

Labor Force Nonparticipation: Trends, Causes, and Policy Solutions

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MISSION STATEMENT

The Hamilton Project seeks to advance America's promise of opportunity, prosperity, and growth.

We believe that today's increasingly competitive global economy demands public policy ideas commensurate with the challenges of the 21st Century. The Project's economic strategy reflects a judgment that long-term prosperity is best achieved by fostering economic growth and broad participation in that growth, by enhancing individual economic security, and by embracing a role for effective government in making needed public investments.

Our strategy calls for combining public investment, a secure social safety net, and fiscal discipline. In that framework, the Project puts forward innovative proposals from leading economic thinkers — based on credible evidence and experience, not ideology or doctrine — to introduce new and effective policy options into the national debate.

The Project is named after Alexander Hamilton, the nation's first Treasury Secretary, who laid the foundation for the modern American economy. Hamilton stood for sound fiscal policy, believed that broad-based opportunity for advancement would drive American economic growth, and recognized that "prudent aids and encouragements on the part of government" are necessary to enhance and guide market forces. The guiding principles of the Project remain consistent with these views.





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Abstract

Over the last two decades the U.S. labor force participation rate has fallen. We explore this decline, emphasizing the effect of population aging as well as patterns by age, gender, race, and education, and assessing potential explanations. The Hamilton Project has offered evidence-based policy proposals for more than a decade on a variety of topics that often have important implications for labor force participation, even if those proposals are primarily aimed at other subjects like poverty, wage growth, regional inequality, or women's role in the economy. In this paper, we discuss these proposals as they relate to the goal of increasing participation, with a special focus on impediments to increased participation from aggregate demand, demand for non-college-educated workers, geographic gaps in participation, caregiving responsibilities, health and disability, and criminal justice.

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Introduction

The share of the population that participates in the labor force is a fundamental underpinning of an economy's health. To raise a society's living standards, more people must work, workers must work more hours, and/or workers must produce more in a given hour of work. But changes in the labor force participation rate (LFPR) can be complicated and influenced by non-economic factors, making them difficult to analyze. A depressed economy can lead to a reduction in labor force participation, but participation also responds to cultural shifts (e.g., more women entering the labor force), demographic changes (e.g., changes in the population shares of those less likely to work, like the young and old), broad economic forces (e.g., weakening demand for low-skilled labor), and policy changes (e.g., improved education and training policies).

Over the last two decades the U.S. labor force participation rate has fallen. While the relatively strong job market since 2014 has led to rising participation for some groups, the overall participation rate remains well below its peak even after adjusting for aging. These changes in the United States have not been mirrored around the world. In 1990, the United States had participation rates near the OECD average for prime-age (25–54) men and well above the average for prime-age women. By 2016, the U.S. male participation rate was nearly three percentage points below the OECD average, and U.S. women were only slightly above the OECD average. This decline has prompted a variety of policy responses based on different assessments of the decline. Some advocate for work requirements in social programs to force individuals who are out of the labor force either to work or lose various benefits. Others call for major overhauls of the labor market—such as a job guarantee—that would pull people into the labor force.

Given the importance of the labor force participation rate, changes in it have attracted considerable attention. Several studies (e.g., Aaronson et al. 2014; Abraham and Kearney, forthcoming; Binder and Bound 2019; Council of Economic Advisers [CEA] 2014, 2016) have assessed the research literature that grapples with drivers of changes in LFPR. Researchers have generally found that demand factors are most important in explaining the LFPR decline, though labor supply impediments matter for particular groups and must be addressed as well.

In this paper, we explore changes in U.S. participation trends to better understand the potential to raise economic output and lift living standards. The decline in labor force participation since 2000 has been in part—though not entirely—attributable to the aging of the population, but there is also clear evidence of the influence of a weak economy during the Great Recession and its aftermath, as well as longer-term shifts driven by other factors. Declines in recent decades have been concentrated among men with less education and youth. Conversely, more women—especially those with more education—now work than in past decades, as do older individuals.

We then explore barriers to participation, which contribute to large gaps in the participation of different groups. These gaps exist by education, gender, and race, pointing to specific barriers that individuals face in labor markets. Closing these gaps represents the clearest opportunity to lift participation. The Hamilton Project has offered many proposals for evidence-based policies that could lift both labor force participation and living standards in the United States. We discuss these proposals as they relate to the goal of increasing participation, with special focus on aggregate demand, demand for non-college-educated workers, geographic gaps in participation, caregiving responsibilities, health and disability, and criminal justice. In each case, we highlight the current views of a past contributor to The Hamilton Project.

No one factor is responsible for the decline in labor force participation, and no one reform can allow Americans to fully access labor market opportunity. But policies that boost labor demand, keeping the economy closer to potential output and providing well-paying job opportunities, are a crucial part of lifting participation. At the same time, it is important to couple these macroeconomic approaches with policies that address specific participation impediments. Combined, these strategies can lift economic growth and ensure that it is more broadly shared.

