FEDERAL RESERVE BANK OF NEW YORK
current issues
IN ECONOMICS AND FINANCE
Volume 20, Number 1 • 2014 • www.newyorkfed.org/research/current_issues

Are Recent College Graduates Finding Good Jobs?

Jaison R. Abel, Richard Deitz, and Yaqin Su

According to numerous accounts, the Great Recession has left many recent college graduates struggling to find jobs that utilize their education. However, a look at the data on the employment outcomes for recent graduates over the past two decades suggests that such difficulties are not a new phenomenon: individuals just beginning their careers often need time to transition into the labor market. Still, the percentage who are unemployed or "underemployed"—working in a job that typically does not require a bachelor's degree—has risen, particularly since the 2001 recession. Moreover, the quality of the jobs held by the underemployed has declined, with today's recent graduates increasingly accepting low-wage jobs or working part-time.

A college education is an important investment that helps people build their skills and prepare for high-skilled jobs. Historically, those who have made this investment have received a substantial economic benefit that lasts over their lifetime. However, with the onset of the Great Recession and the sluggish labor market recovery that has ensued, there have been widespread reports of newly minted college graduates who are unsuccessful at finding jobs suited to their level of education. According to many accounts, recent graduates are finding it increasingly difficult to secure a job, and those who do find work are often confined to low-wage positions. Stories of this nature raise troubling questions about whether a college degree still helps people find good jobs.

In this edition of *Current Issues*, we assess just how difficult the labor market has become for recent college graduates. In doing so, we move beyond anecdotal evidence to examine more than two decades of data on the employment outcomes of recent college graduates. This approach allows us to put the experience of those entering the labor market during the latest business cycle into historical perspective.

Our analysis reveals that, by historical standards, unemployment rates for recent college graduates have indeed been quite high since the onset of the Great Recession. Moreover, underemployment among recent graduates—a condition defined here as working in jobs that typically do not require a bachelor's degree—is also on the rise, part of a trend that began with the 2001 recession. To be sure, our comparison of the experience of new graduates today with that of new graduates in earlier periods shows that fairly high unemployment and underemployment are not uncommon for young people just after they obtain their degrees; this pattern arises because college graduates generally require some time to transition into the labor market. However, when we delve further to examine the *quality* of jobs held by the

underemployed, we find that recent graduates are increasingly working in low-wage jobs or working part-time. We conclude that while elevated rates of unemployment and underemployment may be typical for recent college graduates, finding a good job has indeed become more difficult.

In the final section of our analysis, we examine whether recent graduates in some majors are achieving better labor market outcomes than others. Our results show that unemployment and underemployment rates differ markedly across majors: students majoring in fields that provide technical training, such as engineering or math and computers, or majoring in fields geared toward growing parts of the economy, such as education and health, have tended to do relatively well, even in today's challenging labor market.

The Labor Market for Recent College Graduates

For the purposes of our analysis, recent college graduates are defined as those with at least a bachelor's degree who are twenty-two to twenty-seven years old. We select this group in order to capture college graduates within their first five years after graduation.[1] We exclude those currently enrolled in school from our analysis, whether full-time or part-time, to avoid any confusion about whether people are unemployed or underemployed because they are attending school.

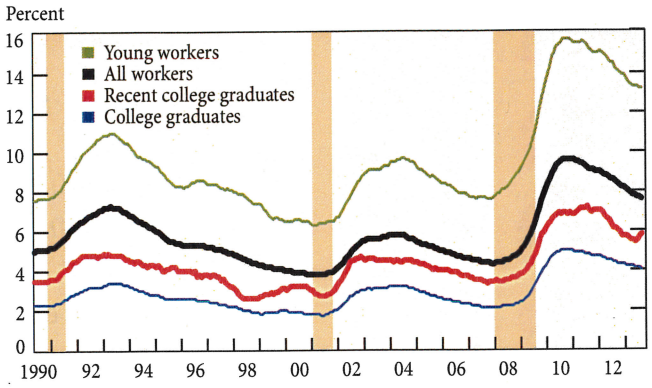
Unemployment among Recent College Graduates

To get some perspective on the labor market difficulties of recent college graduates, we track the unemployment rate for this group relative to three other groups: all workers (that is, those who are sixteen to sixty-five), all college graduates, and a comparable group of young workers, aged twenty-two to twenty-seven, without college degrees (Chart 1). Our sample period, extending from 1990 through the first part of 2013, encompasses the 1990-91 and 2001 recessions as well as the Great Recession of 2007-09. As Chart 1 makes clear, the unemployment rates for all four groups followed common trends during this period: the rates tended to move with the business cycle, rising during the recessions and dropping steadily during the subsequent recoveries. In addition, the unemployment rate for all groups rose to particularly high levels during and after the 2007-09 recession, and then began to decline in 2010 as the labor market started to improve.

