

WHAT WE KNOW AND DON'T KNOW ABOUT DECLINING LABOR FORCE PARTICIPATION: A REVIEW

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Executive summary

For decades, the portion of prime-age men (ages 25 to 54) in the labor force has been in decline. More recently, the labor force participation rate of prime-age women has stagnated and also declined. This paper addresses the consequences of, and reasons for, these declines, especially among men. A subsequent effort will address appropriate policy responses.

Women's increasing workforce participation through the late 1990s largely masked the precipitous decline in male participation rates. Men's rates have fallen about 8 percentage points over the past 60 years. On both fronts, the U.S. is also falling behind other advanced economies. U.S. prime-age female participation fell from 6th to 17th of 22 OECD member countries between 1990 and 2010. Over the same period, the decline in the prime-age male participation rate was the second most severe of the OECD countries, and is now the third lowest among the 34 member countries. The U.S. trends are particularly pronounced for non-Hispanic black men and less-skilled adults. There is now an 11 percentage point gap in participation rates between men with a college degree and those with a high school degree or less—whereas 50 years ago, the two rates were very similar.

Explanations for these trends tend to focus either on the *demand* for workers or the *supply* of labor. Trade and technology have reduced the demand for certain types of work, particularly less-skilled labor in fields like manufacturing. Of the two, most economists believe that automation has played the larger role. Manufacturing's share of GDP has remained relatively stable but, thanks in part to productivity improvements, the sector now employs only two-thirds as many people as it did 30 years ago. Technological change has widened the wage gap between skill levels. While a man with a high school degree earned about three-quarters of the wages of his college-educated counterpart in 1980, he now earns about half as much. At the same time that technology has made certain jobs obsolete, new jobs are being created in other areas (both high-wage managerial and technical jobs and low-wage service sector jobs), but these new jobs often require different skills or pay lower wages.

On the supply side of the labor market, the problems include not only a lack of skills, but also high reservation wages, poor health, and the availability of disability insurance or other forms of unearned income. The trend away from work has coincided with a startling increase in premature mortality as reported by Anne Case and Angus Deaton,¹ and high rates of disability and pain as reported by Alan Krueger.² The extent to which these are a consequence or a cause of the drop in labor force participation remains unclear.

Disability receipt has risen sharply, though most experts believe this can explain only a fraction of the decline in participation rates among prime-age men. More employment among women might also help explain the drop for men, but the men who are out of work are less likely to be married or

to have children than those with families. Time use surveys indicate that men without work are not spending significantly more time on housework and child care than their employed counterparts. Instead, they are engaged in leisure activities, like playing video games.

There is likely a high degree of interaction between each of these factors. A man might initially lose a good-paying manufacturing job to outsourcing or automation, then search for a new position while collecting unemployment insurance, and find nothing he deems acceptable. He might be averse to taking a job as a home health aide, seeing it as “women’s work,” or he might be unwilling to take a large pay cut. Perhaps he then becomes discouraged or depressed, may even turn to drugs or alcohol, and finally applies for SSDI based on a history of arthritis or a bad back.

In sum, there appears to be a growing gap between the skills demanded by today’s employers and those supplied by the labor force, though other factors also contribute to this decline. As the demand for less-skilled labor declines, the relative wages of less-skilled workers also decline. Some dislocated workers are able to relocate to communities with stronger job markets, some pursue training programs to learn new skills, some accept lower-paying positions, but many leave the labor force altogether. Reversing the decades-long decline in participation rates, and the rising inequality associated with declining wages for the less skilled, will require a major investment in education and training as well as better adjustment assistance for workers in declining fields. Reforming social insurance programs to deal with longer periods of joblessness and to provide more flexibility for individuals with disabilities and family care responsibilities might also enable more people to work.

There is still a lot that we don’t know about America’s declining labor force participation rate, and it is only one symptom of what may be a fundamental transformation in the economy that requires new and updated policies as a response.

Background

Rapid technological change and global trade have brought with them rising standards of living, increased access to a wider variety of affordable goods and services, advances in health care that have prolonged lifespans, as well as numerous other benefits that have improved the quality of life for many Americans. However, these forces have not brought equal improvements to all individuals, especially those who have found themselves without work. While the declining labor force participation rate among prime-age adults (ages 25 to 54) is not entirely attributable to technology and trade, these trends, particularly among America's less-skilled male population, are troubling.

Official economic statistics suggest that the United States is finally nearing “full employment,” with the unemployment rate falling to 4.4 percent in April 2017 from a post-recession high of 10 percent in October 2009.³ Despite this encouraging news, the unemployment statistic masks a perverse underlying trend—men and women dropping out of the labor force entirely. The unemployment rate only considers those who are actively looking for work, and excludes individuals who have given up the job search or who are out of the labor force for other reasons. Many reasons for being out of the workforce are not worrisome. They can include returning to school or taking care of one's family. But the downward trend in labor force participation rates among prime-age men over the past 60 years and the stagnation and recent decline among prime-age women suggests that something more disconcerting is occurring in the nation's job market.

The downward trajectory in male labor force participation has been more prominent in the United States than in other advanced economies, and has largely been concentrated among native-born men with a high school degree or less. Participation rates have fallen most dramatically for black men. Declining female participation is unique to the United States, as most other OECD countries have continued to experience increasing rates since the 1990s.

This paper reviews what we know and don't know about the causes of the declining labor force participation rate among prime-age adults, with a focus on identifying their significance (for example, are the causes for the decline voluntary or non-voluntary?) and what, if anything, to do about them.

But first, a technical note on how labor force participation is quantified: The official labor force participation rate (henceforth referred to as the “participation rate”) is the portion of the civilian, non-institutional population above the age of 16 that is either employed or actively seeking work. In this paper, we focus on the participation rate for the 25- to 54-year-old population. The rate excludes individuals who are institutionalized (i.e., in penal and mental facilities or retirement homes) or actively serving in the military. This is because incarcerating a growing portion of adults will have the immediate effect of raising the participation rate, holding all else equal, by reducing the number of people in the civilian, non-institutional population (the denominator used to calculate the rate).

Why should we care about labor force participation?

This steady decline in prime-age male participation rates and recent stagnation of prime-age female rates has adverse implications for national economic growth and individual well-being. Workers between the ages of 25 and 54 tend to be at their most productive,⁴ so these trends affect economic growth as well as individual income. Further, as discussed below, lower work rates might be contributing to the decline in marriage and to poorer health and psychological well-being, possibly leading to an increase in premature deaths among certain populations.

A growing labor force is one of the major determinants of GDP growth. Between 1950 and 2016, growth in the labor force contributed an average of 1.4 percentage points to potential annual economic growth (the maximum sustainable output of the economy), which averaged 3.2 percent over this time period. The Congressional Budget Office (CBO) projects that GDP will only grow at an average of 1.8 percent over the next decade, largely due to the slower growth of the labor force. Over the 2017-2027 period, CBO projects that the labor force will only contribute 0.5 percentage points annually to potential economic growth.⁵ Much of this decline is associated with the aging of the baby boomer generation, but declining participation rates among prime-age adults with relatively low levels of educational attainment is also a factor.

In addition to affecting growth, a low work rate is an important reason for low incomes and high poverty rates. Previous modeling by scholars at Brookings shows that improving work rates would have a larger impact on reducing poverty than many other feasible policy options. Sawhill, Rodrigue, and Joo focus their analysis on the poorest one-third of households, measured by household-size adjusted income.⁶ The primary reason for low incomes among this bottom third is that many are underemployed or not employed at all.⁷ The authors simulate different policy interventions for this population, including improving educational attainment, raising the minimum wage, and increasing the number of two-earner families, but the most beneficial intervention from their simulation for improving incomes is to assume that all household heads work full time.

The drop in employment among men has also been associated with a decline in marriage rates.⁸ However, the size of this effect has been a matter of some dispute. In a paper reviewing this research, Sawhill and Venator show that lower economic prospects among men (particularly black and less-educated white men) can explain a portion of the decline in marriage, though the size of the effect is very sensitive to the model and data used.⁹ They suggest that changes in men's earnings and employment explain about one-quarter of the decline in marriage rates since 1980, though different model specifications produce estimates ranging from almost zero to nearly half of the decline. A recent paper by Autor, Dorn, and Hanson exploits labor market shocks resulting from competition with China to understand how diminishing labor market opportunities for men affect the

prevalence of marriage.¹⁰ The authors find that rising trade has contributed to declining marriage rates, but the estimated effects are small. Their conservative estimate indicates that Chinese trade shocks only reduced marriage rates among young women by between 0.7 and 1.3 percentage points.¹¹

Finally, there are consequences for the social well-being and physical health of men and women without work. Employment provides structure to life, a source of identity, and an opportunity to engage with other members of society outside of one's family. Numerous researchers¹² have noted that employed individuals report higher levels of well-being than those who are not employed.¹³ Prime-age men and women out of the workforce, but men in particular, report lower levels of happiness than those in the workforce, as well as lower levels of general life satisfaction.¹⁴ Without work, individuals may experience depression and turn to addiction, with obvious adverse consequences for their life outcomes. The decline in prime-age adult participation rates has coincided with a stark increase in mortality among middle-aged, white, non-Hispanic men and women, largely due to increases in drug and alcohol poisoning, suicide, and chronic liver diseases and cirrhosis—what Case and Deaton label “deaths of despair.”¹⁵ These downward trends are concentrated among those without a college degree. The year 2014 set a new record in drug overdose deaths in the United States, with 61 percent of these deaths involving some type of opioid use. Between 2000 and 2014, the death rate from opioid overdoses alone increased 200 percent.¹⁶ These numbers do not necessarily mean that the rising mortality rates are *caused* by declining labor force participation, but individuals out of the labor force do report significantly worse health than those who are in the labor force, as discussed below.

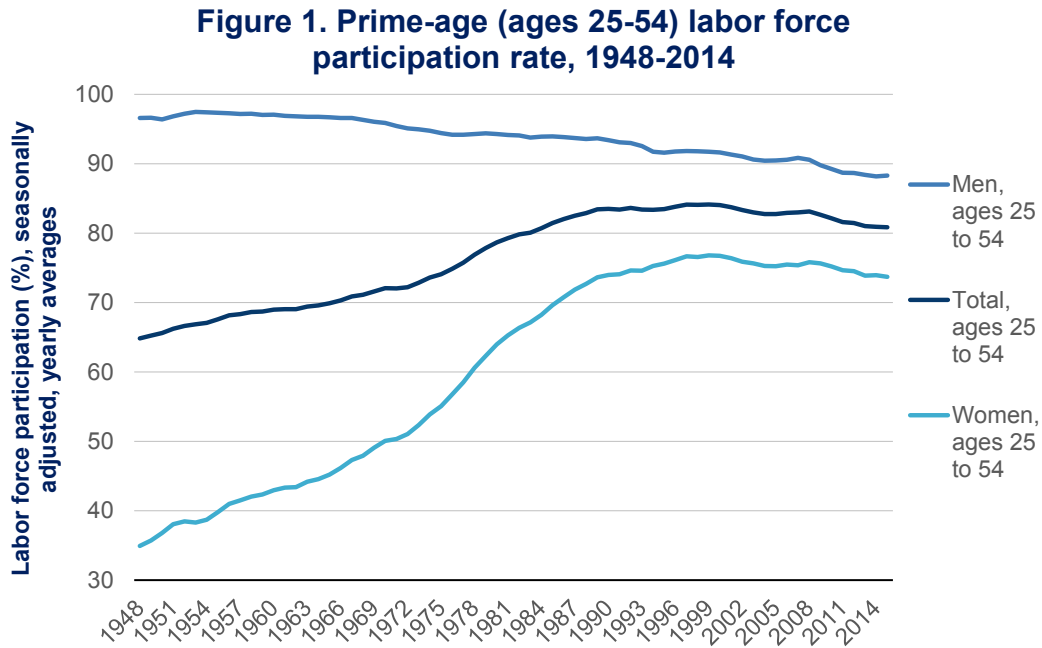
Not all of the decline in employment should be seen as disturbing. A portion may simply reflect some individuals' choices to engage in a range of other activities, from going to school to taking care of family. As a society becomes more affluent, we might expect people to choose leisure over work. However, evidence presented below suggests that factors other than personal choices may be more important in influencing the retreat from work.