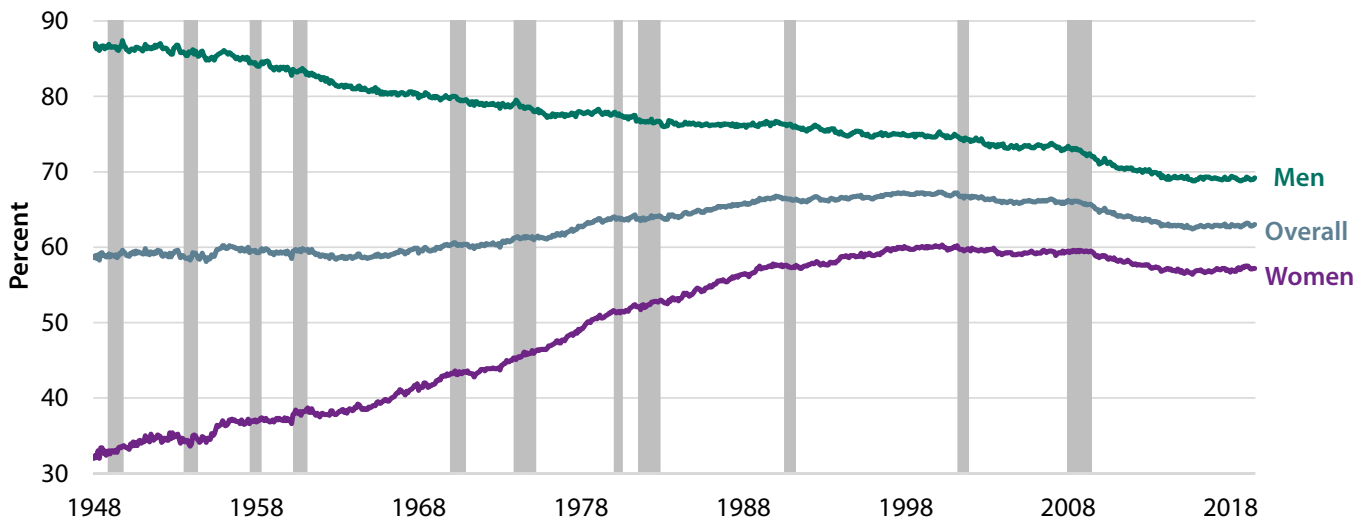
The Evolution of Labor Force Participation

The overall U.S. labor force participation rate—defined as the labor force (employed and unemployed individuals) divided by the civilian noninstitutional population 16 years and older—rose from just under 60 percent in 1948 to a peak above 67 percent in 1999 before settling around 63 percent in recent years (figure 1). (See box 1 for a discussion of the measurement of labor force participation.) This rise and fall in aggregate participation masks distinct trends by gender and age over the past few decades. Over that same period, male labor force participation fell nearly 15 percentage points while female participation increased by more than 25 percentage points. Until 1999 the rising female participation rate was enough to offset declining male participation, but since that year participation has declined for both men and women and the overall participation rate has fallen. The Great Recession further depressed participation rates for all groups and aggregate participation fell more than 3.5 percentage points in the seven years following the recession before rebounding slightly and stabilizing near 63 percent.

Figure 1 shows the participation rate for all individuals 16 and older, including young, middle-aged, and older individuals. Each of these groups has a different likelihood of working and each makes up a changing share of the total population over time. People are far more likely to work between the ages of 25 and 54 (i.e., prime-age years) than they are either when they are younger than 25 (when many are in school) or older than 54 (when many are retired or disabled). Also driving the trends shown in figure 1 are generational shifts in the likelihood of participation. To better understand these shifts, it is helpful to examine how participation has changed throughout the lifecycle for different generations; figures 2 and 3 show the participation rate for men and women, respectively, by age and birth cohort. (See box 2 for how to read a cohort figure.)

Figure 2 shows that regardless of birth year (i.e., cohort), men work more when they are in their 30s and 40s, less as they approach 50, and notably less after that age. This means

FIGURE 1.
Labor Force Participation Rate by Gender, 1948–2019



Source: Bureau of Labor Statistics (BLS) 1948–2019.

Note: Data include individuals 16 and older. Data are monthly, seasonally adjusted, and extend through July 2019. Gray bars denote recessions.

BOX 1.

Measuring and Mismeasuring LFPR

The labor force participation rate is simple in concept: it is all people working or actively trying to find a job (the sum of employed and unemployed workers), divided by the 16 and older civilian non-institutional population (that is, excluding those on active military duty as well as inmates of institutions). But in practice there are difficulties associated with its measurement.

One such difficulty arises from the way we observe participation—using a survey of households—and the tendency of some unemployed respondents to either fail to respond or to incorrectly report that they are not searching for employment. Ahn and Hamilton (2019) argue that the surveys underpinning labor force participation statistics underestimate participation and that this bias has become increasingly pronounced since the Great Recession, meaning that the decline over the past decade may be slightly exaggerated. They estimate that LFPR is on average roughly two percentage points higher than reported in official statistics.

The dynamic nature of the labor market presents another challenge: individuals are constantly churning in and out of the labor force. Because this churn has increased over the last forty years, temporary nonparticipation accounts for part of the decline in labor force participation (Coglianese 2018). Taking snapshots of the labor force can miss the full extent of participation, much of which is episodic and intermittent (Bauer, Schanzenbach, and Shambaugh 2018). In this paper, we focus on the widely reported official statistics, but it is important to recognize that in particular for low wage workers—who often cycle in and out of employment and have a higher unemployment rate—there may be somewhat higher participation than is reported.

that shifts in the age distribution of the population can have important effects on overall participation.

At the same time, there have been sizable generational shifts in participation. Men have seen a steady decline in participation across time, with members of each birth cohort somewhat less likely to work than those in the preceding birth cohort at a given age. Men born between 1945 and 1949 were more likely to be in the labor force at virtually any time during their prime-age years than those in subsequent birth cohorts. Men born between 1950 and 1954 were more likely to work at almost any age during their prime-age years than men in the cohorts that came after them.¹

Figure 3 paints a different picture for women. Women born in the 1940s and 1950s were far less likely to work early in their lives, when many were raising children. For subsequent cohorts, that pattern has disappeared: Women now participate in the labor force at relatively steady rates from ages 25–50. The most striking generational shift for women is that younger cohorts reduce their participation by much less during childrearing years.

