

Beyond Official Unemployment:
Measuring the Size and Incidence of Labor
Underutilization Problems Among U.S.
Workers in 2008

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“For the measure that you measure with, shall be measured back unto you.”
Luke, Ch. 6 v. 36

“In America, Barton, we only do what we measure”
Daniel Patrick Moynihan

“it is thoughtless folly to (try to) solve problems and take action unguided by ultimate moral aims and values”
Robert F. Kennedy
To Seek A Newer World (1967)

Introduction

In assessing the state of U.S. labor markets and identifying the need for new macroeconomic and workforce development strategies to boost labor market performance, many economic and labor market analysts rely heavily on the findings of the monthly Current Population Surveys of households and the monthly U.S. Bureau of Labor Statistics payroll surveys of private sector and government wage and salary employment.¹ Following nearly four and one half years of steady growth in payroll employment between August 2003 and December 2007, aggregate nonfarm payroll employment across the nation has declined for seven consecutive months, falling by 463,000 jobs.² The payroll job declines have been even greater in the private nonfarm sector. Over the same seven month period, private sector payroll jobs have fallen by 651,000. The loss in payroll jobs has been accompanied by rising levels and rates of official unemployment among U.S. workers. The national unemployment rate (seasonally adjusted) in July 2008 was estimated by the U.S. Bureau of Labor Statistics to be 5.7%, up by a full percentage point over the unemployment rate prevailing a year earlier in July 2007. Men, younger workers (16-24), Black and Hispanic workers, and adults with limited education have been most adversely affected by these rising unemployment developments.³

The labor market problems of U.S. workers, however, go well beyond the official unemployment measures of the U.S. Department of Labor. A rapidly growing number of workers

¹ For a review of civilian employment and payroll employment developments in the U.S. in recent months based on these two surveys,
See: U.S. Department of Labor, Bureau of Labor Statistics, The Employment Situation: July 2008, Washington, D.C., August 1, 2008.

² Between August 2003 and December 2007, total payroll employment (seasonally adjusted) grew steadily by 8.256 million jobs.

³ See: (i) U.S. Bureau of Labor Statistics, The Employment Situation: July 2008,...; (ii) Michael S. Grynbaum, “Job Shortage for Young People: U.S. Unemployment Rate Increases to 5.7% in July, a Four Year High,” New York Times, August 5, 2008.

have seen their hours of work reduced during the current labor market downturn, and many more have entered the ranks of the underemployed; i.e., persons working part-time but desiring full-time work.⁴ Some working age adults, including many teens and young adults, have not entered the labor force in search of work even though they desire jobs, thereby remaining as “hidden unemployed”.⁵ Private sector wage and salary workers in production/non supervisory jobs have seen a decline in their real (inflation adjusted) weekly earnings over the past year. The mean weekly earnings of this group of workers (in constant 1982 dollars) fell by about 2 percent between May-June of 2007 and 2008.⁶

This research report goes well beyond the official unemployment statistics to provide a more comprehensive set of labor underutilization measures for U.S. workers during recent months, compares findings for 2008 with those for the same time periods in 2007, and presents estimates of labor underutilization rates for a wide array of demographic and educational groups. Our labor underutilization measures include official unemployment, underemployment, and forms of hidden unemployment (workers who want jobs now but are not actively looking). For young four year college graduates, we also will present estimates of the extent of their mal-employment problems and their wage consequences. These problems are related to the inability of college graduates to find jobs that require a four year college degree. Our findings will reveal that in the aggregate labor underutilization problems are more than twice as high as those of unemployment alone,⁷ that rates of underutilization vary widely across age, race-ethnic, and educational subgroups, and that many young college graduates (21-29 year olds with a bachelor’s degree) also face severe mal-employment problems in today’s labor markets. Our report will begin with a description of the sources of data and the labor underutilization concepts and measures underlying all of the estimates appearing in this paper.

⁴ See: Louis Uchitell, “Jobless Rate Climbs to 5.7% as 51,000 Jobs Are Lost in July,” The New York Times, August 2, 2008, p. B-1, B-3; (ii) Peter S. Goodman, “A Hidden Toll on Employment: Cut to Part-Time,” The New York Times, July 31, 2008.

⁵ For a recent assessment of so-called hidden unemployment among teens, See: Andrew Sum, Joseph McLaughlin, Ishwar Khatiwada, The Collapse of the Teen Job Market and the Outlook for the Summer 2008 Teen Jobs Market: Does Anybody Care?, Center for Labor Market Studies, Northeastern University, Boston, 2008.

⁶ These estimates of weekly wage changes are based upon the findings of the payroll employment surveys of private sector firms and as adjusted for inflation by the U.S. Bureau of Labor Statistics.

⁷ The inclusion of mal-employment problems among all adults with a bachelor’s or higher degree would increase the pool of the underutilized by 9.5 million to 27.4 million, more than three times the size of the unemployed in the first six months of this year.

Data Sources and Concepts Underlying the Labor Underutilization Measures

The labor force underutilization measures appearing in this research paper are based on a diverse array of labor force activity measures and information captured by the Current Population Survey. The monthly estimates of the size of the nation's civilian labor force, the employed and unemployed population and unemployment rates also are based upon the findings of the Current Population Survey (CPS). The Current Population Survey is a national household survey conducted monthly by the U.S. Bureau of the Census for the U.S. Bureau of Labor Statistics with a nationally representative sample of households. In recent years, approximately 60,000 households per month were interviewed as part of the national CPS survey.⁸