In what follows, we attempt to evaluate explanations for declining participation rates in greater detail. But first, we review the key trends.

Trends in participation rates

The latter half of the 20th century was characterized by increasing labor force participation among prime-age Americans, as shown in figure 1. Participation has waned since its peak in the late 1990s. Dramatic improvements in women's educational attainment, widespread availability of more effective forms of birth control, social benefit programs with strong work incentives, as well as reduced legal and cultural discrimination led women to enter the workforce in record numbers

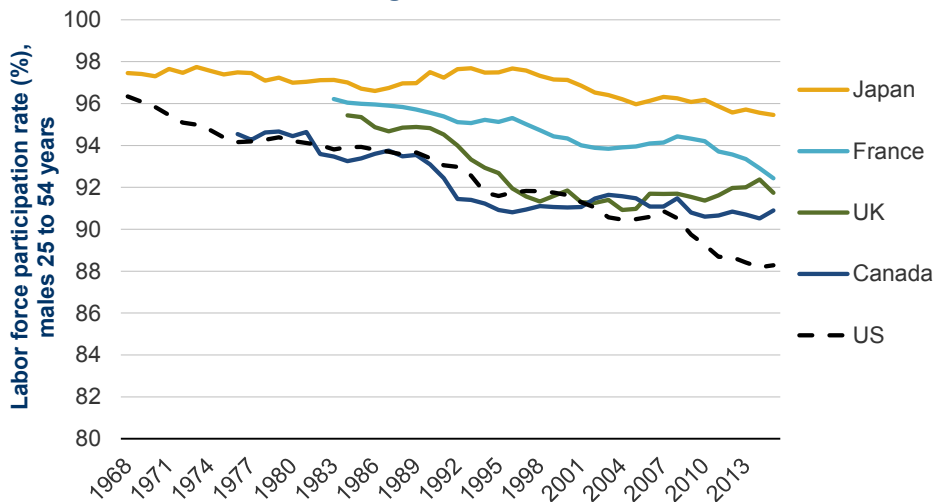
up until the late 1990s.¹⁷ Such increases largely masked the slow decline in workforce participation among prime-age men, but women can no longer be relied upon to prop up the nation’s labor force participation rate.



Source: BLS, "Labor Force Statistics from the Current Population Survey," yearly averages are author's calculations.

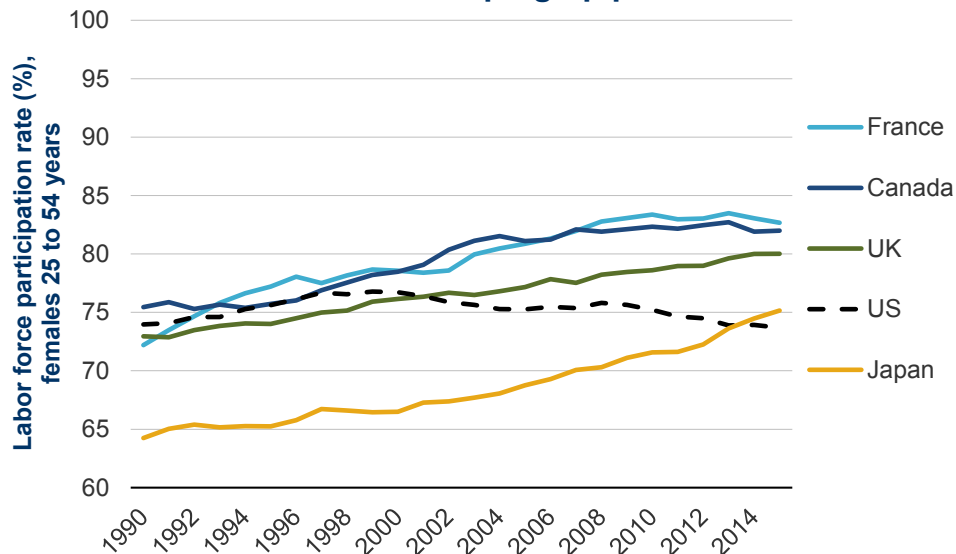
Recent decades have been characterized not only by low overall participation rates compared to historic levels, but also by notably poor work rates compared to other advanced economies. The decline in prime-age male participation since 1990 was the second most severe among all OECD countries, and male employment levels are now the third lowest among the 34 member countries (only above Italy and Israel) (figure 2). Similarly, while other OECD countries have witnessed continued improvements in female participation rates, America’s recent decline is unique and has led the nation’s female participation rate to fall beneath many other advanced economies (figure 3).

Figure 2. Prime-age male labor force participation declining faster in the U.S.



Source: OECD, "Labor force statistics by sex and age," https://stats.oecd.org/Index.aspx?DataSetCode=LFS_SEXAGE_I_R.

Figure 3. America's prime-age female labor force isn't keeping up pace

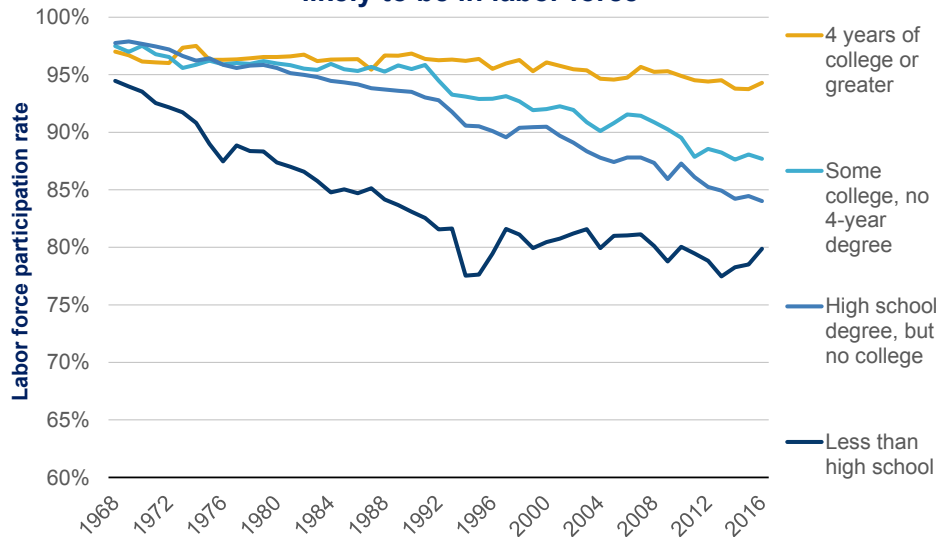


Source: OECD, "Labor force statistics by sex and age," https://stats.oecd.org/Index.aspx?DataSetCode=LFS_SEXAGE_I_R.

TRENDS BY DEMOGRAPHIC GROUP

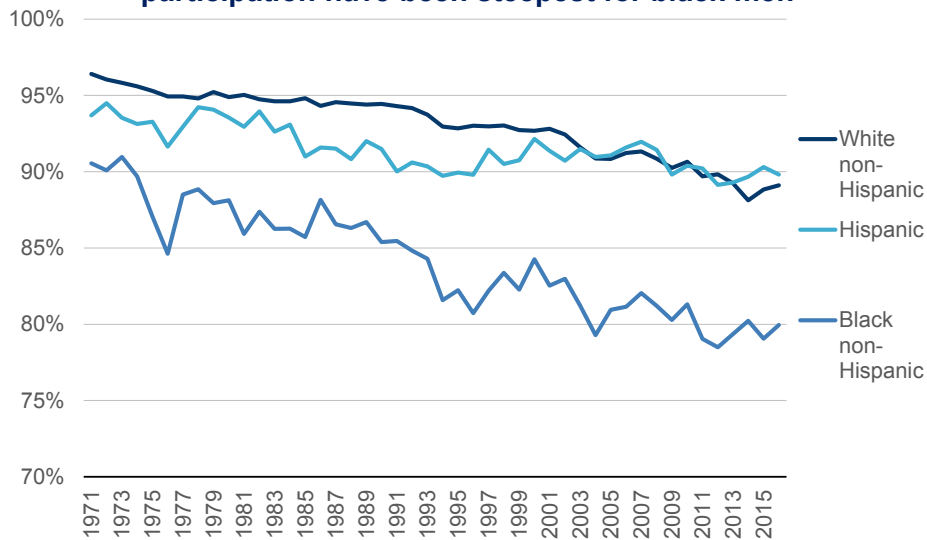
While the growth in female labor force participation has slowed, the decline among men is particularly noteworthy due to its long-term nature and the marked differences among different demographic groups. The participation rate among prime-age men has fallen over 8 percentage points since 1948. However, it has fallen most dramatically for black men and those with a high school degree or less (figures 4 and 5).

Figure 4. Least-educated prime-age men now the least likely to be in labor force



Source: BLS Current Population Survey; population includes men ages 25-54
 Note: The CPS method of assessing educational attainment changed in 1992, so values prior to and after this date are not perfectly comparable.

Figure 5. Declines in prime-age male labor force participation have been steepest for black men



Source: BLS Current Population Survey; Note: 1971 is the first CPS ASEC year with race/ethnicity categories comparable over time.

While labor force participation used to be quite similar across different levels of educational attainment, it is now markedly different across skill levels. In 1968, prime-age men with a high school degree or less participated at roughly the same rate as their college-educated peers. Since then, a startling 11 percentage point difference between the two has emerged. While prime-age men with a high school degree or less make up about 40 percent of those in the labor force, they comprise nearly 60 percent of those not in the labor force. Declines have also been relatively

steep for black men, though non-Hispanic black men have historically participated at lower levels than their white and Hispanic peers, at least since 1971 (when the BLS Current Population Survey began documenting Hispanic origin). Over this period, Hispanic male participation has remained roughly stable, while non-Hispanic male participation rates declined, reversing the gap in participation rates between the two groups in recent years.

The divergence in participation rates across demographic groups is intensifying, especially across educational groups. This raises a critical question—why aren't prime-age men and women working? Perhaps less-educated groups are not receiving the necessary training to take on today's current job openings. Maybe low-skilled jobs are being lost to automation and trade. The stark differences across racial groups is suggestive that some larger institutional force disproportionately plagues black men's job prospects compared to white men. The fact that women are not keeping up with their international peers suggests we should examine the differences in workforce policies across countries. It is true that the labor force participation rate declines during recessions, but when it fails to return to pre-recession levels post-recovery (as has historically been the case), a key question becomes, why aren't people going back to work?

Why are prime-age Americans dropping out of the labor force (and remaining out of the labor force) at such high levels?

This question has received an increasing amount of attention.¹⁸ Explanations for the decline tend to fall into one of two buckets: a demand-side bucket (employers aren't hiring) and a supply-side bucket (workers are ill-fit for the jobs available). After reviewing the evidence for each, we also consider interactions between them. The proceeding discussion focuses on the factors affecting prime-age men, but many of these explanations might be affecting prime-age women as well.