However, for every cohort and at every age, women are less likely to participate in the labor force than are their male counterparts. Even for the youngest cohort (born between 1985 and 1989), 75 percent of 30-year-old women participated compared to nearly 90 percent of 30-year-old men. Thus,

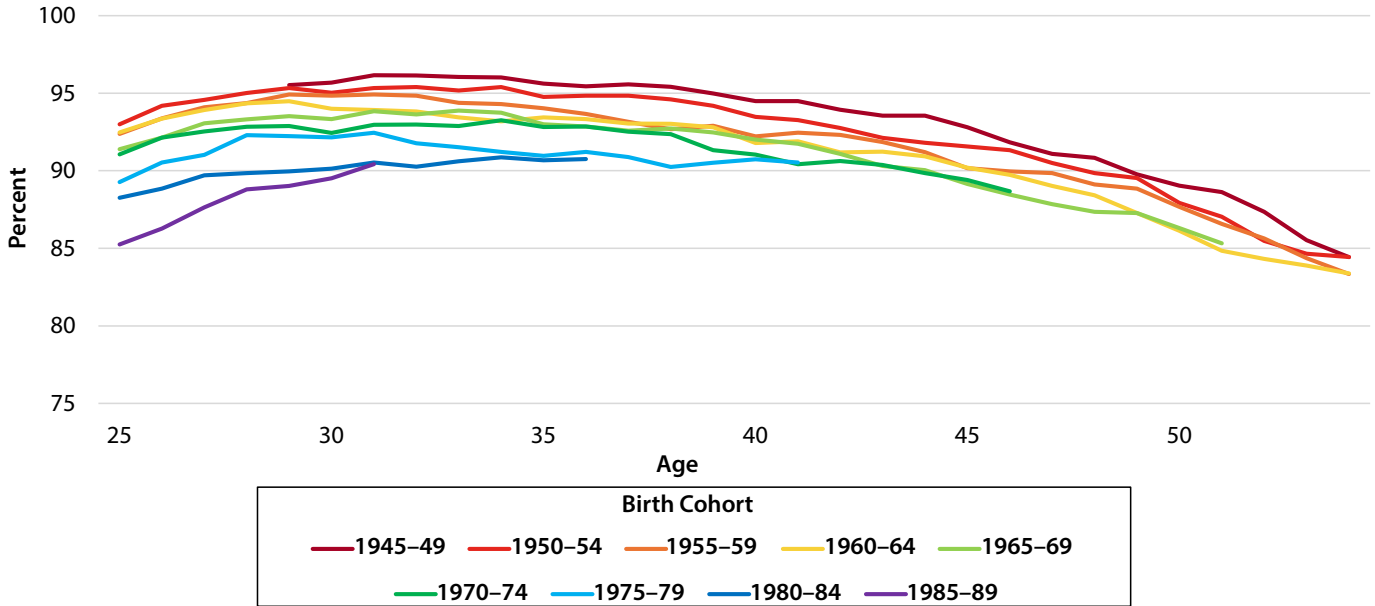
while the shift of women into the workforce certainly played a major role in both workforce and economic growth in the 1970s, 1980s, and 1990s, it has not led to parity in labor force participation between men and women.

It is also important to note that the fact that the flattening and post-1999 decline of U.S. prime-age women's participation is far outside the norm for other advanced economies. As recently as 1995, the United States had one of the highest participation rates for prime-age women of any advanced economy and was nearly ten percentage points above the OECD average. Now, U.S. prime-age women's LFPR is far below that of France and Canada (who saw increasing participation throughout the 2000s) and is even below the rate for Japanese prime-age women (Black, Schanzenbach, and Breitwieser 2017). The LFPR dip during childrearing years has gone away in the United States, but U.S. women's participation now lags behind that of many other countries.

Having examined shifts across cohorts, we now turn to the role of aging. In figure 2, it is revealing that the LFPR shifts across male cohorts—while substantial—are smaller than the overall drop in male participation from 79.7 percent in 1970 to 69.1 percent in 2018. This indicates that demographic changes are an important part of the story. As people in their 60s, 70s, and beyond become a larger share of the population, overall LFPR falls as a consequence.

FIGURE 2.

Male Labor Force Participation Rate by Age and Birth Cohort



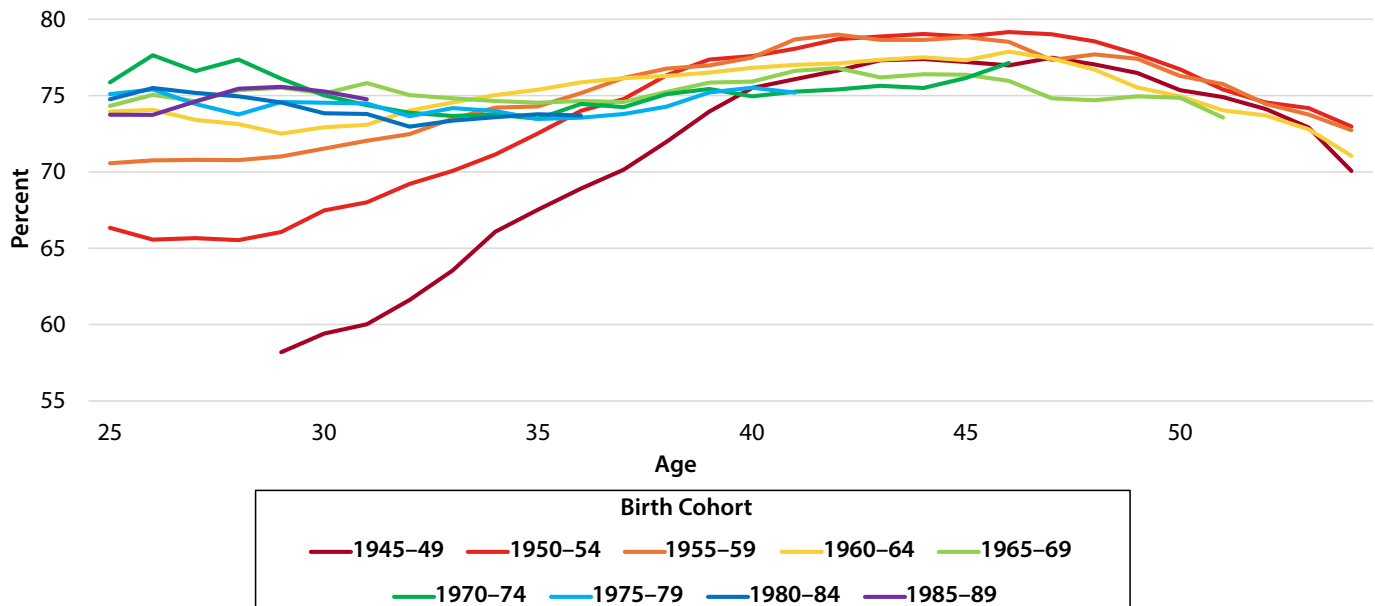
Source: BLS 1976–2018 (CPS); authors' calculations.

