

Better Than You Might Think

College Graduates in the American Workforce

A Review of the Evidence

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Garrison Moore and Robert Bowman

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Table of Contents

Executive Summary	2
Introduction	3
1: Unemployment	6
Sidebar: Damned Lies: Statistics and Speculation	
2: Underemployment	9
3. Earnings	12
Sidebar: Is College All About Return on Investment	
4. So, What's Your Major?	17
Sidebar: Experience Counts	
Sidebar: Culture Clash: What's a College to Do?	
5: A Skills Gap (or Not)	24
6: The Incredible Shrinking Workforce	27
Charts and Graphs	
1. Job Gains/Losses 2002-2012	
2. Recessions Then and Now	
3. Unemployment by Educational Attainment -1985-2014	
4. Earnings and Unemployment by Educational Attainment	
5. US Employment by Education Required	
6. Economic Well-Being of 25-32-year-olds	
7. Number of College Graduates by College Major	
8. Average Earnings for New and Experienced Graduates by Major	
9. Unemployment and Earnings for College Majors	
10. Participation Rates for US population 1947-2014	
11. Participation Rates for US 16-24 Year-olds	
Appendices	30
1. Workforce Stocks and Flows	
2. Majors with the Highest Earnings	
3. Gallup Poll of Business	
4. Educational Attainment of the Population 25 years plus- 1947-2003	
5. Top Google References For ROI of Colleges and Academic Majors	
6. Percent Employment by Education Level	
Selected Bibliography	35

Executive Summary

- Ω **Six Issues Examined** Using openly available data and studies this report examines six major issues concerning the employment and earnings of recent college graduates. These are unemployment, underemployment, earnings, academic majors' effect on future employment and income, skills gap, and the relation of young people to a shrinking workforce.
- Ω **Crises for New Graduates Widely Reported** Over the past six years, a large number of reports have appeared in the media and academic sources expressing serious concerns about the employment and economic prospects for recent college graduates and for future generations of university educated Americans.
- Ω **Unemployment Low** Recent college graduates suffered the worst bout of unemployment in this last recession – 11.2 percent in 2010 - since the Great Depression . . . but so did everyone else. Unemployment for college graduates has since fallen to a level – 4.5 percent – lower than the national average.
- Ω **Underemployment Situation Unclear** Though several studies have looked at the question of college graduates working in occupations that do not require a college degree, flaws in research design and data sources used make the data unreliable
- Ω **Incomes High** Recent college graduates enjoy an advantage over their less education peers. Individually they earn a median income of \$21,000 more per year than non- college graduates - \$40,000 vs \$19,000 a year. For college graduates 25-34 years of age, the disparity is much greater - \$90,000 vs \$40,000 – a \$50,000 difference.
- Ω **Academic Major has Limited Effect.** Most college students should focus on their ability to write and speak clearly, to think critically, and work well with others, employers say. Except for a few specialized careers such as engineering, and information technology, beginning pay is pretty much the same for all majors.
- Ω **Skills Gap not Well Defined.** Any meaningful discussion of an often-reported gap between the skills workers have and what employers want is largely futile at this point. The main questions are *who* is lacking *which* skills. The only agreements among experts are a few truisms: more people should get a baccalaureate degree; HS students not planning to go to college should consider technical fields and skilled trades; and everyone should have ill-defined “soft” skills.
- Ω **Graduates Contribute Little to Shrinking Workforce.** Between 2007 and 2012, six million fewer people decided not to work or look for work. This could become a major concern- too few workers to support the rest of society -- though the number has held steady lately. Workforce participation among young people remains much higher than the average for all adults.

Better Than You Might Think College Graduates and the American Workforce

Introduction

Garrison Moore and Robert Bowman

“A recession is when you lose your job; a depression is when I lose my job.” Harry Truman

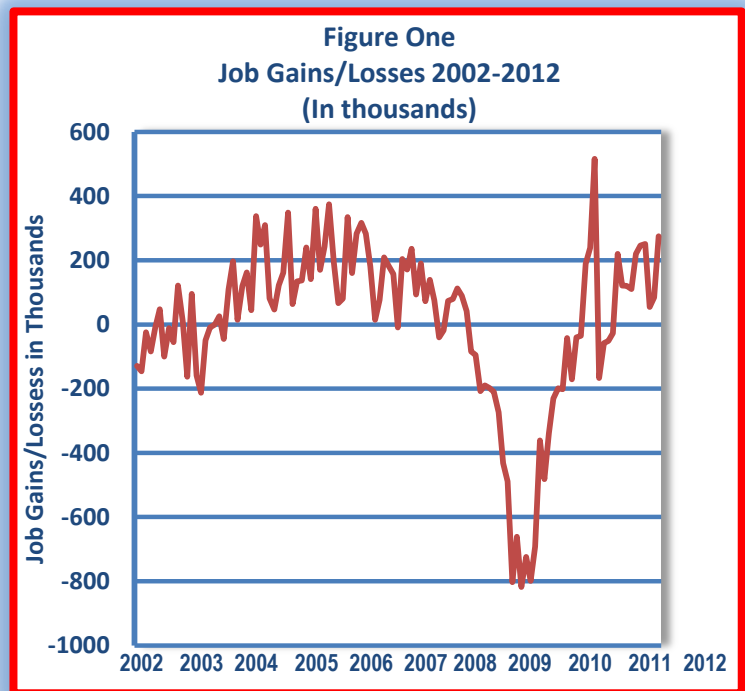
Unemployment - wanting a job, looking for sustaining work, and receiving repeated rejections – is for most people one of the most difficult experiences in life. Not only do the unemployed lose potential income but the sense of powerlessness and shame generated by this experience can leave permanent scars. For the young, seeking a job is the first test of adulthood. Having gainful work provides a primary attachment to society.

The sheer scale of the recent Great Recession exposed long simmering issues about the value of a college education. It seemed something fundamental had changed in the economy and the workplace.

Job losses across the economy in the great recession were devastating and the recovery brutally slow. The workforce had *8.8 million fewer jobs* in 2011 than in 2008.¹

The US economy lost 800,000 jobs in the month of November 2009 alone - a record. Recent college graduate unemployment soared.

At the time, no one knew when or if the losses would end. As the recession worsened, speculation mounted that employment would never return to pre-recession levels; unemployment would remain at historic highs for the



¹ Historical reminder: The recession of 1981-83 resulted in nearly as many jobs lost against a much smaller workforce and a briefly *higher* unemployment rate. The main difference between the two was the 1981-83 bounced back quicker and the comeback was greeted as “Morning in America.”

foreseeable future

Some speculated that given the rapidly rising cost of college, children and their parents should look to the “skilled” jobs that may require some education and training beyond high school but not the cost of a four-year degree. These jobs - traditional trades and new technical jobs – seemed likely to offer a better chance at a middle class life than baccalaureate degree.

Others suggested that college students were doing themselves a disservice by majoring in fields with little possibility of a high paying career. Psychology and the arts may be fine, these commentators said, but young people should study subjects like science, engineering and math that lead to good paying jobs.

There was concern that wages would fall in the face of the surplus of improperly skilled graduates entering the workforce.² Much was made of the shrinking labor force: as of the end of 2013, there were seven million fewer people in the workforce than there were prior to the recession. There were reports of a record number of college graduates forced to move back in with their parents.³ The situation seemed ominous for all.

Concerns about the value of higher education seemed reasonable. The assertions all were plausible and serious. Many of the concerns expressed deal with real issues that policy makers and practitioners should examine carefully and address responsibly. Towards that end, this paper examines publicly available data and research on the plight of recent college graduates in the labor market as well as that of their peers with less than a baccalaureate degree.

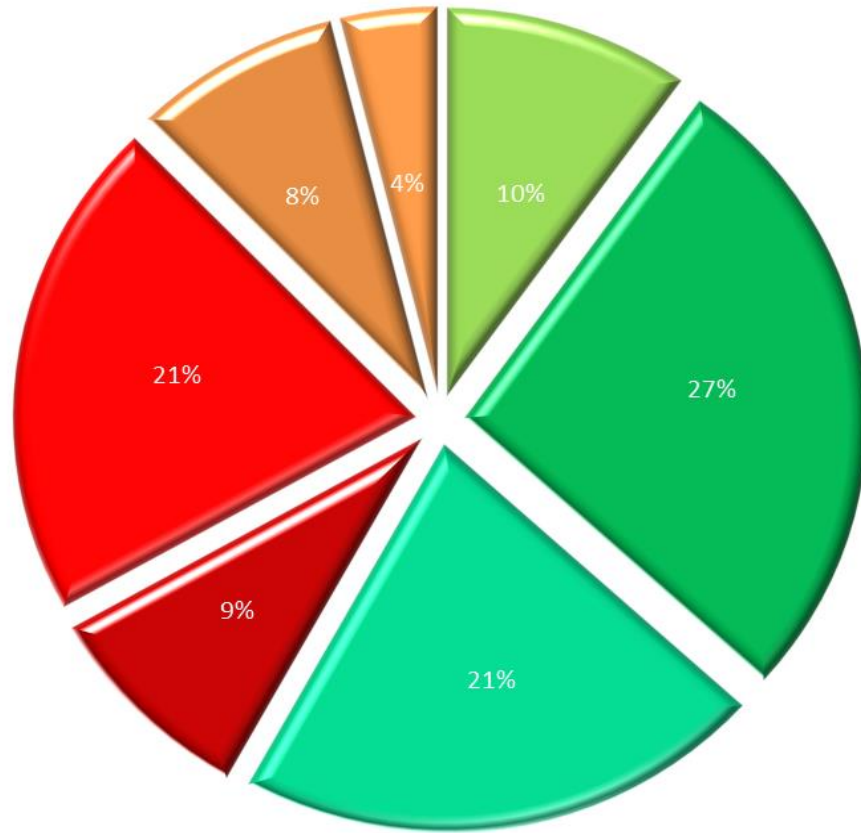
These issues hold import because the portion of college graduates in the workforce large – one third of all US jobs-- and continues to rise. If there are problems with employment and earnings at this level of education, this may have a much broader impact than for earlier generations. (See Figure 3 and Appendix 2

² This view, however, is not new. See: “*Millions Of BAs But No Jobs? That Is the Prospect before the Country and It Has Some Disturbing Implications*” Seymour E. Harris, *New York Times*, **January 2, 1949** and “*Graduates March Down Aisle Into Job Nightmare*” by Jane Gross **January 09, 1992**, *New York Times*. “*Trading Cap and Gown for Mops*” Quentin Fottrell *WSJ Market Watch* **August 3, 2012**

³ *Boomerang Babies: Record Numbers of Young Adults Live with Parents at Terrible Cost* Lynn Parramore, *AlterNet*_August 2, 2013. The recession’s higher numbers for college graduates returnees are proportionate to the overall severity of the Great Recession; forty percent of those with a high school education or less live with their parents, versus 18 percent of college graduates. In the experience of the authors, college graduates have for generations returned home until they found a job.