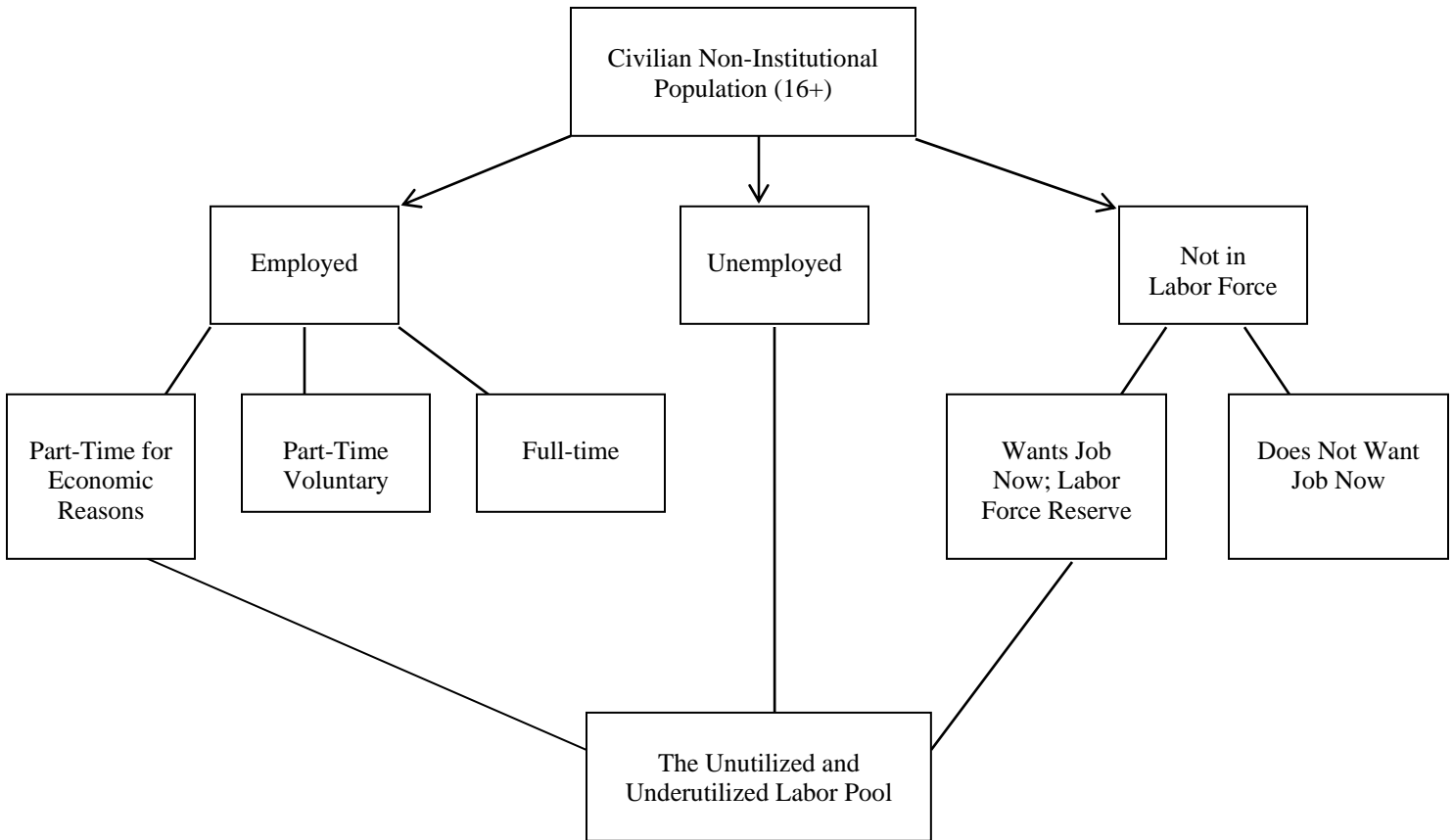
The CPS survey interviewers only collect labor force activity data from those household members 16 and older; i.e., those of working age. In conducting the Current Population Survey, the U.S. Census Bureau does not interview inmates of institutions (jails, prisons, nursing homes, mental institutions), the homeless including those living in temporary shelters, or members of the nation's armed forces whether stationed in the U.S. or abroad.⁹ The universe for all of the CPS labor force estimates is the civilian, non-institutional working age population (16 and older) (See Chart 1).

⁸ For a review of the key design features of the CPS household survey and the labor force concepts and measures underlying the survey,

See: U.S. Bureau of Labor Statistics, Employment and Earnings, January 2007, U.S. Government Printing Office, Washington, D.C., 2007.

⁹ Some members of the nation's armed forces living off base in the U.S. are interviewed by the CPS survey. They are, however, excluded from the count of the civilian, non-institutional population and the civilian labor force.

Chart 1:
The Conceptual Framework for Measuring the U.S. Civilian Labor Force,
the Employed and Unemployed Population, and the Underutilized Labor Pool



For each working-age (16 and older) household member, the U.S. Census Bureau collects data on their labor force activities in the calendar week immediately preceding the survey. The so-called reference week of the survey typically is the calendar week containing the 12th day of the month. The information on the labor force activities of each respondent is used to classify them into one of the following three, mutually exclusive labor force statuses: employed, unemployed, or not in the labor force (Chart 1). The employed are those persons who met one of the following criteria: worked one or more hours for pay or profit during the reference week, had a job from which they were temporarily absent for reasons such as paid vacation, sick leave, temporary illness, or worked without pay in a family owned business for 15 or more hours. The unemployed are those without jobs, who did not work in the reference week, have actively

looked for a job in the past four weeks and were available to take a job during that week.¹⁰ The remainder (those neither employed nor unemployed) are classified as not in the labor force. As will be revealed below, more than five million members of the not in the labor force group in recent months have expressed a desire for immediate employment even though they are not actively looking for work. Through a set of follow-up questions on their job desires and reasons for not actively seeking work, the CPS survey data can be used to identify members of the labor force reserve, persons who report a current job desire even though they are not actively seeking work.¹¹

The labor market problems of working-age adults (16+) in the U.S. frequently go well beyond official unemployment as measured by the monthly CPS household surveys of the U.S. Census Bureau and the U.S. Bureau of Labor Statistics. Being an employed member of the labor force does not guarantee that a worker is able to work his/her desired hours of work, achieve adequate weekly earnings, or fully utilize their educational/training skills on the job (the so-called mal-employed).¹² In addition to these under-employed and mal-employed individuals, there are millions of jobless individuals who desire to be employed but are not counted as members of the official civilian labor force since they do not meet the active job search or work availability criteria underlying the official unemployment measures. In this section of the paper, we provide estimates of the number of U.S. adults who were unutilized or underutilized in June and July of 2008, estimate the overall labor underutilization rate for the nation, and compare

¹⁰ Persons on temporary layoff from their job with a definite recall date from their employers do not have to meet the active job search test to be classified as unemployed. Passive job search activities, such as reading newspaper want ads or surfing internet job sites, do not count in meeting the definition of unemployment in the CPS household survey.

¹¹ The U.S. Bureau of Labor Statistics provides national estimates of a group called the marginally attached labor force. They are individuals who meet the criteria of being a member of the labor force reserve but also have looked for a job in the past 12 months and were available to take a job during the reference week of the survey.

¹² For a review of previous efforts to identify the degree of mal-employment or over-education among U.S. college graduates and those in other countries and their economic impacts on workers' earnings, See: (i) Russell Rumberger, "The Impact of Surplus Schooling on Productivity and Earnings," The Journal of Human Resources, Vol. 22, Issue 1, 1987, pp. 24-50; (ii) Richard Verdugo and Naomi Verdugo, "The Impact of Surplus Schooling on Earnings," The Journal of Human Resources, Volume 24, Issue 4, 1989, pp. 629-643; (iii) Stephen Rubb, "Post-College Schooling, Overeducation, and Hourly Earnings in the United States," Education Economics, Volume 11, No. 1, 2003; (iv) Andrew Sum and Neeta Fogg, "Malemployment and Over-education Problems", from Uses of Labor Market Information for An Analysis of State and Local Labor Market Problems, National Labor Market Information Training Institute, Washington, D.C., 1996; (vi) Santiago Budria and Ana Moro-Egido, Overeducation and Wages in Europe: Evidence from Quartile Regression, University of Madeira and University of Granada, January 2007.

recent underutilization problems with those of all working-age adults in the U.S. in the same two month period in 2007.