Note: The figure shows the average of available cohorts when we lack data for some single-year cohorts within a five-year group. However, we do not display estimates when data for fewer than three single-year cohorts are available.



FIGURE 3.

Female Labor Force Participation Rate by Age and Birth Cohort



Source: BLS 1976–2018 (CPS); authors' calculations.

Note: The figure shows the average of available cohorts when we lack data for some single-year cohorts within a five-year group. However, we do not display estimates when data for fewer than three single-year cohorts are available.



BOX 2.

How to Read a Cohort Figure

Cohort figures are drawn to study the changes in labor market outcomes throughout the life course across different generations. Each line in figures 2 and 3 represents the participation rate of a group born during the same period (i.e., a cohort). For example, in figure 2 the bright red line shows the participation rate of men who were born between 1950 and 1954 as they aged from 25 to 55. Their participation rate was 93 percent at age 25, rising in their early 30s before falling to 84 percent in their mid-50s.

If the age profile of LFPR were the same across generations, each cohort's line would be superimposed on top of the others. However, changing LFPR within a given age group leads to cohort lines with different intercepts and slopes.

Cohort figures will reflect the influence of major shocks to the economy. Because participation rates dipped in 2009–11 during the Great Recession, each cohort's participation will be slightly lower at whichever age corresponds to that period. (See appendix figures B.1 and B.2 for cohort figures with the Great Recession marked.) For example, men born in 1970 were 40 in 2010, so their participation rate dips slightly at that age. Interpreting cohort graphs can therefore be challenging. Were those born in 1985 much less likely to work at age 25 compared to prior cohorts because of broader structural factors or because of the recession? The fact that they closed the gap in subsequent years may signal that the recession was lowering their participation rates.

We explore demographic shifts in figure 4. The solid green line shows the actual labor force participation rate for those 16 years and older; it declines from 67 percent in 2000 to 63 percent in 2018. The dashed line shows what the labor force participation rate would have been if the demographic (age and sex) composition of the population had remained at its 2000 level. The accumulating gap between the dashed and solid green lines indicates that aging is a very important factor in the overall decline, accounting for 75 percent of the actual LFPR reduction from 2000 to the first half of 2019 in this decomposition.² However, that the dashed green line falls 1.0 percentage point from 2000 to 2019 indicates that within-group LFPR decline still drives an appreciable portion of the overall decline: It is not *only* aging that is lowering participation.³

Both lines clearly show the impact of the Great Recession, which drove LFPR down from 2008 through 2015, followed by a rebound. This rebound has erased a good share of what can be thought of as the cyclical decline in participation, though the age-adjusted line is still below even its 2007 prerecession level.

The relatively small reduction in LFPR after adjusting for population aging does not mean that changes in participation among different age groups have been small. In fact, changes have been quite large, but declining youth and prime-age participation rates have been partially offset by rising participation of older workers (Bauer, Liu, and Shambaugh 2019). Just 35 percent of teenagers aged 16–19 participate in the labor force today compared to 52 percent in 2000 (Bauer et al. 2019). In contrast, adults aged 55–64 now participate

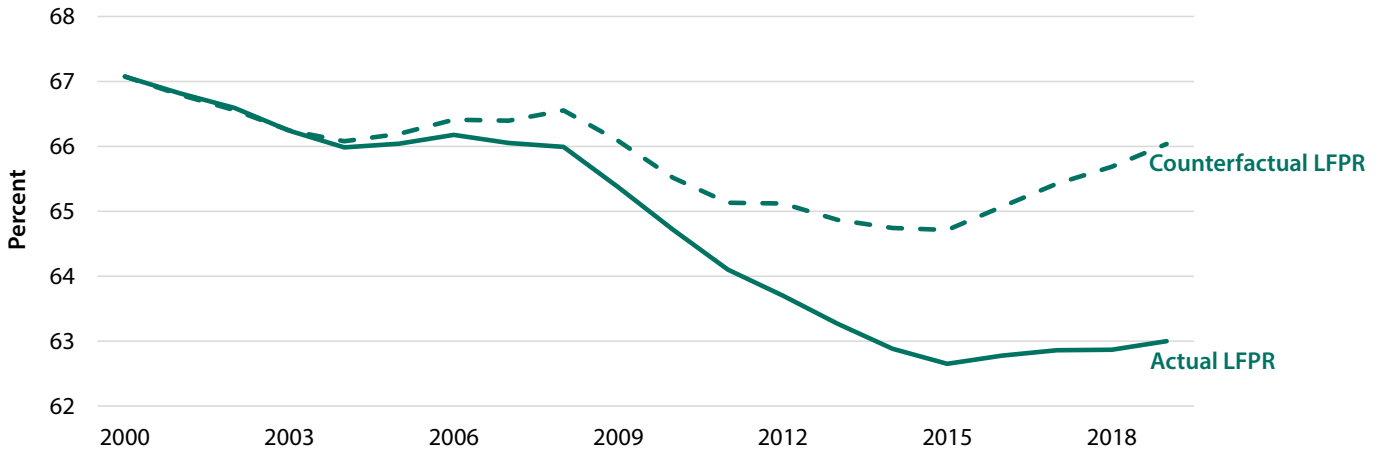
at a rate of 65 percent, much higher than the 2000 rate of 59 percent.