Figure 2

US Employment by Educational Attainment



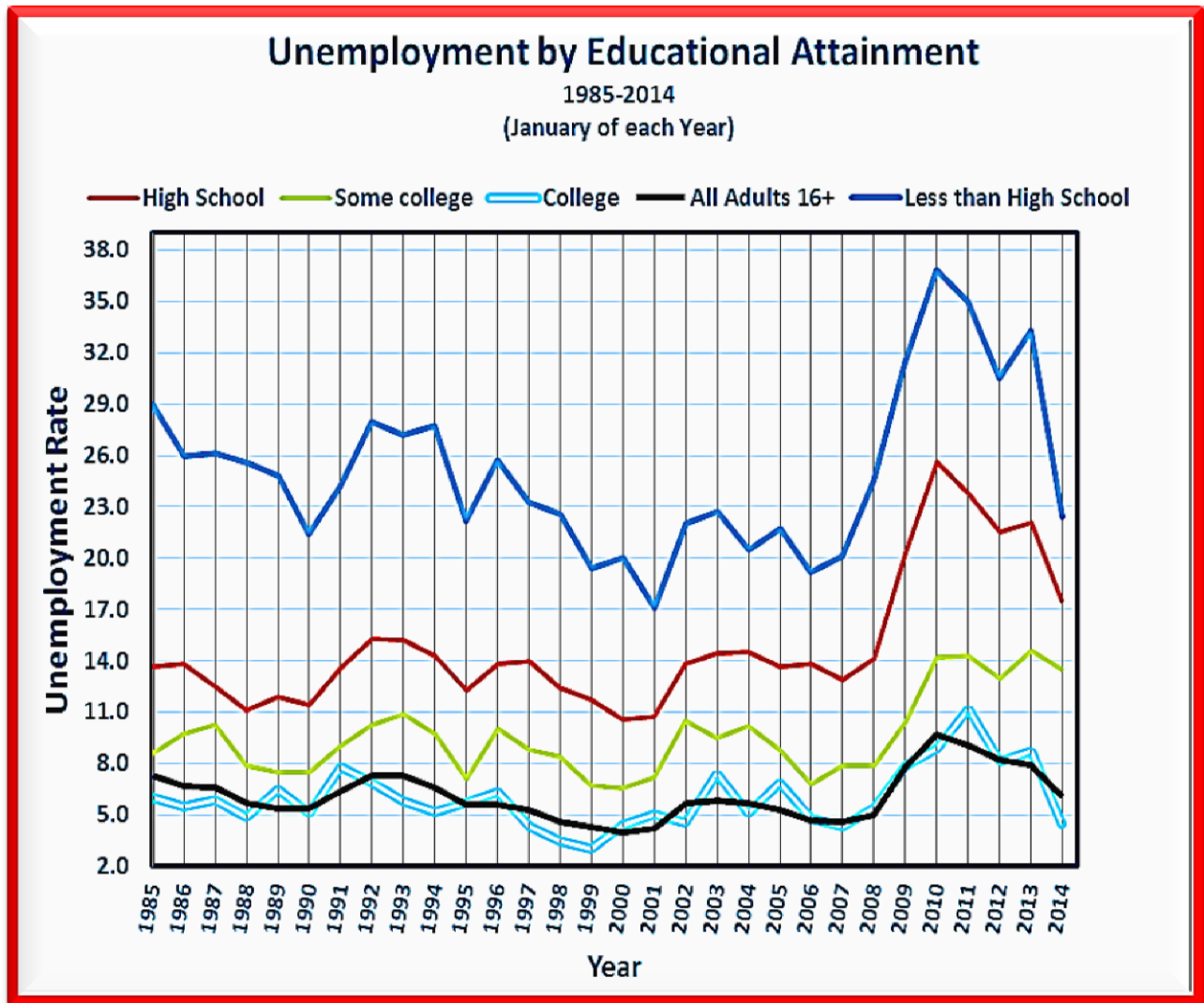
- Less than high school diploma
- Some college, no degree
- Bachelor's degree
- Doctoral or professional degree
- High school diploma or equivalent
- Associate's degree
- Master's degree

Part 1: Unemployment

Recent college graduates felt the lash of unemployment in greater numbers in the past few years than in generations. At the height of the recession the unemployment rate among recent college graduates (aged 20-24) reached levels not seen in decades peaking at over 11 percent, a record for the group..)

As often happens in recessions⁴, experts became concerned that for the first time in history this generation of young people would have it worse off than their parents did.

Figure 3



⁴ Voices in the media have raised concerns about a dismal future generations from the Great Depression on especially in the 1970s oil shock recession, the 1981-83 recession and on to this latest Great Recession.

However, while their unemployment rate rose sharply in the Great Recession so did that of every other group in the workforce (See Figure 3). As the economy slowly recovered from the recession the unemployment rate among recent college graduates, (aged 20-24) fell from the high of 11.2 percent at depths of recession in 2010 to 4.5 percent by April of 2014 well below the national average for all workers.⁵

As Figure 3 shows, for most college graduates, unemployment has not lasted long beyond the first year after completing school. The rate drops quickly as they enter their late 20s. For all adults *over 25* with college degrees the rate fell to an average of 3.3 percent. Most economists consider the latter number “full” employment.⁶

Those 20-24 year olds with a high school degree were much more likely to be without a job than those with or a college degree. This rate peaked at 26 percent in 2010 and then dropped sharply to about 17 percent by early 2014 – still very high.

Those of the same age with less than a high school degree, on the other hand, suffer dramatically higher rates of unemployment, an astounding 36.8 percent in January 2010 - Great Depression level rates – and three times the rate of their college graduate counterparts.

Clearly, college graduates as a group hold a great advantage in the labor market despite the genuine difficulties of individual unemployed graduates.

⁵ A special analysis of the recent college graduate joblessness in the Bureau of Labor Statistics (BLS) Monthly Labor Review addressed unemployment of 20-24 year-olds who had graduated between May and October 2011 just before data collection.

The authors found a 12.0 percent unemployment rate for this group slightly more than shown on Figure 3. However, even without a recession, the few months after graduation involve a great deal of churn as new graduates try to find their way into the workforce.

⁶ Economists call unemployment rates below 3.5 percent or so ‘frictional unemployment.’ The majority of those who remain unemployed are usually in some sort of transition – voluntarily changing jobs, moving to a new city, etc. - and are not likely to remain unemployed for long.

Damned Lies:

Statistics and Speculation

In any discussion of the US workforce, we must first humbly acknowledge our ignorance. A major test of any science is whether it can predictably describe the dynamics of the field, if not predict future developments of the system under consideration. Labor economists and policy analysts cannot do that. Conditions within the 155 million-person-plus US workforce are extraordinarily fluid and complex. The data are little more than blurry snapshots of a raging river – yesterday.

This is not to say the US workforce information system is not useful for many purposes. Indeed, it is and the envy of the world. The Bureau of Labor Statistics, the US Census, and other agencies produce invaluable data; they accurately describe the size, conditions, and general characteristics of the workforce. For many purposes, the data is amazingly good.

Although the agencies do their best to update their methods to adjust to a rapidly changing economy, many of the assumptions behind the understanding of labor markets date from 70 years ago. At that time, most jobs relatively low skilled and workers fungible (interchangeable). As the population became more highly educated, automation replaced many unskilled jobs, and job requirements less uniform, these assumptions have become less true.

With this in mind, any responsible analyst has to acknowledge that real uncertainty exists when drawing conclusions not supported by careful analysis of the data. As with the stock market, there are experts who can provide valid insights into the labor market without offering the false certainty promised by those with an ax to grind or a book to sell.

This is especially true when drawing wide-ranging implications. For instance, we can say that the labor force has shrunk over the past ten years but without further information, we do not know if employable people have become so discouraged that they have dropped out of the workforce entirely. Nevertheless, many do say this.

This ignorance is bliss for the opportunist. If no one knows what the actual situation is, then plausible solutions might be right. The answer only needs to be plausible, consistent with conventional wisdom, and supported by moving anecdotes. (The data offered to support an argument is often little more than a couple of anecdotes and a lobbyist.)

Unsuspecting journalists can always find economists and best-selling authors to propound authoritatively on that which they know just enough to be dangerous. Just as with stock market prognostication, it can be hard to tell who has the valid insights and who is blowing smoke.

Part 2: Underemployment

Despite the clear employment advantage of a college degree, some commentators hold that a large number of college graduates are underemployed for their level of education. With tuition inflation, a four-year college education may no longer be worth the cost for some people. The fact is we know very little about the detail of the educational requirements for most jobs.

Sometimes the data misleads researchers on this point. For example, a recent study by Richard Vedder, Christopher Denhart, and Jonathan Robe of the Center for College Affordability and Productivity asserts *half* of all college graduates are in jobs that do not require a college degree. They imply that the long held belief that college is the key to success in America is a myth; there are already too many underemployed college graduates.