More telling, however, are the differences among the groups. College graduates as a whole fared the best throughout the sample period, experiencing unemployment rates that were about half the rate all workers experienced. But for *recent* college graduates—the group of immediate interest for our study—unemployment was consistently higher than for college

Chart 1

Unemployment Rates for Recent College Graduates and Other Groups



Sources: U.S. Census Bureau and U.S. Bureau of Labor Statistics, Current Population Survey.

Notes: Rates are calculated as a twelve-month moving average. *All workers* are those aged 16 to 65; *college graduates* are those aged 22 to 65 with a bachelor's degree or higher; *recent college graduates* are those aged 22 to 27 with a bachelor's degree or higher; *young workers* are those aged 22 to 27 without a bachelor's degree or higher. All figures exclude those currently enrolled in school. Shaded areas indicate periods designated recessions by the National Bureau of Economic Research.

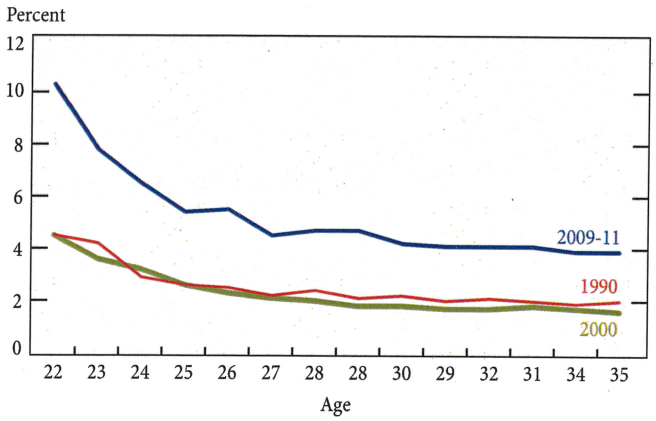
graduates as a whole. After the Great Recession, for example, the unemployment rate for college graduates as a whole peaked at around 5 percent in 2010, while the unemployment rate for recent college graduates peaked at around 7 percent. For the period 1990 through the first quarter of 2013, the unemployment rate averaged 4.3 percent for recent college graduates compared with 2.9 percent for all college graduates. These results suggest that finding a job tends to be more difficult for those just out of school than for those who have been out of school longer; moreover, this disparity exists at all points in the business cycle.

To get a clearer picture about the transition to employment that occurs upon graduation, we examine the unemployment rate for college graduates of different ages. Using data from the U.S. Census Bureau covering the decennial census years 1990 and 2000, as well as a parallel three-year pooled dataset for 2009-11, we plot an age-unemployment rate profile for college graduates at each point in time up to age thirty-five (Chart 2). In all cases, an inverse relationship exists, indicating that the unemployment rate tends to decline as college graduates transition from school into the labor market. During 2009-11—a period that encompasses the end of the Great Recession and the beginning of the recovery—the unemployment rate was about 10 percent for those aged twenty-two, dropping to about 8 percent for twenty-three-year-olds. By the time college graduates reached their late twenties, the unemployment rate had fallen to around 4 percent, and held fairly steady at this rate thereafter. This

[1] Some graduates receive their degrees at ages beyond their early twenties. Because of data limitations, however, we are not able to identify these older recent college graduates, so they are not included in our analysis.

Chart 2

College Graduates' Unemployment Rate, by Age

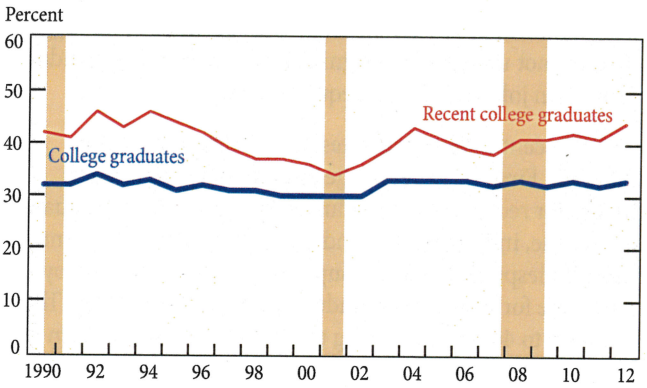


Sources: U.S. Census Bureau, Decennial Census and American Community Survey.