Our analysis of the labor underutilization problems of adults is based on the findings of the monthly CPS household surveys for the June-July periods of 2007 and 2008. Our analysis will be focused on the following three mutually exclusive groups: the unemployed, the underemployed, and the members of the so-called labor force reserve or labor force overhang.¹³ As defined earlier, the unemployed are those adults who were not working during the reference week of the CPS survey and were not temporarily absent from a job for such reasons as vacation, sick leave, or weather, but had been actively looking for work during the past four weeks and were available to take a job in the reference week. The labor force reserve consists of those individuals who reported to the Census Bureau's CPS interviewers that they wanted an immediate job even though they were not actively looking for work.¹⁴ The underemployed are those persons who were working part-time (under 35 hours per week) during the reference week of the CPS survey but wished to be working full-time. They may have experienced reduced work hours due to slack demand for labor at their firm or simply been unable to find a full-time job. On average, they work only 22 to 23 hours per week, or only half the hours of the full time employed. Estimates of the size of each of these three groups of unutilized and underutilized adults will be combined to form a pool of unutilized and underutilized adults and then used to calculate a labor underutilization rate. The value of this labor underutilization rate is obtained by dividing the combined pool of unutilized and underutilized workers by the size of the adjusted civilian labor force. The adjusted labor force consists of the civilian labor force plus the labor force reserve.

The estimates in Table 1 of the number of persons who were unemployed, underemployed, or members of the labor force reserve in June-July of 2007 and in the same two

¹³ The late economist Eli Ginzberg used the concept of a "labor force overhang" to describe this group of persons on the margins of the official labor force. We prefer the term labor force reserve to describe this group.

See: Eli Ginzberg, Good Jobs, Bad Jobs, No Jobs, Harvard University Press, Cambridge, Massachusetts, 1979.

¹⁴ The labor force reserve is sometimes confused with the set of "discouraged workers", who are a small subset of the labor force reserve. The discouraged are those members of the labor force reserve who cite personal and economic discouragement reasons for not seeking work. Fewer than 1 in 10 members of the labor force reserve would meet the definition of being a discouraged worker.

month period of 2008 are not seasonally adjusted.¹⁵ Since we are comparing findings for the same two month period in both years, there is no need to seasonally adjust the data.

According to the findings of the June-July 2008 CPS surveys, there were approximately 156 million adults (16 and older) actively participating in the nation's civilian labor force on average during those two months (Table 1). Of that total number of labor force participants, 9.183 million or nearly 5.9% were unemployed (not seasonally adjusted).¹⁶ There were nearly another 5.876 million employed adults who were underemployed; i.e., working part-time (under 35 hours per week) though they wanted a full-time job. Their actual mean weekly hours of work were only about one-half as high as those worked by their full-time employed peers.¹⁷ Thus, the weekly earnings losses from involuntary part-time employment are quite severe. There also are long-term consequences from involuntary part-time employment. The economic return in the form of higher future wages from part-time employment is considerably lower than that of full-time employment.

There also were at least another 5.3 million adults who wanted a job but were not actively looking for work at the time of the 2008 CPS surveys.¹⁸ These individuals are counted as members of the labor force reserve. They are not included as part of the official civilian labor force of the nation since they were not actively looking for work at the time of the CPS surveys.

¹⁵ Data for the unemployed and the under-employed also are available on a seasonally adjusted basis from the U.S. Bureau of Labor Statistics, but the monthly size of the labor force reserve and their demographic characteristics are not available on a seasonally adjusted basis.

¹⁶ According to estimates of the U.S. Bureau of Labor Statistics, the average seasonally adjusted rate of unemployment for these two months was 5.6%.

¹⁷ In 2007, the mean weekly hours of work among the full-time employed were 43 hours versus only 23 hours for those working part-time for economic reasons.

¹⁸ We consider the estimate of the labor force reserve to be somewhat conservative since it is based on the findings of the CPS survey, which allows proxy respondents for household members such as teens. Previous national and local studies have shown that these adult proxies, often the mother, underestimate the job desires and active job seeking activities of teens, especially in high poverty urban neighborhoods.

Table 1:
Changes in the Civilian Labor Force (16+) and the Number of U.S. Workers Experiencing Key
Types of Labor Underutilization Problems Between June-July 2007 and June-July 2008
(in Thousands, not Seasonally Adjusted)

	(A)	(B)	(C)
Labor Force/ Underutilization Variable	June – July 2007	June – July 2008	Increase 2007 – 2008
Civilian labor force (16+)	154,562	155,941	+1,379
Unemployed	7,426	9,183	+1,757
Labor Force Reserve	5,094	5,294	+200
Underemployed	4,492	5,876	+1,384
Total Unutilized/Underutilized	17,012	20,353	+3,341
Adjusted civilian labor force	159,656	161,235	+1,579
Underutilization Rate (in %)	10.6%	12.6%	+2.0 Percentage Points

Source: U.S. Bureau of Labor Statistics, “web site”, CPS employment statistics, tabulations by authors.