The study is the most carefully argued among those that assert that too many college graduates are underemployed. They say that nearly half - 48percent - of all college graduates hold jobs that do not require a baccalaureate degree. The authors estimate that 5.2 million recent college graduates hold jobs that do not require *even a high school education*. The implication is that college graduates with the baccalaureate degree wasted their time in college when they could have entered the occupation directly from high school, a skills training program or a community college. Unfortunately for the authors, this study is an example of the trap an analyst can fall into. In this case, the statisticians did not design the data set for this type of analysis and it cannot bear the weight of the study's conclusions. We have to take a little detour into the weeds of Department of Labor statistical programs to understand why this is.

The occupational estimates information originate with the BLS Occupational Employment Statistics program and is displayed online by the Department of Labor's Occupational Information Network (O*Net), the Occupational Outlook Handbook and related sources.

O*Net classifies jobs in job "families" or clusters (functional areas which may include workers in the same category from entry level to advanced, and across several sub-specialties). There are only about 974 categories listed on O*Net, instead of over 12,000 job titles in the earlier Dictionary of Occupational Titles (DOT).⁷

⁷ The Department of Labor created the DOT in the 1940s. It included many now defunct manufacturing job titles appropriate to the industrial age. Many puzzlingly humorous titles stand out including "whizzer," "feather renovator," "drifter," and "lump inspector."

For each family of jobs in this truncated list of occupations, O*Net provides a general description of the duties of workers, the number of workers, an educational attainment breakdown, and the anticipated growth of each group over the next 10 years.

The O*Net information best serves as an aid in career counseling for young people. Most of the categories include jobs with a range of educational requirements. This information shows general entry-level possibilities and available career ladders in each field.

The Vedder, Denhart & Robe study attempts to use the information to determine how many underemployed college graduates are in the US. For instance, the authors assert that there are 481,000 college graduates in an occupational category called “Managers (all other).”

Since the BLS data shows that one can enter this occupation with only a high school degree, the college graduates seem overqualified for these jobs.

Yet it only takes a moment’s reflection to realize that many managers are in jobs that require a college degree, if only because they are managing employees who themselves have college degrees.

The same is true of occupational groupings that include farmers, executive secretaries, and sales representatives. College graduates also often voluntarily take work in occupations that certainly do not require a college degree to perform the tasks. Think of Bed & Breakfast operators, graphic artists, and faddish cupcake bakers.

This is not to say that the authors’ concerns are without merit. It is just that the data marshalled to make the argument does not stand up to scrutiny

Jobs vs Occupations

Though often used interchangeably, technically “Jobs” and “Occupations” differ fundamentally. *Jobs* are what we go to every day while *occupations* are abstractions based on perceived similarities between jobs. Any given job title may include jobs with quite different skill sets – e.g. “managers” of auto plants and coffee shops.

Unfortunately for researchers – as well as - students, educators and policymakers - *the requirements of a job are what the individual employer says they are and he or she can call the job whatever he or she wants*. For most jobs the government requires that the educational requirements be justifiable for each job but not much else.

Relatively few jobs, largely in health and safety related occupations - doctors, dentists, and beauticians - even have formal educational qualification and/or third party certification of skills. Software companies, auto repair facilities have taken to establishing certifications for individual software programs and tools but have no educational requirements.

Even for credentialed jobs, the employer may be looking for other intangible attributes beyond the degree and certification. For example, “Is this candidate articulate and service oriented? Will this person fit in with our team?”

Quite a number of jobs that once required no more than a HS degree now require a college degree. This may indicate that employers just feel more comfortable hiring college graduates, especially if the incumbent staffs are all college grads, or what one commentator called “creeping credentialism.”

With 32 percent of the workforce now with college degrees, the degree may simply be a ticket to a better job just as the high school degree became from the 1960s on, when only half the workforce had even a HS degree. Or maybe the jobs now require more skills.

Lest we forget, Steve Jobs, Bill Gates, and a host of other very successful entrepreneurs never completed college. Going back a little further, Thomas Edison, Mark Twain, and Abraham Lincoln never completed elementary school.

Maybe only genius doesn’t require a credential, but it is hard to sort out whether the credential is just a ticket for the gatekeepers or more jobs genuinely require skills imparted by a college education now.

A Rutgers University report by Charley Stone, M.P.P. Carl Van Horn, PhD and Cliff Zukin, PhD called *Chasing the American Dream: Recent College Graduates and the Great Recession* also investigated this issue. It found that: 24 percent of 444 graduates between 2006 and 2011 said their first job was not related or very closely related to their degree.

They report that only 20 percent of the graduates said their first job was on their career path. “Our society’s most talented people are unable to find a job that gives them a decent income,” says Cliff Zukin, a professor of political science and public policy at Rutgers.⁸

Unfortunately, this statement is doubtful due to major limitations of the study. The researchers gathered information from only 444 recent graduates in five different calendar years or an average of 88 per year. Of that, a mere 226 – an average of 45 per year – had jobs at the time of the survey. Thus, any broad implications about the condition of recently employed US college graduates are tenuous at best.

Further, the survey’s question about the graduates’ need for a college degree in their current employment only elicited the respondents’ *opinion* not the criteria established by their employer for the position. The answers are therefore ambiguous. New workers are often assigned relatively simple tasks until they have more experience and training. On the other hand, respondents may have meant that they were working at a fast food joint alongside high school sophomores.

Thus, the question of the extent of underemployment of recent college graduates remains unknown. There surely are underemployed college graduates but the extent remains a mystery.

⁸ Rutgers University John J. Heldrich Center for Workforce Development, Edward J. Bloustein School of Planning and Public Policy, *Chasing the American Dream: Recent College Graduates and the Great Recession* Charley Stone, M.P.P. Carl Van Horn, Ph.D. Cliff Zukin, Ph.D. May 2012

Part 3: Earnings

As the economy collapsed in 2008-2009 and high unemployment dragged on thereafter analysts began to question whether a watershed shift had occurred in the workforce, whether college was still worth the cost.

Economists and families often mean quite different things when referring to the worth of a college education. Economists talk about return on investment (ROI): whether income from your chosen occupation will be enough to pay back your college costs – including loans with interest - over a given period -- often 20 years. Parents and young people on the other hand are more often concerned with the ability to pay the upfront costs of rising college expenses.

There are several problems with researching return on investment. First, college costs range widely and attempts at a national analysis usually obscure this important factor. Second long term future growth or decline of occupations is mostly guessing. Finally, many people just do not care about ROI skewing the premise of these studies that they should care.

Is College All about Return on Investment?

In discussing the worth of college education, we should consider for a moment that there are other reasons than “return on investment” for pursuing undergraduate studies.

Over the past several decades, there has been a profound change in the way Americans perceive higher education. It has gone from being a sanctuary for scholars to becoming a ticket to a financially rewarding career. Certainly, the economic aspects are profound.

Nonetheless, in the real world postsecondary studies are more than vocational education or an investment looking for the highest possible return. Some students are interested in an education in itself – “the joy of finding things out” as the Nobel physicist Richard Feynman said.

Many are pursuing personal dreams because they love a given vocation. Others choose professions - teaching, social work - they know will not be as financially rewarding as others will. Finally, not everyone has the aptitude the highly technical professions that tend to pay the most

That said, the economic returns from a college education have important societal impacts. The country needs a well-educated workforce to compete in a global economy. Individuals need to consider cost compared to expected income or they may become caught in a debt trap where future income can't support repayment of student loans.

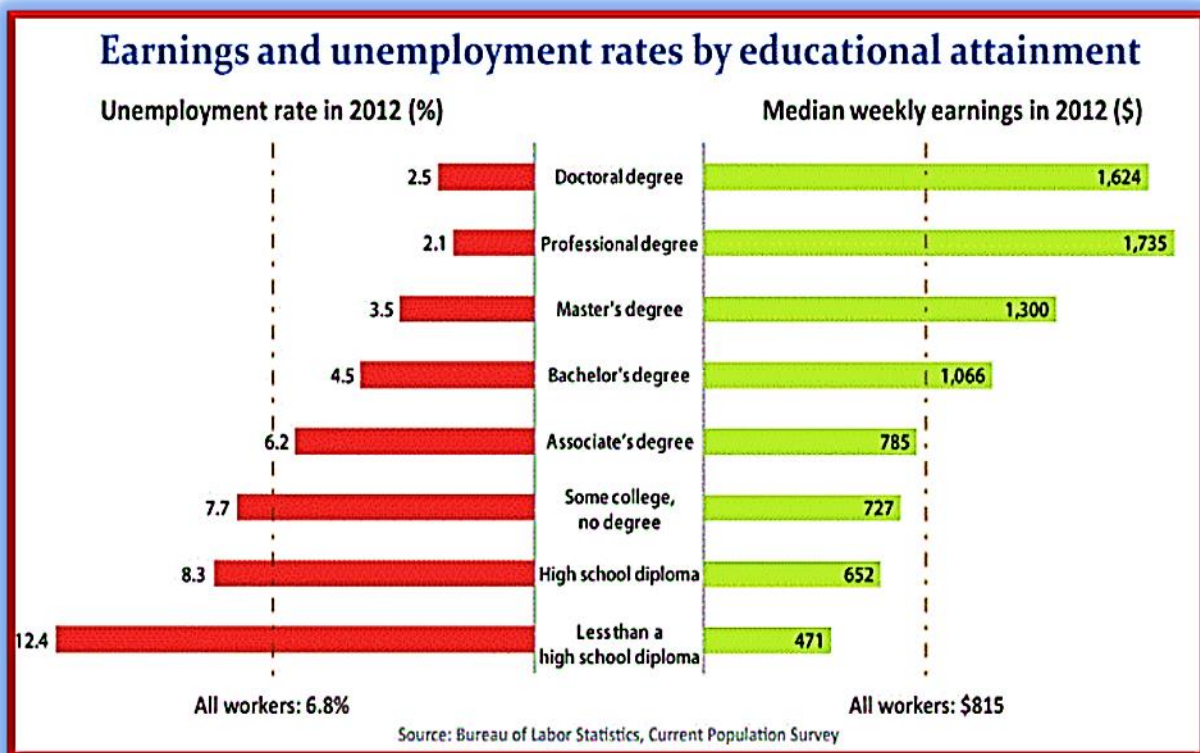
A detailed economic analysis by the highly respected Pew Research Center finds that college graduates' 25-34 years of age had a median income far higher than their high school graduate peers had. In preparing the study, the Pew Center conducted a detailed economic analysis using both scientific survey results and annual US Census socio-economic data.

