over 9% in 2010, and median real family income actually declined.

From 2007 through 2009, the labor market deteriorated substantially on a wide number of fronts and improved only marginally in 2010, with unemployment, underemployment, and hidden unemployment levels prevailing at very high levels. The so-called Great Recession of

¹ See: (i) Claudia Goldin and Lawrence F. Katz, The Race Between Education and Technology, The Belknap Press of Harvard University, Cambridge, Massachusetts, 2008; (ii) Andrew Sum, Neeta Fogg, and Garth Mangum, Confronting the Youth Demographic Challenge: The Labor Market Problems of Out-of-School Young Adults, Sar Levitan Center for Social Policy Studies, Johns Hopkins University, Baltimore, 2000.

² See: The Boston Globe, Saturday, April 5, 1995, p. 1

³ See: (i) Menzie D. Chinn and Jeffrey A. Frieden, Lost Decade: The Making of America’s Debt Crisis and the Long Recovery, W.W. Norton and Company, New York, 2011; (ii) Andrew M. Sum, “The Lost Decade of 2000-2010, Ringing in the New and Ringing Out the Old,” Huffington Post, December 20, 2010; (iii) Andrew Sum, Ishwar Khatiwada, Joseph McLaughlin, et al., Recapturing the American Dream: Meeting the Challenges of the Bay State’s Lost Decade, Massachusetts Institute for A New Commonwealth, Boston, 2011.

2007-09 was not, however, an equal opportunity recession. The job losses and the rise in unemployment and other labor underutilization problems were not evenly distributed across age, educational attainment, or income groups. Younger workers (under 30 years of age), less educated workers (those with no post-secondary schooling), and low income workers were the most adversely affected by these deteriorating labor market problems with high school dropouts typically faring the worst.

The growing concerns over the economic, social, and civic shortcomings of the nation's adults who failed to graduate from high school have led to an increasing number of public policy proposals at the national, state, and local level to help reduce the dropout problem among existing high school students, to encourage those who already dropped out to return to various educational and workforce development programs to achieve a GED certificate, a regular high school diploma, and to bolster their core reading, math, and writing proficiencies.⁴

This paper will track the labor market behaviors and key labor market outcomes of the nation's adults (16 and older) with no post-secondary schooling over the past decade from 2000 through 2010. We are particularly interested in the labor market behaviors and experiences of those adults who are high school dropouts (9 to 12 years of schooling but no regular high school diploma or GED certificate), those who obtained a GED certificate,⁵ and those who obtained a regular high school diploma but did not complete any years of post-secondary schooling. We will compare both the labor market outcomes of high school dropouts with those of GED holders and those of regular high school graduates with those of GED holders.⁶ Do GED holders achieve significantly better labor market outcomes than high school dropouts? Do these differences vary across time (2000-2010), across key demographic and geographic subgroups, and across

⁴ For examples of studies examining the effects of obtaining a GED or alternative diploma, See: (i) V. Joseph Hotz, Guido Imbens, and Jacob Klerman, "Evaluating the Differential Effects of Alternative Welfare-to-Work Training Components: A Reanalysis of the California GAIN Program," Journal of Labor Economics, Vol. 24, 2006, pp. 521-564; (ii) Seven Glazerman, Peter Schochet, and John Burghardt, National Job Corps Study: The Impacts of Job Corps on Participants' Literacy Skills, U.S. Department of Labor, Washington, D.C., 2000; (iii) Megan Millenky, Dan Bloom, et al., Staying on Course: Three Year Results of the National Guard Youth Challenge Evaluation, MDRC, New York, 2011.

⁵ We will only focus on those GED certificate holders who did not complete any years of post-secondary schooling. Most of our data bases do not identify GED holders who completed such schooling.

⁶ For a review of past evidence on the GED, See: (i) David Boesel, Nabeel Alsalam, and Thomas Smith, Educational and Labor Market Performance of GED Recipients, U.S. Department of Education, Washington, D.C., 1998?; (ii) Kathryn Parker Boudett, Richard Murnane, and John Willett, "Second Chance Strategies for Women Who Drop Out of School," Monthly Labor Review, December 2000, pp. 19-31; (iii) Richard Murnane, John Willett, Kathryn Parker Boudett, "Does a GED Lead to More Training, Post-Secondary Education, and Military Service for School Dropouts," Industrial and Labor Relations Review, Vol. 51, No. 1, October 1997, pp. 100-116.

different labor market outcomes? How well do GED holders fare in the labor market in comparison to their peers with regular high school diplomas? Do differences between these two groups' labor market outcomes vary over time or across demographic and geographic subgroups? This paper is designed to provide answers to these key public policy research questions.

Overview of the Report's Findings

The report will begin by describing the main national data sources used to generate the estimates of the labor market behaviors and outcomes for U.S. adults over the 2000-2010 period appearing in this paper. We also will present and define the various labor force activity measures, employment, and unemployment measures and other labor market outcomes analyzed in this paper, including the labor underutilization rates, the industrial and occupational characteristics of the jobs held by the employed, and their weekly earnings from wage and salary employment.

We will then provide the definitions of the four educational groups appearing in the report. Members of all four educational groups had not completed any years of post-secondary schooling by the time they were interviewed in each of these surveys.⁷ The four groups range from those who had not completed any years of schooling beyond the eighth grade to those holding regular high school diplomas. For each of these groups, we divided the observations into the native born and the foreign born and conducted separate analyses of their labor force behavior and key labor market outcomes.⁸ The rationale for this division is explained in this section of the report. We also present findings for a wide array of demographic groups (gender, age, and race-ethnic status) and geographic groups broken out into categories of states based on their population size and their area of residence within the state (central city, other metropolitan community, non-metropolitan area).

⁷ We also exclude any adult with a GED or regular high school diploma who was enrolled in college at the time of each of these surveys.

⁸ For earlier evidence on the links between the annual earnings of immigrant workers and their high school diploma/GED status and literacy proficiencies/English-speaking, reading skills, See: (i) Kamen Madjarov, The Determinants of Immigrant Workers Earnings in the U.S., M.A. Workshop Paper, Department of Economics, Northeastern University, Boston, 2003; (ii) Andrew Sum, Literacy in the Labor Force, National Center for Education Statistics, Washington, D.C., 1999; (iii) Andrew Sum, Irwin Kirsch, Kentaro Yamamoto, A Human Capital Concern: The Literacy Proficiency of U.S. Immigrants, Center for Global Assessment, Educational Testing Service, Princeton, 2004.

The main findings of the analysis with respect to the labor force behaviors, employment outcomes, and labor market problems of adults in the four educational groups will be presented for calendar year 2010. The first set of results will be based on the findings of the twelve monthly CPS surveys for 2010. We will then supplement these findings with an analysis of the data from the 2010 American Community Surveys for both the native born and the foreign born, with detailed tests of significance of the differences between the labor market outcomes between GED holders and those of dropouts. The 2010 ACS survey contains many more sample observations for both the native born and the foreign born, but unfortunately does not collect data on many of the labor underutilization problems of adult workers such as underemployment and hidden unemployment or their weekly wages.

Analysis of the labor force status, employment status and labor utilization of adults in each of the four educational groups will be supplemented with information on a diverse array of other variables. These include the major sectors of their employment (private-for-profit, private non-profit, government, self-employment), the industrial affiliations of their employers, the major occupations of their jobs, and their weekly earnings from wage and salary jobs.

The final two sections of the paper are devoted to an overview of key labor force activity behaviors and labor market developments for adults in each of our four educational groups for selected years over the 2000-2010 decade. These years include 2000, 2003, 2007, 2010, and they cover times of full employment in the nation's labor markets (2000), periods of jobless recoveries (2003), the cyclical peak year of 2007, and a high unemployment year (2010). This analysis enables us to discover whether the labor market advantages of GED holders over their high school dropout peers and the differences between GED holders and regular high school graduates remain fairly constant over time or whether they vary over time and the national business cycle. Findings of tests of the statistical significance between these various labor market outcomes also will be presented. A comprehensive appendix containing detailed results for each of these four years accompanies this report.

Data Sources and Key Labor Force, Labor Force Activity, Employment, Labor Underutilization, and Weekly Earnings Measures

The bulk of the findings in this report are based on two sources of data. The primary source of data is based on the findings of the monthly Current Population Survey, a national

household survey which is conducted by the U.S. Census Bureau for the U.S. Bureau of Labor Statistics.⁹ It is the source of data for the monthly national estimates of the employed and unemployed populations and the national unemployment rate as well as a wide array of other labor force activity, employment, and weekly earnings measures. The monthly CPS survey interviews with approximately 60,000 households across the country.¹⁰ Interviews are conducted with all working-age members of the household, i.e., those ages 16 and older.

Our second source of data is the American Community Survey (ACS) for 2010. The ACS is conducted by the U.S. Census Bureau. Questionnaires are completed by a large sample of households (1.917 million) and persons living in group quarters (145,000).¹¹ The ACS also collects data on the labor force activities, and employment status of working-age respondents, and the occupational characteristics of the jobs held by employed respondents. While the ACS questionnaire does collect information on the unemployment status of respondents at the time of the survey, it does not identify either underemployment or hidden unemployment problems as the CPS does. The ACS questionnaire does, however, obtain information on the work experiences and earnings from employment of all working-age respondents in the 52 week period prior to the interview, including paid weeks of employment and average weekly hours of work.

The following population and labor force measures underlie the findings presented in this report.

The civilian non-institutional working-age population consists of all U.S. residents 16 and older, but excludes the homeless, those serving in a branch of the nation's armed forces, and those residing in institutions, such as nursing homes, mental hospitals, juvenile homes, jails and prisons.

The civilian labor force measure in the monthly CPS survey represents the sum of the employed and unemployed residents in the working-age (16+) civilian non-institutional

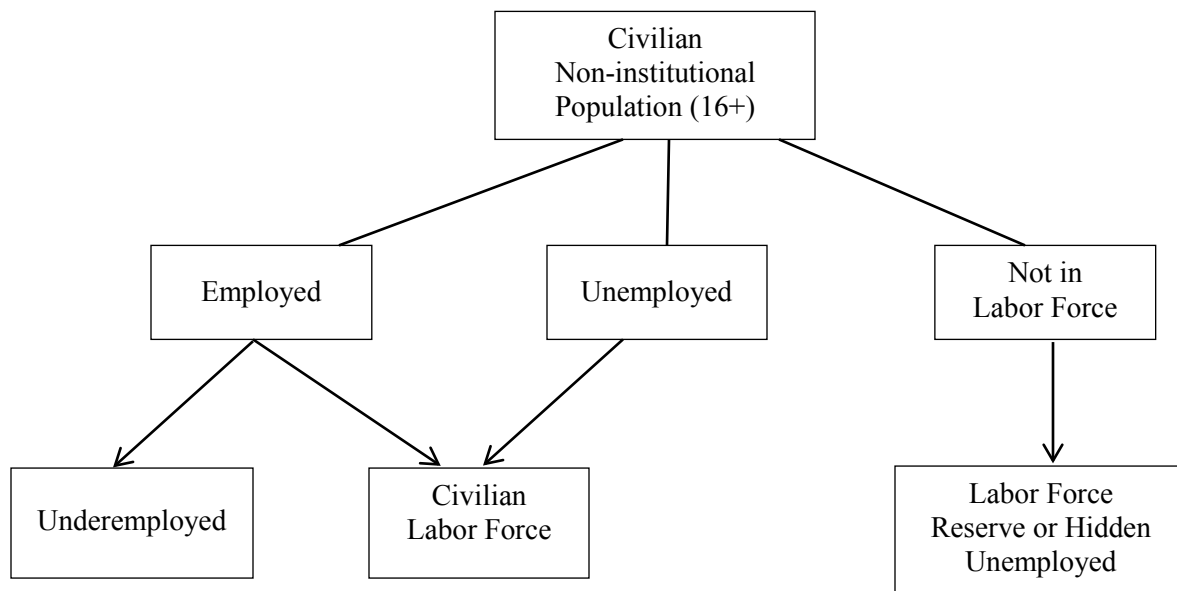
⁹ For a review of the main features of the CPS household survey questionnaire and its uses in producing monthly and national average estimates of the nation's labor force and its employed and unemployed populations, See: U.S. Department of Labor, Bureau of Labor Statistics, website, www.bls.gov.

¹⁰ For a review of the CPS household survey's main design features, See: U.S. Department of Labor, Bureau of Labor Statistics, The Employment Situation: November 2011, Washington, D.C., December 2, 2011.

¹¹ The ACS questionnaires are filled in by the respondent households unlike the CPS survey in which the Census interviewer records the information provided by the respondent either in person or over the telephone.

population. The employed include wage and salary workers, the self-employed, unpaid family workers employed for 15 or more hours per week, and those with a job but not at work due to such reasons as personal vacation, temporary illness, weather related conditions, or an industrial dispute at the work place. The unemployed are those individuals who did no work at all during the reference week of the survey,¹² have actively looked for a job in the past 4 weeks and are available to take a job now.

Chart 1:
Measuring the Nation’s Civilian Labor Force and
the Labor Force Reserve or the Hidden Unemployed in the U.S.



In this research report, the following key measures of labor market outcomes are estimated for working-age adults in each of the four designated educational groups.

- Civilian labor force participation rate: This measure represents the fraction of adults in the civilian non-institutional population who are either employed or unemployed. The civilian labor force excludes members of the so-called labor force reserve or the hidden unemployed defined below.
- Employment to population ratio: This employment rate measure (the employment/population ratio) is frequently referred to by its acronym (E/P ratio) in the labor

¹² Those persons on temporary layoff who have a definite recall date or expect to be recalled within the next six months do not have to meet the active job search test.

economics literature. The E/P ratio simply represents the fraction of persons in a given population group that is employed at a point in time or on average during the year.

- Unemployment rate. The unemployment rate simply measures the ratio of the number of unemployed persons to the civilian labor force.
- The underemployment rate. The underemployed are those employed persons who are working part-time (under 35 hours per week) even though they desire a full-time job and are available for full-time work.¹³ They often work only 21 to 22 hours per week and earn substantially less per week than their full-time employed counterparts. The underemployment rate represents the value of the ratio of the underemployed to the total employed in a given demographic group.
- The hidden unemployed or members of the labor force reserve. The hidden unemployed are those jobless individuals who are not actively looking for work, hence not counted as unemployed, but report to the CPS interviewer that they wish to be working now.
- The hidden unemployment rate represents the ratio of the number of hidden unemployed to the adjusted civilian labor force. The adjusted civilian labor force is the sum of civilian labor force participants and the hidden unemployed. The latter group must be added to the denominator since they are excluded from official labor force estimates.
- The labor underutilization rate is a measure that represents the ratio of the combined pool of underutilized workers to the adjusted civilian labor force. The underutilized represent the sum of the official unemployed, the underemployed, and the hidden unemployed.

¹³ For a review of underemployment problems in the U.S. during the Great Recession, See: Andrew Sum and Ishwar Khatiwada, “The Nation’s Underemployed in the Great Recession of 2007-2009,” Monthly Labor Review, November 2010, pp. 3-14.

Chart 2:
Definitions of Key Labor Force Activities and Labor Underutilization Measures

- Civilian Labor Force = Employed + Unemployed
- Civilian Labor Force Participation Rate = $\frac{\text{Civilian Labor Force}}{\text{Civilian, Non-institutional Working-Age Population}}$
- Employment Rate = $\frac{\text{Employed}}{\text{Civilian Working-Age Population}}$
- Unemployment Rate = $\frac{\text{Unemployed}}{\text{Civilian Labor Force}}$
- Underemployment Rate = $\frac{\text{Underemployed}}{\text{Employed}}$
- Adjusted Civilian Labor Force = Civilian Labor Force + Hidden Unemployed
- Hidden Employment Rate = $\frac{\text{Hidden Unemployed}}{\text{Adjusted civilian labor force}}$
- Underutilization Rate = $\frac{\text{Unemployed} + \text{Underemployed} + \text{Hidden Unemployed}}{\text{Adjusted civilian labor force}}$

Our final three measures of the labor market experiences of adults in the four educational groups will be that of the sectors employing these workers, the major industries of their employers, occupational characteristics of their jobs, and their weekly earnings. Every month, the CPS household survey collects information from each employed respondent on the occupational titles of their jobs and a brief description of their major job duties. This information is then used by Census Bureau staff to assign a Standard Occupational Classification (SOC) code to each job. There are more than 400 individual SOC occupations.

Following the SOC classification system of the U.S. Bureau of Labor Statistics, we have collapsed these 400 plus occupations into 12 major occupational groups listed below. These groups range from those employed in professional/technical occupations to those working in transportation/material moving occupations. We will provide estimates of the occupational distribution of the jobs held by employed adults in each of the four educational groups. These

findings will be generated for all employed 18-74 year olds and for those in gender and age groups.

Chart 3:
Occupational Groups of the Employed

- Professional and technical
- Management, management support, financial operations
- High levels sales (sales representatives, stock/commodity brokers, real estate sales)
- Lower level sales
- Administrative support
- Health service
- Protective service
- Other service
- Construction and extraction occupations
- Installation, maintenance, repair
- Production
- Transportation and material moving

The monthly CPS labor force questionnaire collects hourly and weekly earnings data from employed wage and salary workers.¹⁴ The weekly earnings data represent pre-tax earnings before any payroll deductions. The weekly earnings data are top coded, but only a very small share (1-2%) of the employed wage and salary workers in our four educational subgroups are typically subject to the top code due to their more moderate earnings.

We have generated estimates of the mean weekly earnings for employed wage and salary workers in each of the four educational groups. Findings from all 12 monthly samples were combined to estimate these mean weekly earnings for each year of the analysis: 2000, 2003, 2007, 2010. We also present mean weekly earnings estimates for the employed in key demographic groups (gender, age, race-ethnic group, and nativity status). Our primary focus will be on comparing the mean weekly earnings of employed GED holders with those of high school dropouts with 9-12 years of schooling and those with regular high school diplomas but no completed years of post-secondary schooling. We will conduct a number of tests of the statistical significance of the differences between the mean weekly earnings of GED holders and those of both high school dropouts and high school graduates with regular diplomas. Future research

¹⁴ The CPS survey does not collect weekly earnings data from the self-employed, and we do not include unpaid family employees in the earnings analysis. The survey only collects weekly earnings data from one-fourth of the sample each month; i.e., those in the out-going rotation groups, four and eight

reports will provide findings of multiple regression analyses of the weekly earnings of the employed.