Notes: *College graduates* are those with a bachelor's degree or higher. All figures exclude those currently enrolled in school.

Chart 3

Underemployment Rates for College Graduates



Sources: U.S. Census Bureau and U.S. Bureau of Labor Statistics, Current Population Survey, March Supplement; U.S. Department of Labor, O*NET.

Notes: *College graduates* are those aged 22 to 65 with a bachelor's degree or higher; *recent college graduates* are those aged 22 to 27 with a bachelor's degree or higher. All figures exclude those currently enrolled in school. Shaded areas indicate periods designated recessions by the National Bureau of Economic Research.

same inverse relationship between age and the unemployment rate is also apparent in 1990 and 2000, though unemployment rates were decidedly lower for all ages in these time periods than in 2009-11.

The inverse relationship between age and the unemployment rate appears to hold across time, and occurs even during peaks in the business cycle, as was the case in 1990 and 2000. This pattern suggests that it is typical for young college graduates to have relatively high unemployment rates, and that these rates can be expected to decline as the graduates continue on in the labor force. It takes time for recent college graduates to settle into the labor market and find a job, and this has historically tended to be the case.

Note, however, that the relatively high unemployment experienced by recent college graduates should not prompt us to dismiss the value of a college education in helping young workers find jobs. As Chart 1 showed, the unemployment rate for young workers without a college degree was significantly higher than the rate for recent college graduates. The unemployment rate climbed to nearly 16 percent in 2010 for young workers without degrees, more than double the peak unemployment rate of 7 percent for new college graduates.

Underemployment among Recent College Graduates

While high unemployment among recent college graduates has attracted considerable attention from policymakers and the public alike, there is also growing concern that recent graduates are finding themselves underemployed—that is, working in jobs that do not require a college degree.[2] This phenomenon is exemplified by news stories of recent college graduates who, unable to find employment that fits their education level, take jobs as baristas, bartenders, or retail clerks. But just how widespread is underemployment for recent college graduates?

To measure underemployment, we utilize data from the U.S. Department of Labor's Occupational Information Network (O*NET). O*NET contains information on job-related requirements for hundreds of occupations, collected from interviews of incumbent workers and with input from professional occupational analysts. We use the following question from the O*NET Education and Training Questionnaire to determine whether an occupation requires a college degree: "If someone were being hired to perform this job, indicate the level of education that would be required." We consider a college education to be a requirement for a given occupation if at least 50 percent of the respondents working in that occupation indicated that a bachelor's degree is necessary to perform the job. We then merged these data on the educational requirements for each occupation with data from the decennial Census, American Community Survey, and Current Population Survey on individual workers and their occupations. A college graduate is considered underemployed if he or she is working in an occupation that does not typically require a bachelor's degree.

We calculate the underemployment rate as the number of graduates underemployed divided by total graduates employed. In Chart 3, we report the underemployment rate from 1990 to 2012 for two different groups: all college graduates and recent college graduates. For college graduates as a whole, the underemployment rate has held steady at around

[2] See, for example, Fogg and Harrington (2011) and Vedder, Denhart, and Robe (2013).

33 percent over the past two decades—meaning that about one in three college-educated workers typically holds a job that does not require a degree. The fact that the rate has remained fairly uniform at different points in the business cycle suggests that it is not unusual for a significant share of college graduates to work in jobs that do not require a degree.