The Pew Center found college graduates⁹ outperformed their peers with less education on virtually every measure of economic well-being and career attainment—from personal earnings to job satisfaction to fulltime employment.

The authors say “When today’s young adults are compared with previous generations, the disparity in economic outcomes between college graduates and those with a high school diploma or less formal schooling has never been greater in the modern era.”

Figure 4 from the Bureau of Labor Statistics graphically illustrates the connection between employment, income and education. Figure 5 displays earning power bestowed by the different levels of education over several generations.

Figure 4



⁹ This is a slightly older group than the 20-24 years olds discussed elsewhere in this paper yet still relevant to the questions at hand.

Individual college 20-24 year old graduates (as opposed to households) who were working full time earned \$21,000 more annually (\$40,000 vs \$19,000) in 2013 than employed young adults holding only a high school diploma.

For some “mid-skill” jobs may offer a better chance at the middle class life than a four-year college degree. These occupations include new technical jobs of various sorts – e.g. computer, robotics, advanced manufacturing and alternative energy jobs -- as well more traditional skilled trades.

For the most part this is not true¹⁰. As a rule, a baccalaureate degree trumps postsecondary skill training or an associate’s degree. Still, this type of “mid-skill” work offers better income and a lower likelihood of unemployment than work available to those with a high school degree alone.

The Pew research shows 25-34 year old individuals with “some college” or training beyond high school make about \$6,000 more than those with only a high school degree (\$25,000 vs. \$19,000) but still well below college graduates’ median individual income - \$14,500 below. However, only about 10 percent of the workforce has an associate’s degree or formal postsecondary training (apprenticeships, certificates, etc.) (See Figure 6)

For many, such postsecondary training and subsequent employment is a step up the financial ladder from that of their parents and provides an opportunity to enjoy a middle class life, especially for two earner families. The jobs often lead to supervisory or management jobs in their field and sometimes ownership of small businesses later in life.

The real disparity comes when Pew measured median *household* income (as opposed to individual). The Pew study estimates that among high school graduate-headed households, median annual income comes in at about \$40,000, while college graduate-headed households make around \$90,000 – an astounding \$50,000 difference. Another way of looking at the issue is that college graduates can expect to make a million dollars more in their life than high school graduates can.

The incidence of poverty closely tracks education as well: only about six percent of college graduates are poor while more than one in five (22 percent) high school graduates fall below the poverty line. The study did not address the earning power for young people with less than a high school degree but it is safe to say that their income would be quite a bit lower than the high school graduates would be. Their incomes likely track their unemployment experience.

¹⁰ There are some exceptions, of course including container ship crane operators for container shipping, gasoline refinery workers, and NBA players who opted out of finishing college.

The Pew Center research confirms the widespread view that the income inequality is growing and that college graduates are pulling ahead in terms of lower unemployment rates and relatively higher income.

Figure 5

Economic Well-Being of 25- to 32-year-olds				
	All	Bachelor's Degree or More	Two-Year Degree/ Some College	High School Graduate
Median adjusted household income (in 2012 dollars)				
Millennials in 2013	\$57,175	\$89,079	\$51,962	\$39,842
	\$54,081	\$86,237	\$55,168	\$45,164
Late Boomers in 1986	\$54,140	\$81,686	\$59,518	\$47,986
Early Boomers in 1979	\$27,335	\$38,759	\$30,684	\$24,483
Silent Gen in 1965	\$18,769	\$34,736	\$23,947	\$19,417
Share in Poverty				
Millennials in 2013	16	6	15	22
Gen Xers in 1995	13	3	10	15
Late Boomers in 1986	12	4	8	12
Early Boomers in 1979	8	3	6	7
Silent Gen in 1965*	N/A	N/A	N/A	N/A

*Household income and poverty are not available before 1968.

Notes: "All" includes those who are not high school graduates. Household income figures are adjusted for inflation and are expressed in 2012 dollars. Based on household income in the calendar year preceding the survey. Income standardized to a household size of three. For details, see <http://www.pewsocialtrends.org/2011/11/07/the-rising-age-gap-in-economic-well-being/4/#appendix-a-data-sources-and-methodologyappendix>. Household income is tabulated over households headed by 25- to 32-year-olds. Personal income is tabulated over 25- to 32-year-olds and is based on the total pretax personal income in the calendar year preceding the survey. Poverty is based on the respondent's family income in the calendar year preceding the survey. Poverty refers to the share of 25- to 32-year-olds living in poverty.

Source: Pew Research Center tabulations of 2013, 1995, 1986, 1979 and 1965 March Current Population Survey (CPS) Integrated Public Use Micro Samples.

College Loan Debt It is common knowledge that the cost of college has risen rapidly over recent decades. An article in the April 14, 2014 issue of *The Economist* reminds us “. . . the cost of university per student has risen by almost five times the rate of inflation since 1983.” Student loan debt is on the rise as a result of tuition inflation and the cutting back of federal and state government support of higher education.

The Project for Student Debt, for example, notes that seven in 10 college seniors (71%) who graduated last year had student loan debt, with an average from all sources of \$29,400 per borrower. From 2008 to 2012, debt at graduation (federal and private loans combined) increased an average of six percent each year.

In addition nearly a third of those who take out such federal student loans eventually drop out of postsecondary schools of all types while they must still repay their debts and have little to show for it. A recent US Department of Education report said the highest loan default rates were among students who do not complete their studies.

Of those who defaulted, about 75 percent attended but did not graduate are from for-profit trade and technical schools. The schools receive their money up front at the beginning of the semester and do not return the money if the student drops out. The students often have little income to repay their student loans.

Some relief is on the way for some future borrowers. The same *Economist* article cited above noted, “Under the new federal student loan law, students enrolling this year who service their debts will see them forgiven after 20 years and loan payments will be indexed to the graduates’ future income to keep a lid on monthly payments after graduation.”

Still, the burden is heavy for those who took out loans before the new federal legislation became effective. For most students and their families the cost, while onerous and perhaps unnecessarily high, seems worth the price. As a rule, they are correct given the pay premium of a college degree.

Those left out are the many low and moderate income families who cannot afford the upfront costs or debt burden afterward. It takes much more desire and ingenuity to find ways to pay for college among these students.

Part 4

So, What's Your Major?

Are college students doing themselves a disservice by majoring in fields with little possibility of a high paying career? As often happens in recessions, experts asserted confidently that for the first time in history this generation of young people would have as prosperous a life as their parents.

By majoring in lower paying fields of study, students may be wasting the expense of college education especially considering the amount of money students have to borrow for college.

These students, the argument goes, will spend decades paying for something without ever recouping the cost through increased wages over what they would have made if they had not gone to college.

Critics have expressed concern that too many college students are majoring in art history or psychology. They believe the job market in such fields is not large enough to accommodate their numbers

They argue that to make their college studies worth it, more students should choose majors preparing them for high paying jobs in science, technology, engineering and math – the so-called STEM fields favored by educators, high tech executives, and others.

Of course, not everyone has the right stuff to be an engineer. Even if they did, it would be a pretty dull Oscars night if all the actors (a low demand field) were petroleum engineers (a high demand field). No one knows who is a future movie star and who is going to be wait-

Experience Counts

In a recent survey of more than 2000 business leaders (executives, managers, and human resource directors), *the Chronicle of Higher Education* found that employers tend to place more emphasis on work and internships than the specific course of study or GPA.

The Chronicle reported that an internship is the single most important credential for recent college graduates to have on their resume in their job search among all industry segments.

According to a study by Rutgers University* employers were willing to pay an average of \$4,000 more for those who internships on their resumes -- 13 percent differential.

College major comes in third, overall, in employer priorities except at Health Care organizations where it is neck and neck with employment during college.

Organizations with fewer than 50 employees value volunteer work and extracurricular activities more than a specific major. ."

College graduates were most lacking in "written and oral communication skills, adaptability and managing priorities, and making decisions and problem-solving."

The authors emphasize that the study did not find that an academic major does not matter— simply that other qualifications matter more.

* Charley Stone, M.P.P. Carl Van Horn, Ph.D. Cliff Zukin, Ph.D. *Chasing the American Dream: Recent College Graduates and the Great Recession*

Note: One organization, Innovation America, developed a proposed national internship program potentially involving several hundred thousand participants called America's Innovation Corps. See www.innovationamerica.us

ing tables until they give up being an aspiring actor and go get a “real” job. More to the point the statistics don’t support the assertion that “soft” fields of study (supposedly non-vocational low demand) dominate the list of graduates’ list of majors. (See Figure 7)

As to the availability of reliable detailed data, The New York Times concluded from a thorough review of the various data sources comparing schools and majors that: “Unfortunately, not one

Figure 7



Source: National Center for Educational Statistics.2009-2010 academic yearof

these tools is based on complete or particularly good data. And no site allows students to do what most probably want to do: pick a handful of colleges across the country and compare earnings achieved by graduates in various majors.”¹¹

Figure 7 shows the number of recent (2010) college graduates in 31 different fields identified by National Center for Educational Statistics. Seven of the top ten choices relate directly to high wage, high demand vocational careers including engineering, business, and, health care. Business majors alone account for 358,293 of the graduates or more than 21 percent of the total.

It seems that high profile technology industry complaints about skill shortages in the science, technology, engineering and math (STEM) fields of study have some merit. For instance, computer science and math majors at 37,000 and 16,000 graduates respectively appear to be low by comparison to other majors.