Categorizing the Educational Attainment of the Nation’s Working-Age Population With No Completed Years of Post-Secondary Schooling

The primary objective of this research paper is to estimate and assess differences in key labor force activities, employment and unemployment experiences, other labor market problems, and weekly earnings of U.S. working-age adults who had not yet completed any years of post-secondary schooling. At the request of U.S. Department of Education staff, we have categorized adults into the following four educational groups:

- Those who completed only 1-8 years of formal schooling
- Those who completed 9-12 years of schooling but did not obtain either a high school diploma or a GED certificate. This group will frequently be referred to as “high school dropouts” in this report
- Those who obtained a regular high school diploma but did not complete any years of post-secondary schooling
- Those who obtained a GED certificate or alternative high school diploma but did not complete any years of post-secondary schooling.¹⁵

In comparing the findings of the labor market outcomes for adults in the above four educational groups, we will primarily focus on differences between the outcomes for GED holders and those of high school dropouts; i.e., those completing 1-4 years of high school but not achieving a high school diploma and those between GED holders and those with regular high school diplomas. In a number of cases, we will present the findings of a set of tests of the statistical significance of the differences between the labor market outcomes of high school dropouts and GED holders and those between GED holders and high school graduates. Following reports in this study will present findings of multivariate statistical analyses of the labor market behaviors, earnings, and incomes of these groups.

¹⁵ If a GED holder completes at least one year of post-secondary schooling, he or she will be categorized into one of the post-secondary schooling categories by the CPS survey. For example, if a GED holder completed one year of post-secondary schooling, he would be categorized in the “13-15 years of schooling” category. Only a relatively small fraction of GED holders (under 10%) obtain a post-secondary degree.

The employment behavior of the nation’s foreign born population with no post-secondary schooling in 2010 also differed quite widely from that of their native born counterparts (See Table 1). The employment/population ratio of foreign born high school dropouts was 61.0% statistically identical to that of foreign born workers with a high school diploma. Among the native born, the employment rate of high school dropouts was only 35% in 2010 more than 20 percentage points below that of high school graduates with a regular diploma.

Table 1:
Employment/Population Ratios of 16 and Older High School Dropouts,
Regular High School Graduates, and GED Holders in the U.S., 2010
(Annual Averages in %)

	(A)	(B)	(C)	(D)
Nativity Group	High School Dropouts	Diploma Holder	GED	Diploma Minus High School Dropout
Foreign Born	61.0	61.2	66.8	.2
Native Born	35.0	55.4	49.9	20.4

Source: Monthly CPS surveys, 2010, tabulations by authors.

Many foreign born adults with no high school diploma are undocumented immigrants who frequently have very limited English-speaking skills and literacy/numeracy proficiencies. Yet, the labor market for these undocumented immigrants, especially males, is well organized through informal networks that enable them to obtain jobs at rates well above those of native born dropouts, including Blacks and Hispanics. In 2010, according to the ACS survey, 78% of all foreign born males 16-64 without a high school diploma/GED were employed versus only 36% of native born, Black male high school dropouts and 56% of native born, Hispanic male dropouts.

Research by labor market economists over the past decade has shown that immigrant workers are strong substitutes for native born workers with similar levels of schooling.¹⁶ Higher inflows of less educated immigrants tend to depress the wages and job prospects of the less

¹⁶ See: (i) George Borjas, “The Labor Demand Curve is Downward Sloping: Reexamining the Impact of Immigration on the Labor Market,” *Quarterly Journal of Economics*, 2003, Vol. 118 (4), pp. 1335-74; (ii) Steven A. Camorata, *The Wages of Immigration: The Effects on the Low Skilled Labor Market*, Center for Immigration Studies, Washington, D.C., 1998; (iii) David Jaeger, *Skill Differences and the Effect of Immigration on the Wages of Natives*, U.S. Department of Labor, Bureau of Labor Statistics, Washington, D.C., 1998.

educated native born. Foreign born workers with better English, prose, document, and numeracy proficiencies do perform significantly better on most labor market outcomes, including higher rates of labor force attachment, lower unemployment rates, and higher weekly earnings.¹⁷ They are also more likely to become citizens, to volunteer, and to avoid criminal behavior.

Given the very large differences in the educational distribution of the immigrant and native born population with no post-secondary schooling and the large disparities in their employment behavior across these same educational groups, we have felt it appropriate to conduct the analyses of the links between educational attainment and labor market outcomes separately for the native born and the foreign born. We will rely more heavily on the 2010 ACS survey data for analyzing the labor market findings for the foreign born given its much larger sample sizes of foreign born respondents.

The Nativity Status of the Nation's High School Dropout and GED Population

The monthly CPS questionnaire has been collecting data on the nativity status of respondents for nearly two decades. Findings of the 2010 monthly CPS surveys with respect to the educational attainment/GED status¹⁸ of the nation's working-age population with no completed years of post-secondary schooling are displayed in Table 2. In 2010, there were 98.6 million persons 16 and older who had not completed any years of formal schooling beyond high school.¹⁹ Of this group, 79.2 million or approximately 80% were native born, and 19.4 million or nearly 20% were foreign born.

¹⁷ See: Andrew Sum, Irwin Kirsch, and Kentaro Yamamoto, A Human Capital Concern: The Literacy Proficiency of U.S. Immigrants, Educational Testing Service, Princeton, 2004.

¹⁸ The GED population included in these tables only consists of those persons who did not complete one or more years of post-secondary schooling. The monthly CPS survey does not ask questions about the high school diploma or GED status of those respondents who report to the CPS interviewer that they completed one or more years of post-secondary schooling. Findings from other studies over the years show that only a small fraction of GED holders go on to complete a post-secondary degree.

¹⁹ High school students are excluded from the analysis.

Table 2:
The Distribution of the Adult Population (16 and Older) with No Completed Years of
Post-Secondary Schooling by Educational Attainment and Nativity Status, U.S. 2010
(in Millions)

Nativity Group	(A) 1 – 8 Years	(B) 9 – 12 Years no diploma or GED	(C) High School Diploma	(D) GED	(E) Total
Foreign born	6.333 (32.6)	4.063 (20.9)	8.610 (44.3)	.398 (2.1)	19.404 (100.0)
Native born	4.693 (5.9)	14.40 (18.2)	55.300 (69.8)	4.851 (6.1)	79.248 (100.0)
All	11.026 (11.2)	18.467 (18.7)	63.910 (64.8)	5.249 (5.3)	98.652

Source: 2010 monthly CPS surveys, public use files, tabulations by authors.

The distribution of the native born and foreign born population with no post-secondary schooling by educational attainment are quite different in several respects. The native born are far more likely than the foreign born to have either obtained a high school diploma or a GED certificate (76% vs. 46%), and the native born were nearly three times as likely as the foreign born to have earned a GED certificate (6.1% vs. 2.1%). Slightly under 8% of the GED population were foreign born even though they accounted for 20% of the designated population. The foreign born were far more likely than the native born to have failed to obtain a high school diploma or a GED certificate (54% vs. 24%), and they were disproportionately represented among those with no formal schooling beyond the eighth grade. The CPS data also provide no information as to the country in which the schooling of the foreign born was obtained.

Data from the 2010 ACS survey also can be used to identify the nativity status of the nation's population with no completed years of post-secondary schooling. In Table 3 below, we present estimates of the educational attainment of the foreign born and native born population between 16 and 64 years of age with no completed years of post-secondary schooling. Here again, we find that a much higher fraction of the native born had either obtained a regular high school diploma or a GED certificate (76% vs. 44%). While slightly more than 11% of the native born population held a GED certificate, only 4% of the foreign born had done so. The foreign

born were disproportionately represented among those without a high school diploma or GED (56% vs. 24%), especially among those with no schooling beyond the eighth grade (33% of the foreign born versus only 5% of the native born).

Table 3:
The Per Cent Distribution of the Adult Population (16-64) with No Completed Years of Post-Secondary Schooling by Educational Attainment and Nativity Status, U.S. 2010
(in Millions) (ACS Surveys)

	(A)	(B)	(C)	(D)	(E)
Nativity Group	1 – 8 Years	9 – 12 Years no diploma or GED	High School Diploma	GED	Total
Foreign born	33.1	23.1	39.7	4.1	100.0
Native born	5.0	18.9	64.7	11.4	100.0

The Demographic and Geographic Subgroups Included in the Labor Market Analysis

The findings of the analysis of the labor force activities, employment rates, labor market problems, occupational attachments, and weekly earnings of U.S. adults in each of our four educational subgroups will be presented for an array of demographic and geographic subgroups. The demographic groups will include gender, age, and race-ethnic groups (See Table 4). The sample of adults was divided into six age groups, ranging from those 16-24 years of age to those 65-74 years old.²⁰ The sample was divided into the following four race-ethnic groups: Black not Hispanic, Hispanic, Other, and White not Hispanic. The “other” race-ethnic group includes American Indians/Alaskan Native, Asians, and those of mixed race. For a number of the labor market outcomes from the 2010 American Community Surveys, we will present findings for combinations of gender/race-ethnic groups. As noted above, separate estimates for all variables will be provided for the native born and the foreign born. The two nativity groups are not merged for any of the analyses.

²⁰ Due to typically small sample sizes, we have not produced separate estimates of labor market outcomes for those 75 and older. Very few older adults with no post-secondary schooling (under 10%) are attached to the labor force.

Table 4:
Demographic Subgroups of Adults for Whom Labor Market Outcomes Will Be Provided

- Gender (men, women)
- Age groups (16-24, 25-34, 35-44, 45-54, 55-64, 65-74)
- Race-ethnic groups (Black, not Hispanic; Hispanic; Other, not Hispanic;²¹ White, not Hispanic)
- Nativity status (native born, foreign born)

The sample was also divided into a number of different geographic subgroups based on the locations of the residences of respondents at the time of the CPS or ACS survey. Three sets of geographic breakouts were used (See Table 5). They included the region in which they lived based on the regional definitions of the U.S. Census Bureau, the population level of their state, and their geographic location within the state. States were divided into three groups: the 10 most populous states, the 30 states in the middle of the population distribution, and the 10 least populous states. Within each state, sample members were assigned to one of three geographic locations: central city, other portion of a metropolitan area, and a non-metropolitan area. One of the objectives of the analysis is to determine whether the differences in labor market outcomes between high school dropouts and GED holders and between high school graduates with regular diplomas and GED holders vary across these different geographic areas. Some workforce development analysts have argued that the GED is more widely accepted by employers in smaller states and towns while others have claimed that the GED in some large cities is being used by employers as a signal of potential prior criminal justice involvement given recent policies that encourage high school dropouts in jail or prison to work on obtaining their GED certificates.

²¹ The other, non-Hispanic group includes Asians, American Indians/Alaskan natives, and members of mixed race.

Table 5:
Geographic Subgroups of Adults for Whom Labor Market Outcomes will Be Provided

Regions

- New England
- Mid-Atlantic
- East North Central
- West North Central
- South Atlantic
- East South Central
- West South Central
- Mountain
- Pacific

Population Size of State of Residence

- Ten most populous
- 30 mid-level states
- Ten least populous

Area of residence within the state²²

- Central city
- In metropolitan area but outside of central city
- Non-metropolitan area

The Civilian Labor Force Participation Behavior of U.S. Native Born Adults in 2010

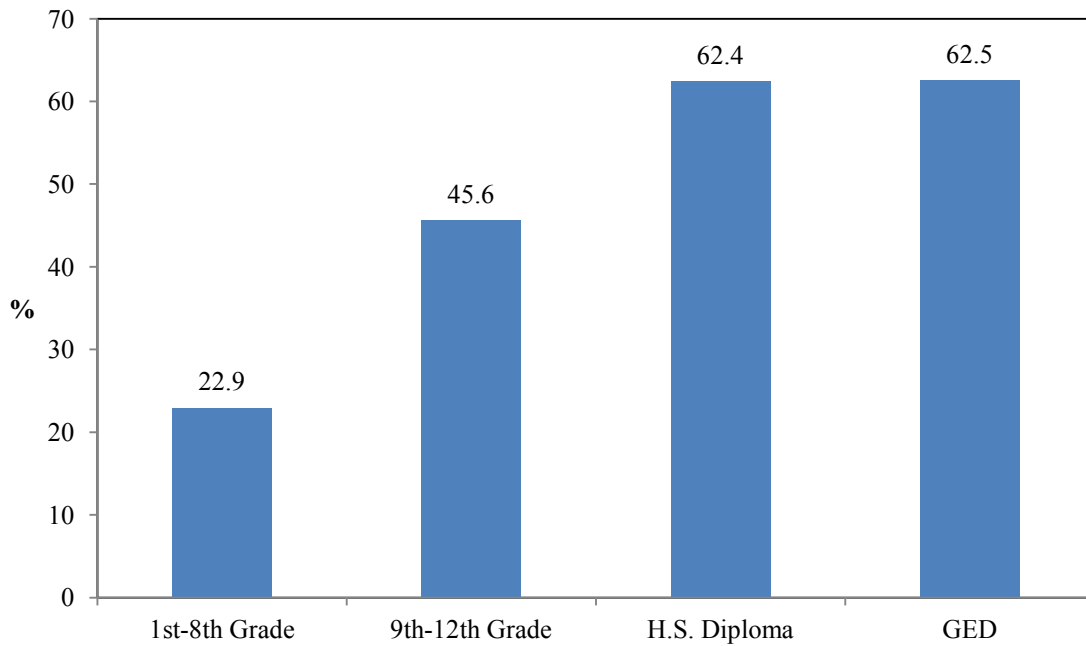
Our first set of labor force measures is focused on the civilian labor force participation rates of each of the four educational groups in 2010 (See Table 6 and Chart 4). During that year, labor force attachment rose very strongly with increasing educational attainment, rising from 23% among those adults who completed no years of schooling beyond 8th grade, to 45% for high school dropouts, and to highs of 62-63% for both GED holders and high school graduates.

²² There is a subset of respondents for whom geographic area of residence is not identified by the U.S. Census Bureau to preserve confidentiality of the data. About 17% of the weighted sample in 2010 was classified as “not identified”.

Table 6:
Civilian Labor Force Participation Rates of Native Born Persons 16 and Older in Selected
Educational Attainment Groups, All and by Gender, Age Group, and Race-Ethnic Group, 2010
(in %)

Demographic Group	(A) 1 st – 8 th grade	(B) 9 th – 12 th grade, no diploma or GED	(C) High School Diploma	(D) GED	(E) GED Minus 9 th – 12 th grade	(F) GED minus High school diploma
All	22.9	45.6	62.4	62.5	+16.9	+1.1
Gender						
Men	29.8	54.7	71.4	67.9	+13.2	-3.5
Women	16.1	36.6	53.8	55.8	+19.2	+2.0
Age Group						
16 – 24	51.9	55.5	77.7	74.6	+19.1	-3.1
25 – 34	58.7	67.8	80.4	76.6	+8.8	-3.8
35 – 44	53.4	64.1	81.9	76.6	+12.5	-5.3
45 – 54	42.2	58.1	79.2	68.6	+10.5	-10.6
55 – 64	30.1	42.1	60.3	51.2	+9.1	-9.1
65 – 74	11.6	15.7	22.1	23.4	+7.7	+1.3
Race-Ethnic Group						
Black, not Hispanic	14.0	42.7	63.9	62.6	+19.9	-1.3
Hispanic	28.7	56.1	72.8	71.6	+15.5	-.8
Other Races	25.8	45.5	63.8	61.2	+15.7	-2.6
White, not Hispanic	23.0	44.2	61.1	61.2	+17.0	+1.1

Chart 4:
Civilian Labor Force Participation Rates of Native Born Persons 16 and
Older by Selected Educational Attainment Group, 2010 (in %)



The 17 percentage point participation rate advantage of GED holders over high school dropouts was quite substantial (Chart 5).²³ Large differences prevailed across each gender, age, and race-ethnic group (Table 6 and Chart 5). The largest advantages in participation rates prevailed among women, younger adults (16-24 years old) and Black, non-Hispanics (20 percentage points) GED holders were substantially more likely to be active participants in the civilian labor force than high school dropouts in each of the three categories of states (classified by population size) and in central cities, suburban metro areas, and non-metropolitan areas of the country (Chart 6).

²³ The tests of statistical significance for these differences will be presented in a later section of the paper. For all GED holders combined, all of the differences in labor market outcomes except underemployment rates were significant at the .01 level.

Chart 5:
Differences in the Civilian Labor Force Participation Rates of
Native Born Persons 16 and Older, GED Holders Minus 9th - 12th Graders,
All and by Gender, Age Group and Race Ethnic Group, 2010 (in Percentage Points)

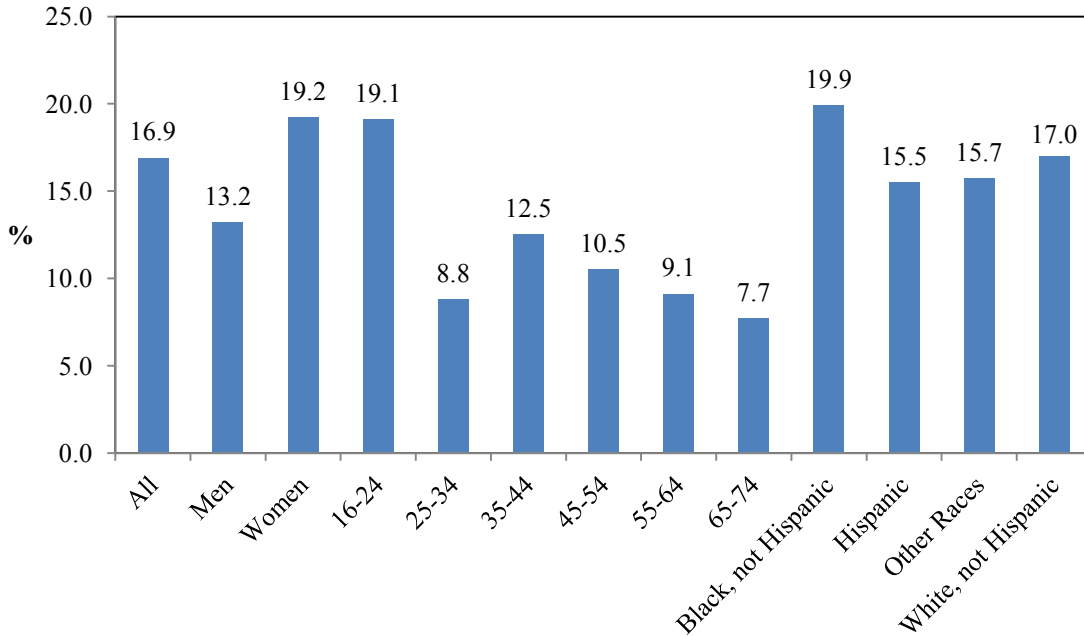
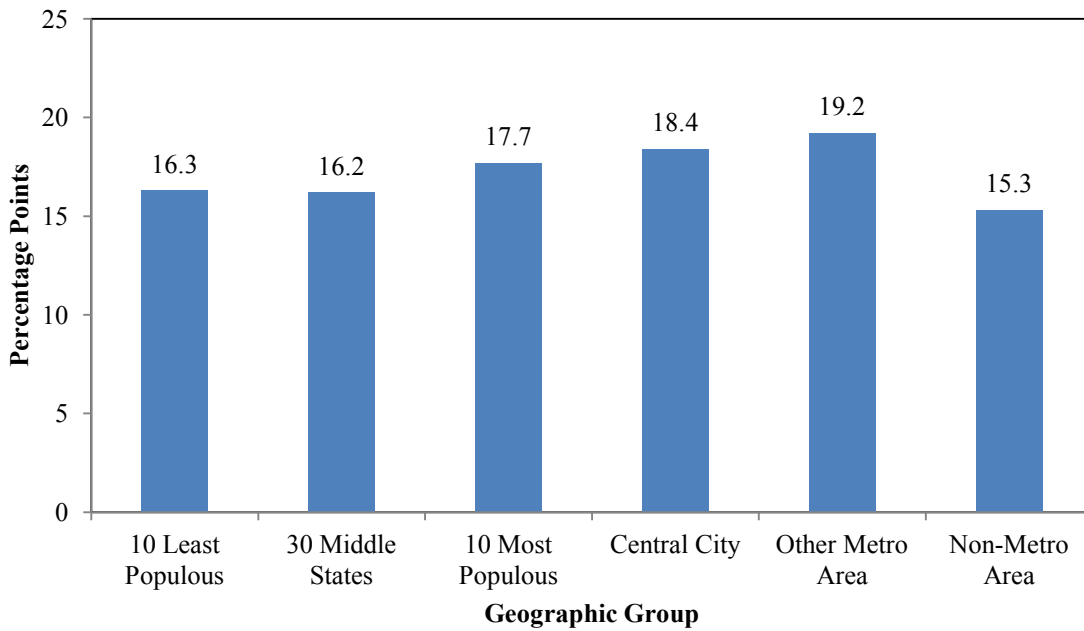