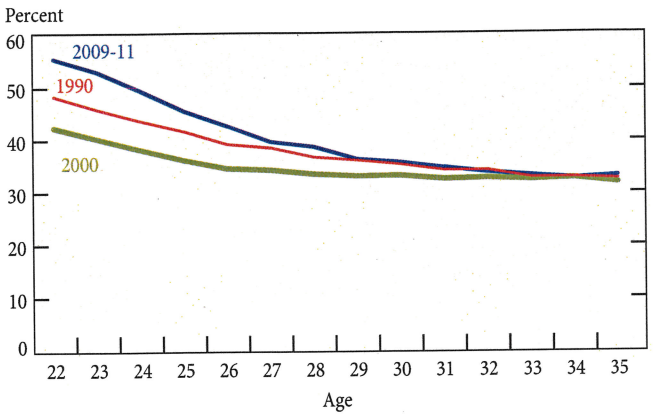
For recent college graduates, the picture looks quite different. First, in all years, the underemployment rate is higher for recent college graduates than for college graduates as a whole, indicating that underemployment is consistently more widespread for this group. Second, the underemployment rate for new college graduates has not held steady. The rate rose to 46 percent during the 1990-91 recession, then fell significantly during the economic expansion of the 1990s. By 2001, the rate had dropped to 34 percent. During the first decade of the 2000s, the underemployment rate rose somewhat sharply after both the 2001 and 2007-09 recessions, and in each case, only partially retreated, resulting in an increase to roughly 44 percent by 2012. Thus, it appears that the underemployment rate has, in fact, been rising for recent college graduates since 2001. Nevertheless, the high rate over the past few years is not unprecedented; rather, it represents a return to the level that prevailed in the early 1990s.[3]

To what extent does this high rate of underemployment among recent graduates simply reflect a natural transition into the labor market? As we did for unemployment, we construct age-underemployment rate profiles for college graduates for 1990, 2000, and 2009-11 to address this question (Chart 4). And as was the case for the unemployment rate, we find an inverse relationship between age and the underemployment rate for all time periods. Focusing first on the 2009-11 period, we see that the underemployment rate for twenty-two-year-olds is about 56 percent, indicating that more than half of the people just graduating end up working in jobs that do not require a degree. This rate drops to 40 percent by age twenty-seven, and reaches the average historical level of about thirty-three percent by the time people reach their thirties. This pattern suggests that recent graduates do, in fact, tend to have relatively high levels of underemployment upon graduation, but that underemployment declines as these graduates spend time in the labor market. However, the age-underemployment profile we estimate for 2009-2011 is somewhat higher than the profile for 1990, and significantly higher than the profile seen in 2000.

Overall, the trends described in this section imply that high underemployment among recent college graduates is not unusual. Recent graduates tend to take some time after they graduate to find jobs that fit their education. But

Chart 4

College Graduates' Underemployment Rate, by Age



Sources: U.S. Census Bureau, Decennial Census and American Community Survey, U.S. Department of Labor, O*NET.

Notes: *College graduates* are those with a bachelor's degree or higher. All figures exclude those currently enrolled in school.

the fact that the underemployment rate in recent years has been higher than in the early 2000s does suggest that it has become more difficult over the past decade for recent college graduates to find jobs that utilize their degrees. While there appears to be a cyclical component to underemployment among recent college graduates, the broader V-shaped pattern in the underemployment rate over the past two decades is also consistent with new research arguing that there has been a reversal in the demand for cognitive skills since 2000.[4] According to this research, businesses ramped up their hiring of college-educated workers in an effort to adapt to the technological changes occurring during the 1980s and 1990s. However, as the information technology revolution reached maturity, demand for cognitive skill fell accordingly. As a result, during the first decade of the 2000s, many college graduates were forced to move down the occupational hierarchy to take jobs typically performed by lower-skilled workers. From this perspective, the relatively low underemployment rates among recent college graduates at the peak of the technology boom around 2000 may in fact be an outlier, while the recent rise in underemployment represents a return to more typical conditions.

Job Quality among the Underemployed

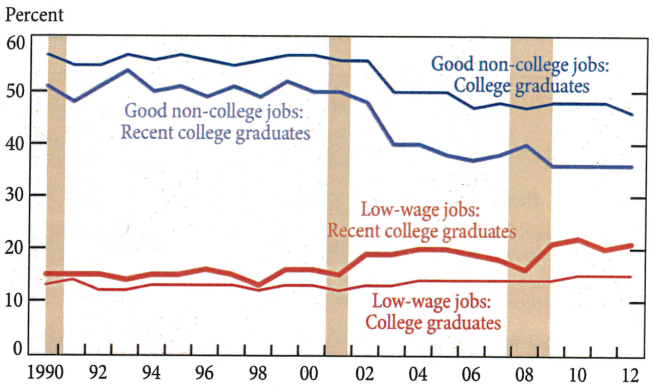
While the underemployment rate appears to have reverted to levels that existed in the early 1990s, it is possible that the quality of the jobs taken by the underemployed has changed over time. To examine this possibility, we analyze the quality of jobs held by those college graduates who are working in non-college jobs (that is, underemployed college graduates).