DEMAND-SIDE EXPLANATIONS FOR THE DECLINE

While the labor force participation rate among prime-age men has been in decline for over half a century, declines are particularly pronounced during recessions. In January 2007, the prime-age male participation rate was 91.5 percent, the highest level in six years. While it declined to 88 percent in the aftermath of the Great Recession, the most recent employment statistics show that we might be on the path to recovery, with a participation rate of 88.6 percent in April 2017.¹⁹ Although it is too soon to predict where the participation rate will end up as the economy continues to recover, if past is prologue, the rate is unlikely to fully recover to its pre-recession levels. In short, there appears to be a structural component to the trend.

Cyclical versus structural joblessness

Separating structural from cyclical effects is difficult. As Blanchard, Cerutti, and Summers write,

“the recession and the associated high unemployment may lead some workers either to drop out permanently, or to become unemployable”²⁰—a phenomenon known as hysteresis.²¹ The authors analyze 50 years of output and employment data across 23 advanced economies and find that about two-thirds of recessions are followed by lower potential output relative to pre-recession levels, and about half of these cases experienced lower levels of output growth relative to pre-recession levels. They note that causality is difficult to establish, but they conclude that hysteresis may be partially responsible for these current trends.

A deep recession and slow recovery may raise the share of the long-term unemployed in the ranks of the total unemployed population. The fact that they have been out of work for longer periods than their recently unemployed counterparts may make it more difficult for them to find new employment. In a study of long-term unemployment and hiring practices, Rand Ghayad shows that the long-term unemployed must submit 3.5 times as many applications and are half as likely to get a callback as the short-term unemployed with similar demographic characteristics and work experience.²² As job prospects diminish, job seekers become discouraged and often give up the search entirely.

In an analysis attempting to decompose the decline in the labor force participation rate since 2007, Aaronson et al. conclude that ongoing structural factors (including the aging of the population and the long-term decline among less-educated males) are largely responsible for the decline rather than cyclical components.²³ Their analysis focused on the overall labor force participation rate, rather than just that of the prime-age adult population. They found that cyclical factors could be responsible for as much as 1 percentage point of the decline as of mid-2014. The Council of Economic Advisers estimates that about one-sixth of the decline between 2007 and 2014 could be attributed to cyclical factors (or, about 0.5 percentage points).²⁴

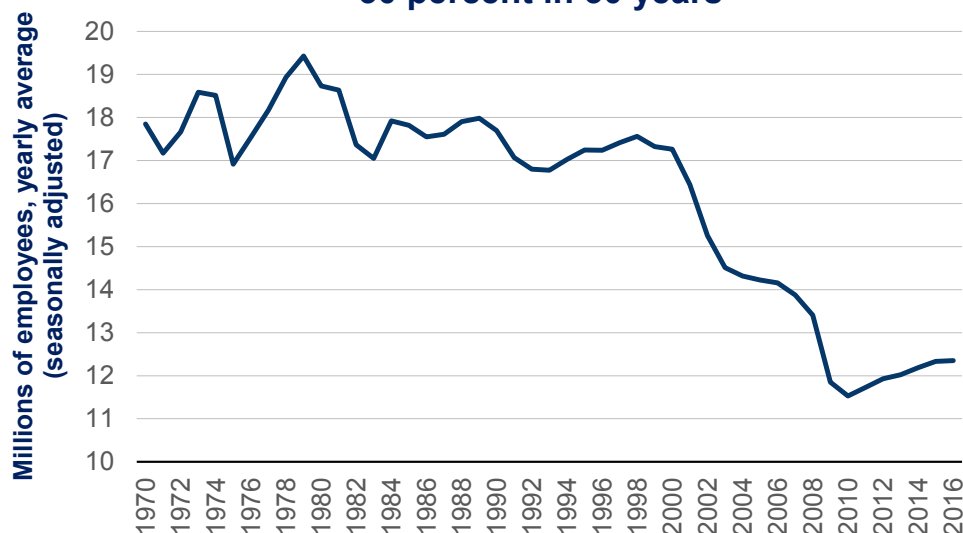
These findings are generally consistent with other studies that have attempted to deconstruct the extent to which the falling participation rate is primarily cyclical or structural in nature: most have concluded that, while the participation rate tends to decline during weak economic conditions, the persistence of low rates following economic recoveries indicates that more is at play than cyclical factors.²⁵

The role of technology and trade

But what are the structural factors that could be affecting the demand for labor among prime-age men? One common explanation for the decline is that trade and technology have reduced demand for less-skilled labor, especially in the manufacturing sector. The manufacturing sector has experienced a 35-year decline in employment that has been far more pronounced since the turn of the 21st century. Muro and Kulkarni show that globalization, offshoring, and automation have led to the loss of 7 million manufacturing jobs in the U.S. since 1980, about one-third of total positions in the sector (figure 6).²⁶ Further, Baily and Bosworth show that while manufacturing’s share of real GDP has remained relatively constant over the past 50 years, there has been a significant decline in employment in the sector since the 1990s—a loss of 5.7 million jobs between 2000 and

2010 alone.²⁷ The combination of rapidly declining employment with relatively stable output points to the growing productivity of the sector and the role of automation in this process, though not all experts are in agreement about the relative importance of automation compared to globalization in influencing these employment trends.²⁸

Figure 6. Manufacturing employment has fallen 30 percent in 30 years



Source: BLS Series ID CES3000000001.

Most economists believe that automation has been more important than trade as a source of the loss of less-skilled jobs. An analysis by researchers at Ball State University found that only about 13 percent of manufacturing job losses in the U.S. in the last decade can be attributed to trade, with the rest explained by productivity growth resulting from technological innovation.²⁹ However, Autor, Dorn, and Hanson show that trade has strongly affected employment rates in places with high levels of employment in trade-exposed manufacturing industries.³⁰ The authors show that competition from Chinese imports explains one-quarter of the decline in manufacturing employment in the United States, although these losses tend to be concentrated in particular communities.³¹

In other work, Autor shows that job polarization, or the “hollowing out” of middle-skilled jobs, has occurred largely due to the automation of routine labor, but with trade and offshoring also partially responsible.³² Because certain less-skilled jobs, especially in the service sector, cannot be readily automated, employment in some sectors continues to grow but with relatively low wages. An increase in high-wage, high-skilled jobs in managerial, professional, and technical fields and in low-wage, low-skilled service jobs have occurred in tandem with a decline in the routine middle-skilled jobs most vulnerable to automation.³³

With that said, technological advances have enabled the displacement of many less-skilled

positions that were once abundant. A number of the authors of recent books and articles focused on the development of new technologies such as artificial intelligence (AI) and “deep learning” by machines are predicting a massive displacement of labor. For example, in *Rise of the Robots: Technology and the Threat of a Jobless Future*, Martin Ford explains that most occupations can be broken down into a set of routine activities that can be accomplished by machines.³⁴ He suggests that even occupations requiring depth perception and dexterity are at risk of automation, given recent advances in robotic visual perception. Tyler Cowen argues that “it’s the rapid increase in machines’ ability to substitute for intelligent human labor that presages the greater disruption.”³⁵ Still, automation’s largest impact will continue to be felt in less-skilled occupations that do not require significant human interaction, like many of those in manufacturing. As Brynjolfsson, McAfee, and Spence suggest, technology will “increasingly replace human labor, especially in relatively structured environments such as factories and especially for the most routine and repetitive tasks.”³⁶

The importance of technology-induced job loss is further supported by a growing body of other evidence. This evidence, detailed below, shows that job loss is primarily related to increased productivity in an industry rather than other factors, that many existing jobs are at risk of automation in the future, and that skill-biased technological change has created a widening wage gap between those with and without skills.

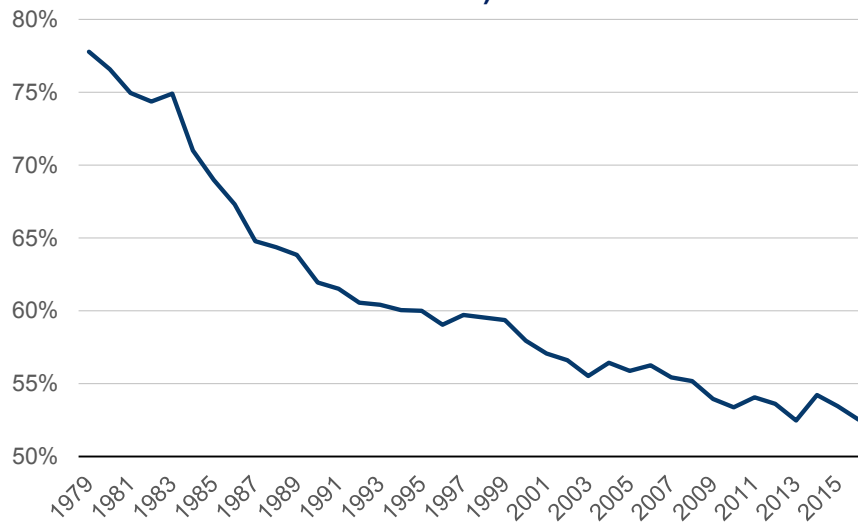
First, job loss has occurred as some industries become far more productive than in the past. Since 1980, real output in the manufacturing sector has increased by 250 percent at the same time that employment has declined. While \$1 million in output took about 25 jobs to generate at the beginning of this period, it now only takes five.³⁷ The Bureau of Labor Statistics projects that 15 of the 20 most rapidly declining job sectors over the 2014-2024 period will be in manufacturing (in fields such as apparel, textiles, and pulp and paper).³⁸ This loss of jobs is not the result of a decline in output but rather an increase in productivity. To be sure, as Mishel and Shierholz show, growth in labor productivity and capital investments across the economy have decelerated in recent years, indicating that automation is not transforming the labor market *as a whole* any faster than in the past.³⁹ But as Robert Solow famously quipped in 1987, “you can see the computer age everywhere but in the productivity statistics.”⁴⁰ Still, this aggregate snapshot of the economy may mask the variability across industries and skill levels, as certain activities are much better candidates for automation than others. Particularly susceptible are physical and highly structured activities most common in manufacturing, accommodation and food service (including activities like cleaning and cooking), and retail trades.⁴¹

Second, several studies have reported that a large portion of existing jobs could be automated with currently demonstrated technologies. A recent study by McKinsey Global Institute suggests that while less than 5 percent of existing positions could be *fully* automated, about half of the *activities* people do in existing jobs are at risk for automation by adapting currently demonstrated

technologies.⁴² Frey and Osborne estimate that about 47 percent of U.S. jobs are at high risk of automation over the next decade or two and that this will disproportionately impact less-educated male workers.⁴³

Another reason to believe that technology is a primary reason for job loss is relative wage trends. Improvements in real wages for less-skilled workers have not kept up with those for higher-skilled workers.⁴⁴ In 1980, the average male worker above the age of 25 with a high school degree could expect to receive about three-quarters of the wages of his college-educated counterpart. Now, he can only expect to earn about half (figure 7). Some of the “college wage premium” is actually the result of falling real earnings for non-college workers.⁴⁵ Some argue that earnings data overestimate the decline in real wages because they do not incorporate the rising value of employer-sponsored fringe benefits. But even when these benefits are accounted for, the increase in total compensation for high-wage workers far outpaces that of low-wage workers.⁴⁶

Figure 7. Ratio of high school graduate wages to college graduate wages (men, 25 years and older)



Source: BLS, “Weekly and hourly earnings data from the Current Population Survey.”

While automation, trade, and other changes in a dynamic economy make certain jobs obsolete, they also create new opportunities in other sectors and often benefit the economy-at-large, leading to lower prices for consumers and thus increased demand. Employment growth is anticipated in many fields over the coming decades, particularly in the health care and social assistance sectors. In the December 2015 *Monthly Labor Review*, the Bureau of Labor Statistics (BLS) projects the largest job growth (in terms of total number of additional jobs) to occur in industries such as home health care services, nursing and residential care facilities, food services and drinking places, and construction.⁴⁷ The BLS projects that the construction sector will add 790,000 jobs over the 2014-2024 period alone. Table 1 shows the five fastest and five most rapidly declining industries (in percentage change) over this period, according to the BLS.