In recent research, the American Association of Colleges and Universities found college majors make much less difference in the job market than often thought. The study¹² found that nearly all (93 percent) of employers surveyed say that “a demonstrated capacity to think critically, communicate clearly, and solve complex problems is more important than [a candidate’s] undergraduate major except in areas that require very specific technical skills or licensure (architecture, engineering, health care, etc.)

Similarly, a recent Chronicle of Higher Education survey of 2,000 employers found that: “Only 19 percent of employers look for specific majors and do not consider candidates without them while the majority—78 percent—will consider any major. When it comes to the skills most needed by employers, job candidates are lacking most in written and oral communication skills, adaptability, and managing multiple priorities, making decisions and problem solving.

Employers place the responsibility on colleges to prepare graduates in written and oral communications and decision-making skills. Results indicate that colleges need to work harder to produce these traits in their graduates.”

¹¹ For the record Appendix 4 gives the top ten sites on Google that offer information on estimated ROI for colleges and academic majors. They focus more on the relative merits of different colleges and less on academic majors. Two organizations, Payscale.com and Salary.com, seem to be the source of most of the information. Both give a general view of relative return of investment but both have source data problems.

¹² “It Takes More Than a Major: Employer Priorities for College Learning and Student Success,” the American Association of Colleges and Universities, Washington, DC

The Chronicle survey included CEOs, human resources directors, and managers. While overall employers seemed to think US colleges and universities are doing a good job, the managers who actually supervise recent college graduates were significantly less pleased than the CEOs or HR directors who have less direct contact.

A national Gallup/Lumina survey of employers published in January 2014 found essentially the same thing. (See Figure 8.) Employers place a great deal more emphasis on actual knowledge (84 percent rated it very important) and skills (79 percent) than the academic major alone.

“The employers place far less importance on where the candidate went to school (nine percent).”

These studies take a broad look at employers as a group. They are enlightening as far as they go. However, they do not distinguish either by industry or by the type of jobs in survey questions. Of course, many jobs require education beyond a baccalaureate also not reflected in these types of studies.

Nonetheless, the study indicates that the great majority of firms that hire recent college graduates look for generalists who they can train on the job for the specifics of the firm or industry. Their greatest needs seem to be the kind of skills that traditionally provided by a liberal arts education.

An excellent study by Anthony Carnevale,

Culture Clash: What's a College to Do?

The culture of the higher education community emphasizes the spread of knowledge. Educators consider themselves in the knowledge business. Business culture tends to believe that education is about competency in useful skills. As a result educators and employers often talk past each other in discussion of what employers want from college graduates. .

Colleges and universities, reward professors for research more than teaching; research expands the body of knowledge. For more than 100 years the paradigm for the university has been as steward of knowledge. In this model, preparation for employment other than as a scholar is secondary. There is a decided disdain for “vocational” education.”

When preparing students for the workforce educators tend to focus on imparting knowledge. The more the better and more efficiently presented the better. The rise of the MOOCs reflects this mindset. To educators it seems an efficient way to get knowledge to the widest possible audience. For the most part written tests determine whether a student has learned something.

Employers on the other hand want graduates who can do the job. To them there is more to work than knowledge alone. Skills, aptitude, and interests are equally important. It does not matter if a graduate has straight A's if he or she does not like the work, does not get along with others, and cannot write or speak fluently.

Employers, especially managers, tend to believe universities should prepare students for the work rather than just impart facts. With this outlook employers tend to be suspicious of MOOCs and to value internships and other hands-on work experience.

To employers, knowledge is of little value without skills – to apply knowledge in context, to communicate effectively, to solve problems – as well as an aptitude for the work, and a sustaining interest in the field.

This culture clash is longstanding and is not likely to be resolved soon. Nevertheless, the issue is worth addressing. Moreover, there have been successful efforts at the local level in which universities and employers have found a working accommodation

Ron Cheah, and Jeff Strohl, with the Center for Education and the Economy at Georgetown University delves into the effects of academic major on the employment and earnings of college graduates.

The virtue of this study is that rather than simply provide the median rates (half above half below of all ages) it offers data on the incomes of recent graduates, experienced college educated workers, and those with graduate degrees in the same academic major they had in undergraduate college. The authors stick close to the available data and judiciously avoid long term “return on investment” type projections. Nor do they try to estimate whether the graduates are underemployed or not.

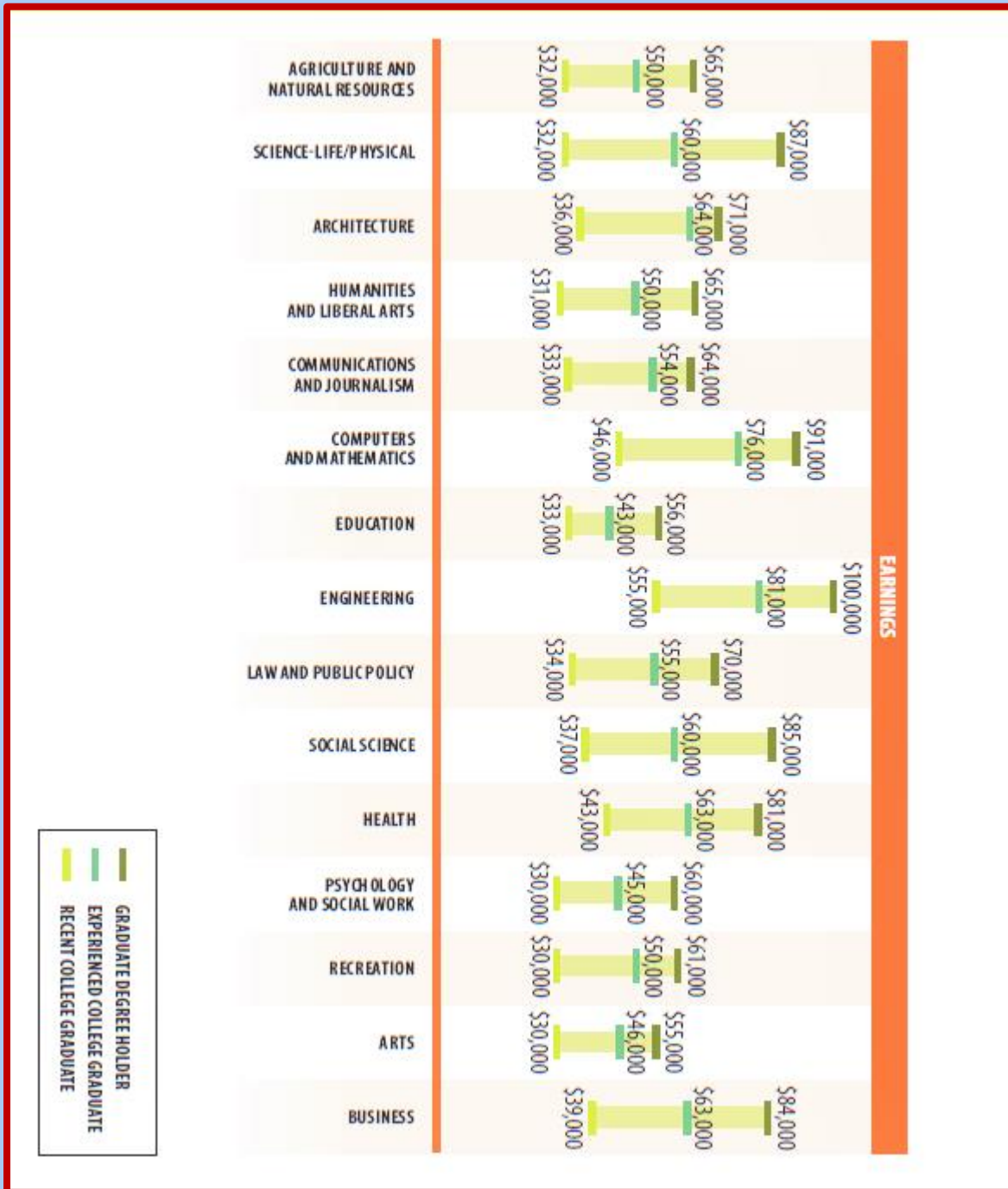
In the report, for most of the majors recent graduates pay falls into a narrow range between \$30,000 and \$35,000 a year. At the high end are engineering (\$55,000); computer science, (\$46,000) health care (\$43,000), and business (\$39,000).¹³

Figure 10 shows unemployment rates for recent graduates in various fields of study along with the earnings numbers for new graduates, experienced graduates and those with advanced degrees.

The unemployment numbers for new graduates range from 5.4 percent for education and health care to a high of 11.1 percent for the arts majors. The unemployment rates fall significantly in all fields of study for experienced workers and those with graduate degrees.

¹³ The much maligned fine arts majors holds their own in terms of pay perhaps because there are 373,000 museums and 1,700 orchestras which hire fine arts majors. Nationally, there are 137,000 employed musicians and singers alone. This does not include graphic artists, writers, photographers, and many other jobs held by fine arts graduates against about 90. Nationally, there are 137,000 employed musicians singers alone and 60,000 of performing arts graduates a year.