Chart 6:
Differences in Civilian Labor Force Participation Rates of Native Born Persons 16 and Older,
GED Holders Minus 9th-12th Graders, by Population Level of State and Area of Residence
(in Percentage Points)



In the aggregate, the civilian labor force participation rate of GED holders was statistically identical to that of high school graduates (62.5% vs. 62.4%). Female GED holders were modestly more likely (+2 percentage points) to be in the labor force than their peers with regular high school diplomas while male GED holders were somewhat less likely (-3 percentage points) to be active in the labor force than their male counterparts with regular high school diplomas. The differences in civilian labor force participation rates between GED holders and high school graduates among Blacks, Hispanics, and White, non-Hispanics were quite small and were never found to be statistically significant.²⁴

The nation's adults lacking regular high school diplomas experienced very high rates of open unemployment in 2010 (Table 7 and Chart 7). High school dropouts fared the worst with an unemployment rate of 23% that came close to matching the 25% rate of unemployment that prevailed in 1933 at the depth of the Great Depression. GED holders also experienced a high rate of unemployment (20%) while high school graduates faced an unemployment rate of only 11.3%. The unemployment rate of GED holders was nearly three percentage points below that of high school dropouts, a gap which was shown to have been statistically significant at the .01 level.²⁵ Both male and female GED holders encountered unemployment rates that were below those of their high school dropout peers. The percentage point sizes of these differences in unemployment rates were 2.2 percentage points for men and 4.1 for women, both of which were statistically significant.²⁶

²⁴ In a separate analysis of the statistical significance of these race-ethnic differences in civilian labor force participation rates, none of the estimated t-statistics exceeded a value of 1.0.

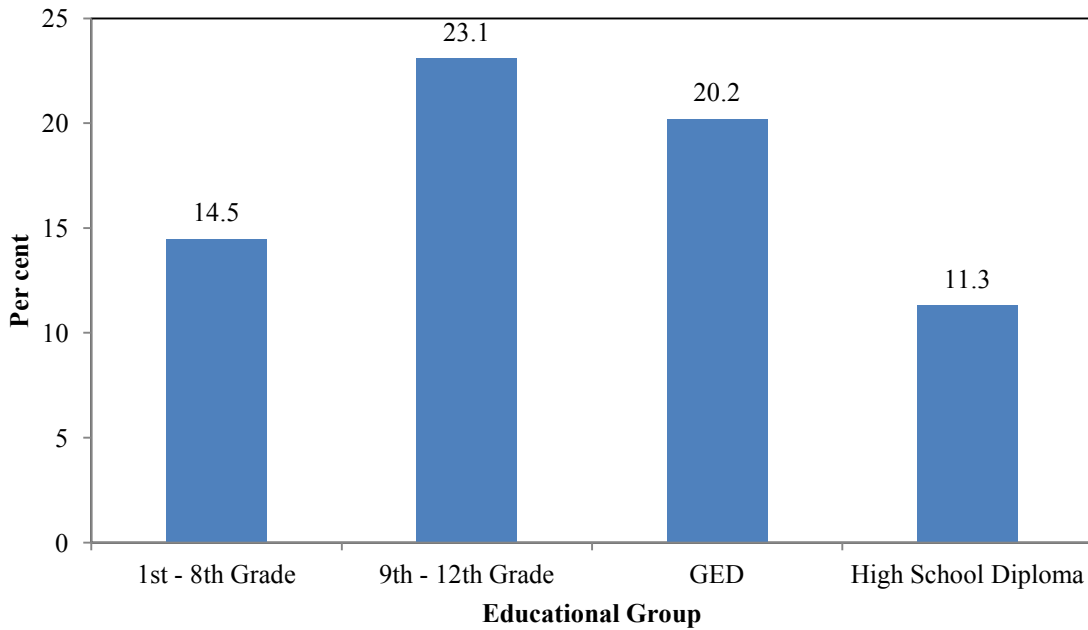
²⁵ See: U.S. Council of Economic Advisers, Economic Report of the President: 1964, "Table C-18", pp. 230-231, U.S. Government Printing Office, Washington, D.C., 1964.

²⁶ In a separate t-test for these two groups, the differences in unemployment rates were found to be significant at the .02 level for men and at the .01 level for women.

Table 7:
Unemployment Rates of Native Born Persons 16 and Older in
Selected Educational Attainment Groups, All and by Gender, 2010 (in %)

	(A)	(B)	(C)	(D)	(E)	(F)
Demographic Group	1 st – 8 th grade	9 th – 12 th grade, no diploma or GED	High School Diploma	GED	GED Minus 9 th – 12 th grade	GED minus High school diploma
All	14.5	23.1	11.3	20.2*	-2.9	+8.9
Gender						
Men	14.5	24.5	12.5	22.3	-2.2	+9.8
Women	14.4	21.1	9.8	17.0	-4.1	+7.2

Chart 7:
Unemployment Rates of Native Born Persons 16 and Older in
Selected Educational Attainment Groups in the U.S., 2010 (in %)



While GED holders were modestly more successful than their dropout peers in avoiding unemployment problems in 2010, they were far more likely to be unemployed than their peers with regular high school diplomas. The 20% unemployment rate for all GED holders combined was nearly nine full percentage points above that of high school graduates, a difference that was statistically significant at the .01 level. There were large gaps in unemployment rates between

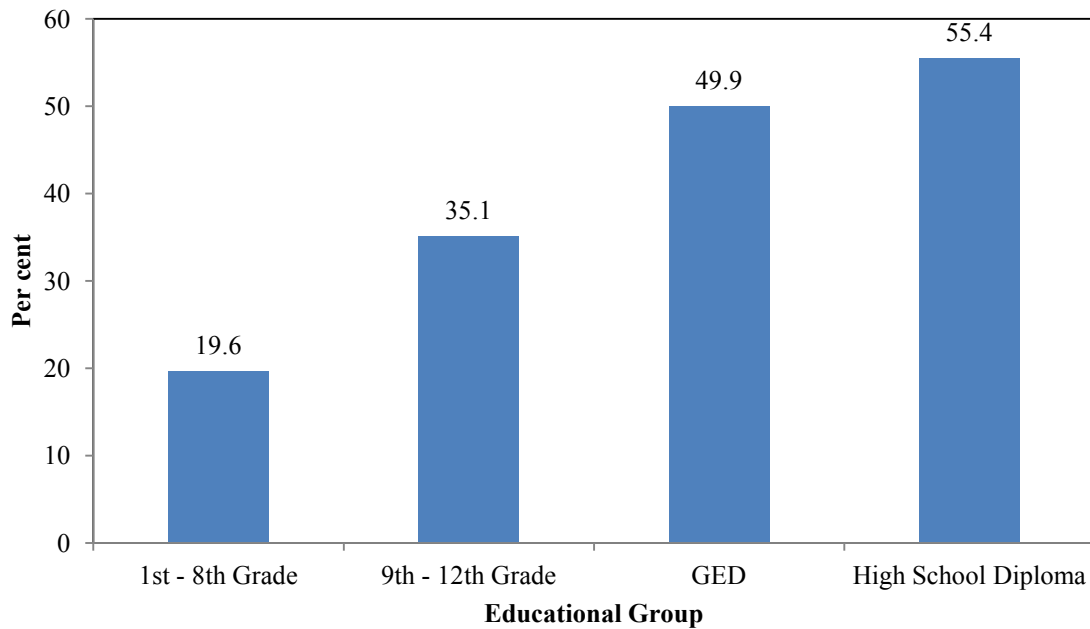
GED holders and high school graduates in both gender groups, nearly all age groups (except the oldest group), and each of the four race-ethnic groups, especially among Black, non-Hispanics where the unemployment rate among GED holders was close to 33%, or nearly twice as high as among high school graduates (18%). The extremely high unemployment rates faced by male, younger (16-24), and Black GED holders, and dropouts in 2010 should be viewed as very troublesome by the nation's educational and workforce development policymakers and program administrators.

Our third measure of labor market performance is the employment/population or E/P ratio. The value of the E/P measure for any group is influenced by its labor force participation rate and its unemployment rate. The higher the participation rate and the lower the unemployment rate, the higher will be the employment/population ratio. Since labor force participation rates of adults increased steadily with their educational attainment and tended to decline with schooling beyond the eighth grade, the E/P ratios of adults can be expected to be positively associated with their years of schooling. This clearly was the case for U.S. adults in 2010.

Table 8:
Employment/Population Ratios of Native Born Persons 16 and Older in Selected Educational Attainment Groups, All and by Gender, Age Group, and Race-Ethnic Group, 2010 (in %)

Demographic Group	(A) 1 st – 8 th grade	(B) 9 th – 12 th grade, no diploma or GED	(C) High School Diploma	(D) GED	(E) GED Minus 9 th – 12 th grade	(F) GED minus High school diploma
All	19.6	35.1	55.4	49.9	14.8	-5.5
Gender						
Men	25.5	41.3	62.5	52.8	11.5	-9.7
Women	13.8	28.9	48.5	46.3	17.4	-2.2
Age Group						
16 – 24	40.4	34.5	60.6	49.4	14.9	-11.2
25 – 34	46.5	50.3	69.6	58.9	8.6	-10.7
35 – 44	46.0	51.5	73.6	62.1	10.6	-11.5
45 – 54	36.6	47.9	72.5	57.9	10.0	-14.6
55 – 64	26.7	37.5	55.4	44.8	7.3	-10.6
65 – 74	10.7	14.5	20.7	21.4	6.9	+.7
Race-Ethnic Group						
Black, not Hispanic	11.0	29.3	52.6	42.3	13.0	-10.3
Hispanic	23.8	42.3	62.1	56.4	14.1	-5.7
Other Races	22.4	34.3	55.2	43.8	9.5	-11.4
White, not Hispanic	20.1	35.4	55.2	50.5	15.1	-4.7

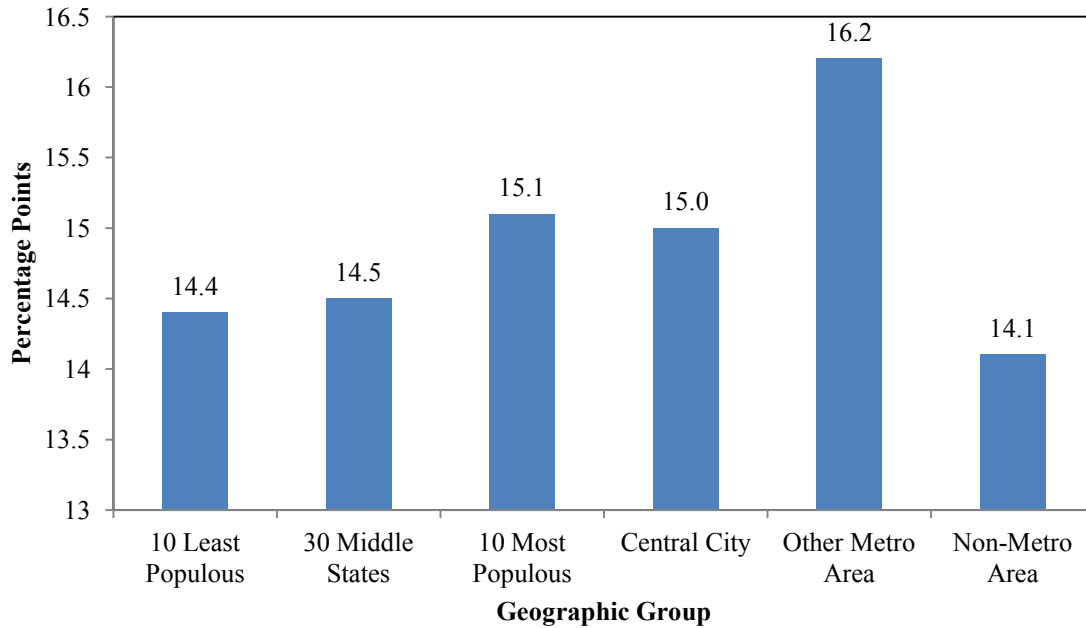
Chart 8:
Employment/Population Ratios of Native Born Persons 16 and Older in
Selected Educational Attainment Groups, U.S, 2010 (in %)



The E/P ratios of native born U.S. adults in 2010 ranged from a low of slightly under 20 per cent for those with only a primary school education to 35% for high school dropouts to 50% for GED holders and to a high of 55% for those with a regular high school diploma. GED holders enjoyed a near 15 percentage point employment rate advantage over high school dropouts in 2010, a difference that was highly statistically significant (.001 level). In each gender, age, and race-ethnic group, GED holders were substantially more likely to be employed than their peers who were high school dropouts. The advantages tended to be bigger for women than for men (17 vs. 11 percentage points) and for the youngest workers (those 16-24). The gains in E/P ratios were quite high for GED holders that were Black, Hispanic, and White, non-Hispanic.

The employment rate differences in favor of GED holders over high school dropouts were both quite high and uniform across all categories of states and in central cities, suburban portions of metropolitan areas, and in non-metro areas. The percentage point size of the E/P advantages of GED holders over high school dropouts were in the 14 to 15 percentage point range for all three groups of states and in the 14 to 16 percentage point range for the three categories of communities.

Chart 9:
Differences in Employment/Population Ratios of Native Born Persons 16 and Older, GED
 Holders Minus 9th – 12th Graders by Population Level of State and Area of Residence
 (in Percentage Points)



While GED holders clearly outperformed their high school dropout counterparts in obtaining employment, they did not match the employment rates of regular high school graduates. Those graduates with regular diplomas had a 5.5 percentage point higher E/P ratio than GED holders. The gap was considerably higher among men than women (10 vs. 2 percentage points) and was in the double digit range for all age groups except for the oldest (those 65-74 years old) and for Blacks (10 percentage points). The GED was clearly not the equivalent of a regular high school diploma in generating opportunities for employment for adults in 2010.

Full-Time Employment Shares and Full-Time Employment Population Ratios of U.S. Adults in 2010

Our next two employment outcomes focus on the weekly hours of work of the jobs obtained by employed U.S. adults in each of our four educational groups in 2010 and on the share of adults who were employed full-time during that year. The first outcome measure classifies the employed into two hours of work categories: those working full-time and those employed part-time. Our definition of a full-time worker is that used by the U.S. Bureau of Labor Statistics in analyzing the findings of the Current Population Survey. A full-time

employee is one who works 35 or more hours in the reference week of the survey. Full-time jobs have a number of important economic advantages for those that hold them. Besides providing many more hours of work per week (21 to 22 more hours on average), full-time jobs also provide higher hourly earnings, offer more employee benefits, including health care insurance and pension coverage and tuition reimbursement, provide more training opportunities, including both formal training and apprenticeship training, and yield higher future wage impacts.²⁷ Recent, national longitudinal research evidence for young adult women has shown that part-time work has no significant effect on future hourly wages while full-time work has significant long-term payoffs on future wages.

Findings from the 2010 CPS surveys on the share of the employed holding full-time jobs reveal that the fraction of the employed holding such full-time positions does rise at least modestly with the number of years of schooling (Table 9). Only 71 to 72 per cent of the employed lacking both a GED certificate and a high school diploma were working full-time in 2010 versus 77% of GED holders and 81% of those with a regular high school diploma . GED holders held a 5 percentage point full-time advantage over their high school dropout counterparts, a difference that was shown to be statistically significant at the .01 level. Both male and female workers with a GED credential were more likely to be working full-time than each of their dropout peers (4.6 and 5.6 percentage points, respectively). Employed Black, Hispanic, and White GED holders also were more likely to be working full-time than each of their dropout peers by anywhere from 5 to 6 percentage points.

²⁷ See: (i) Andrew Sum, Garth Mangum, and Neeta Fogg, Confronting the Youth Demographic Challenge: The Labor Market Prospects of Out-of-School Young Adults, Sar Levitan Center for Social Policy Studies, Johns Hopkins University, Baltimore, October 2000; (ii) Marta Tienda, V. Joseph Hotz, Avner Ahituv, and Michelle Frost, “Employment and Wage Prospects of Black, White, and Hispanic Women”, in Human Resource Economics and Public Policy, W.E. Upjohn Institute for Employment Research, Kalamazoo, 2000.