Table 1

Industry description	Sector	Change (in thousands of jobs), 2014-2024	Compound annual rate of change, 2014-2024
Fastest growing industries			
Home health care services	Health care and social assistance	760.4	4.8
Outpatient care centers	Health care and social assistance	348.1	4.1
Offices of other health practitioners	Health care and social assistance	352.3	3.8
Other ambulatory health care services	Health care and social assistance	110.4	3.4
Medical and diagnostic laboratories	Health care and social assistance	79.7	2.8
Most rapidly declining industries			
Apparel, leather, and allied manufacturing	Manufacturing	-76.8	-5.9
Tobacco manufacturing	Manufacturing	-4.4	-3.9
Postal Service	Federal government	-165.1	-3.2
Federal enterprises except the Postal Service and electric utilities	Federal government	-22.2	-3.1
Manufacturing and reproducing magnetic and optical media	Manufacturing	-4.9	-2.9

Source: BLS. 2015. "Employment projections." U.S. Department of Labor. Table 2.3: Industries with the Fastest Growing and Most Rapidly Declining Wage and Salary Employment.

If new jobs are emerging while others become obsolete, why does the participation rate continue to decline? The answer likely involves the difficulty that workers have in adjusting to these changes. In the short and even the medium run, skills are relatively fixed, families and individuals may not know about or want to move to where jobs are more abundant, and schools and community colleges may not be adjusting to a rapidly changing labor market.

In the next section, we turn to supply-side oriented explanations, but with an understanding that demand- and supply-side explanations interact with one another. Workers might initially lose their jobs due to demand-side forces like bad economic conditions or automation and trade. While out of work, these workers' skills may atrophy, or maybe they simply lack the skills and training necessary to work in the newer jobs offered by today's economy. Perhaps extended periods of time out of the labor force cause these individuals to turn to substance abuse or other activities that make them ill-suited for employment despite new openings. Or maybe they simply don't want the jobs in these growing sectors because they are seen as "women's work" or offer inadequate pay compared to previous earnings.

SUPPLY-SIDE EXPLANATIONS FOR THE DECLINE

In this section, we highlight supply-side explanations for declining participation rates. These explanations emphasize how certain individual characteristics might make them appear less attractive to prospective employers (such as a lack of adequate training), as well as those that reduce the individual's desire to be in the workforce in the first place (such as dependence on supplemental forms of income).

Lack of education or skills

Even in the presence of strong employer demand for labor, the workforce must come equipped with the education and skills needed for the jobs available. As Claudia Goldin and Lawrence F. Katz argued in their aptly titled book, *The Race between Education and Technology*, greater inequality among skill levels will occur if educational advances do not keep up with technological advances.⁴⁸ The participation gap between different skill levels has grown significantly over the past 50 years (figure 4), with the decline in participation concentrated among those with the lowest levels of education. More men are graduating from high school and going on to college than in the past, but the supply of appropriately skilled workers is not keeping up with demand. In fact, women have now outpaced men in acquiring the educational credentials needed in the new economy. This may be one reason why women's participation rates have not declined as much as men's. In addition, continuing growth in traditionally female service sector jobs—jobs that have been relatively immune to automation—has favored them as well.⁴⁹

Although the workforce is more educated than ever in terms of years of schooling, this measure may be an increasingly poor indicator of a job-seeker's relevant technical skills. Evidence of a "skills gap" between what employers want and what job-seekers have to offer is growing. Approximately one-third of small business owners and chief executives report that they could not fill open positions due to a shortage of available talent, thanks to both lower numbers of job-seekers as well as a decline in job-seekers with appropriate skills.⁵⁰ A different survey found that 39 percent of U.S. employers cited "lack of available talent" as a problem in filling open positions.⁵¹ In an analysis seeking to empirically measure the mismatch between occupational skills requirements and those abilities possessed by workers, Guvenen et al. find that skills mismatch is responsible for "large and persistent" effects on wages.⁵²

To be sure, some experts are suspicious of these surveys, suggesting that the questions are ambiguous and the answers self-serving. In an extensive review of the skills gap literature, Cappelli suggests that some employers may be casting blame on applicants' lack of preparation instead of owning up to their own role in a worker's skill development.⁵³ He argues that an "obvious solution... to virtually all the skill problems reported by employers is to increase training and produce the skilled workers they want themselves."⁵⁴ Cappelli notes that the evidence of a skills gap can largely be explained by the decline in employer-sponsored training.⁵⁵

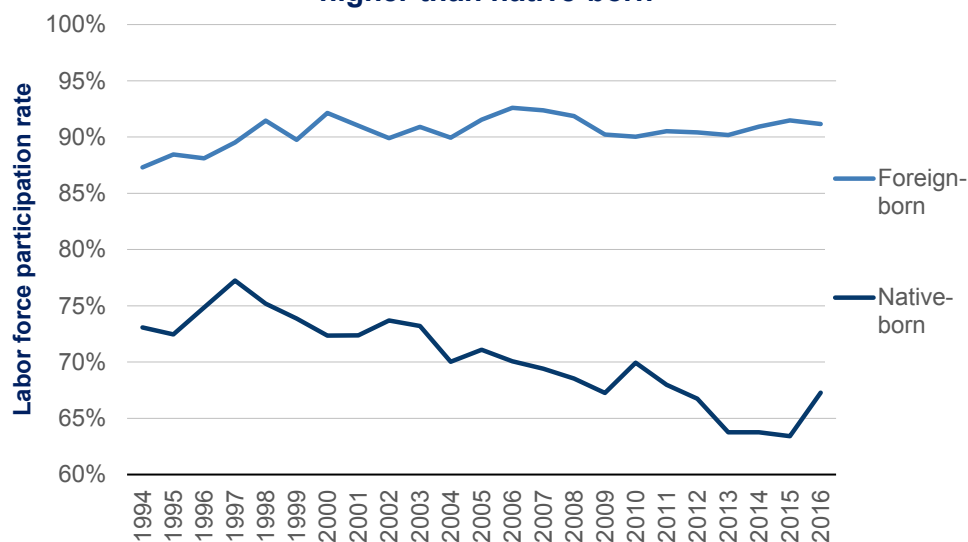
James Bessen suggests that the workforce doesn't lack basic mathematical or reading skills learned at school. Instead, they lack training in the job-specific skills in demand.⁵⁶ Once again, this thesis is supported by the evidence on relative wages: just as less-educated workers' wages have declined relative to more highly educated workers, wages in specific fields like information technology have increased dramatically relative to other fields, suggesting a possible shortage of labor in these fields.⁵⁷

Reservation wages

While the decline in low-skilled workers' wages provides some evidence that skill-biased technological change is affecting prime-age participation, it might also indicate something more complicated. Let's say that a 45-year-old male worked for the same manufacturing company since he graduated from high school, working his way up the ranks to an annual salary of \$70,000 before his company downsized, causing the worker to lose his job. Perhaps his company-specific experiences don't transfer well to other similarly-paid positions, and he is only able to find work at a position paying \$40,000 per year. The dislocated worker tries to hold out for a better-paid position, but finds himself out of work for long enough that even the employers of these more modestly paid positions are not interested in hiring him and he is only eligible for a low-wage position, which he does not want to take despite having limited options. In this case, it is really the worker's *reservation wages* that prevent him from working, rather than an absolute lack of available jobs. The critical question, then, is whether he has some other means of support, enabling him to set his reservation wage above what is available in the market.

In *Men Without Work*, Eberstadt provides some evidence for this "high reservation wage" thesis by showing that the participation rate of prime-age men is consistently higher for foreign-born men compared to native-born men, conditional on education.⁵⁸ Of prime-age men without a high school degree, those who are foreign-born participate in the labor force at roughly the same rate that they did two decades ago, while the participation rate of their native-born counterparts declined over the same time period (figure 8). In 2016, there was a 24 percentage point difference in participation between the two groups (91 percent versus 67 percent).

Figure 8. Participation rate for foreign-born prime-age men without a high school degree is consistently higher than native-born



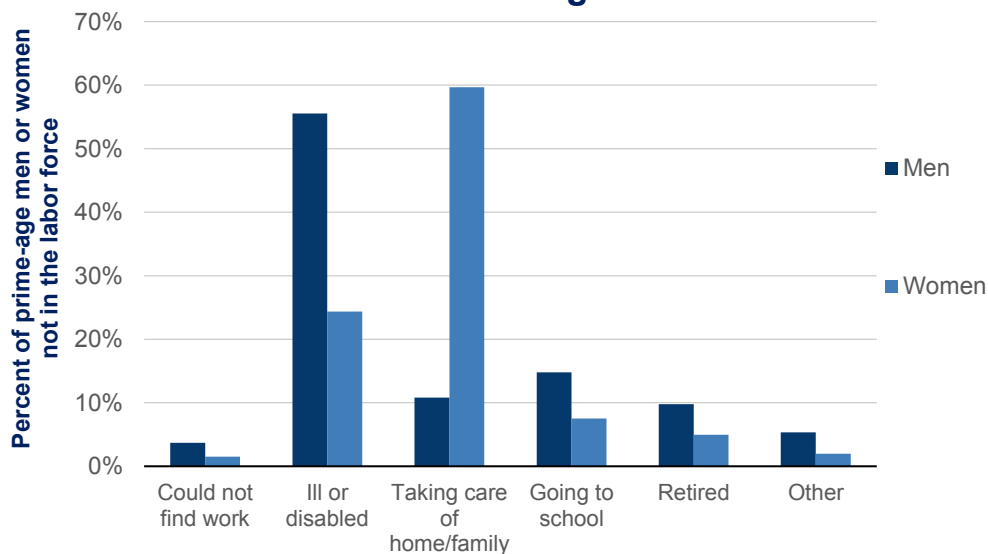
Source: BLS Current Population Survey.

If low-skilled jobs really are in short supply, why are foreign-born men with low educational attainment not having a similarly difficult time finding employment as men born in this country? One possibility is that they come from countries with lower wages and thus don't expect to earn as much. In addition, if they are undocumented immigrants, they may be unable or unwilling to apply for various forms of assistance.⁵⁹ A job-seeker's point of reference is important in determining his or her reservation wage,⁶⁰ which could help to explain why less-skilled native-born men don't appear to be rushing to work at the same pace as their foreign-born counterparts.

Disability and illness

Of prime-age men not in the labor force, only 4 percent reported in 2016 that they didn't work in the last year because they could not find work (figure 9). The most common reason cited for not working among this group (of possible reasons presented in the BLS's Current Population Survey) was being "ill or disabled," cited by 56 percent of the population.

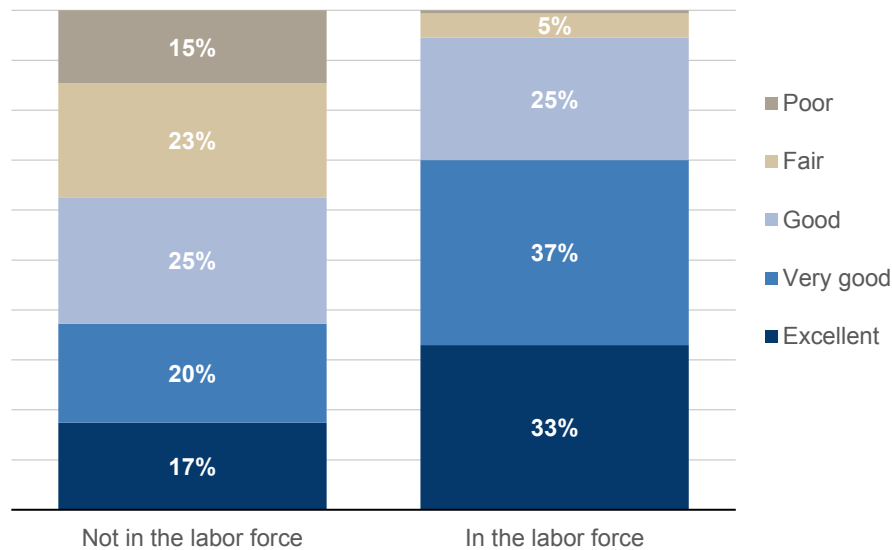
Figure 9. Why are prime-age men and women not working?