Figure 5 shows how shifts in LFPR of each age-gender group have affected the overall participation rate. Falling rates of youth participation have weighed heavily on overall participation rates, with falling male youth participation subtracting 1.0 percentage point from the total and falling female youth participation subtracting another 0.6 percentage points from 2000 to 2018.⁴ Declining labor force participation for those 16–24 years old may not be a problem for the labor market, though. In fact, teens and young adults are not more likely to be idle, but instead have shifted from work to increased engagement with schooling (Bauer et al. 2019). The commensurate increase in time allocated to schooling has meant this group is attaining more education, with long-term payoffs in the form of higher wages and labor force participation over their lifetimes.

Because it is relatively unaffected by demographic shifts, analysts often focus their attention on the prime-age participation rate. Neither men nor women in the 25- to 54-year-old group are back to their levels in 2000; this shortfall contributed 0.7 percentage points and 0.3 percentage points to the overall decline from men and women, respectively. However, prime-age women are back above their prerecession level with a participation rate of 75.6 percent in the second quarter of 2019 compared to 75.4 percent in the fourth quarter of 2007. In contrast, prime-age male LFPR is still down roughly 2 percentage points since the end of 2007. Male prime-age participation has been on a long slow downward trend since mid-1960s (CEA 2016). The decline is

FIGURE 4.

Actual and Counterfactual (Holding Population Shares Constant) Labor Force Participation Rate, 2000–19



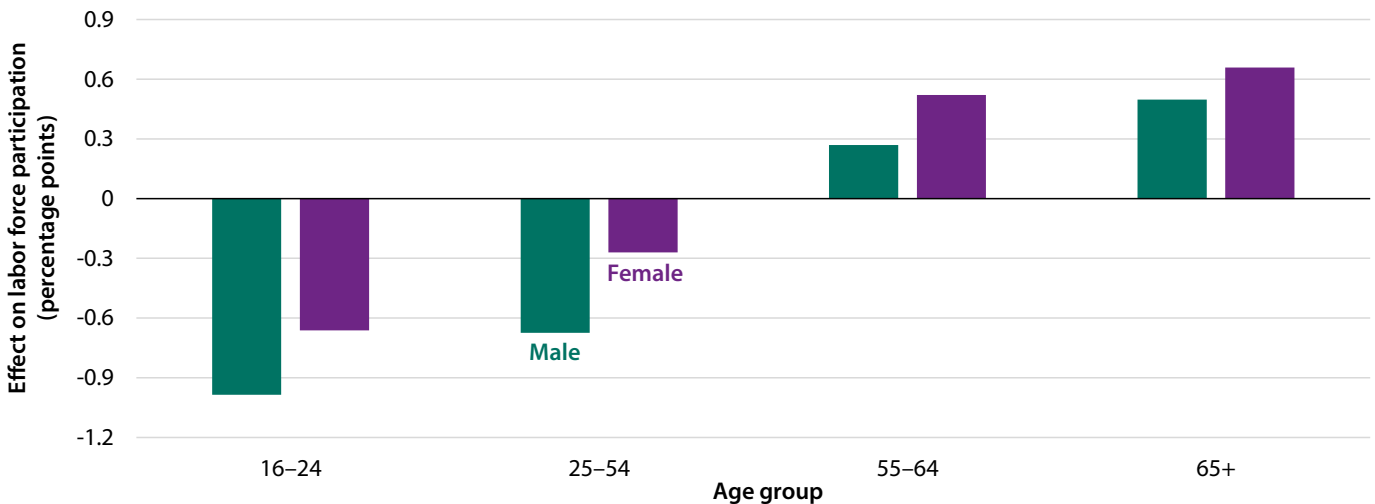
Source: BLS 2000–19; authors' calculations.

Note: Data are not seasonally adjusted. Values for 2019 are projected annual values of LFP and counterfactual LFP. We calculated the average LFP in the first six months of 2019 and added to it the difference between the average LFP in the first six months of 2018 and the 12-month average in 2018.



FIGURE 5.

Effect of Changing Group Participation Rate on Overall Labor Force Participation Rate by Gender and Age, 2000–18



Source: BLS 2000, 2018 (CPS); authors' calculations.

Note: To calculate the contribution of each group's changing participation rates to the overall change in the labor force participation rate, we follow the decomposition method described in Aaronson et al. 2006. Each bar shows the cumulative decline in overall (16+) LFP accounted for by the change in LFP of a particular age-gender group.



likely not due to a temporary cyclical shock, but rather to a longer-run downward trend.

These declines in youth and prime-age participation have been offset by increases for older workers. Increased participation among those aged 55–64 has contributed 0.8 percentage points of increased LFPR and participation among those aged 65 and older has contributed more than 1.0 percentage point.