Figure 8
Average Earnings for New and Experienced College Graduates by Major



Source: “Hard Times: Not All College Degrees are Created Equal,” Anthony P Carnevale, Ron Cheah, and Jeff Strohl, Center for Education and the Economy, Georgetown University, Washington, DC

Figure 9

UNEMPLOYMENT AND EARNINGS FOR COLLEGE MAJORS						
MAJOR	UNEMPLOYMENT RATES			EARNINGS		
	RECENT COLLEGE GRADUATE	EXPERIENCED COLLEGE GRADUATE	GRADUATE DEGREE HOLDER	RECENT COLLEGE GRADUATE	EXPERIENCED COLLEGE GRADUATE	GRADUATE DEGREE HOLDER
AGRICULTURE AND NATURAL RESOURCES	7.0%	3.5%	2.4%	\$32,000	\$50,000	\$65,000
SCIENCE- LIFE/PHYSICAL	7.7%	4.7%	2.2%	\$32,000	\$60,000	\$87,000
ARCHITECTURE	13.9%	9.2%	7.7%	\$36,000	\$64,000	\$71,000
HUMANITIES AND LIBERAL ARTS	9.4%	6.1%	3.9%	\$31,000	\$50,000	\$65,000
COMMUNICATIONS, JOURNALISM	7.3%	6.0%	4.1%	\$33,000	\$54,000	\$64,000
COMPUTERS AND MATHEMATICS	8.2%	5.6%	4.1%	\$46,000	\$76,000	\$91,000
EDUCATION	5.4%	3.9%	1.9%	\$33,000	\$43,000	\$56,000
ENGINEERING	7.5%	4.9%	3.4%	\$55,000	\$81,000	\$100,000
LAW AND PUBLIC POLICY	8.1%	4.5%	3.5%	\$34,000	\$55,000	\$70,000
SOCIAL SCIENCE	8.9%	5.7%	4.1%	\$37,000	\$60,000	\$85,000
INDUSTRIAL ARTS	—	4.7%	—	—	\$71,000	—
HEALTH	5.4%	2.2%	1.9%	\$43,000	\$63,000	\$81,000
PSYCHOLOGY AND SOCIAL WORK	7.3%	5.9%	3.2%	\$30,000	\$45,000	\$60,000
RECREATION	8.3%	4.5%	2.0%	\$30,000	\$50,000	\$61,000
ARTS	11.1%	7.1%	6.2%	\$30,000	\$46,000	\$55,000
BUSINESS	7.4%	5.3%	4.4%	\$39,000	\$63,000	\$84,000

ACS 2009-2010, pooled sample. Recent college graduates are 22-26 years of age, experienced workers are 30-54 years of age. Graduate degree holders are limited to 30-54 years of age. Percent unemployed are computed based on total employed and unemployed. Earnings based on full-time, full-year workers.

Source: “Hard Times: Not All College Degrees are Created Equal,” Anthony P Carnevale, Ron Cheah, and Jeff Strohl, Center for Education and the Economy, Georgetown University, Washington, DC

Part 5 **A Skills Mismatch (Or Not)**

The assertion of a pervasive "Skills Mismatch" is routinely held up to explain the income and employment differences and why nearly half of those out of work have been so for more than six months.

However, the issue is far from simple or clearly defined. As Sociologist Michael Handel points out: "In the skills mismatch debate, it is often not clear *who* is missing *what* skill.

The term "skills mismatch"¹⁴ is used to talk about:

1. Technical manufacturing know-how
2. Doctoral-grade engineering talent
3. High-school level knowledge of reading and math
4. Interpersonal smoothness
5. Facility with personal computers
6. College credentials
7. Problem-solving ability and more

And, depending on the conversation, the problem lies with:

1. High-school graduates
2. High-school drop-outs
3. College graduates without the right majors
4. College graduates without the right experience
5. New entrants to the labor force
6. Older workers (with obsolete skills), or
7. Younger workers (who aren't being properly trained by their employers.)

Since the problem(s) so ambiguously defined, people with vastly different agendas are able to get in on the conversation--and the solution."

In other words: Literally, no one knows what they're talking about. Or at least they don't know what anyone else is talking about for sure. All of the skill deficits may be real and all the groups may need better skills but until these issues are teased out and better understood, no rational approach can be taken to solve whatever skills shortages there might be.

¹⁴ Several terms are used more or less interchangeably including variously "skills gap," "skills deficit," and "skills shortages."

In the meantime, in the face of the huge pay differential between college graduates and all others, many interested - some of them self-interested - groups and policymakers are pushing for greater access, attendance and completion of college.

While this should have positive results, the direct relationship between a college degree and higher pay is not entirely clear. A large part of the difference seems to be driven by something other than the type of degree received.

Do college graduates have genuinely different skills from that of high school and community college graduates? Does a bachelor's degree signify something else other than skills to employers – shorthand for reliability, problem-solving skills, or something darker like a tool to discriminate against groups less likely to have a degree? Is a shortage of college graduates driving up wages? Will pay rates be driven down by a large increase of new graduates into the labor? These subjects do not seem to have been explored in any depth or with any rigor.

In his book, *Why Good People Can't Get Jobs*, University of Pennsylvania business professor Peter Cappelli argues that a big part of the reason American firms feel as if they can't find qualified workers is because of overly restrictive hiring practices.

Based on interviews with personnel managers and others, Cappelli describes procedures that screen out anyone without precisely the right academic qualifications, and job descriptions that include so many different roles that finding one person to fill the slot is practically impossible. If true, this is a case of a self-imposed barrier masquerading as a skills shortage. The suggestion is provocative; however, analysts will require more information since the author appears to base the suggestion largely on anecdotes.

Cappelli also notes complaints from employers that they can't find people with the right skills because the qualified candidates want too much money. On the face of it, that is a market issue not a skills gap. If employers paid more for these jobs they might well find the workers they need. (It could be a case of: "I remember when Snickers only cost a quarter. Why should I be gouged like this?")

Despite the lack of clarity as to what the problem (or set of problems) is various groups have laid a variety proposed solutions before the public:

- For 20 years or more CEOs of major corporations, government officials, and workforce development advocacy groups have been pressing for a great emphasis on "soft skills"; teamwork, problem solving, dependability, polite customer service, etc.

- High tech firms are pushing for changes in immigration law to allow more highly skilled foreign nationals to take permanent residency in the US. Others say that employers should take more responsibility in training their own workers.
- The administration, members of Congress, and many educators argue that the nation needs to greatly increasing the number of Americans going to (and completing) college, especially those from low and moderate-income families.
- For those not planning to get bachelor's degree substantial increases in technical education preferably at degree granting community colleges are recommended.

These all may help in improving the quality of the American workforce, but, as mentioned, the discussion lacks agreement on even the most basic terms” As a result the country lacks any means of prioritizing its actions in a time of scarce resources.

In sum, there appear to be some “soft” skills widely lacking including the ability to think critically, communicate clearly, solve complex problems, and get along with colleagues and customers. Schools, colleges and employers can teach some of these. Mentors can model some behaviors for new employees to learn and still others depend on vagaries of personality and character. Some of it is nostalgia. Like the old song says: “Kids today, why can't they be like we were: Perfect in every way.”

Proponents of “hard” or technical skills shortages have, in our research, failed to demonstrate any specific widespread shortages. The proponents of a greater emphasis on the STEM subjects – science, technology, engineering, and math – in school, however, seem to have identified areas of high demand (and wages) and low supply of competent candidates in certain cases.

Any claims of skills mismatch (or gap or shortage) must be tempered by the possibility that wages and working conditions have not kept up with the attractiveness of alternative work. For many years nursing and teacher shortages were driven by wages and working conditions that failed to keep up with alternatives careers, especially who many more attractive jobs open up beginning the 1960s and 70s.

Massive state and federal spending on nursing education, for instance, resulted in more *trained* nurses but not many more people *working* as nurses until wages and working conditions became competitive with alternative work.

In short, sources reliable skills shortages information are rare . Proponents most often base their recommendations on little more than anecdotes, testimonials, small sample information gathering (technically known as “chatting people up”) or from poorly worded survey questions.

Part 6: A Shrinking Workforce

“**O**ver the last 12 years, the United States has gone from having the highest share of employed 25-to 34-year-olds among large, wealthy economies to having among the lowest.”¹⁵.

David Leonhardt of the New York Times in his article quoted above notes that there were seven million fewer people in the workforce in 2013 than there were at the beginning of the Great Recession. The article implies that there is something foreboding about this. Perhaps so, but this argument may be premature. The smaller workforce may or may not be a major problem. Still, it bears watching for several reasons

It is true that between 2000 and 2012 some seven million fewer people decided to not work or look for work (See Figure 11.) That is, fewer people participated in the labor market, not fewer jobs on offer by employers.¹⁶

Among the reasons for not participating in the active labor market include going to school, retirement, choosing to stay home to raise children, and prolonged illness.¹⁷ Figure 11 shows the historical trends in workforce participation between 1950 and 2013. Though a prolonged drop in the participation rate would be of concern, the recent decline has flattened out as the recovery has regained strength.

Nor is there evidence that recent college graduates or other young people dropped out of the workforce in any great numbers during the recession. As Figure 12 shows, the participation rates of young people between the ages of 16 and 24 changed very little. Historically, the huge growth in workforce participation between roughly 1968 and 2000 was the result of women entering the workforce en masse and the arrival of the baby boom generation, which is now retiring. Without further immigration or a significant rise in birth rates, labor force shrinkage has a good chance of continuing. Yet, if each new worker is more productive than the last and the fruits of that productivity are more widely shared, the size of the labor force may not matter as much as it would appear to.

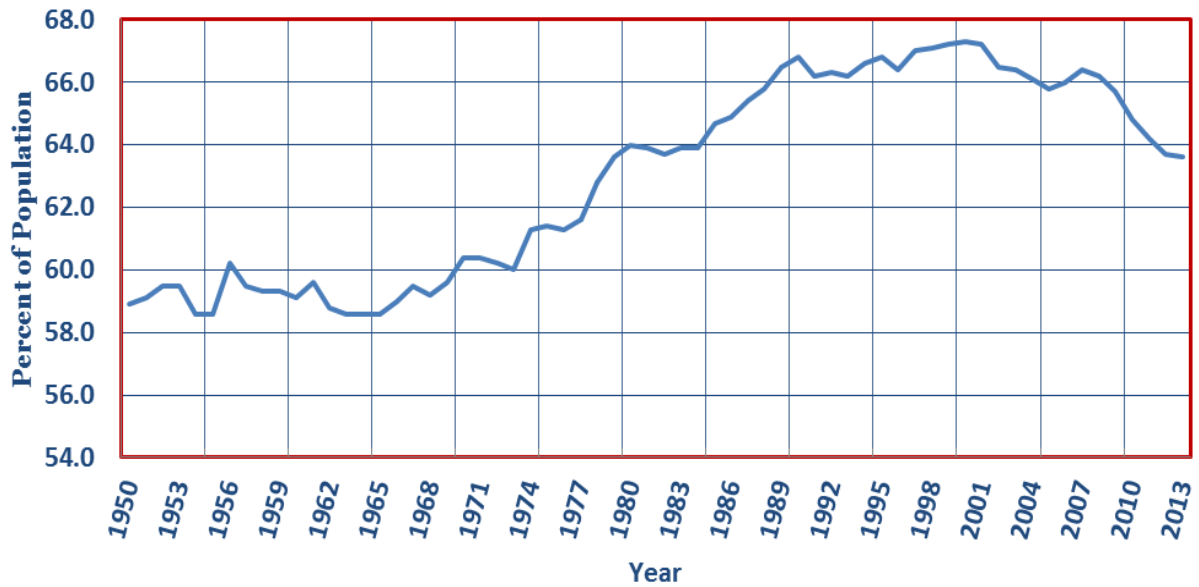
¹⁵ “The Idled Young American”, by David Leonhardt, in the New York Times May 3, 2013

¹⁶ See discussion of fewer jobs starting on page two. See Appendix 1, for a further depiction of the dynamics of the labor market.