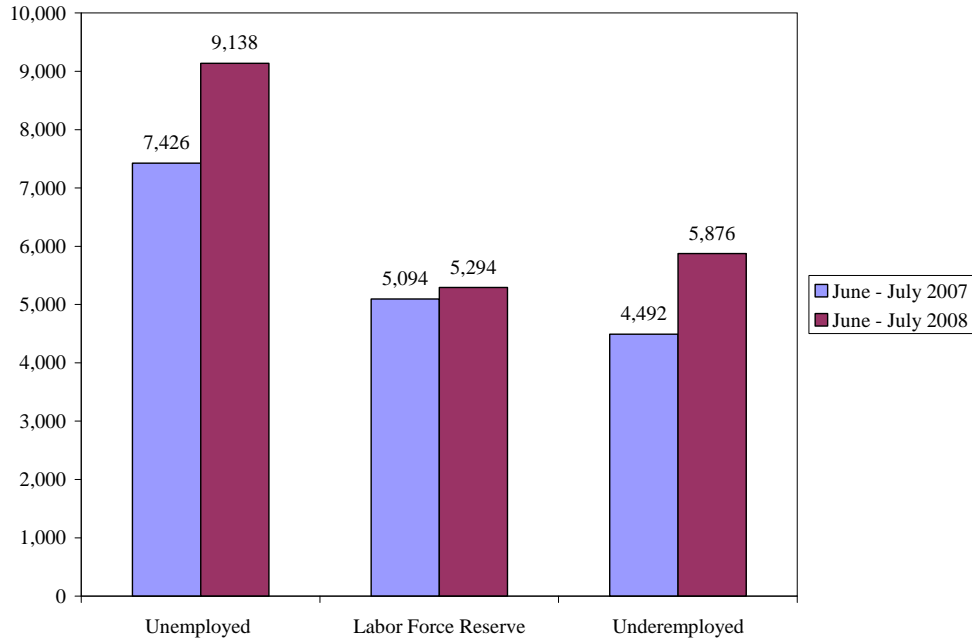
The total number of working-age persons (16+) who were unutilized or underutilized on average between June and July of 2008 was equal to 20.353 million, 2.2 times as large as the pool of unemployed. An overall labor force underutilization rate can be computed by dividing the combined number of unutilized or underutilized adults by the size of the adjusted adult civilian labor force. The adjusted civilian labor force consists of the 155.9 million members of the civilian labor force plus the 5.294 million members of the labor force reserve. The estimated underutilization rate for U.S. adults in June-July 2008 was 12.6%; i.e., nearly 13 of every 100 members of the adjusted labor force were either unemployed, underemployed, or members of the labor force reserve. In the following section, we will show that these underutilization rates varied widely across age, race/ethnic, and educational groups in the U.S. The labor force underutilization rates for teens and young adults (20-24 years old) in the U.S. will be found to be in the 20 to 33 percent range and college educated young adults (22-29) have been facing very severe mal-employment problems in the past year.

How do the labor underutilization rates for U.S. workers in the past two months compare to those in the same two month period in 2007? Findings in Table One reveal that the number of U.S. adults in each of the three labor underutilization categories rose over the past year with the relative increase being greatest among the underemployed; i.e., those working part-time for economic reasons. The official number of unemployed increased sharply from 7.426 million to

9.183 million, a rise of 1.76 million or 24%. The unemployment rate (not seasonally adjusted) increased from 4.8% in the summer of 2007 to 5.9% in the summer of 2008, a rise of 1.1 percentage points, the highest two month unemployment rate for these two summer months since 2003 and the third highest over the past 14 years. Only June-July of 2002 and 2003 were characterized by slightly higher unemployment rates since 1995. The number of underemployed workers also rose sharply over this time period, increasing from about 4.5 million in 2007 to just under 5.9 million in June-July 2008, a rise of 1.4 million or 31%. To prevent layoffs, a growing number of firms have resorted to reducing the work hours of their employees, and jobseekers have been accepting part-time jobs to keep themselves employed. The labor force reserve has risen by 200,000 over the past year to just under 5.3 million.

The total number of unutilized/underutilized workers in the U.S. has grown from 17.012 million in June-July 2007 to 20.353 million in 2007, an increase of 3.341 million, or nearly twice the increase in the number of officially unemployed (Table 1). The underutilization rate in June-July 2008 was 12.6 percent versus only 10.6 percent in the summer of 2007, an increase of 2 percentage points. One of every 8 U.S. working age adults in the adjusted civilian labor force in 2008 were either unutilized (unemployed/member of the labor force reserve) or underutilized (working part-time for economic reasons) in the past two months. The 12.6 percent underutilization rate in the summer of 2008 was only exceeded by the 12.8% underutilization rate in the summer of 2003 over the past 15 years in the U.S.

Chart 2:
Changes in the Number of U.S. Workers Experiencing Key Types of
Labor Underutilization Problems Between June-July 2007 and June-July 2008
 (in Thousands, not Seasonally Adjusted)



Variations in Labor Underutilization Rates Across Gender, Age, Race-Ethnic and Educational Subgroups of Workers, January-June 2007 to January-June 2008

Knowledge of the degree of labor underutilization problems faced by working-age adults in different demographic (age, gender, race-ethnic) groups and educational attainment groups would be helpful in formulating workforce development policies to combat underutilization problems. To obtain more statistically reliable estimates of the incidence of underutilization problems among gender, age, race-ethnic, and educational attainment groups and to estimate recent changes in those underutilization rates for these subgroups, we analyzed findings of the January-June 2007 and 2008 CPS public use files.¹⁹ Estimates of underutilization rates for all working-age adults in the adjusted labor force and for gender and age groups are displayed in Table 2.

¹⁹ The U.S. Bureau of Labor Statistics had not yet released public use data from the July 2008 CPS survey.

Table 2:
Trends in Labor Underutilization Rates in the U.S. Between
January-June of 2007 and 2008, All and by Gender and Age Group
(in %)

Group	(A)	(B)	(C)
	January-June 2007	January-June 2008	Percentage Point Change
All	10.1	11.3	+1.2
Gender			
Men	10.0	11.4	+1.4
Women	10.3	11.2	+.9
Age Group			
16-19	29.8	32.3	+2.5
20-24	16.8	18.8	+2.0
25-34	10.0	11.0	+1.0
35-44	7.6	8.7	+1.1
45-54	7.0	8.1	+1.1
55-64	7.5	8.0	+.5
65+	11.4	13.0	+1.6

Source: January-June 2007 and January-June 2008 CPS surveys, public use files, tabulations by authors.

For the entire adjusted labor force, the underutilization rate in the first six months of 2007 was estimated to be 10.1% (Table 2). During the first six months of this year, the underutilization rate had increased to 11.3%, a rise of 1.2 percentage points, representing an increase of just under two million additional underutilized workers across the nation. The underutilization rates of both men and women increased over this time period; however, the rise was steeper for men (1.4 percentage points) than for women (.9 percentage points). Both gender groups faced statistically identical labor force underutilization rates in the first six months of 2008 (11.4% for men versus 11.2% for women).²⁰