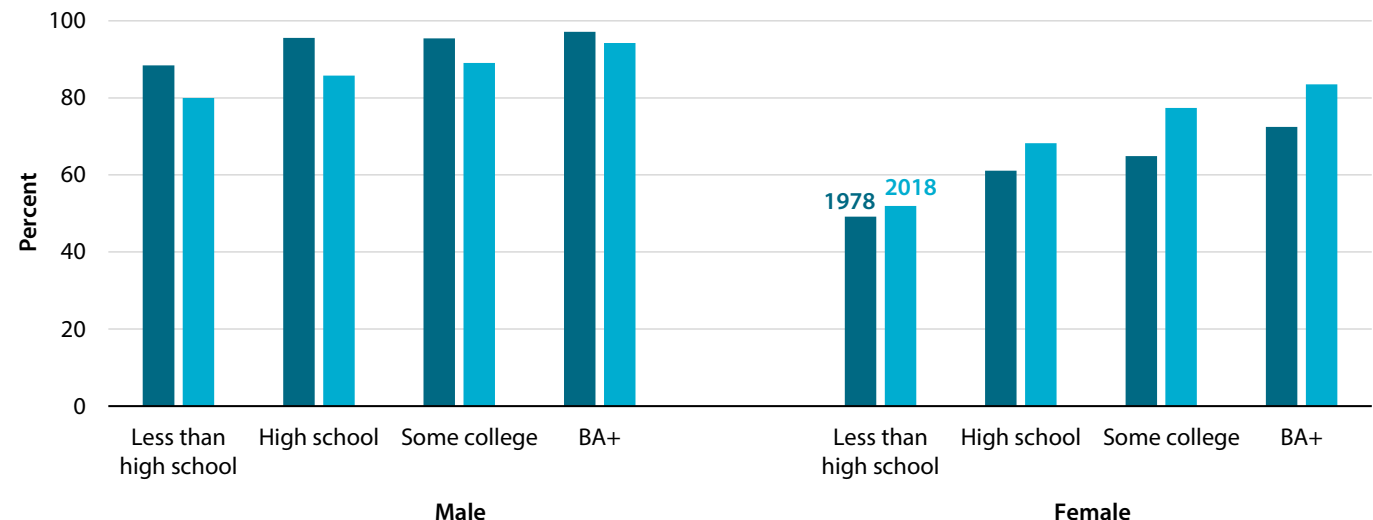
These shifting patterns highlight the challenges in assessing overall participation rates by only looking at demographically adjusted measures like the one presented in figure 4. In 1985 18 percent of those 65–69 were in the labor force—today that figure is 33 percent.⁵ Improving health of older Americans, shifting job tasks, and changes in pensions and Social Security rules have all increased the likelihood that older individuals work (Baily and Harris 2019). Thus, if one assumes that adults 65 and older will hold steady at their 2000 participation rate, one may underestimate the importance of within-group declines in other age groups that are offset by increases for older workers.

In attempting to understand evolving patterns of prime-age LFPR, researchers have stressed the importance of education (Abraham and Kearney, forthcoming; CEA 2014, 2016; Montes 2018). Rising educational attainment means there is now a smaller share of the prime-age population from the relatively low-LFPR group with less than a high school education and a larger share of the relatively high-LFPR group of workers with a college degree or more. This has tended to raise overall LFPR relative to a counterfactual in which educational attainment had not increased (CBO 2018).

In addition, LFPR gaps by education have changed over time. Figure 6 shows that in 1978 prime-age men with a high school diploma had similar participation rates to those who had obtained additional education. Men without a high school degree participated at slightly lower rates. By 2018 the gaps had grown considerably. Men with at least a bachelor’s degree had a small decline in participation over the four decades, but those with less education saw a much larger dip—especially those with a high school diploma or less—such that the gap between those with a bachelor’s and high school dropouts grew from 8.7 in 1978 to 14.3 percentage points by 2018. This means that the bulk of the decline of male prime-age participation comes from those with a high school diploma or less (a point emphasized in CEA 2016 and Krueger 2017). Again, rising educational attainment has in part offset these declines within educational groups.

A similar gap opened between the LFPR of less- and more-educated women (figure 6). Women with more education have had a sharply rising participation rate since 1978, with increases of at least 11 percentage points for both women with some college and those with a bachelor’s degree. By contrast, women with less than a high school diploma have seen an increase in LFPR of only 2.8 percentage points. The education gap for women today is much larger than it is for men: women with a bachelor’s or more have an LFPR that is 31.5 percentage points above that of women with less than a high school education. While there has always been a gap in participation based on education, the gap has grown over time for both genders.⁶

FIGURE 6.
Prime-age Labor Force Participation Rate by Educational Attainment and Gender, 1978 and 2018



Source: BLS 1978, 2018 (CPS); authors’ calculations.

Note: Some college includes associates degrees. “BA+” refers to a four-year degree or more. “High school” includes high school diplomas and equivalents.



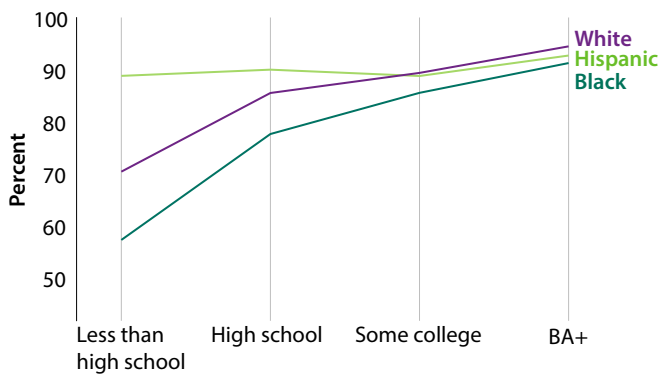
Another way to view figure 6 is to note that the gap between male and female LFPR is much more pronounced at lower levels of education. That gap is 10.7 percentage points for those with at least a bachelor’s degree in 2018, but 28 percentage points for those with less than a high school diploma. More women have attained college degrees, and in recent cohorts more women have a college degree than men. This shift has contributed to the closing of the gender gap in participation rates (Goldin 2006).

Age, gender, and education are all vital to understanding shifting participation patterns. Race and ethnicity are also an important lens through which to interpret these patterns, as shown in figure 7. At each level of education, prime-age Black men have consistently had lower participation rates than their White counterparts (figure 7a and appendix figure B.3).

Hispanic men have a very different pattern of labor force participation. Their LFPR is high regardless of educational attainment and is higher than for Whites among those with a high school diploma or less. LFPR of Hispanic women is less out of step with that of Black and White women, but is still high (relative to Black and White women with the same level of education) for those with less than a high school diploma and low for those with a college degree or more.

In contrast to Black men, Black women have higher participation rates than their White counterparts at all levels of education. College-educated Black women have over time participated at consistently higher rates than their White counterparts (see appendix figure B.4). College-educated White women increased their participation rates steadily from 1976 to the mid-1990s, but LFPR was already high for Black women. Similarly, White women with a high school diploma increased their participation rates from the 1970s to 2000s, converging with the LFPR of Black women with a high school diploma. In many ways, increasing female participation is largely a phenomenon of White women, since Black women have always had high LFPR. These distinct trends by gender, race, education, and other characteristics suggest the importance of group-specific impediments to labor force participation. In the following sections we discuss some of the chief impediments to higher LFPR, both at an aggregate level and for specific groups. In each section we highlight evidence-based proposals from The Hamilton Project that would address each problem and lift labor force participation.