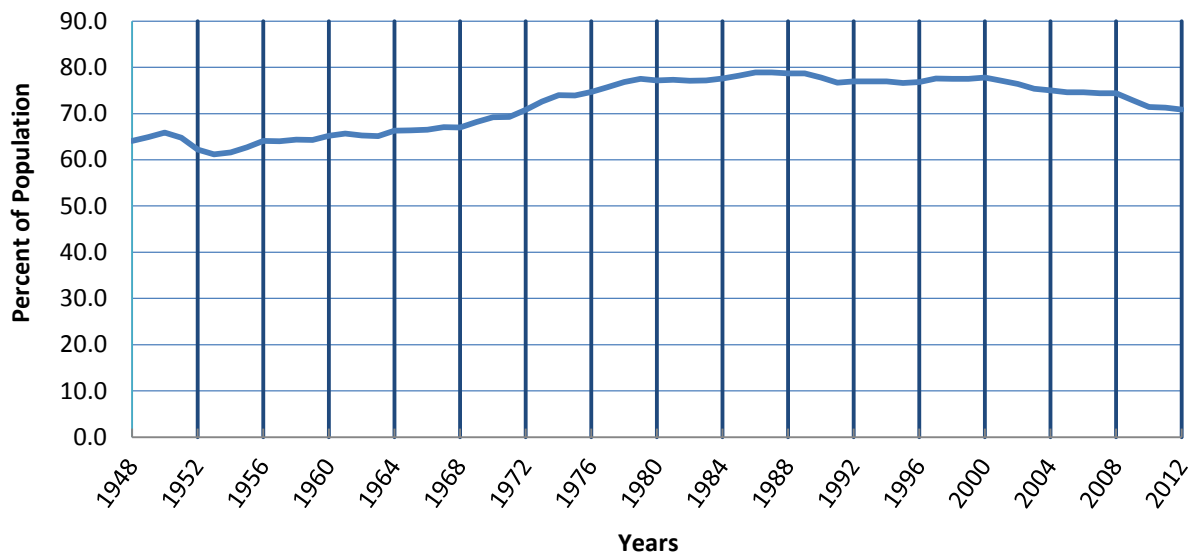
¹⁷ Not to mention the idle rich, who make up less than one percent of the civilian noninstitutional population. Then there’s that slacker son-in-law of yours and his friends.