[3] It is probably no coincidence that the early 1990s also saw much discussion about the underemployment of recent graduates and the value of a college degree. See, for example, Hecker (1992) and Tyler, Murnane, and Levy (1995).

[4] See Beaudry, Green, and Sand (2013).

Chart 5

Share of Underemployed Graduates in Good Non-College and Low-Wage Jobs

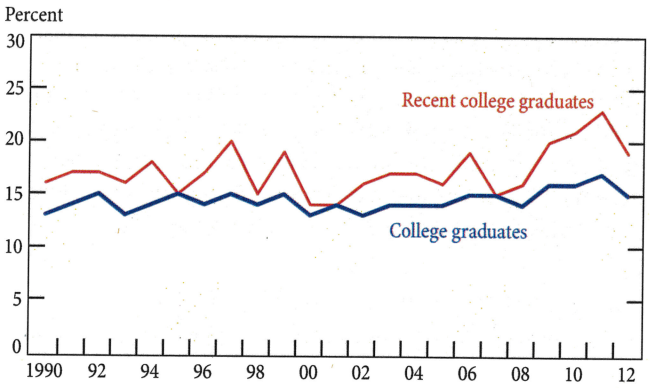


Sources: U.S. Census Bureau and U.S. Bureau of Labor Statistics, Current Population Survey, March Supplement; U.S. Department of Labor, O*NET.

Notes: *College graduates* are those aged 22 to 65 with a bachelor's degree or higher; *recent college graduates* are those aged 22 to 27 with a bachelor's degree or higher. All figures exclude those currently enrolled in school. Shaded areas indicate periods designated recessions by the National Bureau of Economic Research.

Chart 6

Share of Underemployed Graduates Working Part-Time



Sources: U.S. Census Bureau and U.S. Bureau of Labor Statistics, Current Population Survey, March Supplement; U.S. Department of Labor, O*NET.

Notes: *College graduates* are those aged 22 to 65 with a bachelor's degree or higher; *recent college graduates* are those aged 22 to 27 with a bachelor's degree or higher. All figures exclude those currently enrolled in school. Shaded areas indicate periods designated recessions by the National Bureau of Economic Research.

We single out two dimensions of job quality for this group: the type of job and the prevalence of part-time work.

Although stories of recent college graduates working as low-paid baristas, waiters, and retail clerks abound in the media, few commentators consider whether recent graduates might have found good jobs that do not require a college degree—for example, in fields such as health care and the skilled trades. To address this possibility, we construct two groups of non-college jobs: what we refer to as *good non-college jobs* and *low-wage jobs*. Good non-college jobs consist of those occupations—for example, electrician, dental hygienist, or mechanic—that paid an average wage of around $45,000 per year in 2012. While these jobs do not require a bachelor's degree, they tend to be career oriented, relatively skilled, and fairly well compensated. At the other end of the spectrum, low-wage jobs paid an average wage below $25,000 per year in 2012, and include occupations such as bartender, food server, and cashier.

Analyzing the percentage of underemployed college graduates who fall into the two job groups, we find a clear trend: the share of underemployed college graduates in good non-college jobs has fallen sharply, while the share working in low-wage jobs has risen, with most of these changes occurring since 2000 (Chart 5). The share of underemployed college graduates in good non-college jobs was lower for recent college graduates than for college graduates as a whole, and it fell more steeply over time. About half of underemployed recent college graduates were in good non-college jobs in the 1990s, and that share fell to about 36 percent by 2009. As for low-wage jobs, the share of workers in this group was similar for recent college graduates and all college graduates in the 1990s, but beginning in 2000, the shares for the two series diverged. The share of recent college graduates in low-wage jobs rose from about 15 percent in 1990 to more than 20 percent by 2009, while the corresponding share of all college graduates increased only modestly, from 13 percent to 15 percent. Together, these trends suggest that the quality of jobs for underemployed recent college graduates has been on the decline, particularly since 2000.