Source: BLS Current Population Survey, 2016.

The poor health status of men not in the labor force compared to their employed counterparts has recently received considerable attention. Alan Krueger reports that 20 percent of prime-age men not in the labor force have difficulty walking or climbing up stairs, and 16 percent have difficulty concentrating, remembering, or making decisions, compared to less than one percent of prime-age male employees. Half take pain medications daily. In total, Krueger suggests that over one-third of prime-age men not in the labor force have a disability, compared to only 2.6 percent of prime-age employed men.⁶¹ BLS data from the Current Population Survey confirm Krueger’s findings—a prime-age male out of the labor force is much more likely to report that his health is “fair” or “poor” compared to a male in the labor force (37 percent versus 5 percent) (figure 10).

Figure 10. Prime-age men out of the labor force report worse health status than those in the labor force



Source: BLS Current Population Survey, 2016.

Case and Deaton show that mortality rates due to addiction, depression, and suicide are rising—but only for white, prime-age adults (rather than other demographic groups, which have witnessed increases in life expectancy over recent years).⁶² A more recent analysis by the same authors defines these as “deaths of despair.”⁶³ The skyrocketing numbers of opioid overdoses over the past decade confirm that something is deeply affecting the mental and physical health of many Americans, but only a few studies to date have attempted to connect these mortality trends with employment trends in a causal way. A recent study by Pierce and Schott gets at a piece of this relationship.⁶⁴ The authors find that counties more exposed to a specific, and presumably exogenous, economic shock (e.g., trade liberalization associated with the establishment of permanent normal trade relations with China) exhibited higher mortality from causes like suicide and accidental poisonings, which include drug overdoses. These effects were primarily concentrated among whites, who make up a disproportionate share of the manufacturing sector affected by the economic shock. The authors’ analysis implies that, among other things, “a 1 standard deviation increase in the state unemployment rate...is associated with a 29 percent increase in suicides and an 84 percent increase in accidental poisonings” compared to 2000 levels.⁶⁵ Case and Deaton hypothesize that increased “deaths of despair” among less-educated middle-age Americans might be rooted in “a long-term process of decline, or of cumulative deprivation, rooted in the steady deterioration in job opportunities for people with low education.”⁶⁶

Further, county-level mortality data retrieved from the CDC paired with employment data from BLS show that counties with high prime-age male death rates from alcohol, suicide, and accidental poisonings (using the same mortality coding definitions used by Case and Deaton to characterize

“deaths of despair”) tend to have lower prime-age male participation rates than elsewhere. The ten counties with the highest prime-age male mortality rates due to these “deaths of despair” in the CDC database had an average prime-age male participation rate of 73 percent in 2014, compared to 88 percent for the prime-age male population across the country.⁶⁷ This observation does not imply any causal effect, but it is consistent with the diagnosis offered by Case and Deaton above. What seems to be well established is that communities with the lowest participation rates also have the highest mortality rates among prime-age men. What is less clear is the extent and direction of causation.

Disability benefit receipt

While we are uncertain of the extent to which a lack of employment *causes* physical and mental health issues, we do know that an increasing number of Americans are claiming disability benefits, particularly since reforms to the program in 1984 liberalized the definition of a qualifying disability. The increasing number of disability insurance beneficiaries has become a popular explanation for the decline in prime-age male participation rates, but the numbers show that increased disability receipt is unlikely to be the primary driver of this decline. Between 2004 and 2014, the number of men between the ages of 25 and 54 who received Social Security Disability Insurance (SSDI) increased by about 117,000, but the number of prime-age men not in the labor force increased by almost 1,400,000 over the same period.⁶⁸ That is, SSDI receipt has increased among this population, but not as a proportion of men not in the labor force. Other disability benefits, such as Supplemental Security Income (SSI), may be contributing as well. Estimates on how much increased disability receipt has contributed to the decline in prime-age male participation rates vary. The CEA suggests that, at most, increased disability receipt explains 0.5 percentage points of the 8 percentage point decline in the prime-age male participation rate since 1976.⁶⁹ On the other end of the spectrum, Scott Winship has suggested that the rise in self-reported disability has accounted for one-third of this decline since 1968.⁷⁰ Alan Krueger suggests that it may account for one-quarter of the decline.⁷¹

Regardless of the magnitude, a more liberal definition of the term “disability” and the stark differences in self-reported health and disability between working and non-working men indicate that some reform might be needed. Existing disability and unemployment programs are arguably flawed for two reasons. First, disability programs discourage people from working, since lack of employment is usually a condition of eligibility. Once an individual has been certified as disabled, they are highly unlikely to rejoin the labor force, since this would cause them to lose their eligibility. As Terrence McCoy recently reported for the Washington Post, “the decision to apply [for disability], in many cases, is a decision to effectively abandon working altogether.”⁷² Second, unemployment insurance was created to deal with short periods of cyclical unemployment, not with the risk of dislocation from an existing job or structural unemployment. Autor writes that, since the SSDI reforms in 1984, the program has become (for some beneficiaries), “a de facto social safety net for individuals whose primary barrier to gainful employment is one of poor skills and job opportunities

rather than health limitations per se.”⁷³ Disability programs are intended to assist individuals whose illnesses make them incapable of joining the workforce, but in the absence of a sufficient support system to deal with long-term joblessness, job training, and reemployment, it is possible that our disability programs are now one of the only available safety nets for individuals out of work.

Getting by on alternative sources of income

Regardless of the reason many men are not actively seeking work—be it physical or mental disability, lack of skills, geographic immobility, or a general unwillingness to take the jobs available to them—they must find a way to finance life without an earned income. So, how are these men supporting their nonworking lifestyles?

Accurate information on non-employed individuals’ sources of income is sparse, but a survey of non-employed, prime-age adults conducted by Kaiser Family Foundation, New York Times, and CBS News (KFF/NYT/CBS) in 2014 sheds some light on this issue.⁷⁴ The survey included men and women not in the labor force as well as those who are unemployed. Over the entire surveyed population, income from a spouse or other employed person in the household was the most common source of income (42 percent), followed by food stamps (30 percent), disability benefits (28 percent), and money from family and friends (26 percent). Reliance on a spouse’s income was much more common among women than among men, and women out of work were much more likely than men to be homemakers who say that they plan to go back to work in the future. Among all respondents, other sources of income include savings or retirement funds (17 percent) and spousal or child support (11 percent).⁷⁵ The survey did not account for the relative sizes of these sources of income, so understanding the extent to which these individuals rely on each source is still difficult.

Among the non-employed in the KFF/NYT/CBS poll who report being able to work, nearly one-third report receiving income from temporary work or odd jobs. This points to another, possibly substantial source of income: unreported earned income—such as contract, temporary, or under-the-table work. Modern methods of obtaining employment data are probably not keeping up with the dramatic changes in the variety of ways in which many individuals make a living in today’s economy. As many more individuals turn to sporadic, part-time, and freelance work, perhaps we are overstating the total number of men not in the labor force. Most research uses single point in time “snapshot” data on the composition of the labor force and those who are not in the labor force, so getting a firm grasp on this issue is challenging. Employment surveys often do not reveal much about the duration of joblessness. It may be temporary, rather than long-term, and enable people to support themselves by borrowing, drawing down their savings, or relying on family and friends.

Coglianesse attempts to decompose the decline in prime-age male participation rates into two types of individuals: (1) those who have permanently dropped out of the labor force (“dropouts”) and (2) those who temporarily or seasonally engage in the labor force (“shrinkouts”).⁷⁶ He determines

that each is responsible for about half of the decline in the participation rate of this group since 1950. He finds that dropouts are predominantly less educated and less likely to be married or have children, while shrinkouts are more or less evenly distributed across skill groups and more likely to be married and to have more children. The KFF/NYT/CBS poll used the same definitions of working and non-working as does the Current Population Survey, which defines one's employment and labor force status by whether or not the respondent was working or actively seeking employment in the past week, a period which might be an inadequate indicator of one's true employment status over the year.⁷⁷

Some jobless individuals rely on government transfers, but beyond disability receipt, there are very few benefits for nonworking individuals that arguably provide a livable income. Data on government benefits are notoriously inadequate, to be sure, and most surveys result in gross underestimates of the actual magnitude of benefits received by respondents. Still, Eberstadt shows that 63 percent of prime-age men not in the labor force lived in a household receiving at least one means-tested benefit in 2013.⁷⁸ However, a large portion of this statistic is made up of Medicaid beneficiaries. While access to affordable health care is important, health insurance can't be used to pay for one's living expenses and thus cannot explain how so many prime-age men support a life without work.⁷⁹

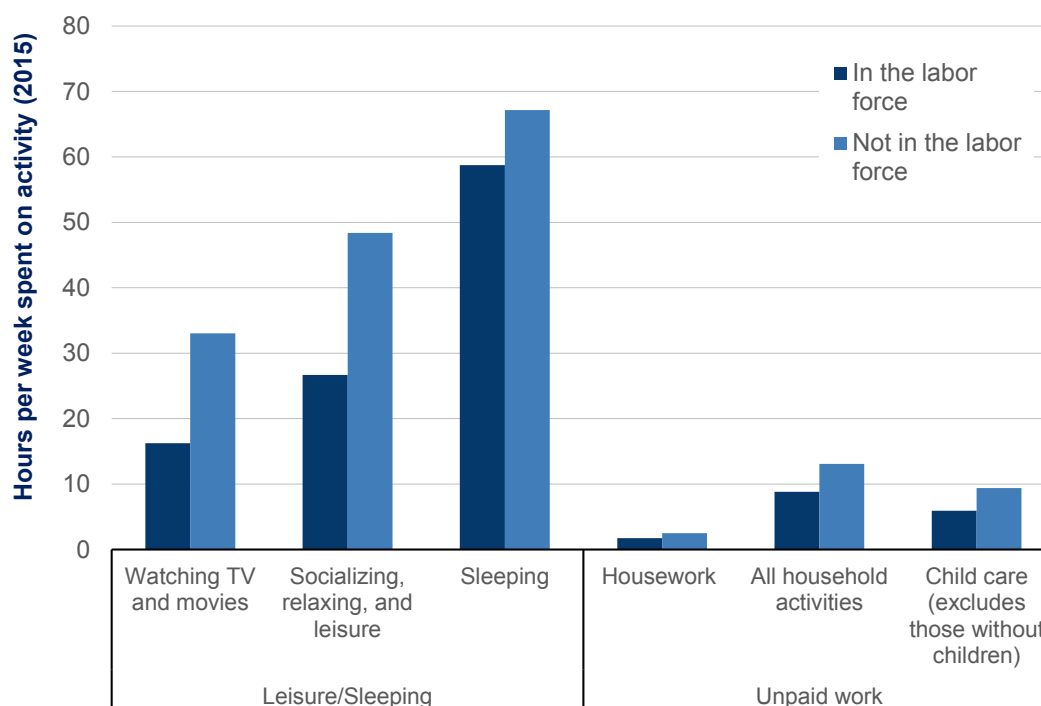
Another possibility is that, as women have entered the workforce in greater numbers, men have been able to rely more on their spouse's income, but the data do not strongly support this view. Prime-age men out of the labor force are less likely to be married than their employed or unemployed peers—only 34 percent were married in 2016, compared to 58 percent of prime-age men who were in the labor force.⁸⁰ In addition, the participation rate has dropped nearly twice as fast since 1968 for nonparents compared to fathers. It is also possible that a lack of marriage and children has reduced the need for men to work in order to earn a living for their family, but these data suggest that it is unlikely that men have been dropping out to take on more child care responsibilities.