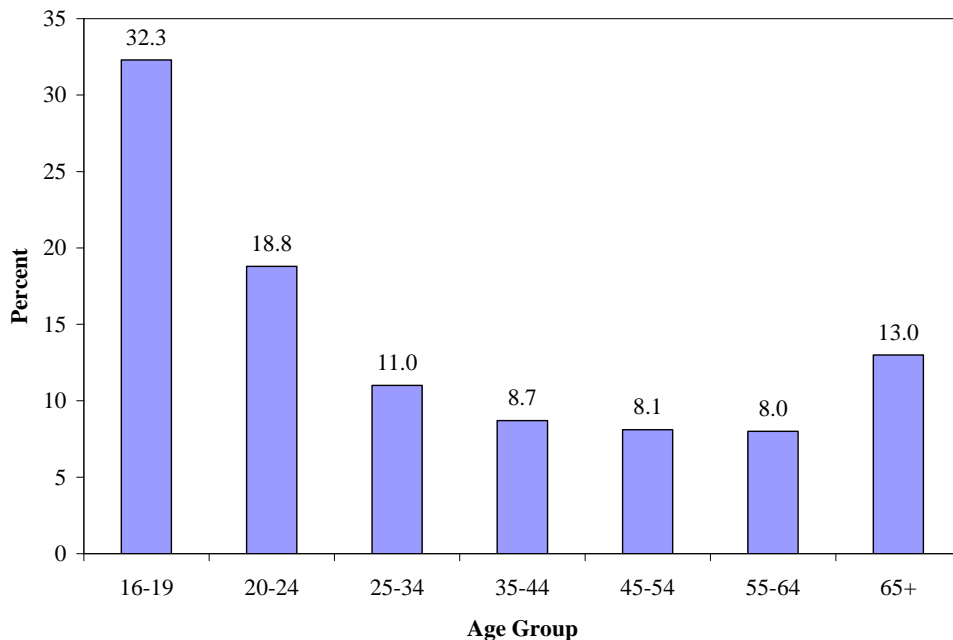
Labor force underutilization rates varied far more widely across age groups in both 2007 and 2008, with teen workers and young adults facing the steepest underutilization rates (Table 2 and Chart 2). During January-June 2008, nearly one-third of teens in the labor force and nearly 1 of 5 20-24 year olds experienced some type of underutilization problem. Teen and young adults (20-24) faced high rates of both unemployment and underemployment and were the most likely

²⁰ The difference between these two underutilization rates was not quite statistically significant at the .05 level using a two-tailed t-test of the difference between two sample proportions.

to be members of the labor force reserve. Underutilization rates fell steadily with age through the age group 55-64. Those persons 45-54 and 55-64 faced underutilization rates of 8.0-8.1 percent.

Over the past year, underutilization rates rose across every age group, but the percentage point increases were highest among teens (2.5 percentage points) and young adults and lowest among those 55-64 (a rise of .5 percentage points). Teenagers (16-19) were four times as likely to be underutilized as those 45-64 years of age in the first six months of this year. Many teenagers have been displaced by the employment of young, poorly educated immigrant workers, especially undocumented immigrants, over the past seven years, and the sharp downturn in overall labor demand since December 2007 has pushed a large number of teens to the back of the hiring queues of the nation’s employers.²¹

Chart 2:
Labor Underutilization Rates of U.S. Adults by Age Group, January-June 2008
(in %)



Estimates of the underutilization rates of workers in race-ethnic groups and educational groups during the first six months of 2007 and 2008 are displayed in Table 3. During the January-June period of 2008, the underutilization rates of adults varied widely across the five

²¹ See: (i) Andrew Sum, Ishwar Khatiwada, and Joseph McLaughlin, The Nation’s Temporary Guest Worker Program, The New Immigrant Work Force, and the Steep Deterioration in the Employment of Native Born Workers, Paper Presented to the U.S. Congress, House of Representatives, Committee on Labor and Education, Washington, D.C., May 2008; (ii) Christina M. Wright, “Job Market Idles Many Teens,” Wall Street Journal, July 2008.

race-ethnic groups, ranging from a low of 8.4% among Asian workers to highs of between 17-18 percent among members of Black and other races.²² The underutilization rates of each race-ethnic group rose between 2007 and 2008, with Hispanics and “other” races experiencing the largest increases (2.0-2.3 percentage points) in their underutilization rates. The sharp rise in the underutilization rate among Hispanics appears to have been primarily attributable to a jump in labor underutilization among newer immigrant arrivals with less education. Declines in construction activity due to the financial troubles of the home mortgage industry have led to a drop in employment in the construction industry, which had employed a considerable number of young Hispanic immigrants over the past 7 years. Highly educated immigrants have been affected to a considerably lower degree.

Table 3:
The Labor Underutilization Rates of U.S. Adults in the Adjusted Labor
Force by Race-Ethnic Group and Educational Attainment, January-June 2007 to 2008
(in %)

Group	(A) January – June 2007	(B) January – June 2008	(C) Percentage Point Change
Race/Ethnic Group			
• Asian	8.0	8.4	+.4
• Black	16.1	17.4	+1.3
• Hispanic	13.2	15.5	+2.3
• Other	15.9	17.9	+2.0
• White	8.5	9.4	+.9
Educational Attainment			
• <12 or 12, no diploma	22.3	25.0	+2.7
• H.S. diploma/GED	11.4	13.4	+2.0
• 13-15 years, including Associate degree	8.9	9.9	+1.0
• Bachelor’s degree	5.3	5.7	+.4
• Master’s or higher degree	3.5	4.2	+.7

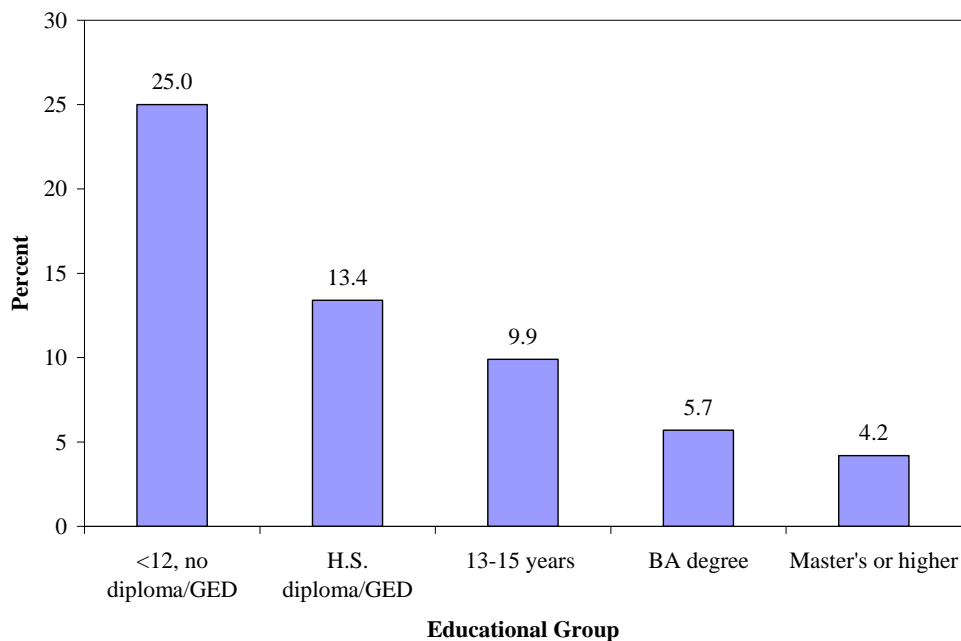
Source: January-June 2007 and 2008 CPS public use files, tabulations by authors.