Table 9:
Per Cent of the Employed Working Full-Time Among Native Born Persons 16 and
Older in Selected Educational Attainment Groups, All and by Gender, 2010 (in %)

	(A)	(B)	(C)	(D)	(E)	(F)
Demographic Group	1 st – 8 th grade	9 th – 12 th grade, no diploma or GED	High School Diploma	GED	GED Minus 9 th – 12 th grade	GED minus High school diploma
All	71.3	71.9	81.3	76.8	+4.9	-4.5
Gender						
Men	77.4	79.3	87.9	83.9	+4.6	-4.0
Women	60.2	61.2	73.1	66.8	+5.6	-6.3

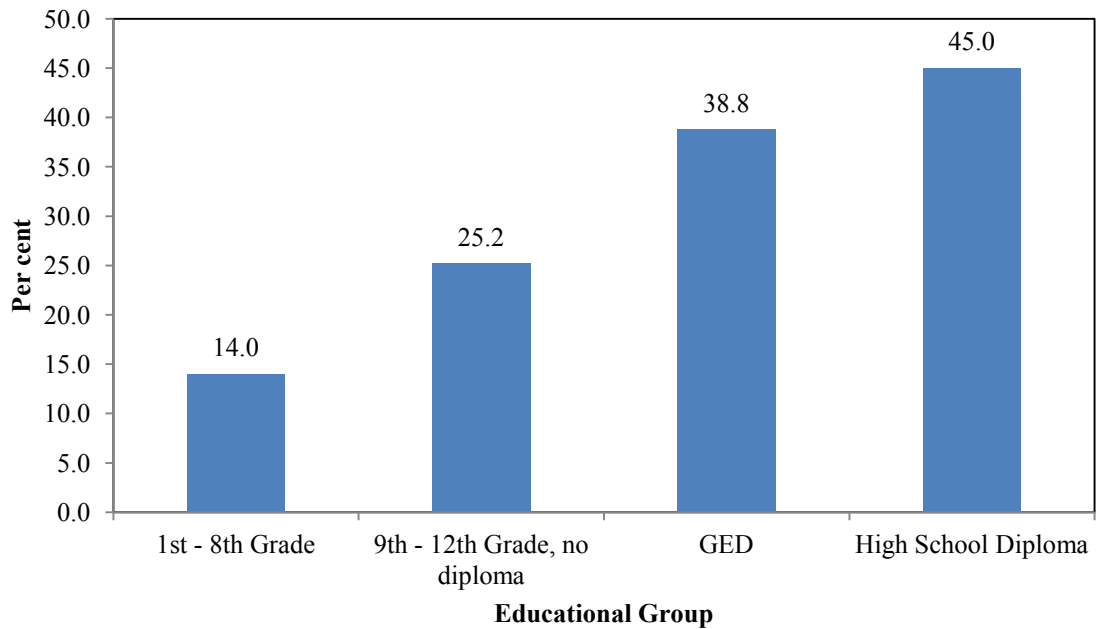
Employed GED holders, however, did not match the full-time employment shares of their counterparts with a regular high school diploma. Overall, 81% of employed high school graduates held a full-time job in 2010 versus slightly under 77% of GED holders, a 4.5 percentage point gap that was statistically significant at the .01 level. Both male and female high school graduates, those in each age group, and both Blacks and Whites were somewhat more likely to work full-time than each of their respective GED peers.

Since both the employment rates of adults and the share of their jobs that were full-time rose with their years of schooling completed, the full-time employment population ratios of adults also rose consistently and strongly with their years of schooling (See Table 10). In 2010, these full-time employment/population ratios increased from a low of only 14% for those adults with only a primary school education to 25% for high school dropouts to close to 39% for GED holders and to a high of 45% for adults with a regular high school diploma.

Table 10:
Full-Time Employment/Population Ratios of Native Born Persons 16 and Older in Selected
Educational Attainment Groups, All and by Gender, Age Group, and Race-Ethnic Group, 2010
(in %)

Demographic Group	(A) 1 st – 8 th grade	(B) 9 th – 12 th grade, no diploma or GED	(C) High School Diploma	(D) GED	(E) GED Minus 9 th – 12 th grade	(F) GED minus High school diploma
All	14.0	25.2	45.0	38.8	13.6	-6.2
Gender						
Men	19.7	32.8	54.9	44.3	11.5	-10.6
Women	8.3	17.7	35.5	30.9	13.2	-4.6
Age Group						
16 – 24	25.4	17.5	40.4	31.6	14.1	-8.8
25 – 34	36.7	39.0	58.3	45.3	6.3	-13.0
35 – 44	36.0	41.4	63.8	51.8	10.4	-8.0
45 – 54	29.4	38.6	63.0	47.4	8.8	-15.6
55 – 64	18.8	29.4	45.0	34.6	5.2	-10.4
65 – 74	6.3	7.4	11.4	11.1	3.7	-.3
Race-Ethnic Group						
Black, not Hispanic	7.3	20.4	43.6	31.8	11.4	-11.8
Hispanic	18.1	32.0	51.0	46.2	14.2	-4.8
Other Races	17.6	24.0	44.0	32.2	8.2	-11.8
White, not Hispanic	14.0	25.3	44.6	38.6	13.3	-6.0

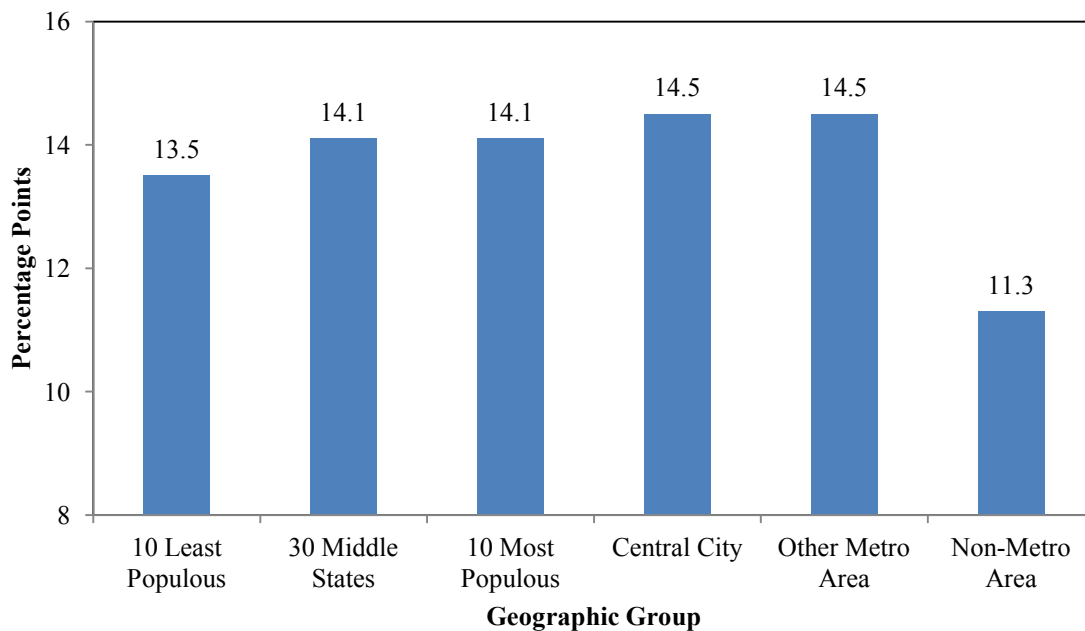
Chart 10:
Full-Time Employment/Population Ratios of Native Born Persons
16 and Older in Selected Educational Attainment Groups, U.S.: 2010 (in %)



The full-time E/P advantage for GED holders over high school dropouts was a fairly substantial 14 percentage points that was found to be statistically significant at the .01 level. GED holders held substantive full-time E/P ratio advantages over high school dropouts in each gender, age, and race-ethnic group. The differences were in the double digits for men and women, among the youngest workers (16-24) and those 35-44, and for Blacks, Hispanics, and Whites.

GED holders in each of the three state population groups held nearly identical double digit gains over their high school dropout peers, with the size of these differences in full-time E/P ratios ranging from 13.5 to 14 percentage points. Similar sized employment gains for GED holders also held in the nation’s central cities, its suburban communities, and in non-metropolitan areas (Chart 11).

Chart 11:
Differences in Full-Time Employment/Population Ratios of Native Born Persons 16 and Older,
GED Holders Minus High School Dropouts, by Population Level of State and Area of Residence
 (in Percentage Points)



The full-time E/P ratios of GED holders did not, however, match those of regular high school graduates in 2010. The gap between these two groups was slightly more than 6 percentage points which was significant at the .01 level. In both gender groups, most age groups except those 65-74, and among each race-ethnic group, the differences in full-time E/P ratios were in favor of high school graduates.

The Underemployment, Hidden Unemployment, and Labor Underutilization Problems of the Nation’s Adults with No Post-Secondary Schooling

The labor market problems of the nation’s workers frequently go well beyond those of open unemployment. They include the problems of underemployment (working part-time but desiring full-time jobs), hidden unemployment (wanting a job but not actively looking for one), and low weekly wages while employed. Over the 2007-2010 period, both underemployment and hidden unemployment problems increased markedly in the U.S.

The incidence of underemployment problems in 2010 varied from a low of 7.3% among high school graduates to 11.8% among GED holders and to a high of 12.8% among high school dropouts (Table 11). In the aggregate, GED holders were only modestly less likely to be

underemployed than high school dropouts. This one percentage point difference was not quite large enough to be classified as statistically significant at the .10 level. Very similar results applied across gender and age groups of the employed. None of these differences in underemployment rates between GED holders and dropouts would have met the test of statistical significance.

Table 11:
Underemployment Rates of Native Born Persons 16 and Older in Selected Educational Attainment Groups, All and by Gender, and Age Group, , 2010 (in %)

Demographic Group	(A) 1 st – 8 th grade	(B) 9 th – 12 th grade, no diploma or GED	(C) High School Diploma	(D) GED	(E) GED Minus 9 th – 12 th grade	(F) GED minus High school diploma
All	10.5	12.8	7.3	11.8	-1.0	+4.5
Gender						
Men	10.6	12.4	7.1	11.0	-1.4	+3.9
Women	10.3	13.3	7.6	12.8	-.5	+5.2
Age Group						
16 – 24	16.8	21.4	17.6	23.1	+1.7	+5.5
25 – 34	14.3	14.1	8.0	13.6	-.5	+5.6
35 – 44	9.7	11.6	6.1	10.2	-1.4	+4.1
45 – 54	10.5	10.6	5.5	9.2	-1.4	+3.7
55 – 64	9.8	7.9	5.0	8.0	+1	+3.0
65 – 74	4.1	4.9	4.0	5.8	+9	+1.8

Problems of hidden unemployment in the U.S. also rose sharply over the 2007-2010 period with younger, less educated and low income adults bearing most of the burden. This group of hidden unemployed workers reduced the size of the official civilian labor force, thereby hiding their joblessness state from the official ranks of the unemployed. A high fraction of them, however, did end up on the public assistance caseloads, food stamp recipients, and Medicaid rolls.

Hidden unemployment rates in 2010 fell fairly steadily with the educational attainment of adults (Table 12 and Chart 12). They ranged from 7.9 to 8.2 per cent among native born adults lacking a GED and a high school diploma to 5.7% among GED holders and to a low of 3.4% among those with a regular high school diploma. The gap between the hidden unemployment

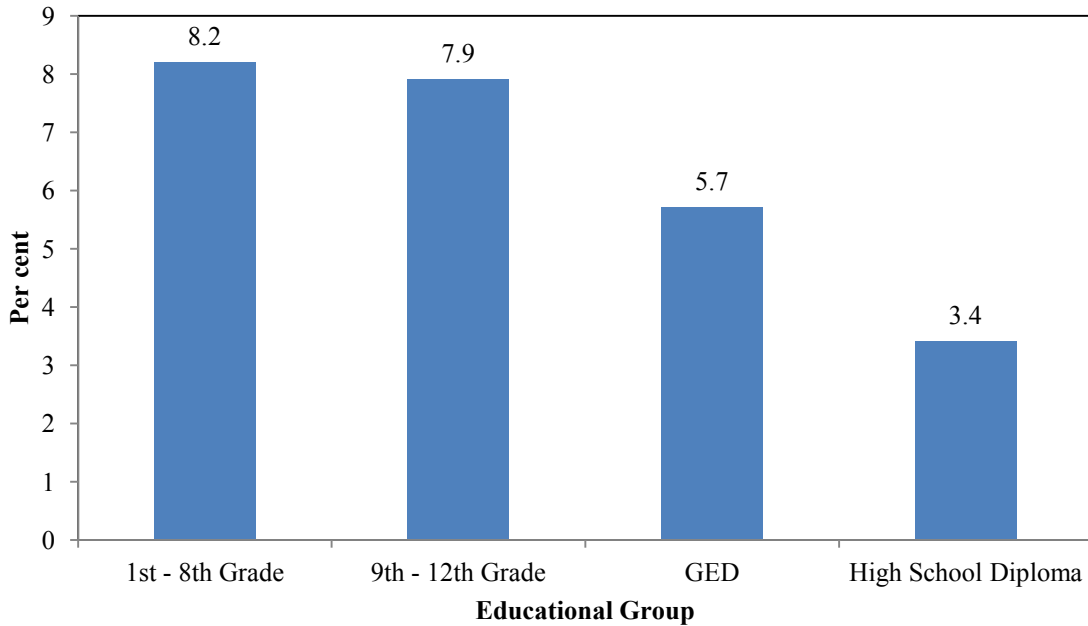
rate of GED holders and that of high school dropouts was 2.2 percentage points, which was statistically significant at the .01 level. Both male and female GED holders experienced lower hidden unemployment rates than their dropout peers²⁸ as did those in most age groups except 55-64 year olds.

Table 12:
Hidden Unemployment Rates of Native Born Persons 16 and Older in Selected Educational Attainment Groups, All and by Gender, and Age Group, 2010 (in %)

	(A)	(B)	(C)	(D)	(E)	(F)
Demographic Group	1 st – 8 th grade	9 th – 12 th grade, no diploma or GED	High School Diploma	GED	GED Minus 9 th – 12 th grade	GED minus High school diploma
All	8.2	7.9	3.4	5.7	-2.2	+2.3
Gender						
Men	6.6	6.7	3.2	5.3	-1.4	+2.1
Women	10.8	9.6	3.8	6.3	-3.3	+2.5
Age Group						
16 – 24	11.0	12.3	5.8	8.1	-4.2	+2.3
25 – 34	7.6	7.3	3.5	5.7	-1.6	+2.2
35 – 44	4.6	6.0	2.5	4.7	-1.3	+2.2
45 – 54	5.7	5.3	2.3	4.4	-.9	-2.1
55 – 64	6.3	4.9	2.8	5.8	+.9	+3.0
65 – 74	13.5	10.4	6.6	8.8	-1.6	+2.2

²⁸ Both of the differences in hidden unemployment rates for men and women were large enough to be statistically significant.

Chart 12:
Hidden Unemployment Rates of Native Born Persons 16 and Older by
Educational Attainment, 2010 (in %)



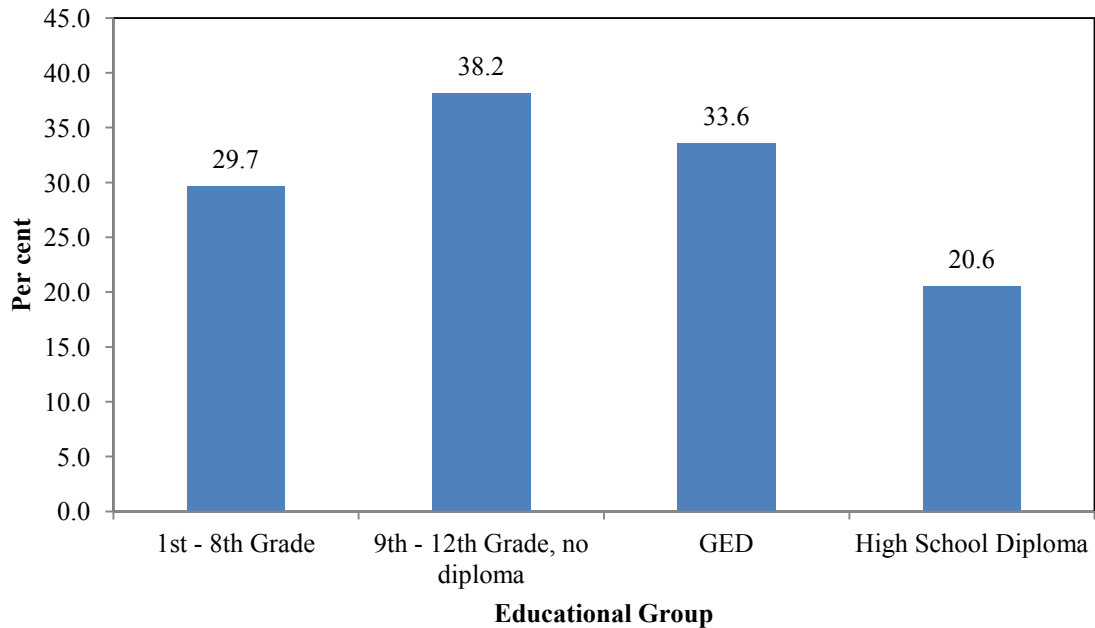
GED holders, however, were not as successful in avoiding hidden unemployment problems as high school graduates. Only 3.4 per cent of high school graduates in the adjusted civilian labor force experienced a hidden unemployment problem versus 5.7% of GED holders, a difference of 2.3 percentage points that was statistically significant at the .01 level. Similar differences in hidden unemployment rates between GED recipients and high school graduates prevailed for both gender groups and for most age groups. Again, we find that GED holders achieve better outcomes than high school dropouts, but they do not match the labor market outcomes of regular high school graduates.

Our next measure of labor market outcomes is the labor underutilization rate. The pool of individuals classified as underutilized include the unemployed, the underemployed, and the hidden unemployed, three mutually exclusive groups. The combined pool of these underutilized workers is divided by the adjusted civilian labor force (which includes the hidden unemployed) to estimate the labor underutilization rate. Estimates of the 2010 labor underutilization rates of the members of the four educational groups are displayed in Table 13 and Chart 13.