The second dimension of job quality that we consider is the extent to which underemployed college graduates are working part-time. Using the U.S. Bureau of Labor Statistics' definition of part-time workers as those who usually work fewer than 35 hours per week, we track the extent to which underemployed college graduates—all graduates as well as recent graduates—have worked part-time between 1990 and 2012 (Chart 6). The two series are somewhat volatile, but beginning with the 2001 recession, an upward trend in part-time work is evident in both. Significantly, however, the increase is much steeper for recent graduates than for college graduates as a whole. About 14 percent of all underemployed college graduates worked part-time during the 1990s, with this share drifting up to around 16 percent during the 2000s. By contrast, the share of recent college graduates working part-time rose from around 15 percent in 2000 to 23 percent by 2011, with particularly sharp increases directly following the last two recessions.[5]

[5] Workers without a college degree were about as likely as underemployed college graduates to be working part-time, and experienced a similar increase in part-time work during the 2000s. By contrast, the share of college graduates with a job requiring a bachelor's degree who were working part-time changed little, remaining at around 10 percent for all college graduates and 12 percent for recent graduates over the entire 1990-2012 period.

Taken as a whole, these trends provide evidence that the job prospects for recent college graduates have indeed worsened, even though the high rate of underemployment over the past few years is comparable to the level seen in the early 1990s. Among those recent college graduates who are underemployed, more are working part-time or in low-wage jobs since 2000, while fewer are working in good non-college jobs. This downward trend in the quality of jobs for underemployed recent college graduates compounds the increase in the level of the group's underemployment over the past decade.[6]

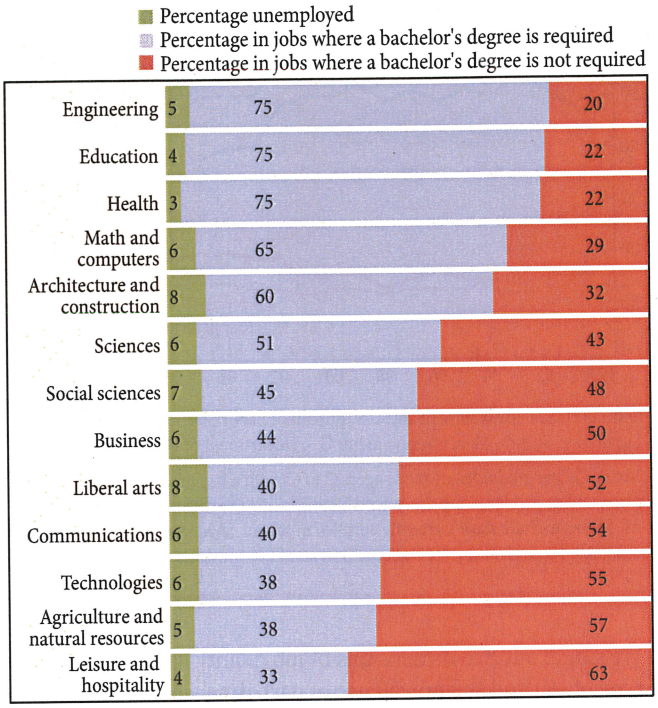
Labor Market Outcomes by College Major

In the wake of the Great Recession, recent college graduates are clearly facing significant labor market challenges. But are those recent graduates who major in certain subjects experiencing relatively better labor market outcomes than others? To address this question, we use newly available census data identifying college graduates' undergraduate majors to analyze differences in employment outcomes across majors. Beginning in 2009, the American Community Survey asked those with a college degree to identify their undergraduate major. We classify recent college graduates as belonging to one of thirteen different undergraduate majors, and utilize this information to look at unemployment and underemployment by major for the 2009-11 period.

Care must be taken when interpreting our findings on the labor market outcomes of recent college graduates across majors. Because students sort into their chosen field of study based in part on their ability to complete the required coursework, not all majors are feasible for every college student.[7] Moreover, graduates with different majors likely differ in other important ways, such as intelligence, perseverance, or motivation. Indeed, recent research has shown that graduating with a math or science major is more difficult than pursuing other fields of study.[8] In addition, the results we present below represent average outcomes for people within each of the thirteen majors we analyze. Thus, by definition, some individuals within each major will have better or worse experiences than our results would indicate. Nonetheless, examining the typical experience provides useful insight into the variation in labor market outcomes that exists for recent college graduates with different majors.

Chart 7

Employment Outcomes for Recent College Graduates by Major, 2009-11



Sources: U.S. Census Bureau, American Community Survey; U.S. Department of Labor, O*NET.

Notes: *Recent college graduates* are those aged 22 to 27 with a bachelor's degree or higher. All figures exclude those currently enrolled in school. Because of rounding, figures in each bar may not sum to 100.