Labor underutilization rates in both 2007 and 2008 varied quite considerably across educational attainment groups, falling steadily and steeply with additional years of schooling

²² Other races include American Indians, Alaskan natives, and members of mixed races.

(Table 3 and Chart 3). During the first six months of this year, the labor underutilization rates of adults ranged from lows of 4.2 percent among those holding a Master’s or higher degree and 5.7% among bachelor degree holders to a high of 25% among those adults lacking a high school diploma or its equivalent (a GED certificate). High school dropouts were 6 times as likely to be underutilized as their counterparts with a Master’s or higher degree. They experienced very high rates of unemployment and accounted for a relatively high share of the labor force reserve. Among dropouts, the labor force reserve represented 7.35% of their adjusted labor force versus only 3% of high school graduates and only slightly more than 1% of those adults with a Master’s or higher degree.

Chart 3:
Labor Underutilization Rates of U.S. Adults (16+) by
Educational Attainment, January – June 2008
 (in %)



Between January-June 2007 and the same six month period of 2008, the labor underutilization rates of members of each educational group increased, but the percentage point sizes of these increases also varied quite widely across educational attainment groups, being largest for the less educated groups of adults. Labor force members with a Bachelor’s degree only saw a .4 percentage point rise in their underutilization rate versus a 1.0 percentage point increase for adults with 1-3 years of college, a 2.0 percentage point increase for adults with only

a high school diploma, and a near three percentage point increase for those labor force members lacking a high school diploma/GED certificate. The rise in the underutilization rate of high school dropouts was seven times higher than that of their peers with a bachelor's degree. As will be shown below, however, young adults under 30 years of age with a bachelor's degree face very high rates of labor underutilization when we also take into account their mal-employment problems, i.e., their inability to obtain jobs that require a four-year college education.

The Severe Incidence of Labor Underutilization Problems Among the Nation's 16-24 Year Olds, Especially Non-College Graduates

The nation's teens (16-19) and young adults (20-24) were found to face labor underutilization rates far above those of older adults. In substantial contrast to their labor market experience in the 1990s jobs recovery and those in earlier decades, teens did not obtain any of the increased employment opportunities generated by the national economy between the late spring of 2003 and the end of calendar year 2007 when job creation ended. This current summer, teens are experiencing the lowest employment rate they have ever faced in the past 60 years for which such employment data are available from the Current Population Survey.²³ To obtain a better understanding of the labor underutilization problems of the nation's 16-24 year olds, we analyzed their labor market problems by school enrollment and educational attainment during the first six months of this calendar year (See Table 4).

²³ For a review of the particularly severe job market problems of the nation's teens this summer including a 60 year low employment rate,

See: Andrew Sum, Joseph McLaughlin, and Ishwar Khatiwada, The Collapse of the Nation's Summer Job Market for Teens: A 60 Year Historical Low Employment Rate This Summer, Center for Labor Market Studies, Northeastern University, Boston, August 2008; (ii) Algernon Austin, "Understanding the Black Jobs Crisis," www.BETJ.com, August 1, 2008; (iii) Michael M. Grynbaum, "Job Shortage for Young People," The New York Times, August 5, 2008; (iv) Floyd Norris, "Bad Time to Be Young", The New York Times, August 1, 2008.

Table 4:
Underutilization Rates of 16-24 Year Olds in the U.S. in January-June 2008 by
Educational Attainment and School Enrollment Status
(in %)

Group	Underutilization Rate
All	23.3
• High school students	33.5
• College students in 2 and 4 year institutions	15.3
• High school dropouts	38.9
• High school graduates not enrolled in school	25.9
• 1-3 years of college, not enrolled	17.0
• Bachelor's or higher degree, not enrolled in college	10.2

Source: January-June 2008 CPS public use surveys, tabulations by authors.

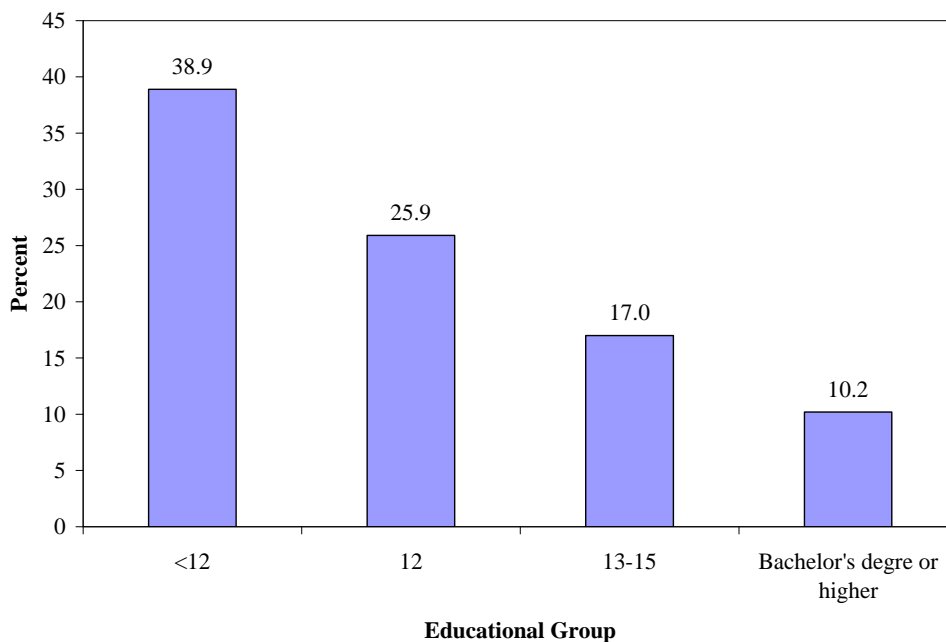
Overall, the combined population of 16-24 year olds in the adjusted labor force were characterized by a very high labor underutilization rate (23.3%), which was nearly three times as high as that for adults 25 and older. Among these 16-24 year olds, however, underutilization rates during both 2007 and 2008 varied quite substantially across school enrollment and educational attainment groups (Table 4). Among those enrolled in school, the labor underutilization rates ranged from a staggering high of 33.5% among high school students, to 15% among those attending two and four year colleges, and to a low of 11% among those enrolled in graduate schools.

Among those 16-24 year olds not enrolled in school during the first six months of this year, underutilization rates varied quite widely by their educational attainment. Nearly 39 of every 100 young adult high school dropouts in the labor force were underutilized as were 26 of every 100 high school graduates. (Table 4 and Chart 4). The underutilization rates for young adults fell to 17% for those with 1-3 years of college and to only 10% for young college graduates with a bachelor's or higher degree. While a substantial majority (88%) of young bachelor degree holders were able to obtain some type of employment during the first six months of this year, a relatively high share of them (over one-third) were working in jobs that did not require a four year college degree.²⁴ By capturing jobs in the non-college labor market, however,

²⁴ In Appendix 1, we provide a description of the methods that were used to identify college labor market jobs and provide a listing of all occupations included in the college labor market jobs category.

these young college graduates displaced less educated young adults from the ranks of the employed, driving up their labor underutilization rates.