Table 13:
Labor Underutilization Rates of Native Born Persons 16 and Older in Selected Educational Attainment Groups, All and by Gender, and Age Group, 2010 (in %)

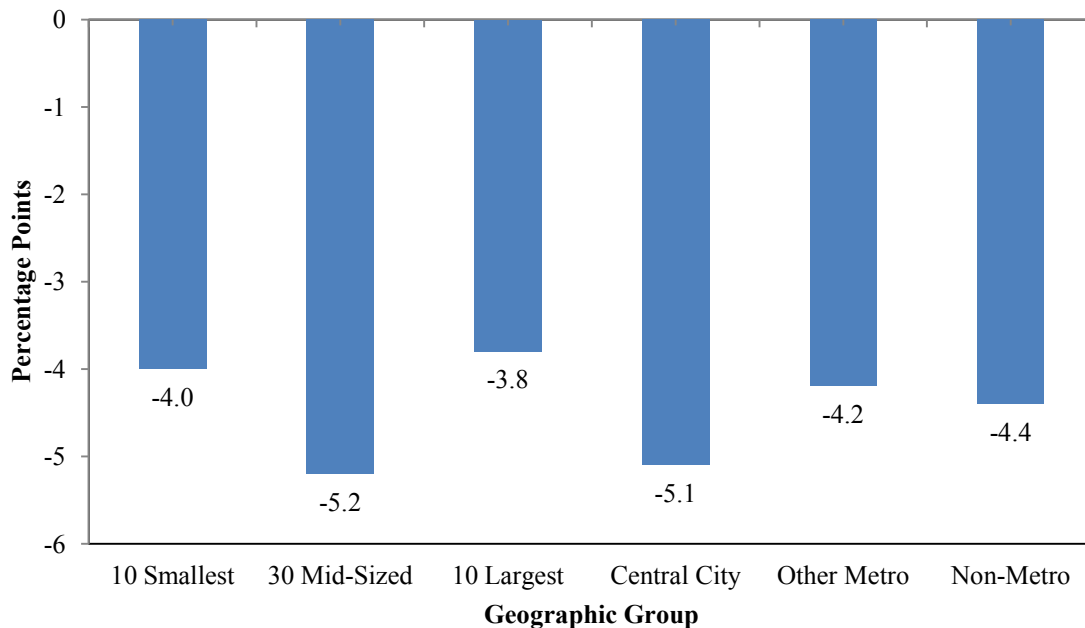
	(A)	(B)	(C)	(D)	(E)	(F)
Demographic Group	1 st – 8 th grade	9 th – 12 th grade, no diploma or GED	High School Diploma	GED	GED Minus 9 th – 12 th grade	GED minus High school diploma
All	29.7	38.2	20.6	33.6	-4.6	+13.0
Gender						
Men	28.7	38.3	21.3	34.5	-3.8	+13.2
Women	31.5	38.2	19.8	32.2	-6.0	+12.4
Age Group						
16 – 24	42.5	57.2	39.5	53.2	-4.0	+13.7
25 – 34	37.2	41.0	23.1	37.4	-3.6	+14.3
35 – 44	25.8	33.3	17.7	30.6	-2.7	+13.3
45 – 54	26.8	30.1	15.5	26.8	-3.3	+11.3
55 – 64	25.0	22.0	15.2	24.3	+2.3	+9.1
65 – 74	23.4	21.2	16.2	21.6	+4	+5.4

Chart 13:
Labor Underutilization Rates of Native Born Persons 16 and Older by Educational Attainment, U.S., 2010 (in %)



The labor underutilization rate was highest among high school dropouts at 38.2% followed by GED holders at 33.6% and high school graduates at 20.6%.²⁹ While both high school dropouts and GED holders faced extraordinarily high labor underutilization rates in 2010, especially among the young with labor underutilization rates exceeding 50% for both educational groups, the gap in underutilization rates between these two groups was 4.6 percentage points which was found to be statistically significant at the .01 level. GED holders in both gender groups and in each age group under 55 achieved lower labor underutilization rates than high school dropouts in 2010. GED holders in each of the three groups of states classified by population size and in central cities, other metropolitan communities, and non-metro areas achieved 4 to 5 percentage point lower labor under utilization rates than their dropout peers.

Chart 14:
Differences Between the Labor Underutilization Rates of GED Holders and High School Dropouts by Population Size of State and Geographic Area of Residence, 2010
 (in Percentage Points)



The labor underutilization rates of GED holders in 2010 were substantially higher than those of high school graduates, both overall (33.6% vs. 20.6%) and in each gender group and

²⁹ Actually, native born adults with only a primary school education had a lower labor underutilization rate than GED holders, but a major part of this difference was attributable to a much higher share of primary school adults being 55 and older, the groups with below average underutilization rates. Some 53% of adults with a primary school education were between the ages of 55-74 versus only 24% of GED holders.

major age group. In each of the three labor market problem groups (the unemployed, the underemployed, and the hidden unemployed), GED holders experienced a higher incidence of labor market problems than high school graduates, thereby producing these sharply higher rates of labor force underutilization. Again, the GED credential is not the equivalent of a regular high school diploma in producing favorable labor market outcomes.

A Scorecard on Differences Between the Labor Market Outcomes of Native Born Adults with GEDs and High School Dropouts in 2010: A Review of Their Sizes and Statistical Significance

The above findings on the labor market behaviors and outcomes of the working-age native born population in 2010 by educational attainment have revealed a number of important differences between GED holders and high school dropouts. In the table below, we present estimates of the values of 9 different labor market outcomes, including civilian labor force participation rates, employment rates, underutilization rates, and mean weekly earnings for employed GED holders and high school dropouts. The differences between these outcomes are presented together with their statistical significance based on t-tests of differences between sample proportions or sample means (mean weekly earnings).

Table 14:
Estimates of the Differences Between the Labor Market Activity Rates and Mean Weekly Earnings of GED Holders and High School Dropouts with 9-12 Years of Schooling and Their Statistical Significance, All Persons 16+, 2010

Variable	(A) GED Holders	(B) High School Dropouts	(C) Difference	(D) Sig. of Diff.
Civilian Labor Force Participation Rate	62.5	45.6	+16.9	.01
Unemployment Rate	20.2	23.1	-2.9	.01
Employment/Population Ratio	49.9	35.0	+14.9	.01
Per Cent Employed Full-time Employment Rate	76.8	71.9	+4.9	.01
Full-time Employment Rate	38.3	25.2	+13.1	.01
Underemployment Rate	11.8	12.8	-1.0	--
Hidden Unemployment Rate	5.7	7.9	-2.2	.01
Labor Underutilization Rate	33.6	38.3	-4.7	.01
Mean Weekly Earnings of Employed Wage and Salary Workers	\$597	\$476	\$121	.01

Note: -- implies not significant at .10 level.

The overall findings are quite favorable for GED recipients. For 8 of these 9 labor market measures, GED recipients achieved either significantly higher outcomes for positive measures, such as employment/population ratios, full-time employment rates, or mean weekly earnings, or smaller values for such negative labor market outcomes as the unemployment rate or the labor underutilization rate. The differences in these outcomes were quite sizable for each employment-related measure such as civilian labor force participation rates (+17 percentage points), employment/population ratios (+15 percentage points), or full-time employment rates (+13 percentage points), and for mean weekly earnings (+\$121).

When one considers both the employment rate advantages of GED holders and their higher mean weekly earnings when working, one would expect them to achieve significantly higher annual earnings than high school dropouts who did not obtain a GED. Their higher levels of employment also increase their cumulative work experience, a form of human capital that has been frequently found to improve one's future employability and earnings. These higher annual earnings of GED recipients are likely to persist over the work life given significant employment and weekly wage outcomes in each major age group. Our next report will provide evidence on the year round work experiences and annual earnings of both high school dropouts and GED holders in recent years in the U.S from 2008 to 2010.

The Labor Force Behavior and Employment Rates of Native Born Adults, 16-64 Years Old, in 2010: Findings of the American Community Surveys

The 2010 American Community Surveys also can be used to analyze the labor force participation behavior, unemployment problems, and employment/population ratios of the nation's native born adults. Since 2008, the ACS survey questionnaire has asked respondents with a high school education whether they held a regular high school diploma or a GED certificate/alternative diploma. For the 2010 data, we have restricted our analysis in this section to native born residents who were ages 16-64 at the time that they completed the questionnaire.

In 2010, the civilian labor force participation rates of 16-64 year old adults with no post-secondary schooling varied quite widely by their educational attainment, ranging from a low of 45% for those with only an elementary education to slightly over 76% for those with a regular high school diploma (Table 15). GED holders were characterized by a participation rate of 71%.

This rate of labor force attachment was 10 percentage points above that of high school dropouts, a difference that was statistically significant at the .01 level.

Table 15:
Civilian Labor Force Participation Rates of Native Born Persons 16 to 64 Years Old in Selected Educational Attainment Groups, All and by Gender, Age Group, and Race-Ethnic Group, 2010
(American Community Survey)

	(A)	(B)	(C)	(D)	(E)	(F)
Demographic Group	1 st – 8 th grade	9 th – 12 th grade, no diploma or GED	High School Diploma	GED	GED Minus 9 th – 12 th grade	GED minus High school diploma
All	45.4	60.6	76.4	71.0	+10.4**	-5.4**
Gender						
Men	52.3	68.2	82.4	76.2	+8.0**	-6.2**
Women	36.7	51.2	69.9	64.4	+13.2**	-5.5**
Age Group						
16 – 24	53.4	61.8	79.8	75.3	+13.5**	-4.5
25 – 34	57.9	69.3	82.2	77.5	+8.2**	-4.7
35 – 44	52.3	66.5	82.3	76.2	+9.7**	-6.1
45 – 54	44.3	60.7	80.0	71.4	+10.7**	-8.6
55 – 64	32.3	43.3	60.2	53.2	+10.0**	-7.0
Race-Ethnic Group						
Asian	60.4	67.7	78.0	73.5	+5.8**	-4.5
Black, not Hispanic	37.9	54.8	72.7	67.4	+12.6**	-5.3
Hispanic	56.3	66.9	78.1	75.1	+8.2**	-3.0
Other Races	39.7	56.9	72.7	66.4	+9.5**	-6.3
White, not Hispanic	44.2	61.3	77.1	71.2	+15.8**	-5.9

Notes: ** significant at .01 level
-- not significant at .05 level

The gaps in labor force participation rates between GED holders and high school dropouts were quite substantial and statistically significant for each gender group, age group, and nearly every race-ethnic group.³⁰ The percentage point gaps in participation rates were especially high for women (13.2), older persons (10-11), Blacks (13), and White, non-Hispanics (16).

³⁰ The only exception to this finding was that for native born Asians. The 6 percentage point gap in favor of Asians was not quite significant at the .05 level. The sample size for Asian high school dropouts and GED holders was rather small, far below that of all other race-ethnic groups.

While GED holders fared well relative to high school dropouts in their degree of attachment to the labor force, they did not match the participation rates of their peers with regular high school diplomas. Overall, the participation rate of those holding high school diplomas was 76.4% versus only 71% for GED holders, a difference of 5.4 percentage points that was statistically significant at the .01 level. In both gender groups, those adults with regular diplomas were significantly more likely to be active in the civilian labor force in 2010.

The unemployment rates of native born persons also varied widely across educational attainment groups. These rates ranged from a high of 25% among high school dropouts to 20% for GED holders, and to a low of slightly under 13% among those with a regular high school diploma (Table 16). The differences in unemployment rates between GED holders and high school dropouts was nearly five full percentage points which was statistically significant at the .01 level. The gaps in unemployment rates between GED holders and high school dropouts in both gender groups also were statistically significant at the .01 level.³¹ GED holders did, however, experience significantly higher unemployment rates than adults holding regular high school diplomas. The unemployment rate difference was 7.6 percentage points for all adults (16-46) and was in the six to eight percentage point range for women and men, respectively.

³¹ We did not conduct statistical significance tests for each age and race-ethnic group but the gaps for all age groups, but those for persons under age 55 were all statistically significant.

Table 16:
Unemployment Rates of Native Born Persons 16 to 64 Years Old in Selected Educational
Attainment Groups, All and by Gender, Age Group, and Race-Ethnic Group, 2010
(American Community Survey)

	(A)	(B)	(C)	(D)	(E)	(F)
Demographic Group	1 st – 8 th grade	9 th – 12 th grade, no diploma or GED	High School Diploma	GED	GED Minus 9 th – 12 th grade	GED minus High school diploma
All	20.7	25.1	12.7	20.3	-4.8**	+7.6**
Gender						
Men	20.9	25.	713.8	22.3	-3.4**	+8.5**
Women	20.4	24.0	11.2	17.4	-6.6**	+6.2**
Age Group						
16 – 24	32.9	39.9	23.5	33.4	-6.5	+9.9
25 – 34	24.8	28.9	14.9	23.8	-5.1	+8.9
35 – 44	20.6	22.5	11.2	19.9	-2.6	+8.7
45 – 54	17.5	18.2	9.6	14.9	-3.3	+5.3
55 – 64	12.5	13.5	8.7	11.6	-1.9	+2.9
Race-Ethnic Group						
Asian	20.7	24.8	13.8	15.0	-9.8	+1.2
Black, not Hispanic	30.9	34.8	20.0	30.3	-4.5	+10.3
Hispanic	18.7	25.2	14.2	20.6	-4.6	+6.4
Other Races	28.3	30.3	18.8	27.0	-3.3	+8.2
White, not Hispanic	18.8	21.5	10.8	18.3	-3.2	+7.5

Note: ** implies difference was significant at the .01 level.

Due to their higher rates of labor force attachment and their lower rates of unemployment, GED holders were significantly more likely to be employed than high school dropouts in 2010. While nearly 52 of every 100 GED holders were employed in 2010, only 45% of high school dropouts and 36% of adults with only an elementary level of schooling were working. The employment rate gaps between GED holders and high school dropouts was 11.2 percentage points, which was significant at the .01 level. Every gender, age, and race-ethnic group of GED holders was significantly more likely to be employed than their high school dropout peers in 2010 (Tables 17 and 18). All of the gaps in these E/P ratios were at least 8 percentage points and were in the double digits for six of these groups. These GED holders,

however, did not match the employment rates of their peers with regular high school diplomas in 2010. A 10 percentage point gap in E/P ratios prevailed in 2010.

Table 17:
Employment/Population Ratios of Native Born Persons 16 to 64 Years Old in Selected Educational Attainment Groups, All and by Gender, Age Group, and Race-Ethnic Group, 2010
(American Community Survey)

	(A)	(B)	(C)	(D)	(E)	(F)
Demographic Group	1 st – 8 th grade	9 th – 12 th grade, no diploma or GED	High School Diploma	GED	GED Minus 9 th – 12 th grade	GED minus High school diploma
All	36.0	45.4	66.7	56.6	+11.2**	-10.1**
Gender						
Men	41.4	50.7	71.0	59.3	+8.3**	-11.7**
Women	29.2	38.9	62.1	53.2	+14.3**	-8.9**
Age Group						
16 – 24	35.8	37.2	61.1	50.1	+12.9**	-11.0
25 – 34	43.5	49.3	69.9	59.1	+9.8**	-10.8
35 – 44	41.5	51.6	73.1	61.1	+9.5**	-12.0
45 – 54	36.6	49.7	72.3	60.7	+11.0**	-11.6
55 – 64	28.2	37.5	54.9	47.1	+9.6**	-7.8
Race-Ethnic Group						
Asian	47.9	50.6	67.3	62.5	+11.6**	-4.8
Black, not Hispanic	26.2	35.7	58.2	47.0	+11.3**	-11.2
Hispanic	45.8	50.0	67.0	59.6	+9.6**	-7.4
Other Races	28.5	39.7	59.0	48.5	+8.8**	-10.5
White, not Hispanic	35.9	48.1	68.7	58.2	+10.1**	-10.5

Note: ** significant at the .01 level.

Table 18:
Tests of the Statistical Significance of the Differences Between the
Employment/Population Ratios of Native Born High School Dropouts and
GED Holders 16-64 Years Old in 2010

Group	(A) High School Dropouts	(B) GED Holders	(C) GED – Dropouts	(D) Sig. Level
All	45.4	56.6	+11.2	.01
Gender				
Men	50.7	59.3	+8.6	.01
Women	38.9	53.2	+14.3	.01
Age Group				
16 – 24	37.2	50.1	+12.9	.01
25 – 34	49.3	59.1	+9.8	.01
35 – 44	51.6	61.1	+9.5	.01
45 – 54	49.7	60.7	+11.0	.01
55 – 64	37.5	47.1	+9.6	.01
Race-Ethnic Group				
Asian	50.9	62.5	+11.6	.01
Black, not Hispanic	35.7	47.0	+11.3	.01
Hispanic	50.0	59.6	+9.6	.01
Other Races	39.7	48.5	+8.8	.01
White, not Hispanic	48.1	58.2	+10.1	.01

The Labor Force Behavior and Employment Rates of Foreign Born Adults Across Educational Groups in 2010

The 2010 American Community Survey data also were used to examine the labor force participation behavior, unemployment problems, and employment rates of the 16-64 year old foreign born population in each of the four educational groups.³² Estimates of the civilian labor force participation rates, unemployment rates, and E/P ratios of each of these four groups are displayed in Table 19.

³² For the 2010 ACS survey, observations were available for 134,247 foreign born individuals between the ages of 16 and 64 who had completed no years of schooling beyond high school. The sample included about 31,000 high school dropouts and 6,400 GED recipients.

Table 19:
The Civilian Labor Force Participation Rates, Unemployment Rates, and E/P Ratios of
Foreign Born Adults 16-64 Years Old in the U.S. by Educational Attainment
(in %)

Variable	(A) 0 – 8 Years of School	(B) 9 – 12 Years, No Diploma or GED	(C) High School Diploma	(D) GED	(E) GED Minus 9 – 12 Years	(F) GED minus High school diploma
Civilian Labor Force Participation Rate	71.0	74.3	77.5	78.3	+4.0**	+.8
Unemployment Rate	12.1	13.2	11.0	12.5	-.7	+1.5**
Employment/Population Ratio	62.5	64.5	68.9	68.5	+4.0**	-.4

Note: ** implies significant at .01 level.
* implies significant at .05 level.
No * implies not significant at .01.

The civilian labor force participation rates of the foreign born tended to increase modestly with their educational attainment. The participation rate of GED holders was 78.3% which was four percentage points above that of high school dropouts, a difference that was statistically significant at the .01 level. All of this favorable impact was due to the behavior of women. Female GED holders were 11 percentage points more likely than high school dropouts (69% vs. 58%) to be active in the civilian labor force.³³ Male, foreign born GED holders were modestly more likely to be in the labor force than their peers with a regular high school diploma, but the small .8 percentage point difference was not sufficiently large to be categorized as statistically significant.

Unemployment rates among the foreign born varied modestly across educational groups. GED holders fared slightly better than high school dropouts in avoiding unemployment (12.5% vs. 13.2%), however, the small .7 percentage point gap was not statistically significant. GED holders experienced a 1.5 percentage point higher unemployment rate than those with a regular high school diploma, a difference that was statistically significant.

³³ Among men, GED holders were 1 percentage point less likely to be in the labor force than high school dropouts, a statistically insignificant result.

As a consequence of their higher participation rate and their modestly lower unemployment rate, the E/P ratio of GED holders was 4 percentage points above that of high school dropouts (68.5% vs. 64.5%), a difference that was statistically significant at the .01 level. GED holders came very close to matching the 68.9% E/P ratio of high school graduates, the estimated difference was not statistically significant.

To identify how well various gender, age, and race-ethnic groups of foreign born GED holders fared in obtaining employment in comparison to their high school dropout counterparts, we estimated E/P ratios for each group in 2010 (Table 20 and Table 21).