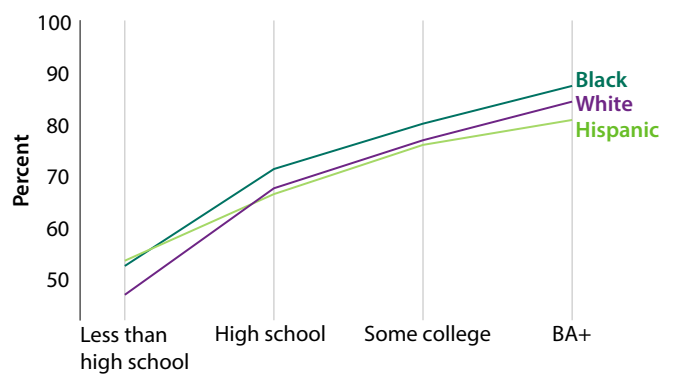
FIGURE 7A.
Male Prime-Age Labor Force Participation by Race/Ethnicity and Education



Source: BLS 2018 (CPS); authors’ calculations.

Note: Data are for 2018. “Some college” includes associate degrees. “BA+” is a four-year degree or more. “White” is the white non-Hispanic population and “Black” is the non-Hispanic black population.

FIGURE 7B.
Female Prime-Age Labor Force Participation by Race/Ethnicity and Education



Weak Aggregate Demand

Aggregate demand in the economy is the total spending by individuals, firms, and governments; it can differ from aggregate potential supply, which is the maximum sustainable output an economy is able to produce. When the economy is producing its maximum sustainable output and supply is equal to demand, the economy is said to be at potential output or full employment. The business cycle can be understood as deviations from this state of affairs, often determined by ebbs and flows in aggregate demand.

In theory, deteriorating aggregate demand should lead both the price of labor (wages) and the quantity of labor (employment rates) to fall. (See appendix A for a discussion of how to understand LFPR through the classical labor market model.) But if there are factors that prevent wages from falling—a phenomenon known as downward wage rigidity—it could be that employment, and possibly participation rates, decline more than they otherwise would.

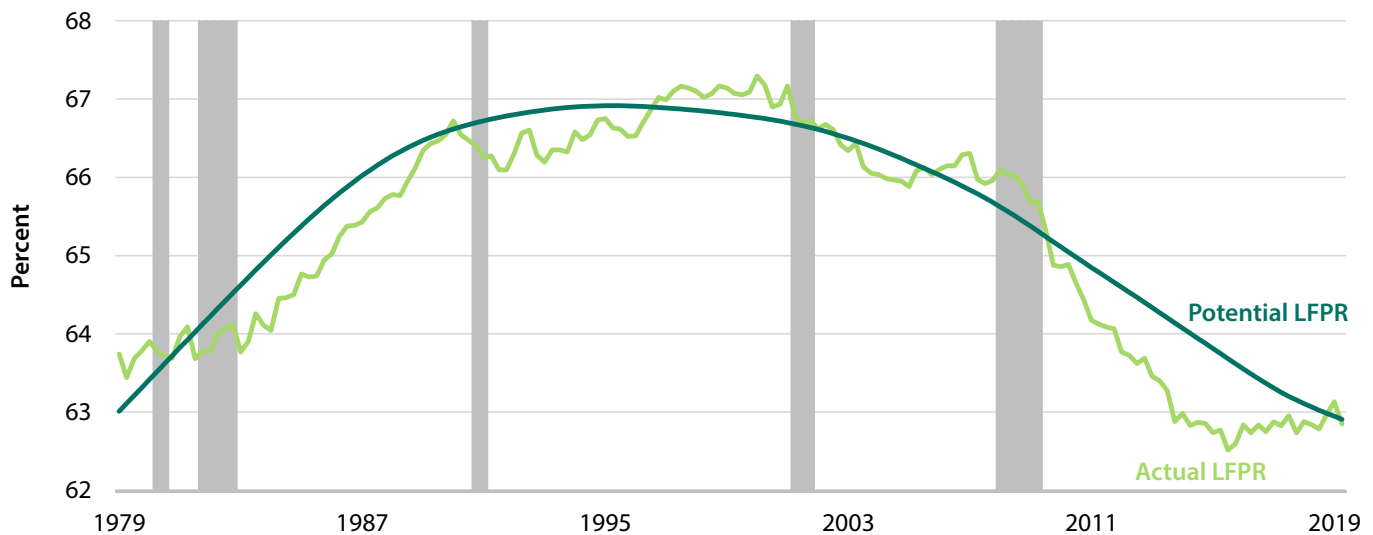
In practice, some amount of downward wage rigidity is observed and economic weakness leads to substantial falls in labor force participation rates.⁷ Unemployed workers might

eventually become discouraged and exit the labor force while those out of the labor force may be less likely to enter.⁸ These business cycle dynamics can be difficult to see in a graph like figure 1 because of demographic and other shifts. One way to see the influence of aggregate demand on participation is to examine the relationship between actual participation and potential participation, defined as what participation would be if the economy were operating at its full potential.

Figure 8 shows this relationship using the Congressional Budget Office’s (CBO’s) measure of potential labor force participation.⁹ At various points in time, actual participation is elevated above potential, since more people are working than would be expected based on how much the economy can sustainably produce, but in the aftermath of recessions (marked by the gray bars) participation tends to fall well below potential.

Figure 8 demonstrates the importance of taking into account shifts in potential participation. For example, in the years following the severe 1982 recession, actual participation rates did not fall as one might have expected. But relative to

FIGURE 8.
Actual and Potential Labor Force Participation Rate, 1979–2019



Source: CBO 2019a.