We characterize the labor market situation for recent college graduates by looking at three possible labor market outcomes for each graduate: unemployed, employed in a job where a bachelor's degree is required, and employed in a job where a bachelor's degree is not required. We then identify the share of recent college graduates in each of the thirteen majors that has experienced each of these outcomes (Chart 7). We find that unemployment rates across majors range from 3 percent to 8 percent. The two majors with the lowest unemployment rates are health majors, at 3 percent, and education majors, at just under 4 percent. Relatively low unemployment rates for these majors likely reflect the stability of the education and health sectors, which grew before, during, and after the Great Recession and thus have tended to provide a growing number of jobs during this period. At the other end of the spectrum, the unemployment rate for architecture and construction majors was 8 percent—a finding consistent with the lack of jobs in housing-related sectors of the economy following the housing bust. Liberal arts and social sciences majors also tended to have relatively high unemployment rates, at 7 to 8 percent.

[6] During bad economic times, young people who wish to avoid being unemployed or underemployed may choose to delay their entrance to the job market, either by taking more time to complete a degree or by entering graduate school. Given the incentives to remain in school, the labor market difficulties for recent college graduates during the 2000s may in fact be more pronounced than our findings suggest.

[7] See, for example, Arcidiacono (2004) and Zafar (2011) for research on the determinants of and returns to college majors.

[8] See Stinebrickner and Stinebrickner (2013).

Chart 7 also identifies the share of recent college graduates working in jobs where a bachelor's degree is required and the share working in jobs where a bachelor's degree is not required. For example, 75 percent of those with an engineering degree worked in a job that required a college degree.[9] We find that majors providing technical training—that is, training that focuses on quantitative and analytical skills—had the highest shares of graduates working in jobs that require a degree; engineering and math and computers majors are cases in point. In addition, education and health majors also had high shares of workers employed in jobs that require a college degree, again likely reflecting the growth of these sectors in recent years.

At the other end of the spectrum, leisure and hospitality was the major with the lowest share of graduates working in a job that required a degree. Although degree holders with this major experienced relatively low unemployment, only 33 percent were working in jobs that required a bachelor's degree, while 63 percent worked in jobs that did not require this degree. It is likely that many of the jobs such graduates took were in the leisure and hospitality industry, and these jobs often do not require a bachelor's degree. Similarly, only 38 percent of recent graduates with a technologies major—which provides practical training in fields such as electrical and mechanical repairs, radiology, and biological technologies—were working in a job that required a bachelor's degree. This finding may stem in part from the fact that many of the jobs for people with this type of training often require only an associate's degree. In addition, many of the majors that provide general training—that is, training that is not occupation-specific or highly technical in nature—also ranked relatively low on this dimension. In particular, only 40 to 45 percent of recent college graduates majoring in communications, liberal arts, business, and social sciences were working in jobs that required a degree.

Conclusion

While stories about recent college graduates' struggles to find a good job have become increasingly common over the past few years, we show that this experience is not a new phenomenon, nor one that can be ascribed simply to the Great Recession and the ensuing weakness in the labor market. Our analysis demonstrates that new college graduates typically take some time to transition into the labor market and find jobs that utilize their education. In fact, during both good and bad economic times, relatively high rates of unemployment and underemployment are not uncommon among college graduates just beginning their careers, and those rates can be expected to drop considerably by the time the graduates reach their late twenties. Moreover, while it appears that the labor market has become more challenging for recent college graduates, it is much worse for young people who do not have a college degree.

That said, both unemployment and underemployment have followed a clear upward trend for recent college graduates over the past two decades, and particularly since the 2001 recession. In addition, it has become more common for underemployed college graduates to find themselves in low-wage jobs or to be working part-time. It is not clear whether these trends represent a structural change in the labor market, or if they are a consequence of the two recessions and jobless recoveries in the first decade of the 2000s. Either way, young college graduates entering the labor market since the 2001 recession face more challenges in finding a good job. While many of these graduates will eventually find employment or transition into higher-skilled jobs as they gain experience and as the labor market normalizes, recent research suggests that those who begin their careers during such a weak labor market recovery may see permanent negative effects on their wages.[10]

What can students do to increase their chances of finding a good job upon graduation? It does appear that one's college major matters: unemployment and underemployment rates differ markedly across majors. In particular, those who choose majors that provide technical training, such as engineering or math and computers, or majors that are geared toward growing parts of the economy, such as education and health, have tended to do relatively well. At the other end of the spectrum, those with majors that provide less technical and more general training, such as leisure and hospitality, communications, the liberal arts, and even the social sciences and business, have not tended to fare particularly well in recent years. An important caveat about this interpretation is that the links we show between college major, unemployment, and underemployment are not necessarily causal. That is, the data may in part reflect the fact that people can sort into majors based on their skill level, such that those with higher innate skills and abilities select majors that tend to have better labor market outcomes. Nonetheless, with this caveat in mind, it appears that college major plays a role in determining whether a college graduate will find a good job.