Table 20:
Employment/Population Ratios of Foreign Born Persons 16 to 64 Years Old in Selected Educational Attainment Groups, All and by Gender, Age Group, and Race-Ethnic Group, 2010
(American Community Survey)

Demographic Group	(A) 1 st – 8 th grade	(B) 9 th – 12 th grade, no diploma or GED	(C) High School Diploma	(D) GED	(E) GED Minus 9 th – 12 th grade	(F) GED minus High school diploma
All	62.5	64.5	68.9	68.5	+4.0	-.4
Gender						
Men	78.6	78.4	80.0	76.8	-1.6	-3.2
Women	44.5	48.6	57.8	60.1	11.5	+2.3
Age Group						
16 – 24	66.9	58.6	62.5	61.2	+2.6	-1.3
25 – 34	66.0	65.9	70.0	68.0	+3.1	-1.0
35 – 44	68.3	68.8	73.8	73.4	+4.6	-.4
45 – 54	65.3	67.6	73.5	70.3	+2.7	-3.2
55 – 64	46.2	53.1	56.2	60.6	+7.5	+4.4
Race-Ethnic Group						
Asian	53.8	63.1	66.9	69.3	+6.2	+2.4
Black, not Hispanic	55.4	62.8	69.6	74.9	+12.1	+5.3
Hispanic	64.4	65.5	70.2	68.3	+2.8	-1.9
Other Races	53.6	59.6	68.1	69.5	+9.9	+1.4
White, not Hispanic	46.7	58.1	66.2	63.6	+5.5	-2.6

There were quite different gender differences between the E/P ratios of high school dropouts and GED holders. Among men, the E/P ratio of GED holders was 1.6 percentage points below that of high school dropouts, a difference that was statistically significant at the .05 level. However, women with GED certificates were nearly 12 percentage points more likely to be employed than their peers who left high school before obtaining a diploma, a very significant difference. While foreign born males with GEDs do not outperform their high school dropout peers in obtaining some type of job, preliminary findings from our multivariate statistical analysis of their weekly and annual earnings suggest that they do obtain significantly higher weekly and annual earnings.

Table 21:
Summary of the Tests of the Statistical Significance of the Differences Between the Employment/Population Ratios of Foreign Born High School Dropouts and GED Holders 16-64 Years Old in the U.S., All and by Gender, 2010

	(A)	(B)	(C)	(D)
Group	High School Dropouts	GED Holders	Difference (B – A)	Sig. Level
All	64.5	68.5	+4.0	**
Men	78.4	76.8	-1.6	*
Women	48.6	60.1	+11.5	**

Notes: ** significant at .01 level.
* significant at .05 level.

Foreign born adults with GEDs were more likely to be working in 2010 than high school dropouts in each major age group and race-ethnic group, with the size of these advantages ranging from as little as 2.6 to 2.8 percentage points to as high as 10 to 12 percentage points (for Blacks and members of other races). Nearly all of these differences in employment rates were statistically significant at the .01 level.

The Distribution of High School Dropouts, High School Graduates, and GED Holders by Class of Worker and Major Industrial Sector of Their Employers in 2010

While GED holders and high school graduates with regular diplomas are more likely to work than high school dropouts with similar demographic traits, do they also obtain access to different types of jobs by class of worker, industrial sector, or major occupational group? To

answer this key research question, we have analyzed both the 2010 ACS surveys and the monthly 2010 CPS household surveys to identify the class of worker status of the employed in each of our four educational groups, the industrial affiliations of their private sector employers, and the occupations of their jobs.

The U.S. Census Bureau and the U.S. Bureau of Labor Statistics classify employed workers into eight different class of worker groups, which we collapsed into the four categories displayed in Table 22. Federal, state, and local government employers were combined into one joint “government” worker category, and the self-employed both incorporated and unincorporated were placed into one category of “self-employed”. We have deleted “unpaid family workers” from the table since they typically account for only .1% of the employed in our combined educational groups.³⁴

Table 22:
The Distribution of Employed Native Born 16-64 Year Olds in the U.S. by
Educational Attainment and Class of Worker, 2010

	(A)	(B)	(C)	(D)	(E)
Class of Worker	1 st – 8 th grade	9 th – 12 th grade, no diploma or GED	High School Diploma	GED	GED Minus 9 th – 12 th grade
Wage and salary worker, private for profit sector	71.8	78.7	73.9	75.7	-3.0**
Wage and salary worker, non-profit sector	7.1	4.3	5.0	5.0	+7.7**
Government	7.1	6.6	11.7	10.4	+3.8**
Self-employed	13.7	10.1	9.3	8.9	-1.2**

** implies difference was significant at .01 level; * implies difference was significant at .05 level.

Source: American Community Surveys, 2010, public use files, tabulations by authors.

Employed high school dropouts were more likely than both high school graduates and GED holders to work as wage and salary workers in the private for profit sector. The three percentage point difference (78.7% vs. 75.7%) between employed high school dropout and GED holders was statistically significant at the .01 level. GED holders were modestly but significantly more likely than high school dropouts (+7.7 percentage points) to be employed in the private non-

³⁴ These unpaid family workers must work 15 or more hours per week to be classified as employed. The least well educated (i.e., those with only a primary school education) were the most likely to be unpaid family workers, but only a small fraction (<1%) of them did so.

profit sector and more likely to work for the government (10.4% vs. 6.6). Both differences were statistically significant at the .01 level. GED holders were more likely than high school dropouts to work in local, state, and federal government jobs.

Given their more frequent hiring of mid to higher level white collar workers (administrative support, technical, para-professional, management support), do industries such as information services, finance/insurance, and professional/educational/health services employ more workers that are high school graduates/GED holders than high school dropouts? For native born workers employed in the private sector, we estimated the per cent of the employed in each of our four educational groups who were working in one of the above five industries in 2010. Findings are displayed in Table 23. In each of these five private sector industries, employed GED holders were significantly more likely to find work than high school dropouts. In these five industries combined, approximately 1 of 5 GED holders held their jobs versus only 14% of high school dropouts, a gap of 5.3 percentage points in favor of GED holders. At the same time, workers with regular high school diplomas were somewhat more likely than GED holders to obtain their jobs in these same five industries (22.3% vs. 19.5%), a difference of slightly under 3 percentage points that was statistically significant at the .01 level.

Table 23:
The Distribution of Employed, Native Born 16-64 Year Olds in the Private Sector in Selected Major Industries by Educational Attainment, 2010 (in %)

	(A)	(B)	(C)	(D)	(E)	(F)
Industrial Sector	1 st – 8 th grade	9 th – 12 th grade	High School Diploma	GED	GED Minus 9 th – 12 th grade	GED minus High school diploma
Information	1.0	1.0	1.8	1.6	+ .6	-.2
Finance and insurance	1.0	1.0	4.5	2.8	+1.8	-1.7
Professional and technical services	1.2	1.3	2.8	2.1	+ .8	-.7
Educational services	1.5	1.0	1.6	1.2	+ .2	-.4
Health care/social assistance	11.0	9.9	11.6	11.8	+1.9	-.2
Above Five Industries Combined	15.7	14.2	22.3	19.5	+5.3**	-2.8**

** implies difference was significant at .01 level.

* implies difference was significant at .05 level.

Source: American Community Surveys, 2010, public use files, tabulations by authors.

The Occupational Characteristics of the Jobs Held by the Employed in 2010: Findings of the CPS and American Community Surveys

The high school diploma (GED certificate) has been used in the past by some employers as a hiring requirement or screening criterion. Recent television ads by the American Council on Education promoting the GED for youth who dropped out of high school have argued that the attainment of the certificate will help pull down the barriers (the walls) to success in the labor market and in life in general. One test of this hypothesis is whether GED holders are able to gain entry into different types of occupations than their peers who left high school before obtaining a regular high school diploma. The findings of the 2010 monthly CPS surveys and the 2010 American Community Surveys were used to identify the occupational distribution of the jobs held by employed adults in each of our four educational subgroups. Comparisons of the findings for key subgroups of these occupations were used to determine whether GED holders were significantly more likely to obtain jobs in more highly skilled professional/technical/managerial/high level sales positions and in administrative support/health support/protective service jobs than their employed peers who did not graduate from high school.

Findings from the monthly CPS household surveys on the occupational distribution of employed adults 16 and older, both overall and by gender, in 2010 are displayed in Tables 24 through 26. Individual SOC occupations were classified into 13 major occupational groups for this analysis. Findings for all of the native born employed are displayed in Table 24. Employed GED holders were more successful than high school dropouts in obtaining jobs in high level white collar occupations (professional, managerial, technical, high level sales).³⁵ Approximately 17% of employed GED holders held such jobs versus only 11% of high school dropouts. This approximately 6 percentage point difference was found to be statistically significant at the .01 level.³⁶ GED holders were also significantly more likely to obtain jobs in administrative support/clerical occupations, protective services, and health service jobs than their employed high school dropout counterparts (20% vs. 14%). There were no significant differences between the shares of employed GED holders and high school dropouts who were employed in construction crafts and in higher skilled, blue collar installation, maintenance and repair occupations (15.6% vs. 16.7%).

³⁵ High level sales jobs include sales representative, buyers, real estate agents, stock, bond, and commodity brokers, and buyers. Lower level sales include cashiers, sales clerks, and retail sales associates.

³⁶ The U.S. Bureau of Labor Statistics has provided a methodology for estimating the standard errors of levels and percentages of a wide array of measures from the CPS survey including adjustment factors for yearly averages: See: U.S. Bureau of Labor Statistics, Employment and Earnings, August 2007, Washington, D.C., 290-299.

While GED holders were significantly more successful than high school dropouts in securing high level white collar positions and administrative support/health care/protective service occupations, they did not fare as well as those employed persons obtaining a regular high school diploma (See Column F of Table 24). They were less likely to work in the professional/technical/managerial occupations (17% vs. 23%) and in administrative support/health support/protective services (19% vs. 22%).³⁷

Table 24:
The Per Cent Distribution of Employed Native Born Persons 16 and Older in
Selected Educational Attainment Groups by Occupational Group, 2010 (in %) (CPS Surveys)

Occupational Group	(A) 1 st – 8 th grade	(B) 9 th – 12 th grade, no diploma or GED	(C) High School Diploma	(D) GED	(E) GED Minus 9 th – 12 th grade	(F) GED minus High school diploma
Professional/Technical	3.7	3.5	8.7	6.7	+3.2	-2.0
Management/Financial Operations	6.9	5.0	8.3	6.1	+1.1	-2.2
High Level Sales	2.6	3.0	5.6	4.3	+1.3	-1.3
Lower Level Sales	5.9	7.7	6.3	7.0	-.7	+.7
Administrative Support	5.2	9.0	17.1	13.1	+4.1	-4.0
Health Care Service	2.4	3.3	2.9	3.7	+.4	+.8
Protective Service	.7	1.4	2.3	2.6	+1.2	+.3
All Other Service Including Security Guard	25.9	25.8	15.0	18.2	-7.6	+3.2
Farming/Forestry/Fishing	4.8	1.6	.8	.8	-.8	0.0
Construction and Extraction Crafts	12.4	10.7	7.7	9.3	-1.4	+1.6
Installation, Maintenance, and Repair	6.3	6.0	6.0	6.3	+.3	+.3
Production	11.3	10.5	9.3	10.5	.0	-1.2
Transportation and Material Moving	12.0	12.7	10.0	11.3	-1.4	+1.3
Subtotals						
Professional/Technical/Management/ High Level Sales	13.2	11.5	22.6	17.1	+5.6*	-5.5*
Construction/Extraction/Installation/Maintenance	18.7	16.7	13.7	15.6	-1.1	+1.9
Administrative Support, Health Care Services, Protective Services Excluding Security Guards	8.3	13.7	22.3	19.5	+5.8*	-2.8*

* Difference was statistically significant at .01 level.

Findings on the occupational distribution of jobs held by males in each of the four educational groups in 2010 are displayed in Table 25. Approximately 1 of 6 employed men with

³⁷ Our definition of protective services includes police officers, firemen, sheriffs, constables, detectives, but excludes those working as security guards and other lower level security positions.

a GED certificate held a professional/managerial/high levels sales job versus only 11 per cent of high school dropouts. This difference of 5.4 percentage points was statistically significant at the .01 level. Male GED holders also were modestly (though significantly) more likely than high school dropouts to obtain employment in the protective service and health service occupations (4% versus a little less than 2.0%). Male GED holders, however, did not perform as well as their peers with regular high school diplomas in gaining access to jobs in the professional/management-related/high level sales occupations in 2010. While nearly 21% of male high school graduates were working in such occupations, only 16 per cent of male GED holders were employed in such jobs, a difference of 4.3 percentage points that was statistically significant at the .01 level.

Table 25:
The Per Cent Distribution of Employed Native Born Males 16 and Older in
Selected Educational Attainment Groups by Occupational Group, 2010 (in %) (CPS Surveys)

Occupational Group	(A) 1 st – 8 th grade	(B) 9 th – 12 th grade, no diploma or GED	(C) High School Diploma	(D) GED	(E) GED Minus 9 th – 12 th grade	(F) GED minus High school diploma
Professional/Technical	2.4	2.6	5.6	5.6	+3.0	.0
Management/Financial Operations	8.5	6.0	9.5	7.0	+1.0	-2.5
High Level Sales	2.8	2.5	5.7	3.9	+1.4	-1.8
Lower Level Sales	3.0	3.6	3.9	4.0	+.4	+.1
Administrative Support	4.1	5.6	7.2	6.4	+.8	-.8
Health Care Service	.7	.4	.5	.7	+.3	+.2
Protective Service	.7	1.5	3.2	3.3	+1.8	+.1
All Other Service Including Security Guard	16.5	17.4	11.2	13.2	-4.2	+2.0
Construction and Extraction Crafts	18.7	17.9	13.5	15.3	-2.6	+1.8
Installation, Maintenance, and Repair	9.5	10.1	10.4	10.6	+.5	+.2
Production	11.8	12.1	12.5	12.8	+.7	-.3
Transportation and Material Moving	15.5	18.3	15.6	16.6	-1.7	+1.0
Subtotals						
Professional/Technical/Management/ High Level Sales	13.7	11.1	20.8	16.5	+5.48	-4.38
Protective and Health Services	1.4	1.9	3.7	4.0	+2.18	+.3

* The difference was statistically significant at the .01 level.

The per cent distribution of employed women in each educational group by major occupation in 2010 are displayed in Table 26. Here, the findings are quite favorable for female

GED holders relative to their counterparts who failed to graduate from high school. Female GED holders were substantially more likely than their dropout peers to obtain employment in higher level professional/technical/management-related jobs (19% vs. 12%) and as administrative support/health service workers (32% vs. 23%). Both of these fairly large differences in occupational attachment were statistically significant at the .01 level. Since most of these occupations pay higher than average weekly wages, female GED holders can be expected to receive higher mean weekly wages than their less educated peers.

Table 26:
The Per Cent Distribution of Employed Native Born Women 16 and Older in Selected Educational Attainment Groups by Occupation, 2010 (in %) (CPS Surveys)

Occupational Group	(A) 1 st – 8 th grade	(B) 9 th – 12 th grade, no diploma or GED	(C) High School Diploma	(D) GED	(E) GED Minus 9 th – 12 th grade	(F) GED minus High school diploma
Professional/Technical	6.1	4.7	12.4	9.0	44.3	-3.4
Management/Financial Operations	3.8	3.7	6.9	4.9	+1.2	-2.0
High Level Sales	2.1	3.6	5.5	5.0	+1.4	-.5
Lower Level Sales	11.2	13.4	9.4	11.3	-2.1	+1.9
Administrative Support	7.3	14.0	29.4	22.6	+8.6	-6.8
Health Care Service	5.7	7.4	5.8	7.9	+5	+2.1
Protective Service	.6	1.3	1.1	1.6	+3	+5
All Other Service Including Security Guard	43.0	37.8	19.8	19.8	-18.0	.0
Farming/Forestry/Fishing	1.0	.4	.4	.8	+4	+4
Construction and Extraction Crafts	.3	.1	.4	.3	+2	-.1
Production	10.5	8.2	5.4	7.2	-1.0	+1.8
Transportation and Material Moving	5.6	4.6	3.3	3.9	-.7	+6
Subtotals						
Professional/Technical/Management/ High Level Sales	12.0	12.0	24.8	18.9	+6.9*	-5.9*
Administrative Support/Health and Protective Services	13.6	22.7	36.3	32.1	+9.4*	-4.2*

* Difference was statistically significant at .01 level.

As was the case for men, however, female GED holders do not fare as well as their employed peers with regular high school diplomas. They were significantly less likely to hold positions in the professional/technical/managerial ranks (19% vs. 25%) and as administrative support/health support workers (32% vs. 36%). Each of these differences was statistically

significant at the .01 level. Again, GED holders do better than high school dropouts in acquiring these more highly skilled and typically higher wage occupations, but they fall short of the performance of high school graduates.

The Occupational Attachment of Employed High School Dropouts and GED Holders: Findings of the 2010 American Community Survey

The American Community Surveys also collects information from employed respondents on the occupational duties and titles of the jobs they were holding at the time of the survey. The U.S. Census Bureau then assigns a SOC-based occupational code to these jobs including those held by the self-employed. Findings on the per cent distribution of employed 16-64 year old, native born persons in the U.S. by major occupational group are displayed in Tables 27 through 29 for all of the employed and then for men and women separately. Many of the findings are quite similar to those from the 2010 monthly Current Population Surveys, providing further confirmation of the more favorable labor market outcomes for GED holders relative to high school dropouts.

In 2010, close to one of every six employed GED holders were working in professional/technical/managerial/high level sales occupations.³⁸ This ratio was more than five percentage points higher than that for employed high school dropouts (10.8%), a difference that was statistically significant at the .01 level.³⁹ Employed GED holders were also more likely than high school dropouts to obtain access to jobs in the administrative support and protective service occupation (approximately 15% vs. 9%). This percentage point difference also was statistically significant at the .01 level. As was the case for the CPS findings, however, GED holders were significantly less likely than their peers with regular high school diplomas to obtain jobs in either the higher level professional/technical/managerial occupations (19% vs. 16%) or in administrative support/protective service occupations (19% vs. 15%).

³⁸ The management category includes executive, administrators, managers, management support, and financial operations occupations.

³⁹ The much larger sample sizes of independent households for the ACS surveys reduces the estimated standard errors of the estimates, increasing the significance level.

Table 27:
The Per Cent Distribution of Employed Persons 16 and Older in Selected Educational
Attainment Groups by Major Occupational Group, Both Genders Combined, 2010
(American Community Survey) (in %)

Occupational Group	(A) 1 st – 8 th grade	(B) 9 th – 12 th grade, no diploma or GED	(C) High School Diploma	(D) GED	(E) GED Minus 9 th – 12 th grade	(F) GED minus High school diploma
Professional/Technical	3.1	2.6	5.9	5.2	+2.6	-.7
Management/Financial Operations	5.5	4.9	8.3	6.5	+1.6	-1.8
High Level Sales	2.6	3.3	5.1	4.3	+1.0	-.8
Lower Level Sales	5.1	7.0	6.3	6.4	-.6	+.1
Administrative Support	7.2	9.0	18.1	13.6	+4.6	-4.5
Health Care Service	2.5	3.5	3.0	3.6	+.1	+.6
Protective Service	.3	.2	1.3	1.1	+.9	-.2
All Other Service Including Security Guard	24.9	24.9	16.4	19.3	-5.6	+2.9
Farming/Forestry/Fishing	3.3	1.5	.7	.7	-.8	0.0
Construction and Extraction Crafts and Installation, Maintenance, and Repair	17.8	18.3	14.2	15.7	-2.6	+1.5
Production, Transportation, and Material Moving	27.7	24.9	20.8	23.6	-1.3	+2.8
Subtotals						
Professional/Technical/Management/ High Level Sales	11.2	10.8	19.3	16.0	+5.2*	-3.3*
Administrative Support and Protective Services	7.5	9.2	19.4	14.7	+5.5*	-4.7*

Note: * Difference between the two sample proportions was statistically significant at .01 level.