However, it is plausible that a substitution effect within the labor market at-large is affecting male participation rates. If women's entrance into the labor force is causing wages to decline in certain industries, this could interact with men's high reservation wages to dissuade some men from taking on new employment. Greater labor market competition from women may have lowered male earnings, making this work less desirable to men. Indeed, a longitudinal study of earnings by occupation over the 1950 to 2000 period shows that wages tend to decline as occupations become more female-dominated, controlling for a variety of factors including education and work experience.⁸¹ Research on these questions is thin and inconclusive. While it does not seem to be the case that men are increasingly relying on a spouse's income to support themselves or spending more time on child care or household work, the introduction of women into the labor force more generally may have affected wages and other factors that influence an individual's decision to work, particularly in less-skilled jobs.

Cultural explanations for non-work

Time use studies confirm the implications of the data described above: prime-age men not in the labor force are not spending substantially more time caring for family members or performing housework. Prime-age men without work spend only about 45 minutes more per week on traditional housework activities like laundry and cleaning. Even among those with children in the household, prime-age men out of the labor force only spend about 30 more minutes per day on child care than those who are employed or looking for work. The largest differences between those in the labor force and those without work (besides the amount of time spent doing paid work) occur in the amount of time spent on activities falling into “socializing, relaxing, and leisure.” Prime-age men out of the labor force spend over three more hours per day (22 hours per week) on these activities than those in the labor force, including over two more hours per day (15 hours per week) watching TV and movies. Further, those out of the labor force spend almost nine more hours per week sleeping than those in the labor force (figure 11).

Figure 11. Men without work spend twice as much time on leisure, slightly more on housework and child care



Source: Author's analysis of BLS American Time Use Survey, 2015.

Note: Housework includes activities such as cleaning and doing laundry. All household activities includes housework as well as things such as food preparation and home and vehicle maintenance. Population includes men ages 25-54. Child care only includes this population with children under 18 living in the household.

It is possible that the happiness derived from activities such as playing video games is higher than for other types of leisure activities, as Krueger suggests.⁸² This could mean that the advent of new leisure activities has brought with it more attractive alternatives to working than have existed in the

past. This might provide one plausible explanation for the retreat from work, especially if these men have found some alternative sources of financial support. One theory floated by Charles Murray and Nicholas Eberstadt, among others, suggests that American culture has simply become more amenable to non-work. The fairly strong social norm linking a man's dignity and self-respect to his ability to bring home a decent paycheck seems to have faded over time.

Culture might play a role deeper still in dictating the jobs that men think are worthy of taking. As the traditionally male-dominated, labor-intensive fields like manufacturing and mining diminish and are replaced by service-oriented positions in retail, health care, and education, men might see themselves as ill-suited for these “pink collar” jobs, believing them to be “women’s work.” Currently, women make up the vast majority of teachers, nurses, and personal care aides, positions available in some of the fastest-growing sectors of our economy. While there have been notable attempts to get more educated women to enter the high-skilled STEM fields (science, technology, engineering, and math), there has not been a similar effort to incorporate more men into HEAL jobs (health, education, administration, and literacy).⁸³ It might be that many men are simply unwilling to work in the jobs available to them largely due to cultural norms and attitudes. The extent to which men are unwilling to take traditionally female-dominated jobs because of gender norms or whether they are simply ineligible for many positions because they lack the appropriate skills, including interpersonal skills, is unclear, but both supply-side factors are probably at play.

Increasing incarceration rates

The final factor discussed here is the large number of men in the U.S. who are, or have been, incarcerated. Our international counterparts have experienced many of the same forces of globalization and technology that have displaced many traditional low-skilled jobs, but one trend is particularly unique to the American experience: a drastic increase in our prison and, by extension, our ex-prisoner population. Crime rates are roughly what they were 50 years ago, but incarceration rates have increased fivefold. The U.S. incarceration rate was 5 times the OECD average in 2014.⁸⁴ As Eberstadt explains, “criminal justice history looks to be a key variable in the collapse of work and the flight from work for U.S. men over the postwar era.”⁸⁵

The rapid rise in incarceration rates has disproportionately affected low-skilled and black men, the same population experiencing the steepest declines in participation. As explained at the beginning of this paper, the direct effect of a larger incarcerated population is actually to increase the labor force participation rate by reducing the number of individuals falling into the civilian *non-institutional* population. However, the formerly incarcerated face significant barriers to employment compared to their peers with no criminal background. The data on criminal backgrounds are sparse, and often unreliable, but Eberstadt reports that 12 percent of men in the civilian non-institutional population had a felony conviction in their background in 2010.⁸⁶ Schmitt and Warner estimate that about 1 in 17 working-age men were ex-prisoners and 1 in 8 were ex-felons in 2008.⁸⁷ The 2014 KFF/NYT/CBS poll of prime-age nonworking Americans found that 34 percent of male respondents had

criminal records, including both felonies and misdemeanors.⁸⁸

Whatever the number, that is a lot of adult men who are less likely to be hired by employers, either because they have lower levels of education, longer periods of time spent away from the workforce, or simply due to the stigma surrounding a criminal record. Schmitt and Warner estimate that the reduced employment rate resulting from the country's large population of ex-offenders costs the nation between \$57 and \$65 billion per year in lost output, even accounting for the lower productivity of less-educated workers.⁸⁹

The effect of having a criminal record on employment is well-documented. Pager finds that a criminal record reduces the number of callbacks by almost 50 percent on average, but that this criminal record penalty was twice as large for blacks than whites (reducing callbacks by 60 percent for blacks and 30 percent for whites).⁹⁰ Holzer, Offner, and Sorenson found that previous incarceration accounted for over one-half of the decline in participation rates among black men ages 25-34 without a high school education between 1979 and 2000.⁹¹ Since incarceration rates have increased since the time of this study, it is likely that these trends have only worsened. And again, standard labor force statistics do not include those who are *currently* incarcerated. Western and Pettit report that 40 percent of black male high school dropouts were employed in 2008 according to conventional measures (excluding the prison population).⁹² When inmates are included in these population and employment estimates, this proportion drops to 25 percent. The precipitous increase in America's prison population has not only kept a large portion of America's prime-age population out of the nation's labor force statistics entirely, but it has also impacted a large share of the working age population's employment prospects once they get out of prison and able to search for work.

HOW ABOUT WOMEN?

The majority of the discussion here and among experts has focused on understanding and addressing the declining participation rate among prime-age men, but if we are concerned with boosting *overall* participation, the lowest hanging fruit might be to take a closer look at why women's entry into the workforce has slowed or reversed in recent decades. The gains in participation and the consequent growth in incomes and GDP through the mid-90s can largely be attributed to women entering the workforce in record numbers.⁹³ The CEA shows that a large portion of the growth in middle-class incomes between 1973 and 1995 could be attributed to the rise in female participation rates.⁹⁴ However, since the stagnation and recent decline in prime-age women's participation rates, the overall participation rate among the prime-age population has suffered. In 2015, the prime-age female participation rate was nearly 15 percentage points lower than the prime-age male rate. So, why are men getting all of the attention? Understanding the forces that might be preventing women from working could be just as important to getting American adults back to work.

Of course, much of the preceding discussion applies to women as well as men. In particular, a lack of adequate skills to meet the technical requirements of many of today's jobs is probably having an impact on women as well as men, especially those with low levels of educational attainment. Despite these common elements in their stories, men and women report different barriers to employment. Prime-age women are far more likely than men to cite home responsibilities as the primary reason for not working. In 2016, 60 percent of prime-age women not in the labor force reported "taking care of home/family" as the reason for not working, compared to 11 percent of prime-age men (figure 9). While we've made huge gains in overcoming traditional gender stereotypes regarding men and women's respective roles in the workplace and in the home, these numbers suggest that traditional roles and the lack of policies to support work-family flexibility are still preventing large numbers of women from entering the workforce.

As women's entry into the workforce has slowed in America, participation rates continued to rise in other advanced economies (figure 3). Of 22 OECD member countries, U.S. prime-age female participation fell from 6th to 17th between 1990 and 2010.⁹⁵ While there could be many reasons for the higher participation rates of women in some other advanced countries, there is one very large difference between the United States and our international counterparts that stands out: the lack of family-friendly policies in America. As the only advanced democracy without a statutory right to paid leave and very low levels of child care support, it is not surprising that women in the U.S. have greater difficulty meeting the competing demands of the workplace and the family. Blau and Kahn find that America's lack of family-friendly policies can explain almost 30 percent of the decline in women's participation between 1990 and 2010 relative to other OECD countries.⁹⁶

Lack of workplace flexibility affects men, too. The KFF/NYT/CBS survey of non-working Americans referenced above asked respondents what would make them more likely to work. Among homemakers out of the labor force (male and female alike), the majority said that they would be more likely to consider taking a job if it allowed them to work from home or had flexible hours. Even among those who identify as "disabled, unable to work," over one-quarter said that they would work if a potential employer could make accommodations, including offering a less physically demanding/desk job, flexible hours, and the ability to work from home. Many American employers do offer workplace flexibility such as paid family leave and teleworking, but lower-wage workers have far less access to such jobs than their higher-wage counterparts.⁹⁷

Conclusions and policy implications

The demand and supply factors discussed above do not operate in isolation. Many workers lose their jobs thanks to outsourcing or automation but then are unable to find work again due to their own lack of skills or ambition. Others are unable to find work in the first place because they attempted to enter the labor market without the necessary education, with a criminal background,

or during a recession. Understanding how these forces interact with one another provides a more complex, but more complete sense of why many prime-age adults are not working.

A fairly intuitive story is a variation of one cited earlier: a worker loses a well-paid job, but his high reservation wage prevents him from taking a lower-paid position suitable to his skill level. He becomes discouraged and withdraws from the labor force entirely. A loss of dignity or self-esteem may lead him to substance abuse or, more benignly, a life of video gaming and occasional work, at which point he appears unemployable to any employer should he try once again to find a regular job.

Or, imagine a student enrolled at a failing public school. He drops out before finishing his degree and looks for work, but his lack of a degree makes him ill-suited for any decent paying position. He resorts to crime, but soon finds himself with a criminal record. Even after serving the appropriate time for his bad deeds, he struggles to find a job because of his criminal history.

In still another scenario, a middle-aged man with a decent-paying job is terminated during an economic recession. The value of his house has declined dramatically during the recession, making it impossible for him to relocate to where more jobs exist. Without work, he becomes depressed and is approved for SSDI benefits. Once on SSDI, he lacks an incentive to look for work, even when labor market conditions improve.

There are infinite variations on these examples. Our conclusion is that there is no one smoking gun in this story, although if we had to point to the three most prominent, they would be a general lack of the right education and skills, too many years of slack labor markets, and high rates of incarceration (in combination with employer reluctance to hire those with a criminal record). If we are right, improving the nation's adult participation rate will require a major investment in education and training (or retraining) linked to jobs in growing sectors of the economy, maintaining full employment, and criminal justice reform including re-entry programs for ex-offenders.