There may be other ways to foster better outcomes for college graduates as well. Timely information on the fields in which jobs are available, what different jobs pay, and the career paths new workers can expect over their lifetime would be helpful to the parents and students investing in a college education. One means of generating such information would be for higher education institutions to establish or expand their partnerships with businesses. In this way, colleges and universities could develop a fuller understanding of the relationship between their own curriculum, the needs of

[9] These jobs are not necessarily engineering jobs, but are any jobs that require a bachelor's degree. For example, if someone with an engineering major were working as an electrical engineer or a financial manager, each would be counted as working in a job that requires a bachelor's degree.

[10] See Kahn (2010).

employers, and the majors selected by their students. Further, close ties between employers and higher education institutions would help ensure that the information given to students on jobs and careers was current. Providing such information early and often could help students make more educated decisions about their major, and ultimately, about the most valuable skills to build while in school. While securing that first job out of college may continue to be a challenge for many, having a better grasp of the landscape of the labor market could help more college graduates find good jobs upon graduation.

References

Arcidiacono, Peter. 2004. "Ability Sorting and the Returns to College Major." *Journal of Econometrics* 121, no. 1-2: 343-75.

Beaudry, Paul, David A. Green, and Benjamin M. Sand. 2013. "The Great Reversal in the Demand for Skill and Cognitive Tasks." NBER Working Paper no. 18901, March.

Fogg, Neeta P., and Paul E. Harrington. 2011. "Rising Mal-Employment and the Great Recession: The Growing Disconnection between Recent College Graduates and the College Labor Market." *Continuing Higher Education Review* 75: 51-65.

Hecker, Daniel E. 1992. "Reconciling Conflicting Data on Jobs for College Graduates." *Monthly Labor Review*, July: 3-12.

Kahn, Lisa B. 2010. "The Long-Term Labor Market Consequences of Graduating from College in a Bad Economy." *Labour Economics* 17, no. 2 (April): 303-16.

Stinebrickner, Ralph, and Todd R. Stinebrickner. 2013. "A Major in Science? Initial Beliefs and Final Outcomes for College Major and Dropout." NBER Working Paper no. 19165, June.

Tyler, John, Richard J. Murnane, and Frank Levy. 1995. "Are More College Graduates Really Taking 'High School' Jobs?" *Monthly Labor Review*, December: 18-27.

Vedder, Richard, Christopher Denhart, and Jonathan Robe. 2013. "Why Are Recent College Graduates Underemployed?" Center for College Affordability and Productivity Policy Paper, January.

Zafar, Basit. 2011. "How Do College Students Form Expectations?" *Journal of Labor Economics* 29, no. 2 (April): 301-48.

ABOUT THE AUTHORS

Jaison R. Abel is a senior economist and Richard Deitz an assistant vice president in the Regional Analysis Function of the Federal Reserve Bank of New York's Research and Statistics Group. Yaqin Su was a Ph.D. intern in the Regional Analysis Function at the time this article was written.

The content co-editor of this article is Basit Zafar.

Current Issues in Economics and Finance is published by the Research and Statistics Group of the Federal Reserve Bank of New York. Michael Fleming and Thomas Klitgaard are the editors of the series.

Editorial Staff: Valerie LaPorte, Mike De Mott, Michelle Bailer, Karen Carter, Anna Snider

Production: Jane Urry, Jessica Iannuzzi, David Rosenberg

The views expressed in this article are those of the authors and do not necessarily reflect the position of the Federal Reserve Bank of New York or the Federal Reserve System.

Join Us Online!

To receive notice when new articles in *Current Issues in Economics and Finance* or our other research series are available online, sign up for our e-alert service at the Research Publications home page, www.newyorkfed.org/research/publication_annuals/index.html. The e-mails you'll receive provide links to the articles you want, allowing you to download them quickly and conveniently.

Electronic access brings many additional benefits: From the Research Publications page, you can download earlier articles in our research series, search for articles on a particular topic, and learn what research is most in demand by our readers.