Chart 4:
Underutilization Rates of 16-24 Year Old, Non-Enrolled Youth by
Educational Attainment, January – June 2008
(in %)



The severe labor market problems faced by high school dropouts in their late teens and early 20s unfortunately do not vanish as they reach their mid to late 20s.²⁵ While their overall employment rates and mean annual earnings do rise as they age, they remain far below those of their better educated peers, including high school graduates and those with some post-secondary schooling. Over the past 28 years, the mean annual and lifetime earnings of male dropouts and many male high school graduates with no post-secondary schooling have declined considerably. These substantially reduced lifetime earnings for male dropouts and high school graduates have been associated with a myriad set of income, social, criminal justice, and fiscal problems, including much higher rates of poverty and other forms of income inadequacy, a sharp drop in their marriage rates, a substantial rise in out-of-wedlock childbearing among women with no post-secondary schooling, increased child poverty and neglect, rising rates of incarceration

²⁵ See: Andrew Sum, Ishwar Khatiwada, Joseph McLaughlin with Jacqui Motroni and Sheila Palma, The Labor Market, Income, Social, Health, Civic, and Fiscal Consequences of Dropping Out of High School: Findings for Michigan Adults in the 21st Century, Report Prepared for C. Stewart Mott Foundation, June 2008.

among males, reduced tax payments and increased cash and in-kind transfers from local, state, and federal governments. All of these developments represent both unfavorable short and long run trends for the nation's young adult dropouts.

Mal-Employment Problems of Young College Graduates (21-29 Years Old)

Our preceding analyses of labor underutilization problems have focused on three main sets of problems: open unemployment, hidden unemployment (the labor force reserve), and underemployment. Among other labor underutilization problems faced by workers, especially those with higher level skills and schooling, is that of mal-employment; i.e., being employed in jobs that do not require the use of one's training, formal education, or literacy/numeracy skills.²⁶ While maintaining high overall employment rates, recent college graduates appear to have faced severe problems in obtaining jobs related to their college majors and are receiving lower hourly and weekly wages and fewer key employee benefits, including health insurance and pension coverage.²⁷ Mal-employment (which is sometimes referred to by economic analysts as "over education" or "surplus schooling") can result in substantial wage and annual earnings losses for workers and lower levels of output for society, thereby reducing the private and social rates of return to education or training.²⁸

To identify the degree of mal-employment problems among young four year college graduates (21-29 years old) in the U.S. in the past year and the wage impacts of being mal-employed, we first developed a methodology for estimating mal-employment. The problem of mal-employment among bachelor degree holders is defined as being employed in an occupation that does not require a four year college degree. In Appendix A, we describe the methodology that we developed to identify whether a college graduate was mal-employed at the time of the CPS survey. The methodology is straightforward and is based on comparing the occupational titles of the jobs held by employed four year or higher college graduates with those of occupations that we define as college labor market jobs (See Appendix A).

²⁶ For a review of the concept of mal-employment and its original uses in human resource economics, See: Frederick Harbison, Human Resources as the Wealth of Nations, Oxford University Press, New York, 1973

²⁷ For recent articles on the labor market difficulties being faced by young college graduates: See: (i) Nancy Trejos, "Graduates Having Hard Time Getting Foot in the Door," The Washington Post, August 7, 2008; (ii) Lawrence Mishel and Elise Gould, "Inhospitable Job Markets to Greet College Graduates," Economic Snapshots, Economic Policy Institute, May 14, 2008.

²⁸ Similar findings appear to apply to literacy and numeracy proficiencies. The degree to which such proficiencies are used on the job has a major influence on their earnings impacts. See: Andrew Sum, Literacy in the Labor Force, National Center for Education Statistics, Washington, D.C., 1999.

During the first six months of 2007, nearly 28 percent of employed young bachelor degree holders (21-29 years old) were categorized as mal-employed.²⁹ (Table 5). Young adult college graduates with a Master’s or higher degree faced a mal-employment rate of only slightly over 9%. Young bachelor degree holders were, thus, three times as likely to be mal-employed as their similar-aged counterparts with a Master’s or higher degree.

Table 5:
Mal-employment Problems Among Young Four-Year College Graduates
(21-29 Years Old) in the U.S. by Type of Degree Held, January-June 2008

	(A)	(B)	(C)
Type of Degree	Employed (in Millions)	Mal-employed (in Millions)	Percent Mal-Employed
Bachelor’s only	6.215	1.717	27.6%
Master’s or higher degree	1.408	.133	9.4%

Source: January-June 2008 CPS surveys, public use files, tabulations by authors.

Previous national and international econometric research on the earnings losses of workers that are over-educated or possess “surplus schooling” show that these losses are fairly substantial.³⁰ To simply illustrate the differences in the weekly earnings of employed young high school graduates and college graduates (those with bachelor degrees) based on the college labor market status of the jobs they held, we analyzed the weekly earnings of each of these groups with national CPS data for the first six months of 2008.³¹

During the first six months of 2008, the mean weekly earnings of employed high school graduates 21-29 years old were \$519 (Table 6). In comparison, the mean weekly earnings of 21-29 year old bachelor degree recipients were equal to \$787. The size of the difference between the mean weekly earnings of these two groups was \$268 or 52% in favor of bachelor degree holders. Gaining access to a college labor market job had a dramatic impact on the mean weekly earnings of these young college graduates. The mean weekly earnings of those young four-year college

²⁹ Somewhat surprisingly, mal-employment problems of younger bachelor degree holders were only slightly above those of their older counterparts (30+). The mal-employment rate for these older college graduates was 26%.

³⁰ See: (i) Russell Rumberger, *op.cit.*; (ii) Richard Verdugo and Naomi Verdugo, *op. cit.*, Rumberger estimated the differences in earnings returns to worker from each additional year of required and surplus schooling. Only schooling that is required for the job had any positive economic payoff.