Employed male GED holders were more likely than their high school dropout counterparts to obtain jobs in the professional/technical/managerial/high level sales occupations in 2010. Nearly 14 per cent of employed male GED holders held jobs in these occupations versus 9 per cent of high school dropouts. This 4.6 percentage point gap in these two employment shares was statistically significant at the .01 level. Again, however, male GED holders did not fare as well as male high school diploma holders in securing jobs in these occupations (17.2% vs. 13.9%).

Table 28:
The Per Cent Distribution of Employed Native Born Men 16-64 Years Old in Selected
Educational Attainment Groups by Occupational Group, 2010 (in %) (ACS)

Occupational Group	(A) 1 st – 8 th grade	(B) 9 th – 12 th grade, no diploma or GED	(C) High School Diploma	(D) GED	(E) GED Minus 9 th – 12 th grade	(F) GED minus High school diploma
Professional/Technical	1.8	1.6	3.7	3.6	+2.0	-.1
Management/Financial Operations	6.3	4.8	8.3	6.4	+1.6	-1.9
High Level Sales	2.3	2.9	5.2	3.9	+1.0	-1.3
Lower Level Sales	2.8	3.4	4.0	3.7	+.3	-.3
Administrative Support	4.3	5.4	7.8	6.7	+1.3	-1.1
Health Care Service	.4	.5	.6	.6	+.1	0
Protective Service	.4	.3	1.9	1.5	+1.2	-.4
All Other Service Including Security Guard	17.5	18.1	12.6	15.0	3.1	+2.4
Farming/Forestry/Fishing	4.2	2.2	1.1	1.0	-1.2	-.1
Construction, Extraction Crafts, and Installation, Maintenance, and Repair	27.5	29.0	25.0	26.4	-3.4	+1.4
Production, Transportation, and Material Moving	32.7	31.8	29.7	31.4	-.4	+1.7
Subtotals						
Professional/Technical/Management/ High Level Sales	10.4	9.3	17.2	3.9	+4.6*	-3.3

Employed female GED holders were significantly more likely than high school dropouts to obtain jobs in both higher level white collar occupations (professional/managerial/technical/high level sales) and in administrative support/health service/protective service occupations. In 2010, 19% of female GED workers held one of these higher level white collar occupations versus only 13% of employed female high school dropouts, a difference of 6 percentage points in favor of GED holders. In the same year, slightly over 18% of employed female GED holders were working in administrative support, health service, or protective service occupations versus under 13% of high school dropouts, a gap of nearly six percentage points in favor of GED holders.

Table 29:
The Per Cent Distribution of Employed Women 16 and Older in Selected Educational
Attainment Groups by Major Occupational Group, 2010 (in %)

Occupational Group	(A) 1 st – 8 th grade	(B) 9 th – 12 th grade, no diploma or GED	(C) High School Diploma	(D) GED	(E) GED Minus 9 th – 12 th grade	(F) GED minus High school diploma
Professional/Technical	5.6	4.1	8.5	7.3	+3.2	-1.2
Management/Financial Operations	4.1	4.9	8.2	6.8	+4.9	-1.4
High Level Sales	3.1	4.0	5.0	4.9	+9	-.1
Lower Level Sales	9.1	12.8	9.1	10.1	-2.7	+1.0
Administrative Support	12.5	14.6	30.8	23.2	+8.6	-7.6
Health Care Service	6.4	8.2	6.1	7.7	-.5	+1.6
Protective Service	.2	.1	.6	.6	+.5	.0
All Other Service Including Security Guard	37.7	35.7	21.0	25.2	-10.5	+4.2
Farming/Forestry/Fishing	1.6	.6	.2	.2	-.4	.0
Construction and Extraction Crafts and Installation, Maintenance, and Repair	.8	1.1	.89	1.1	.0	+.3
Production, Transportation, and Material Moving	19.0	13.	99.8	12.8	-1.1	+3.0
Subtotals						
Professional/Technical/Management/ High Level Sales	12.8	13.0	21.7	18.9	6.0	-2.8
Administrative Support and Protective Services	19.1	22.9	37.5	31.5	8.6	-6.0

Mean Weekly Earnings of Employed Native Born Adults by Educational Attainment in 2010

Previous sections of this report showed how various labor market outcomes such as labor force participation rate and employment rate of adults varied between GED holders and adults with only 9 to 12 years of schooling and high school graduates with a regular diploma. In this section, we provide estimates of the mean weekly earnings of employed adults in each of the four educational groups. We also analyze differences in gross weekly earnings between employed native born workers with GEDs and their peers who either dropped out of high school or obtained a regular high school diploma. Weekly earnings are an ultimate test of the economic worth of a GED degree. Do GED holders perform better once they find a job than high school dropouts, and how do the weekly earnings of GED holders compare to the earnings of those who completed a formal high school degree?

For this analysis, we use the weekly earnings data for employed wage and salary workers in the CPS 2010 monthly survey. The weekly wage data refers to gross weekly earnings a respondent received from his/her employer during the week prior to the interview. To properly estimate these wage levels and differentials, we restricted our analysis only to those workers who made between \$125 and \$2884 in weekly wages, thus cutting about 4% of the whole sample. We trimmed our sample to eliminate the possibility that outliers, such as people reporting abnormally low or abnormally high weekly earnings, would not adversely affect the means and estimated standard deviations. In Appendix A, we present an example of the same results without any wage restriction.

Findings of mean weekly earnings for all four educational group are presented in Table 30. Overall, employed holders of a GED they made \$610 per week versus only \$501 for high school dropouts, a difference of about \$110 more per week than workers with only 9 to 12 years of schooling. This represented a 22% difference that we found to be statistically significant at the .01 level. GED holders, however, fared worse than their employed peers with a high school diploma, making on average \$56 less, a statistically significant difference. Both male and female GED holders were making more per week than their dropout peers. Male GED holders outearned high school dropouts by \$130 (or about 22%) but they made \$56 less than; high school graduates (a 7% difference). Female GED holders also made less than their high school graduate peers, earning 14% less than high school graduates.

Table 30:
Mean Weekly Earnings of Native Born Employed 18 to 64 Year Olds, by
Educational Attainment and by Gender, 2010 Averages⁴⁰

	(A)	(B)	(C)	(D)	(E)	(F)
Gender	1-8th grade	9-12th grade	High School graduate	GED	GED minus 9-12th grade	GED minus HS diploma
Male	531	579	766	710	130*	-55*
Female	383	393	551	475	81*	-76*
Total	472	501	666	610	109*	-56*

*Statistically significant at .01 level.

⁴⁰ We use the unweighted results here because in order for us to evaluate the statistical significance of the differences in weekly earnings, we need to use sample sizes of surveyed individuals rather than the estimated population sizes provided by use of the CPS sample weights.

Younger GED holders 16-24 years old (See Table 31) made more per week than high school dropouts, a statistically significance difference. We found no statistically significant difference between young high school graduates over workers in the same age group with a GED credential. As workers become older, the weekly earnings premium associated with a GED credential grows and peaks for workers 45 to 54 years old at \$140 per week. The weekly earnings differentials between GED holders and high school graduates in each age group 25 and older were statistically significant.

Table 31:
Mean Weekly Earnings of Native Born Employed 18 to 64 Year Olds, by
Age Group, 2010 Average (CPS survey)

	(A)	(B)	(C)	(D)	(E)	(F)
Age Group	1-8th grade	9-12th grade	High School graduate	GED	GED minus 9-12th grade	GED minus HS diploma
16-24	359	344	415	407	63*	-8
25-34	445	479	612	543	64*	-68*
35-44	466	545	709	655	109*	-54*
45-54	526	557	741	698	140*	-43*
55-64	485	549	707	652	103*	-54*
Total	472	501	666	610	109*	-56*

*Statistically significant at .01 level.

Weekly wage premiums for GED holders over high school dropouts remained strong across all race/ethnic groups as well (Table 32). The weekly wage premium that GED holders commanded over high school dropouts stood at 17 to 19 percent across all race/ethnic groups, with the wage differences ranging in absolute value from \$77 for Black workers to \$105 for White workers. In each race ethnic group, GED holders earned less per week than their peers with a regular high school diploma.

Table 32:
Mean Weekly Earnings of Native Born Employed 18 to 64 Year Olds, by Educational Attainment and Race/Ethnic Group, 2010 Average (CPS survey)

	(A)	(B)	(C)	(D)	(E)	(F)
Race/Ethnic group	1-8th grade	9-12th grade	High School graduate	GED	GED minus 9-12th grade	GED minus HS diploma
White	490.9	530.6	688.4	635.4	104.8*	-53.0*
Black	469.5	424.8	571.1	502.3	77.5*	-68.8*
Hispanic	416.1	464.9	607.7	548.6	83.7*	-59.1*
Other	512.3	466.2	621.5	547.0	80.8*	-74.6*
Total	472.5	501.1	666.8	610.4	109.3*	-56.4*

*Statistically significant at .01 level.

Employed GED holders clearly make substantially more in weekly earnings than comparable workers who dropped out of school and failed to obtain a GED certificate. This result is shown to be consistent across all major demographic groups. However, staying in school and graduating with a regular diploma pays off as employers appear to still value a regular high school diploma more than a GED, compensating high school graduates with a higher weekly wage.

Trends in Labor Market Behaviors and Employment Outcomes of High School Dropouts, High School Graduates, and GED Holders, 2000-2010

Over the past decade, the nation's labor markets have been quite volatile. Employment opportunities for U.S. workers have been adversely affected by two economic recessions (2001 and 2007-2009) and their ensuing jobless recoveries. Due to the job losses that occurred from these recessions, total nonfarm payroll employment failed to grow over the decade for the first time in the past 70 years. The Great Recession of 2007-09 generated a wide array of labor market problems for America's workers, including rising levels of unemployment, increasing durations of unemployment, underemployment, hidden unemployment, and mal-employment.⁴¹ In many

⁴¹ For a review of the causes and consequences of the Great Recession and the poor economic performance of the entire 2000-2010 decade, See: (i) Menzie D. Chinn and Jeffrey A. Frieden, Lost Decades: The Making of America's Debt Crisis and the Long Recovery, W.W. Norton and Company, New York, 2011; (ii) Robert B. Reich, Aftershock: The Next Economy and America's Future Vintage Books, New York, 2011; (iii) Michael Heno Siam-Heng, The Great Recession: History,

respects, the past decade in the United States (2001-2010) was a “lost decade” for most of America’s workers.⁴²

The labor market analysis that follows tracks changes in key labor market behaviors and employment/wage outcomes for high school dropouts and GED holders for the following years: 2000, 2003, 2007, and 2010. Findings for each of these years are based on the monthly Current Population Surveys. More detailed findings for each year are presented in a comprehensive appendix to the report. The year 2000 was chosen as a base year since it reflects the labor market environment at the peak of the 1990’s economic boom. The nation’s overall unemployment rate during 2000 was only 4%, the lowest since the late 1960s. The economic expansion the ended in March 2001 when the nation’s economy slipped into a comparatively mild economic recession that would end later in the year (in November 2001). Despite being short in duration, the recession of 2001 did result in sharp job losses and a largely jobless recovery that persisted through the first eight months of 2003. Between 2000 and 2003, the nation’s unemployment rate climbed from 4% to 6%. The year 2003 was chosen for the labor market analysis because it represents the trough of the labor market downturn resulting from the 2001 recession. Beginning in the fall of 2003 through the end of 2007, the nation’s firms added jobs at a fairly steady rate that resulted in a reduction in the nation’s unemployment rate. The unemployment rate fell from 6% in 2003 to 5.1% in 2005 and to a low of 4.6% in both 2006 and 2007. However, the improvement in the nation’s labor markets between 2003 and 2007 was not strong enough to return the unemployment rate back to the low 4% rate that prevailed in 2000.

According to the National Bureau of Economic Research (NBER), the official arbiter of the nation’s business cycle dating, the U.S. economy fell back into an economic recession in December 2007 that would last until June 2009.⁴³ This recession would become known as The Great Recession of 2007-2009 due to its length and severity. The national unemployment rate doubled between 2007 and 2009, rising from 4.6% to 9.3%. The nation’s labor market remained weak through a large part of 2010 as the unemployment rate climbed higher to an average of

Ideology, Hubris and Nemesis, World Scientific Publishing, Hackensack, New Jersey, 2010; (iv) Robert J. Shiller, The Subprime Solution: How Today’s Global Financial Crisis Happened and What to Do About It, Princeton University Press, Princeton, 2008.

⁴² See: Andrew Sum, “Ringling Out the Lost Decade of 2000-2010,” The Huffington Post, December 30, 2010.

⁴³ The National Bureau of Economic Research, the official arbiter of business cycle dating, identified December 2007 as the peak month of the business cycle and June 2009 as the trough month. The recession lasted for 18 months, the longest in post-World War Two history.

9.6% for the year. Our analysis includes labor market outcomes for 2007, which represents the year prior to the onset of the Great Recession, and 2010, a year where unemployment and underemployment problems remained quite high even though the nation was technically experiencing an economic recovery.

As will be revealed below, the deterioration in labor market opportunities over the past decade has most adversely affected those working age adults with no post-secondary schooling. The employment rate of native born high school dropouts fell steeply from 45% in 2000 to 42% in 2007 and to only 35% in 2010. The employment rate declines were also quite steep for native born high school graduates and GED credential holders, but both of the latter groups still maintained substantial employment rate advantages over their peers without a regular high diploma or GED. Employment rates of native born GED holders fell from 62% in 2000 to 50% in 2010, a decline of 12 percentage points. Unemployment rates of both of these groups also increased sharply over the decade, particularly between 2007 and 2010.

The nation's youngest workers have been more adversely affected by the labor market downturns over the past decade than any other age group. In fact, employment rates of persons 65 and older were higher at the end of the decade than at the beginning. The percentage point changes in the employment/population ratios of native born (16 and older) adults between 2000 and 2010 are displayed in the table below for selected age and educational attainment subgroups. In each of the three educational groups, the employment rate declines were steepest for younger workers (16-24) and (25-34) with all of these declines in the double digits from 12 to nearly 20 percentage points over the decade. The magnitude of the percentage point decline in the employment rates of native born adults in the three educational attainment groups moderate with age and turned positive for those over 65.

Table 33:
Changes in the Employment/ Population Ratios of Native Born Adults (16 and Older) in
Selected Educational Attainment Groups By Age Group, 2000-2010

	(A)	(B)	(C)
Age Group	9th-12th grade, no diploma or GED	High School Diploma	GED
16 - 24	-19.9	-16.8	-16.6
25 - 34	-15.1	-11.9	-14.8
35 - 44	-14.0	-8.8	-13.3
45 - 54	-11.9	-5.7	-12.3
55 - 64	-5.2	0.0	-7.7
65 - 74	0.7	3.1	4.2

Comparisons of the Labor Force Activity Rates, Employment Rates, Labor Market Problems and Weekly Earnings of GED Holders and High School Dropouts (16 and Older) in the U.S., Selected Years 2000-2010

Findings of the CPS monthly household surveys for calendar years 2000, 2003, 2007, and 2010 on the labor force behaviors, employment experiences, labor market problems, and weekly earnings of the employed are displayed in Table 34 for high school dropouts and GED holders 16 years of age and older. The estimated differences between these 10 labor market outcomes for GED holders and high school dropouts also are presented together with their estimated significance levels. With the exception of several of the estimates of the underemployment rate, all of these differences were found to be statistically significant.⁴⁴ More detailed estimates of these labor market outcomes for a wide array of demographic and geographic subgroups of the population in each of our four educational groups are presented in a set of appendices to this report.⁴⁵

There are ten labor force activity rates, employment rates, unemployment rates, underemployment rates, other labor underutilization rates, and weekly earnings measures appearing in this analysis. They are the following:

⁴⁴ The statistical procedures developed by the U.S. Bureau of Labor Statistics for estimating the standard errors of monthly and annual average labor market outcomes from the CPS were used in conducting these tests of statistical significance.

See: U.S. Bureau of Labor Statistics, Employment and Earnings, January 2007, Washington, D.C., pp. 290-299.

⁴⁵ A separate set of these tables is presented for each of the four years.

- Civilian labor force participation rate
- Unemployment rate
- Employment/population ratio
- Percent of the employed working full-time
- Full-time employment/population ratio
- Underemployment rate
- Hidden unemployment rate
- Labor underutilization rate
- Mean weekly earnings (in current dollars)
- Mean weekly earnings (in constant 2000 dollars)

The annual civilian labor force participation rates of the nation's GED holders exceeded those of high school dropouts in each of the four years by fairly wide margins, ranging from 15 to nearly 18 percentage points (See Table 34 and Chart 15). All of these differences in civilian labor force participation rates for them were statistically significant at the .01 level. It should be noted, however, that over the decade the labor force participation rates of members of both educational groups had declined by approximately 5 percentage points, reflecting both considerably weakened labor market conditions, especially at the end of the decade due to the effects of the Great Recession of 2007-2009 and the ensuing jobless recovery in 2009 and early 2010, and an above average deterioration of labor market demand for less educated and lower income workers.