Other issues worth attending to include expanding access to paid leave and workplace flexibility both for caregivers and for the partially disabled. Reforming SSDI to reflect the fact that disability is a spectrum that may permit some work and isn't always permanent seems to have broad support. It should be accompanied by reform of the unemployment insurance program to cover retraining and relocation assistance along the lines proposed by the Obama administration.⁹⁸ Additionally, stronger work requirements in some assistance programs could improve work incentives, but these should be combined, in our view, with a subsidized job for those who cannot find unsubsidized work on their own. Finally, we are struck by the high rates of substance abuse across the country and its clear association with lack of employment. We remain uncertain about whether it is the cause or effect of prolonged joblessness. Either way, it is taking a terrible toll on people's lives and needs to be addressed.

Endnotes

1. Anne Case and Angus Deaton, “Mortality and morbidity in the 21st century,” *Brookings Papers on Economic Activity* conference drafts, March 23-24, 2017, https://www.brookings.edu/wp-content/uploads/2017/03/6_casedeaton.pdf.
2. Alan B. Krueger. “Where have all the workers gone?” Prepared for the Boston Federal Reserve Bank 60th Economic Conference, October 15, 2016.
3. Bureau of Labor Statistics, “Labor force statistics from the Current Population Survey,” accessed May 10, 2017, <https://data.bls.gov/timeseries/LNS14000000>.
4. Estimating a worker’s actual productivity is complicated and the age-productivity relationship varies by industry. A literature review of research on the impacts of aging on productivity reports that many studies find that peak productivity occurs at around age 40, with a few studies indicating slightly older ages ([National Research Council 2012](#)). Labor productivity is generally measured as output per hour worked, and the slow growth in U.S. labor productivity in recent decades is an important reason for the sluggish economic growth in the U.S. and other advanced economies over the same time frame.
5. Congressional Budget Office, “The Budget and Economic Outlook: 2017 to 2027” (Washington: Congressional Budget Office, January 2017), Table 2-3.
6. Isabel Sawhill, Edward Rodrigue, and Nathan Joo, “One third of a nation: Strategies for helping working families” (Washington: The Brookings Institution, May 2016), <https://www.brookings.edu/wp-content/uploads/2016/07/one-third-of-a-nation.pdf>.
7. This is consistent with data presented by Hall and Petrosky-Nadeau ([2016](#)), showing that the probability of a prime-age worker being in the labor force is only 61.5 percent for households in the lowest income quartile, compared to 89.9 percent for those in the highest income quartile.
8. Michael Greenstone and Adam Looney, “The marriage gap: The impact of economic and technological change on marriage rates” (Washington: The Brookings Institution, February 2012), <https://www.brookings.edu/blog/jobs/2012/02/03/the-marriage-gap-the-impact-of-economic-and-technological-change-on-marriage-rates/>.
9. Isabel Sawhill and Joanna Venator, “Is there a shortage of marriageable men?” *CCF Brief #56* (Washington: The Brookings Institution, September 2015), <https://www.brookings.edu/wp-content/uploads/2016/06/56-Shortage-of-Marriageable-Men.pdf>.
10. David Autor, David Dorn, and Gordon Hanson, “When work disappears: Manufacturing decline

and the falling marriage-market value of men,” NBER Working Paper 23173 (Cambridge: National Bureau of Economic Research, February 2017).

11. Richard V. Reeves and Dimitrios Halikias, “Are Chinese factories really killing marriage in America?” *Social Mobility Memos*, March 10, 2017, <https://www.brookings.edu/blog/social-mobility-memos/2017/03/10/are-chinese-factories-really-killing-marriage-in-america/>.

12. Andreas Knabe et al., “Dissatisfied with life but having a good day: Time-use and well-being of the unemployed,” *The Economic Journal* 120 (2010): 867-889; Milena Nikolova and Carol Graham, “Employment, late-life work, retirement, and well-being in Europe and the United States,” *IZA Journal of European Labor Studies* 3 (2014): 1-30; Alan B. Krueger and Andreas Mueller, “The lot of the unemployed: A time use perspective,” *IZA Discussion Paper Series No. 3490* (Bonn, Germany: IZA, May 2008).

13. Nikolova and Graham cite numerous studies (Clark et al. 2001; Winkelmann and Winkelmann 1998; Hetschko et al. 2013; DiTella et al. 2001; Clark and Oswald 1994; Ravallion and Lokshin 2001) that have demonstrated the association between lack of employment and reduced well-being. These relationships remain true even when the lack of income is accounted for. Frey (2008) shows that the unemployed would remain less happy than their employed counterparts even if they were provided with their relative lack of income. Further, “scarring” effects of long-term unemployment on well-being appear to be pronounced in the long term, unlike the relatively short-term impacts of life events such as divorce and physical injury to which individuals tend to adapt eventually, returning to their baseline levels of well-being. In their own analysis, Nikolova and Graham find that working later in life (rather than retirement) can also have positive impacts on well-being.

14. Krueger, “Where have all the workers gone?”

15. Case and Deaton, “Mortality and morbidity in the 21st century.”

16. Rose A. Rudd et al., “Increases in drug and opioid overdose deaths—United States, 2000-2014,” *Morbidity and Mortality Weekly Report* 64 (2016): 1378-82.

17. Council of Economic Advisers, “The labor force participation rate since 2007: Causes and policy implications,” (Washington: Executive Office of the President, July 2014), https://obamawhitehouse.archives.gov/sites/default/files/docs/labor_force_participation_report.pdf.

18. For an excellent review of the literature on this subject, see Council of Economic Advisers, “The long-term decline in prime-age male labor force participation” (Washington: Executive Office of the President, June 2016), https://obamawhitehouse.archives.gov/sites/default/files/page/files/20160620_cea_primeage_male_lfp.pdf.

19. Bureau of Labor Statistics, “Labor force statistics from the Current Population Survey,” accessed May 1, 2017, <https://data.bls.gov/timeseries/LNS11300061>.
20. Olivier Blanchard, Eugenio Cerutti, and Lawrence Summers, “Inflation and activity—Two explorations and their monetary policy implications,” *IMF Working Paper 15/230* (Washington: International Monetary Fund, November 2015), <https://www.imf.org/external/pubs/ft/wp/2015/wp15230.pdf>.
21. Lawrence H. Summers, “U.S. economic prospects: Secular stagnation, hysteresis, and the zero lower bound,” *Business Economics* 49 (April 2014): 65-73.
22. Rand Ghayad, “Escaping the unemployment trap: Does industry-specific human capital matter? Evidence from a field experiment,” accessed May 1, 2017, <https://www.econ-jobs.com/research/53084-Escaping-the-Unemployment-Trap-Does-Specific-Human-Capital-Matter-Evidence-From-a-Field-Experiment.pdf>.
23. Stephanie Aaronson et al., “Labor force participation: Recent developments and future prospects” *Brookings Papers on Economic Activity* (Washington: Brookings Institution, Fall 2014), https://www.brookings.edu/wp-content/uploads/2016/07/Fall2014BPEA_Aaronson_et_al.pdf.
24. Council of Economic Advisers, “The labor force participation rate since 2007.”
25. Stephanie Aaronson et al., “The recent decline in the labor force participation rate and its implications for potential labor supply,” *Brookings Papers on Economic Activity* (Washington: The Brookings Institution, 2006), https://www.brookings.edu/wp-content/uploads/2006/03/2006a_bpea_aaronson.pdf; Nicholas Eberstadt, *Men without Work: America’s Invisible Crisis* (West Conshohocken, PA: Templeton Press, 2016). There is some uncertainty in the academic community regarding the extent to which declining participation rates unrelated to the aging of the population is explained by structural versus cyclical factors (Fay and Ketcheson 2016). In a more detailed analysis of industry- and skill-level-specific impacts of cyclical changes to employment, Foote and Ryan (2015) show that the responsiveness of routine jobs (which are more vulnerable to automation) to business cycles has worsened in recent economic downturns and that these middle-skill jobs are particularly vulnerable to cyclical effects in general. Indeed, CEA (2016) shows that participation rates have become more cyclically sensitive in recent decades, but that this trend is not as pronounced when the population is limited to prime-age men.
26. Mark Muro and Siddarth Kulkarni, “Voter anger explained—in one chart,” *The Avenue*, March 15, 2016, <https://www.brookings.edu/blog/the-avenue/2016/03/15/voter-anger-explained-in-one-chart/>.
27. Martin Neil Baily and Barry P. Bosworth, “U.S. manufacturing: Understanding its past and its

potential future,” *Journal of Economic Perspectives* 28 (Winter 2014): 3-26.

28. As Houseman (2016) notes, the story that automation has dramatically affected employment and productivity within the manufacturing sector even masks significant variability by industry within the sector—productivity growth in the computer industry has driven most of the sector’s strong output gains. She argues that the remainder of the sector’s anemic growth is largely the result of globalization.

29. Michael J. Hicks and Srikant Devaraj, “The myth and the reality of manufacturing in America” (Muncie, IN: Ball State University, June 2015), <http://projects.cberdata.org/reports/MfgReality.pdf>.

30. David H. Autor, David Dorn, and Gordon H. Hanson, “The China syndrome: Local labor market effects of import competition in the United States,” *American Economic Review* 103 (2013): 2121-2168.

31. For example, Pittsburg—once the epicenter of the steel industry—went from being the tenth largest city in America in 1950 to the 52nd largest in 2000 alongside a dramatic decline in steel industry employment. Between 1962 and 2005, the steel industry lost 75 percent of its workforce (Collard-Wexler and De Loecker 2015).

32. David Autor, “The polarization of job opportunities in the U.S. labor market: Implications for employment and earnings” (Washington: Center for American Progress and The Hamilton Project, April 2010), <http://economics.mit.edu/files/5554>. Routine tasks are defined as those that are “sufficiently well-defined that they can be carried out successfully by either a computer” or a “comparatively less-educated worker in a developing country” (p. 4).

33. David H. Autor, Lawrence F. Katz, and Melissa S. Kearney, “Trends in U.S. wage inequality: Revising the revisionists,” *The Review of Economics and Statistics* 90 (May 2008): 300-323; David H. Autor and David Dorn, “The growth of low-skill service jobs and the polarization of the U.S. labor market,” *American Economic Review* 103 (August 2013), 1553-97.

34. Martin Ford, *Rise of the robots: Technology and the threat of a jobless future* (New York: Basic Books, 2015).

35. Tyler Cowen, “The robots are here,” *Politico*, November 2013, <http://www.politico.com/magazine/story/2013/11/the-robots-are-here-098995>.

36. Erik Brynjolfsson, Andrew McAfee, and Michael Spence, “New world order: Labor, capital, and ideas in the power law economy,” *Foreign Affairs*, July/August 2014, <https://www.foreignaffairs.com/articles/united-states/2014-06-04/new-world-order>.

37. Mark Muro, “Manufacturing jobs aren’t coming back,” *MIT Technology Review*, November 18,

2016, <https://www.technologyreview.com/s/602869/manufacturing-jobs-arent-coming-back/>.

38. Richard Henderson, "Industry employment and output projections to 2024," *Monthly Labor Review* (Washington: U.S. Bureau of Labor Statistics, December 2015), <https://www.bls.gov/opub/mlr/2015/article/industry-employment-and-output-projections-to-2024.htm>.

39. Lawrence Mishel and Heidi Shierholz, "Robots, or automation, are not the problem: Too little worker power is," *Economic Policy Institute* (blog), February 21, 2017, <http://www.epi.org/publication/robots-or-automation-are-not-the-problem-too-little-worker-power-is/>.

40. Robert M. Solow, "We'd better watch out," *The New York Times*, July 12, 1987, <http://www.standupeconomist.com/pdf/misc/solow-computer-productivity.pdf>.

41. James Manyika et al., "Harnessing automation for a future that works" (New York: McKinsey Global Institute, January 2017).