³¹ The CPS survey collects hourly/weekly wage data from one-fourth of the sample of respondents each month. The weekly earnings data are only collected for those workers holding wage and salary jobs at the time of the survey.

graduates with college labor market jobs were well above those of their peers employed in non-college labor market jobs, \$850 versus only \$619, a difference in mean weekly earnings of \$231 or 37%

Table 6:
Mean Weekly Earnings of Employed High School Graduates and
Bachelor Degree Holders 21-29 Years Old, January – June 2008

Educational Group	Mean Weekly Earnings
High school graduates	\$519
Bachelor’s degree, all	787
• College labor market job	850
• Non-college labor market job	619
BA degree/H.S. graduate	1.52*
BA degree, college labor job/H.S. graduate	1.64*
BA degree, non-college labor job/H.S. graduate	1.19*

Failing to obtain a job that is part of the college labor market substantially reduces the relative wage advantages of college graduates over high school graduates. A bachelor degree holder with a “college labor market job” earned 64% more than a high school graduate while their counterparts working in jobs outside the college labor market obtained mean weekly earnings only 19% higher.³² The considerably smaller weekly and annual wage advantages of college graduates who work outside the college labor market sharply reduce the private and social rates of return to college investments and reduce the fiscal benefits to local, state, and national governments from a college educated work force.

Including the mal-employment problems of young college graduates in our count of the underutilized labor force for young college graduates (21-29 years old) substantially raises their number and the rate of labor underutilization (Table 7). During the first six months of this year, the average monthly number of open unemployed, hidden unemployed, and underemployed young college graduates was 469,000, yielding an overall underutilization rate of only 7.2%. During the same time period, these were 1.717 million mal-employed young adults (21-29).

³² College graduates, on average, have significantly higher reading, math, and writing proficiencies than high school graduates. These proficiencies have significant, independent effects on the annual earnings of workers. Controlling for pre-existing differences in the basic academic skills of college and high school graduates would reduce the net economic return from a college degree close to zero for those not holding college labor market jobs.

Including this group into the previous count of underutilized workers raises the overall underutilization rate of young college graduates to 33.5%. One of every three young college graduates was underutilized in the labor markets of the nation during the first half of 2008.

Table 7:
Numbers of Underutilized Persons Including Mal-Employed Persons and
the Underutilization Rate of 21-29 Year Old Bachelor Degree Holders in the
Adjusted Labor Force, January-June 2008
(Numbers in Thousands)

Underutilized Group	Number
Unemployed	211
Labor Force Reserve	97
Underemployed	161
Mal-employed	1,717
Total underutilized	2,186
Adjusted labor force	6,523
Underutilization rate including mal-employed (in %)	33.5

Source: January-June CPS surveys, public use files, tabulations by authors.

These high mal-employment problems of young college graduates also have consequences for their less educated counterparts and the rest of society. By competing for jobs in occupations outside of the college labor market, these young college graduates depress the weekly earnings and employment opportunities for less educated younger workers, including those with only a high school diploma and only one or two years of college. These job displacement impacts upon less educated workers also raise their unemployment and underemployment rates, thereby raising their incidence of labor underutilization problems. Employment in jobs that do not require the schooling and skills that college educated workers possess reduces their productivity, holding down their contribution to the real output performance of the U.S. economy and slowing U.S. economic growth. Lower employment in college labor markets will reduce the expected return to a college investment and send signals to younger adults that future investments in a college education may not be economically worthwhile.

Future labor underutilization indices should incorporate mal-employment problems among all adults with college degrees, including those with associate, bachelor, master's or more advanced degrees, and earnings inadequacy problems among fully-employed workers with major

family responsibilities. Our preliminary research work in this expanded area of underutilization incorporating mal-employment problems among all bachelor and master's/PhD degree holders and low earnings problems of household heads³³ yielded a labor underutilization rate of just under 20% for the first six months of 2008 for the entire adult population. This overall rate of labor underutilization was nearly four times higher than the official unemployment rate of the nation.

³³ Our annual income inadequacy standard for employed household heads was the average value of the federal government's poverty line for a three person family. In 2007, this represented an average weekly wage of about \$340, assuming full-time year round employment.

Appendix A: Defining College Labor Market Occupations

The measures of mal-employment appearing in our report primarily are based on definitions of “college labor market occupations”. Those employed persons with a bachelor’s degree but not working in a “college labor market occupation” are classified as mal-employed. This appendix is designed to explain the methodology that we used to identify the set of college labor market occupation.

The U.S. Census Bureau has classified occupations into slightly more than 500 individual categories. These occupations are further grouped into 23 major categories according to their skills and duties, ranging from various professional and management-related occupations to groups of blue-collar occupations. Table A1 displays the classifications of college labor market occupations by CLMS research staff based on the Census Bureau’s classifications of occupations. The labor market occupations presented in Table 1 are categorized as “college labor market occupations” since they frequently require a four-year college degree. All management, professional, and technical occupations are counted as college labor market occupations. The majority of the jobs in the healthcare practitioner and technical occupations require a specialized college degree. We have excluded from the full set of healthcare practitioner and technical occupations four occupations that are perceived not to require a four-year college degree. These occupations are dental hygienists, emergency medical technicians and paramedics, licensed practical and licensed vocational nurses, and medical records and health information technicians.

Only a few service occupations require job applicants to hold four-year college degrees. Workers holding occupations such as bailiffs, correctional officers, jailers, detectives, criminal investigators, and police and sheriff’s patrol officers are often encouraged by local and state government to have a four-year college degree. First-line supervisors and managers of retail and non-retail occupations are also frequently required to have college degrees. High-level sales occupations are classified as college labor market occupation. The center has excluded low-level sales occupations, such as cashiers, retail sales clerks, counter and rental clerks, insurance sales agents, and telemarketers from the count of college labor market occupations.

Table A1:
CLMS Listing of College Labor Market Occupations

Census Occupation Code	Occupation
(10- 3300)	Management Occupations Business and Financial Occupations Computer and Mathematical Occupations Architecture and Engineering Occupations Life, Physical, and Social Science Occupations Community and Social Service Occupations Legal Occupations Education, Training, and Library Occupations Arts, Design, Entertainment, Sports, and Media Occupations Healthcare Practitioners and Technical Occupations (also include the following) 3320 Diagnostic Related Technologists and Technicians 3410 Health Diagnosing and Treating Practitioner Support Technicians 3520 Opticians and Dispensing 3530 Miscellaneous Health Technologists and Technicians 3540 Other Healthcare Practitioners and Technical Occupations
3800 3820 3850 4700 4710	Selected Service Occupations Bailiffs, Correctional Officers, and Jailers Detectives and Criminal Investigators Police and Sheriff's Patrol Officers First-line Supervisors/Managers of Retail Sales Workers First-line Supervisors/Managers of Non-Retail Sales Workers
4800 4820 4840 4850 4900 4920 4930	High Levels Sales Occupations Advertising Sales Agents Securities, Commodities, and Financial Services Sales Agents Sales Representatives, Services, All Other Sales Representatives, Wholesale and Manufacturing Models, Demonstrators, and Product Promoters Real Estate Brokers and Sales Agents Sales Engineers