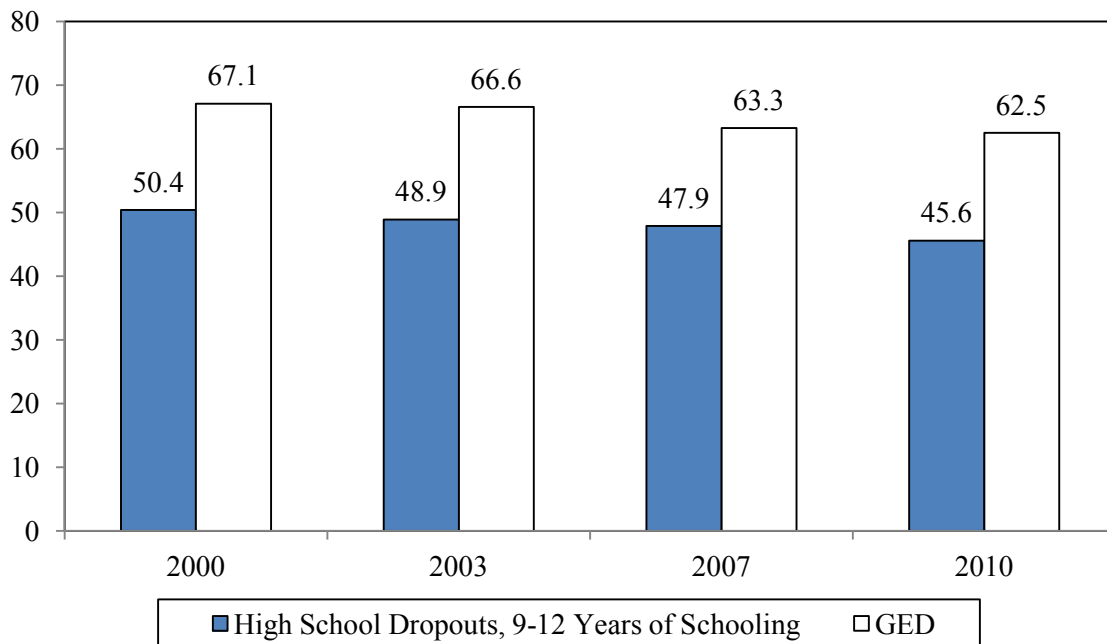
Table 34:
Comparisons of Labor Force Activity Rates, Employment Rates,
 Labor Underutilization Rates, and Mean Weekly Earnings of Native Born High School Dropouts
 and GED Holders (16 and Older) in 2000, 2003, 2007, and 2010
 (Numbers in Per Cent Except Weekly Earnings)

Labor Market Measure/Year	(A) High School Dropouts, 9-12 Years of School	(B) GED	(C) GED Minus High School Dropouts	(D) Sig. Level
Civilian Labor Force Participation Rate				
• 2000	50.4	67.1	+16.7	.01
• 2003	48.9	66.6	+17.7	.01
• 2007	47.9	63.3	+15.4	.01
• 2010	45.6	62.5	+16.9	.01
Unemployment Rate				
• 2000	10.4	7.6	-2.8	.01
• 2003	13.9	11.0	-2.9	.01
• 2007	12.9	10.4	-2.5	.01
• 2010	23.1	20.2	-2.9	.01
Employment/Population Ratio				
• 2000	45.2	62.1	+16.9	.01
• 2003	42.1	59.3	+17.2	.01
• 2007	41.7	56.7	+15.0	.01
• 2010	35.0	49.9	+14.9	.01
Per Cent Employed Full-Time				
• 2000	77.7	85.1	+7.4	.01
• 2003	77.1	82.3	+5.2	.01
• 2007	76.4	82.1	+5.7	.01
• 2010	71.9	76.8	+4.9	.01
Full-Time E/P Ratio				
• 2000	35.1	52.8	+17.7	.01
• 2003	32.4	48.8	+16.4	.01
• 2007	31.9	46.1	+14.2	.01
• 2010	25.2	38.3	+13.1	.01

Table 34: Continued

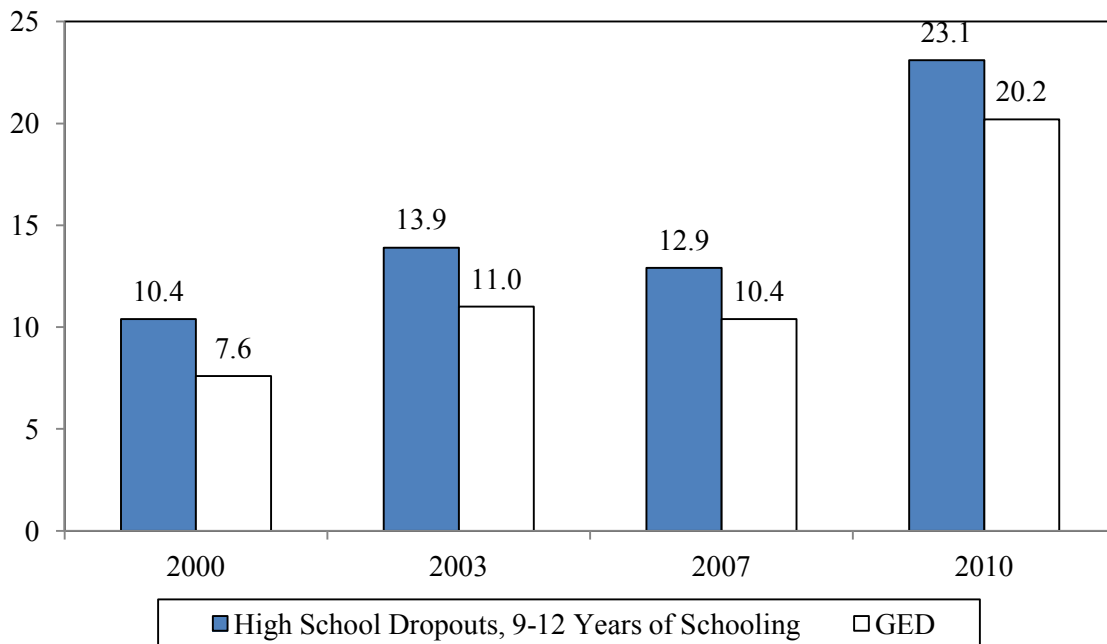
	(A)	(B)	(C)	(D)
Labor Market Measure/Year	High School Dropouts, 9-12 Years of School	GED	GED Minus High School Dropouts	Sig. Level
Underemployment Rate				
• 2000	5.7	4.2	-1.5	.01
• 2003	6.7	6.1	-.6	--
• 2007	7.0	5.7	-1.3	.05
• 2010	12.8	11.8	-1.0	--
Hidden Unemployment				
• 2000	6.2	3.9	-2.3	.01
• 2003	6.2	4.3	-1.9	.01
• 2007	6.7	4.4	-2.3	.01
• 2010	7.9	5.7	-2.2	.01
Labor Underutilization Rate				
• 2000	20.7	15.0	-5.7	.01
• 2003	24.7	20.0	-4.7	.01
• 2007	24.4	19.3	-5.1	.01
• 2010	38.3	33.6	-4.7	.01
Mean Weekly Earnings (in Current Dollars)				
• 2000	\$358	\$447	\$89	.01
• 2003	\$430	\$524	\$94	.01
• 2007	\$483	\$569	\$86	.01
• 2010	\$476	\$597	\$121	.01
In 2010 CPI-U Dollars				
• 2000	\$453	\$566	\$113	.01
• 2003	\$510	\$621	\$111	.01
• 2007	\$508	\$598	\$90	.01
• 2010	\$476	\$597	\$121	.01
Δ 2000 – 2010	+23	+31		

Chart 15:
Trends in the Civilian Labor Force Participation Rates of Native Born High School Dropouts and GED Holders (16 and Older), Selected Years, 2000-2010 (in %)



Over the 2000-2010 decade, the unemployment rates of both high school dropouts and GED holders had increased considerably. The unemployment rates of both groups in 2010 were in the 20 per cent plus range, nearly 13 percentage points above those prevailing for both groups at the height of the labor market boom in 2000. The 2010 unemployment rates for both of these groups were at depression era levels. In each of these four years, however, the unemployment rate of GED holders was between 2 and 3 percentage points below those of high school dropouts. Each of these differences in unemployment rates was statistically significant at the .01 level.

Chart 16:
Trends in the Unemployment Rates of Native Born High School Dropouts and
GED Holders (16 and Older), Selected Years, 2000-2010 (in %)



As a consequence of their higher labor force participation rates and their lower unemployment rates, the employment/population ratios of GED holders exceeded those of high school dropouts each year by anywhere from 15 to 17 percentage points. Each of these differences was statistically significant at the .01 level. Again, however, it should be noted that both groups experienced very steep declines in their E/P ratios over the decade, falling by 10 to 12 percentage points, far greater than those of any other educational group in the labor market. College educated workers fared considerably better in obtaining some type of employment, but a growing number of younger Bachelor degree holders (under 30) encountered a rising incidence of mal-employment problems, working in jobs that did not require a college degree and earning considerably less per week than their peers holding college related jobs.⁴⁶

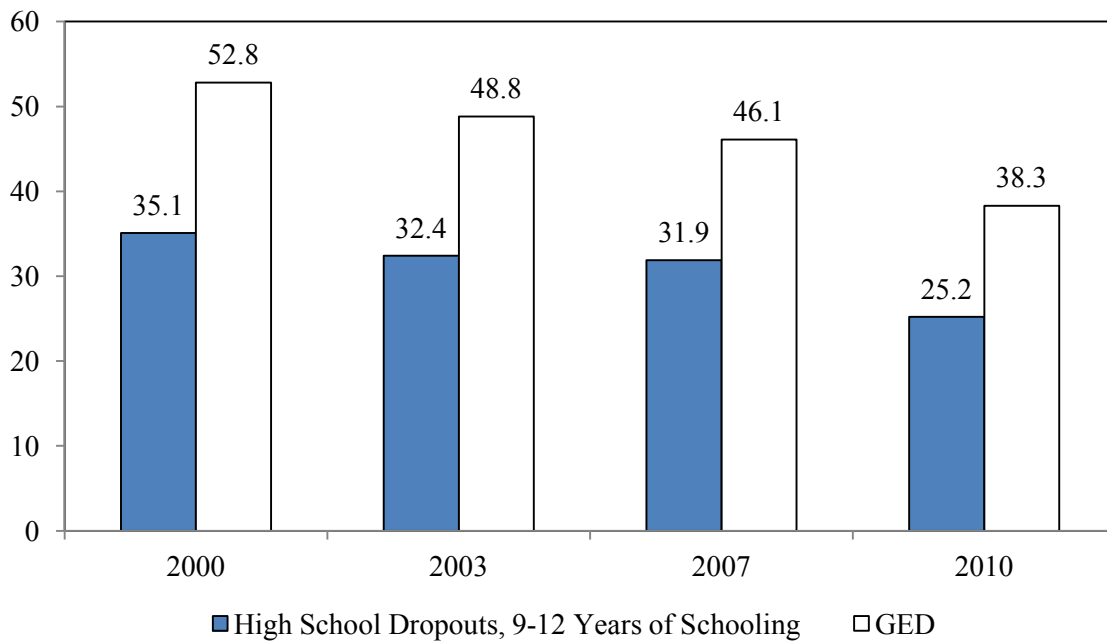
In each of the four years examined, employed GED holders were more likely than their high school dropout peers to hold full-time jobs; i.e., those providing at least 35 hours of work

⁴⁶ For a review of recent evidence on this issue, See: Andrew Sum, Ishwar Khatiwada, Mykhaylo Trubskyy, Rising Mal-Employment Problems Among Young College Graduates and Their Economic Consequences, Paper Prepared for the Educational Testing Service, Princeton, 2011. For the historical evolution of the mal-employment concepts, See: Frederick Harbison, Human Resources as the Wealth of Nations, Oxford University Press, New York City, 1973.

per week. In calendar year 2000, the full-time employment share for GED holders was 85% versus under 78% for high school dropouts, a 7.4 percentage point gap that was statistically significant at the .01 level. In each of the other three years, the full-time employment share for GED holders was five to six percentage points higher than that of high school dropouts. Each of these differences was statistically significant at the .01 level. It again should be noted that employed members of both groups (GED holders and high school dropouts) were finding it increasingly difficult to obtain full-time jobs over the decade. The full-time employment share of GED holders in 2010 was more than eight percentage points below its share in 2000 while that for high school dropouts was six percentage points below.

Given the higher employment rates of GED holders and their greater likelihood of holding full-time jobs when employed, their full-time employment population ratios were well above those of high school dropouts in each of the four years. For example, in 2000, the full-time E/P ratio of GED holders was nearly 53% versus only 35% for high school dropouts a difference of nearly 18 percentage points that was statistically significant at the .01 level. The gaps in full-time E/P ratios between GED holders and high school dropouts ranged from 13 to 18 percentage points in these four years. Over time, the advantage of GED holders tended to drop as both groups faced growing difficulties in securing full-time jobs due to the substantial weakening of the U.S. labor market, especially from 2008 to 2010.

Chart 17:
Trends in the Full-Time Employment/ Population Ratios of Native Born
High School Dropouts and GED Holders (16 and Older), Selected Years, 2000-2010 (in %)



GED holders were modestly more successful than high school dropouts in avoiding underemployment problems in each of the four years under analysis; however, these differences were not always large enough to be classified as statistically significant. In 2000, the underemployment rate of GED holders was only 4.2% versus 5.7% for high school dropouts, a difference of 1.5 percentage points that was statistically significant. In 2003, the gap between these two underemployment rates had declined to only .6 percentage points and fell short of significant at the .05 level. In 2007, the gap widened to 1.3 percentage points and became significant at the .05 level. But by 2010, both groups faced far more severe underemployment rates, and the difference had narrowed to just one percentage point and was no longer statistically significant. Nationally, underemployment rates had increased very substantially between 2007 and 2010 and impacted both less educated and low income workers far more than their respective peers.⁴⁷ The underemployment rates of both high school dropouts and GED holders in 2010 were two to three times higher than they were in 2000. These were historically high levels.

Another labor market problem experienced by workers is that of hidden unemployment. The hidden unemployed are those who express a desire for immediate employment but have not

⁴⁷ See: Andrew Sum and Ishwar Khatriwada, “The Nation’s Underemployed in the Great Recession of 2007-2009,” Monthly Labor Review, November 2010, pp. 3-14.

actively looked for work in the past four weeks and are, thus, not classified as officially unemployed. The hidden unemployment rates of GED holders were significantly below those of their high school dropout peers in each of these four years. The size of the differences was in the 2 to 3 percentage point range in each of these years. For both groups, the incidence of “hidden unemployment” problems rose over the decade. Among high school dropouts, the hidden unemployment rate rose from lows of 6.2% in 2000 and 2003 to 6.7% in 2007 and 7.9% in 2010, an increase of 1.7 percentage points over the decade. Among GED holders, the incidence of such problems rose by 1.8 percentage points over the decade. The gap between these two hidden unemployment rates varied over a fairly modest interval (1.9 to 2.3 percentage points) over this 10 year period, but were large enough in each year to be classified as statistically significant at the .01 level.

The labor underutilization rate measures the combined effect of unemployment, underemployment, and hidden unemployment problems.⁴⁸ Since GED holders experienced lower unemployment rates, underemployment rates, and hidden unemployment rates than high school dropouts each year, their labor underutilization rate had to be lower than that of high school dropouts. The gap between the labor underutilization rates of these two groups ranged from 4.7 percentage points in 2003 and 2010 to a high of 5.7 percentage points in 2000. Each of these differences was statistically significant at the .01 level. Again, however, it should be noted that the labor underutilization rates of both groups were substantially higher in 2010 than they were in 2000, a year of full employment in U.S. labor markets. Among GED holders, the labor underutilization rate more than doubled over the decade, increasing from 15% in 2000 to nearly 34% in 2010. The labor underutilization rate among high school dropouts also came close to doubling, rising from slightly below 21% in 2000 to 38% in 2010. Both groups faced extraordinarily severe labor market problems in 2010 that were characteristic of a true labor market depression.

The weekly wages of employed GED holders and high school dropouts were analyzed and estimates of their mean weekly earnings were developed for each year. Two sets of these mean weekly earnings were produced for each educational group: those based in current dollars

⁴⁸ The denominator for the labor underutilization rate is the adjusted civilian labor force; i.e., the sum of the civilian labor force and the hidden unemployed.

and those in constant 2010 dollars using the Consumer Price Index for All Urban Consumers (CPI-U index).

The mean weekly earnings of employed wage and salary workers holding a GED certificate in current dollars were anywhere from \$86 to \$121 higher than those of their high school dropout counterparts in each of the four years. Each of these weekly wage differences were statistically significant at the .01 level. Converting these nominal weekly wage data into their real dollar equivalents (in 2010 dollars) yielded weekly earnings differences of \$90 to \$121 in favor of GED holders in each of these four years. All of these differences were statistically significant at the .01 level in each of these four years. In relative terms, the size of these weekly earnings differences in favor of GED graduates ranged from 18% in 2007 to a high of 25% in both 2000 and 2010. Converting these earnings differences in 2010 into an annual equivalent would yield an annual earnings difference of \$6,200. Our initial analysis of the annual weeks worked by employed GED holders in 2010 suggests that the mean annual weeks of work in 2010 were about 43 weeks. A mean weekly wage difference of \$121 per week for 43 weeks would yield about \$5,200 more earnings per year in favor of GED recipients. Over a working life of about 42 years, this would yield an undiscounted lifetime earnings difference of about \$216,000. This lifetime earnings estimate needs to be discounted back to the present; however, initial impressions suggest a potentially high rate of return to workers earnings the GED certificate. Findings of our forthcoming multiple regression analysis later in the year will provide more insights into the independent effect of the GED on the annual earnings of adults who acquired this educational credential.

Appendix A

To better evaluate differentials in weekly earnings between selected groups of workers by their educational attainment, we restricted our analysis to those workers who made between \$125 and \$2884 per week. This wage censoring is a common practice in economics and other social sciences that allows us to avoid putting an additional weight on workers who report abnormally high or abnormally low weekly earnings. For example, a worker could have worked only a few hours last week due to illness and collected only a small amount in weekly compensation or some workers report really high weekly earnings due to some rare type of job or a massive amount of overtime and bonus. Given that the individual sample sizes for some groups are relatively small, these outlier observations could significantly skew estimates of sample both mean and sample deviation for one particular group under analysis.

In this Appendix, we present the same data as in the text, but without any restrictions on wages. As you can see, we obtain mean weekly wages that are smaller than in our original analysis, sometimes considerably so due to very low weekly earnings of outliers in restricted samples. For subgroups with larger sample sizes, such as white high school graduates, differences in estimated mean wages are relatively small - \$688 vs. 683. However, in groups where the sample size is small, some differences are relatively significant. Given the fact that we cut only about 4% of our sample, differences between our initial estimate and those in Table B1 clearly indicate the impact outliers have on our analysis.

Table A1:
Mean Weekly Earnings of Native Born Employed 18 to 64 Year Olds,
by Selected Demographic Groups, 2010 Averages.

	(A)	(B)	(C)	(D)	(E)	(F)
	1-8th grade	9-12th grade	High School graduate	GED	GED minus 9-12th grade	GED minus HS diploma
Total	439.3	486.4	661.9	599.9	113.4*	-62.0*
Male	500.9	571.0	772.0	706.7	135.7*	-65.3*
Female	347.4	374.6	537.0	457.9	83.3*	-79.1*
16-24	323.8	319.5	400.4	385.1	65.7*	-15.2
25-34	421.5	464.3	608.3	530.0	65.7*	-78.3*
35-44	429.9	546.2	710.1	647.2	101.0*	-62.9*
45-54	499.4	543.6	740.1	688.9	145.3*	-51.3*
55-64	442.5	538.8	703.9	656.5	117.7*	-47.4
White	447.5	517.1	682.9	624.4	107.3*	-58.5*
Black	438.2	406.2	562.6	499.4	93.2*	-63.2*
Hispanic	400.8	452.2	611.2	541.8	89.6*	-69.4*
Other	503.2	440.6	621.2	520.2	79.6	-101.0*

*Statistically significant at .01 level.

What is interesting of note, however, is that change in methodology did not alter our previous findings on average weekly differences between workers with GED and their peers who dropped out of school or graduated from high school with a regular diploma.