Figures 10-11

Percent of Population 16 and Over in Workforce

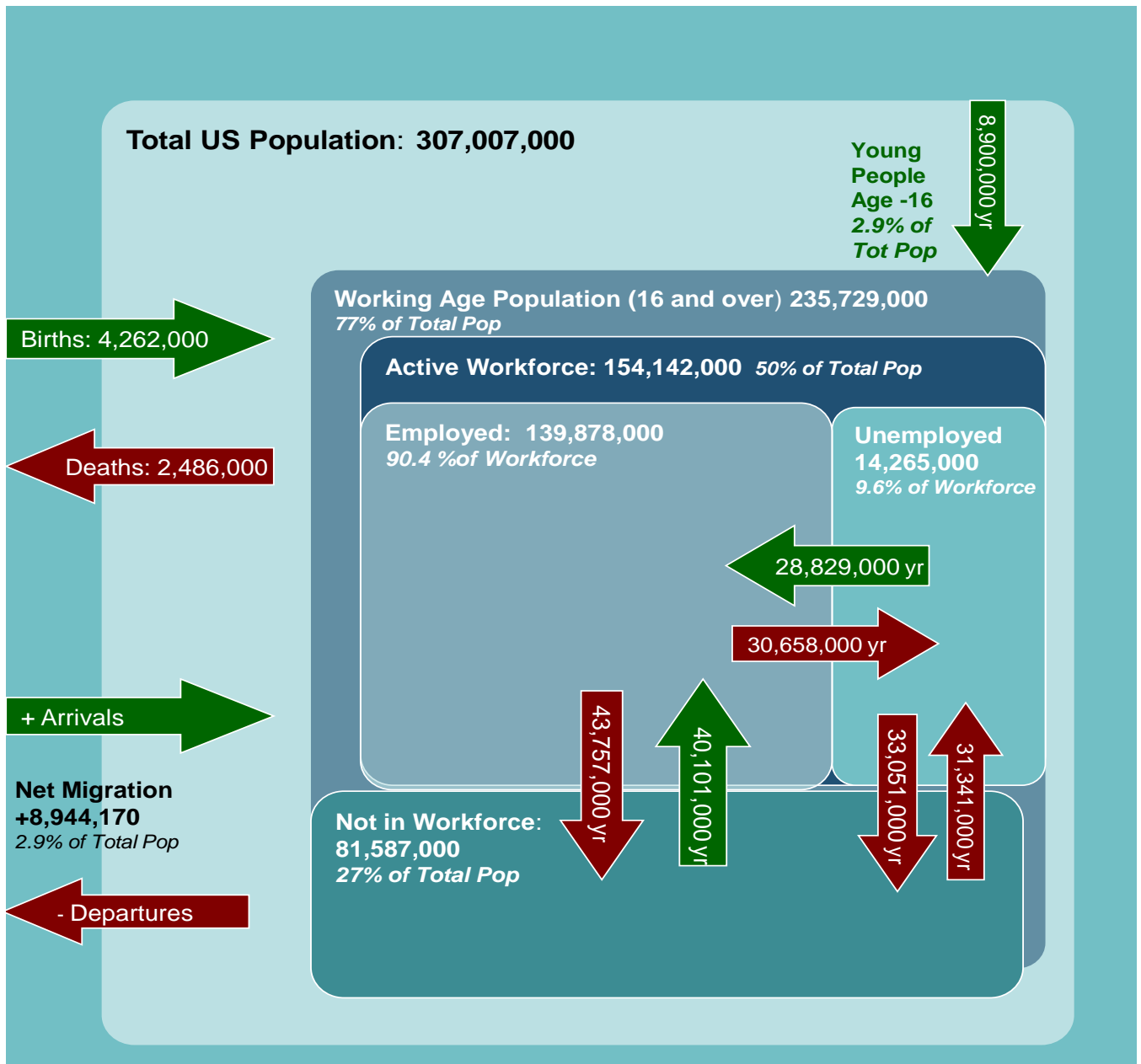


Participation Rate Ages 16-24 1948-2012



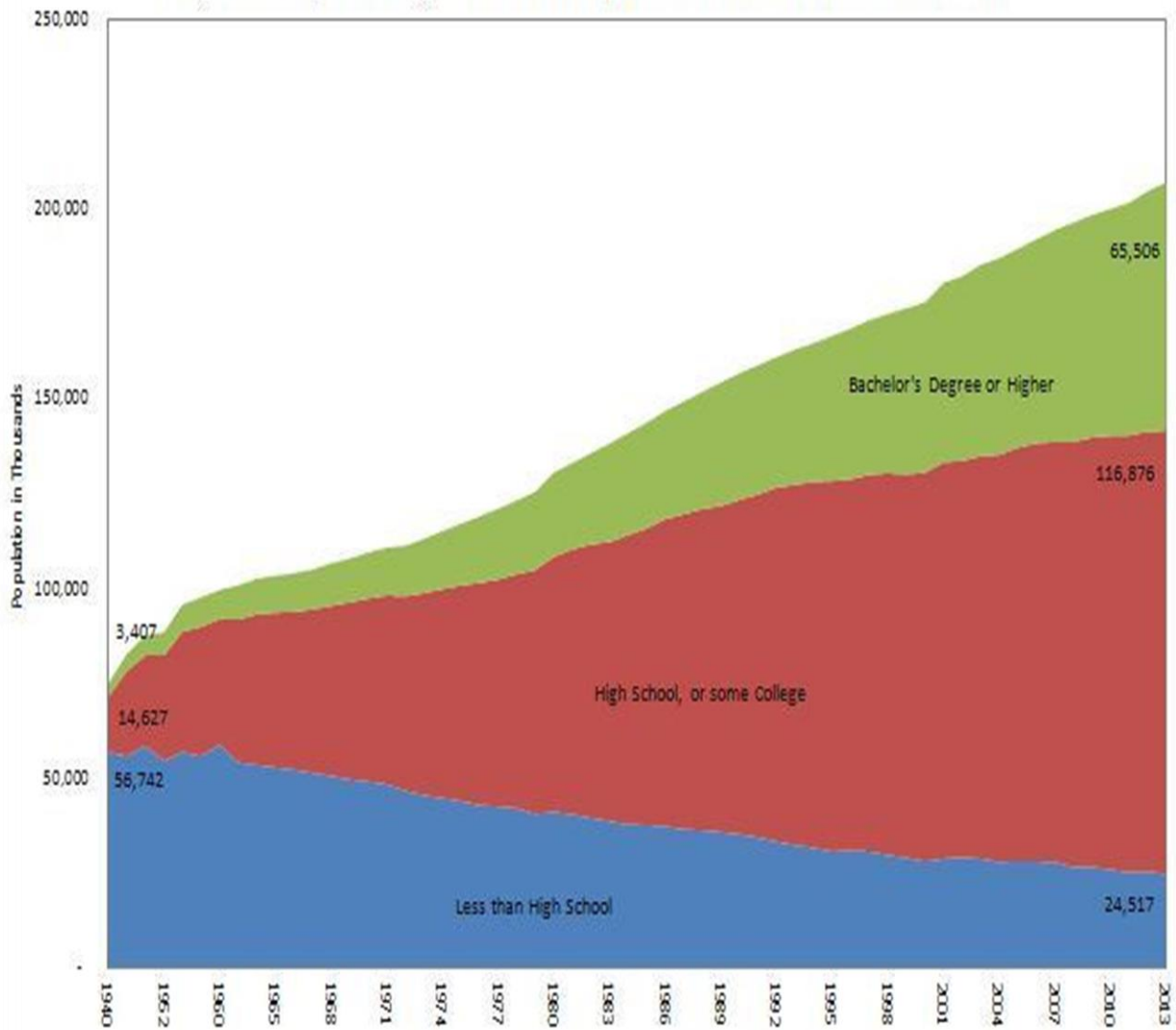
Appendices

Appendix 1: Workforce Dynamics



Appendix 2

Figure 1: Population Age 25 and over by Educational Attainment: 1940-2013



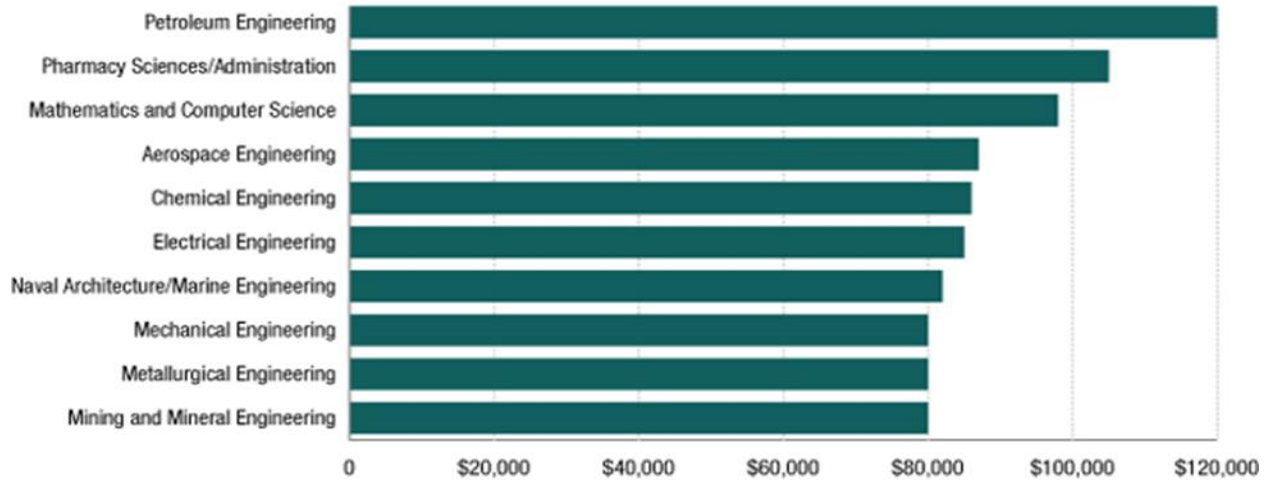
Sources: U.S. Census Bureau, 1947, 1952-2002 March Current Population Survey, 2003-2013 Annual Social and Economic Supplement to the Current Population Survey, 1940-1980 Census of Population.



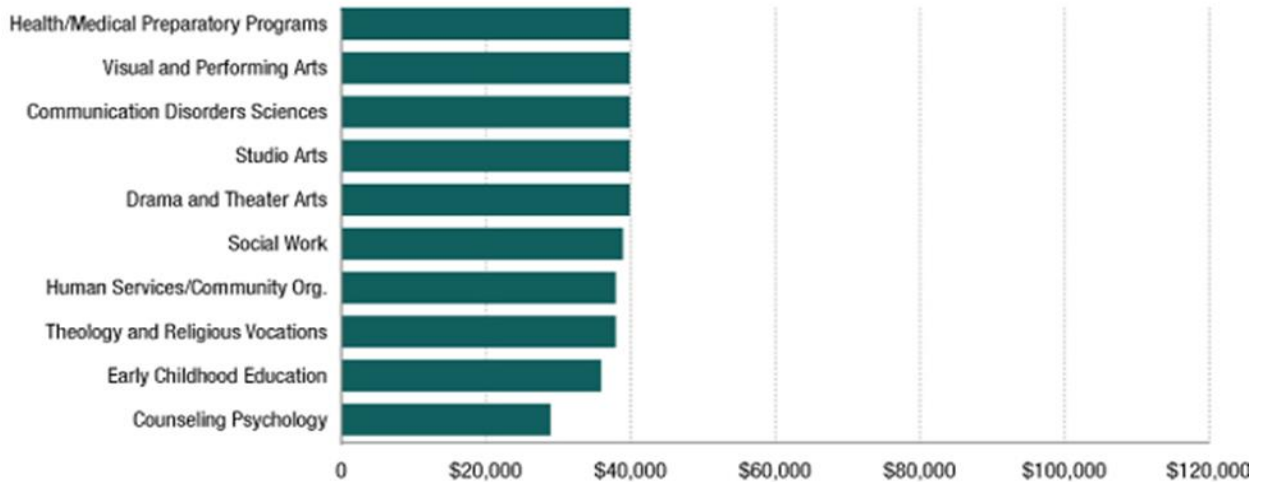
Appendix 3

College Majors with the Highest and Lowest Earnings

Majors With The Highest Earnings



Majors With The Lowest Earnings



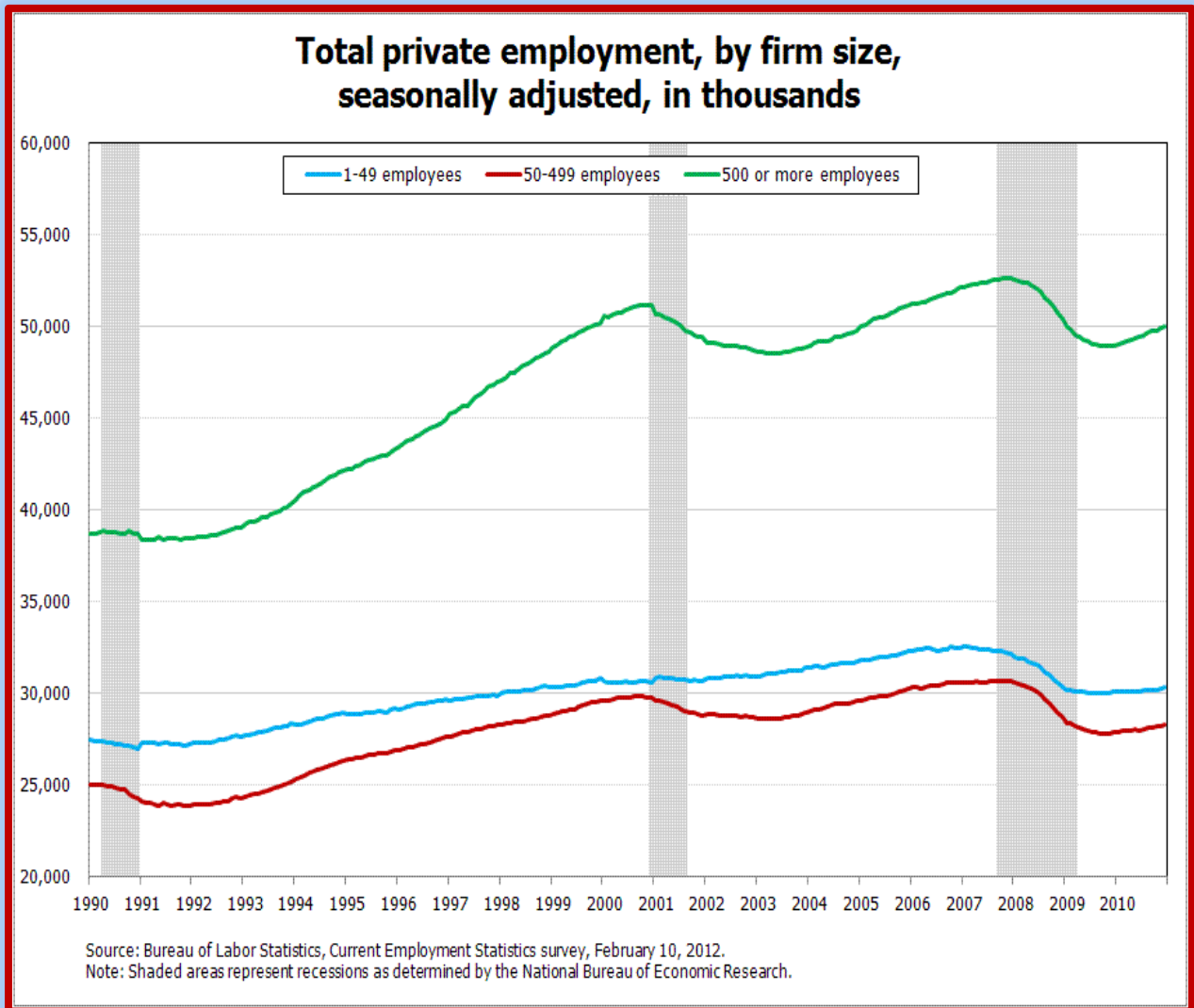
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Appendix 5



Total Private Employment by Firm Size Since 1990, firms with 500 or more employees have accounted for more than 40 percent of total private employment. The percentage of private employment accounted for by each size class has remained stable over time. Employment trends in small firms (1-49 employees) have led larger firms at cyclical turning points. Numbers are displayed in millions.

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