42. Ibid.

43. Carl Benedikt Frey and Michael A. Osborne, "The future of employment: How susceptible are jobs to computerization?" (Oxford, UK: Oxford martin Programme on Technology and Employment, 2013). While automation can serve as a substitute for human labor, it can also serve as a complement to this labor. Automation may help improve productivity of higher-skilled conventional labor while also creating new complementary jobs and work roles, but this complementary job creation effect does not necessarily occur at the same pace as the substitution effect (CEA 2016). Though Brynjolfsson, McAfee, and Spence (2014) suggest that automation will primarily benefit those with new ideas and innovations, Taylor (2014) believes that the typical worker might also benefit through new job opportunities that complement these new technologies, provided that they have the skills and training necessary to perform such jobs. Acemoglu and Restrepo (2016) show that the substitution effects of automation will increase inequality across individuals of various educational attainment, as low-skilled labor is more likely to be squeezed out by the introduction of technological advancements.

44. The rising wage premium for more educated workers is more consistent with a demand-side shift than a supply-side shift. If the supply curve were to shift inward (indicating less willingness to work among the unskilled), their wages should increase. Instead, we've witnessed a depression in relative wages for lower-skilled workers, which is better supported by an inward shift of the demand curve.

45. Autor, "The polarization of job opportunities."

46. Kristen Monaco and Brooks Pierce, "Compensation inequality: Evidence from the National

Compensation Survey,” *Monthly Labor Review* (Washington: U.S. Bureau of Labor Statistics, July 2015), <https://www.bls.gov/opub/mlr/2015/article/compensation-inequality-evidence-from-the-national-compensation-survey.htm>.

47. Henderson.

48. Claudia Goldin and Lawrence F. Katz, *The Race Between Education and Technology* (Cambridge: Harvard University Press, 2010).

49. L. Rachel Ngai and Barbara Petronglo, “Gender gaps and the rise of the service economy,” September 2016, http://personal.lse.ac.uk/petronglo/manuscript_NP.pdf.

50. Sarah E. Needleman, “Skills shortage means many jobs go unfilled,” *The Wall Street Journal*, July 9, 2014, <https://www.wsj.com/articles/small-business-owners-work-to-fill-job-openings-1404940118>.

51. James Bessen, “Employers aren’t just whining—the ‘skills gap’ is real,” *Harvard Business Review*, August 25, 2014, <https://hbr.org/2014/08/employers-arent-just-whining-the-skills-gap-is-real>.

52. Fatih Guvenen et al., “Multidimensional skill mismatch,” NBER Working Paper 21376 (Cambridge: National Bureau of Economic Research, July 2015).

53. Peter Cappelli, “Skill gaps, skill shortages and skill mismatches: Evidence for the U.S.,” NBER Working Paper 20382 (Cambridge: National Bureau of Economic Research, August 2014).

54. *Ibid.*, pg. 46.

55. While he largely concludes that many complaints of a skills gap are overblown, Cappelli notes, “one area where employer complaints...have unique credibility is with skilled trades.” He suggests that employers requiring that workers have vocational training “would indeed find a shrinking pool of candidates” due to the decline in career and technical education. These are the types of positions that have traditionally been filled by adults with lower levels of educational attainment—precisely the group experiencing the largest decline in labor force participation rates.

56. Bessen, “Employers aren’t just whining—the ‘skills gap’ is real.”

57. Deming (2015) finds that the returns to social skills, rather than traditional skills such as mathematical training, increased substantially between 1980 and 2012. He shows that jobs requiring high social skills increased nearly 10 percentage points as a share of the total labor force, as did wage growth in these occupations.

58. Eberstadt, *Men Without Work*.

59. In Olsen's dissent to Ebersdad's *Men Without Work*, he notes that immigrant workers likely have lower "economic expectations" than native-born workers because they often come from countries with much lower standards of living than America. Additionally, many avoid government benefit programs for fear of discovery of their illegal status and are thus less capable of getting by without an earned income.

60. Numerous studies have documented the impact of backward-looking reference points on a job-seeker's reservation wages. These reservation wages are often indexed in some way to the individual's previous earnings (Koenig et al. 2016; Hogan 2004). Hogan (2004) finds that previous earnings have a larger impact on men's reservation wages than women's, who tend to be more influenced by market wages. Krueger and Mueller (2013) find that the duration of unemployment has a modest, but statistically significant negative impact on reservation wages and that this trend is largely influenced by those who began their unemployment spells with greater savings. The authors find that, compared to their calibrated search model, reservation wages tend to start out too high and decline too slowly.

61. Krueger, "Where have all the workers gone?"

62. Anne Case and Angus Deaton, "Rising morbidity and mortality in midlife among white non-Hispanic Americans in the 21st century," *PNAS* 112 (2015): 15078-83.

63. Case and Deaton, "Mortality and morbidity in the 21st century."

64. Justin R. Pierce and Peter K. Schott, "Trade liberalization and mortality: Evidence from U.S. counties," November 2016, http://faculty.som.yale.edu/peterschott/files/research/papers/mortality_58.pdf.

65. Ibid., pg. 24.

66. Case and Deaton, "Mortality and morbidity in the 21st century," pg. 29.

67. Author's analysis of CDC WONDER database and BLS labor force statistics, 2016. Many of the counties with the highest crude mortality rates were concentrated in and around Appalachia. Note that the data for some less populated areas may be unreliable, so this analysis is merely descriptive and does not attempt to determine any statistical significance in the association between deaths of despair and labor force participation.

68. The number of male worker SSDI recipients between the ages of 25 and 54 increased from 1,760,307 in 2004 (SSA 2004, Table 2) to 1,877,699 in 2015 (SSA 2015, Table 2). At the same time, the number of prime-age men not in the labor force increased from 5,801,420 in 2004 to 7,199,000

in 2015 ([BLS 2017](#)). This number omits adult children beneficiaries and widowers.

69. Council of Economic Advisers, “The long-term decline.”

70. Scott Winship, “How to fix disability insurance,” *National Affairs* (Spring 2015): 3-25.

71. Krueger, “Where have all the workers gone?”

72. Terrence McCoy, “Disabled or just desperate? Rural Americans turn to disability as jobs dry up,” *The Washington Post*, March 30, 2017, https://www.washingtonpost.com/classic-apps/disabled-or-just-desperate-rural-americans-turn-to-disability-as-jobs-dry-up/2017/03/30/5d1fca94-0509-11e7-b9fa-ed727b644a0b_story.html?utm_term=.23160917867a.

73. David H. Autor, “The unsustainable rise of the disability rolls in the United States: Causes, consequences, and policy options,” NBER Working Paper 17697 (Cambridge: National Bureau of Economic Research, December 2011), pg. 25.

74. Liz Hamel, Jamie Firth, and Mollyann Brodie, “Kaiser Family Foundation/New York Times/CBS News non-employed poll,” *The Henry J. Kaiser Family Foundation* (blog), December 11, 2014, <http://kff.org/other/poll-finding/kaiser-family-foundationnew-york-times-cbs-news-non-employed-poll/>.

75. Ibid.

76. John Coglianesse, “Shrinkouts versus dropouts: Explaining declines in labor force participation,” June 16, 2016, http://scholar.harvard.edu/files/coglianesse/files/Coglianesse_2016.pdf.

77. In the CPS, labor force participation is a dichotomous variable signifying whether the individual did or did not participate in the labor force in the preceding week. It is based on the individual’s employment status, determined by the person’s response to a series of questions on the previous week’s activities, including whether they did any work at all for pay or profit. Individuals who did not work in the previous week but acknowledge having a job from which they were temporarily absent are classified as employed, and therefore in the labor force.

78. Eberstadt, *Men Without Work*.

79. Eberstadt also notes that 56.5 percent of prime-age men not in the labor force receipt some form of disability benefit - either SSDI, SSI, veteran’s disability compensation, or a combination of these. Using SIPP data, he finds much higher rates of reliance on disability programs than administrative would suggest. This could be in part due to the small sample size for prime-age men not in the labor force in the SIPP database. However, it is likely also because most administrative publications reveal a monthly snapshot of disability benefits – for example, SSDI receipt in December 2015. However, SIPP asks whether the individual received income from

a particular source at some point over the past year. This would reveal much higher rates of reliance on disability insurance than a monthly snapshot might. With that said, the average monthly SSDI benefit awarded in 2014 to men was \$1,290.20, while the average monthly SSI benefit for individuals ages 18-64 was \$550.92 ([SSA 2015](#), Tables 5.D and 7.A). Thus, reliance on disability receipt might explain how a non-trivial portion of men out of the labor force gets by, but modest monthly benefits mean that many individuals are likely pooling resources from multiple supplemental sources.

80. Author's analysis of BLS Current Population Survey, 2016.

81. Asaf Levanon, Paula England, and Paul Allison, "Occupational feminization and pay: Assessing causal dynamics using 1950-2000 U.S. Census data," *Social Forces* 88 (December 2009): 865-91.

82. Krueger, "Where have all the workers gone?"

83. Richard V. Reeves and Isabel V. Sawhill, "Men's Lib!" *The New York Times*, November 14, 2015, https://www.nytimes.com/2015/11/15/opinion/sunday/mens-lib.html?_r=0.

84. Council of Economic Advisers, "The long-term decline."

85. Eberstadt, *Men Without Work*, pg. 146.

86. Ibid.

87. John Schmitt and Kris Warner, "Ex-offenders and the labor market" (Washington: Center for Economic and Policy Research, November 2010).

88. Benjamin Appelbaum, "The vanishing male worker: How America fell behind," *The New York Times*, December 11, 2014, <https://www.nytimes.com/2014/12/12/upshot/unemployment-the-vanishing-male-worker-how-america-fell-behind.html>.

89. Schmitt and Warner, "Ex-offenders."

90. Devah Pager, Bruce Western, and Naomi Sugie, "Sequencing disadvantage: Barriers to employment facing young black and white men with criminal records," *Annals of the American Academy of Political and Social Science* 623 (2009): 195-213.

91. Harry J. Holzer, Paul Offner, and Elaine Sorensen, "Declining employment among young black less-educated men: The role of incarceration and child support," *Journal of Policy Analysis and Management* 24 (2005): 329-50.

92. Bruce Western and Becky Pettit, "Incarceration and social inequality," *Dædalus* (Summer 2010),

<https://www.amacad.org/content/publications/pubContent.aspx?d=808>.

93. The Economist estimates that “the employment of extra women has not only added more to GDP than new jobs for men but has also chipped in more than either capital investment or increased productivity” ([The Economist 2006](#)). In a review of the evidence on female labor force participation internationally, Elborgh-Woytek et al. ([2013](#)) explain that increasing women’s participation to that of men’s would substantially contribute to macroeconomic conditions across the world.

94. Council of Economic Advisers, “Economic report of the President” (Washington: Executive Office of the President, February 2015), https://obamawhitehouse.archives.gov/sites/default/files/docs/cea_2015_erp.pdf.

95. Francine D. Blau and Lawrence M. Kahn, “Female labor supply: Why is the U.S. falling behind?” NBER Working Paper 18702 (Cambridge: National Bureau of Economic Research, January 2013).

96. Ibid.

97. Eleanor Krause and Isabel V. Sawhill, “What could really help the working class? Paid leave,” *Social Mobility Memos*, December 13, 2016, <https://www.brookings.edu/blog/social-mobility-memos/2016/12/13/what-could-really-help-the-working-class-paid-leave/>.

98. White House Office of the Press Secretary, “Fact Sheet: Improving economic security by strengthening and modernizing the unemployment insurance system,” January 16, 2016, <https://obamawhitehouse.archives.gov/the-press-office/2016/01/16/fact-sheet-improving-economic-security-strengthening-and-modernizing>.