Note: Gray bars denote recessions. Data are seasonally adjusted, at a quarterly frequency, and extend through the second quarter of 2019. As defined by CBO, the potential labor force participation rate is the percentage of the population who would be employed or seeking work if the economy were producing its maximum sustainable amount of output.



potential LFPR—which at that time was rising along with the growth in the prime-age population and women’s entry into the labor force—actual LFPR fell substantially. Conversely, some of the drop in LFPR after the Great Recession was due to aging, but actual LFPR still fell more quickly than potential.¹⁰

Otherwise temporary shortfalls in demand can in turn have longer-run impacts if workers become permanently discouraged, either leaving the labor force or remaining on a less-rewarding career track. Yagan (forthcoming) shows that people entering the labor market in the wake of the Great Recession experienced significantly lower employment, participation, and earnings. Furthermore, in areas that were hit harder by the recession, participation rates were lower even in 2015, six years after the end of the recession. Whether these impacts can be reversed may in part depend on whether the economy goes through a subsequent boom cycle that lifts wages and participation rates.

Weak aggregate demand can also have a strong impact on wages, and, by pushing down wage growth, may in turn depress participation. Bernstein (2018) demonstrates that, for the past 30 years, the U.S. economy has been below full employment far more often than it has been at or above full employment; this is a reversal of the pattern seen in prior decades. Bernstein provides evidence that wages of lower-income workers fare particularly poorly during periods of less than full employment.

More-vulnerable workers also tend to face larger increases in unemployment rates following a shock: Unemployment rates rose more for both lower-education workers and non-White workers during the Great Recession (Boushey et al. 2019). Conversely, a strong economy tends to bring down unemployment faster for disadvantaged workers (Aaronson et al. 2019; Okun 1973). Yagan (forthcoming) also finds that older and lower-income workers are both more likely to become unemployed and drop out of the labor force during a recession.

One reason for the better job market performance of disadvantaged groups during a boom is a tendency for employers to relax their job requirements in response to tightening labor markets, allowing for many nonparticipants and marginally attached workers to become more-regular participants (Modestino, Shoag, and Balance 2016, 2019). Thus, participation rises in a strong economy as wages rise (making work more attractive), job availability increases, and employers relax job requirements.

POLICY RESPONSES TO WEAK AGGREGATE DEMAND

To address the problems stemming from low aggregate demand, fiscal and monetary policy must support a labor market that is as close to full employment as possible without pushing the economy into excess inflation or credit bubbles.¹¹

The most recent few recessions have been followed by slower recoveries than in the past, during which the employment levels did not fully recover until many years after the recession had ended (Schanzenbach, Nunn, et al. 2017). Countercyclical fiscal policy can and has taken several forms, from automatic increases in regular unemployment benefits to discretionary individual stimulus payments (Sheiner and Ng 2019), but the United States could do more to reinforce and extend its system of automatic stabilizers.

Two Hamilton Project proposals—Bitler and Hoynes (2016) and Ziliak (2016)—explored countercyclical improvements to safety-net programs; a third recent proposal examined the history of thought and practice related to stabilization policy (Blinder 2016).

Recession Ready: Policies to Stabilize the American Economy, published by The Hamilton Project and the Washington Center for Equitable Growth, contains analysis and proposals by experts to enhance the countercyclicality of a range of public programs (Boushey, Nunn, and Shambaugh 2019). The book describes specific plans for automatic stimulus through payments to individuals to support consumer demand (Sahm 2019), fiscal aid to states to prevent cuts in state budgets that slow the economy (Fiedler, Furman, and Powell 2019), infrastructure investments to generate aggregate demand (Haughwout 2019), unemployment insurance reform that would augment what is already an important automatic stabilizer (Chodorow-Reich and Coglianesse 2019), Temporary Assistance for Needy Families (TANF) reforms to increase countercyclicality and subsidize employment in downturns (Dutta-Gupta 2019), and Supplemental Nutrition Assistance Program (SNAP) reforms to boost payments in downturns and ensure work requirements do not limit SNAP’s effectiveness as a stabilizer (Hoynes and Schanzenbach 2019).

Finally, in a recent Hamilton Project proposal, Bernstein (2018) describes the full scope of the problem presented by weak aggregate demand and discusses various complementary approaches to addressing it. See box 3 for Bernstein’s view on how to boost LFPR with strong aggregate demand.

Aggregate demand and business cycle management policies are critical for supporting labor force participation, but they are not the only policies that matter. This is immediately apparent in the large LFPR differences across demographic groups as well as in the different trends of LFPR for those groups over time. For example, participation has fallen for some groups despite a robust economy: Men with low levels of education worked less in 1999 than they did in 1990, even though there was a recession in 1990 while in 1999 the economy had been growing rapidly for a number of years. In addition, aggregate participation was rising throughout the period even as it was falling for men with less education.

In subsequent sections we discuss barriers to participation; stronger aggregate demand would help in nearly every case. Whether the barrier is related to criminal records, disability and poor health, caregiving responsibilities, education and training gaps, or other factors, individuals are more likely

to overcome the barrier if there is strong demand for labor, rising wages, and plentiful jobs. But these barriers can also be addressed directly. The next sections explore a range of barriers to participation and highlight policies that could help lift participation.

BOX 3.

Boosting the Labor Force Participation Rate with Strong Aggregate Demand

By Jared Bernstein

Back in early 2018 my Hamilton Project policy proposal emphasized two facts. First, while the U.S. labor market has run pretty hot over the past few years, since 1980 periods of full employment were more the exception than the rule. Second, persistently high-pressure labor markets are a critical mechanism by which middle- and lower-wage workers get the bargaining clout they need to claim a larger share of the growth they are helping to generate.

The proposal noted another benefit of tight labor markets: They can lead to increased labor supply among the most economically vulnerable workers. In a reversal of Say's Law (supply creates demand), think of this as Say's Rule: Persistent, strong labor demand helps to discover more labor supply. Workers who would not get a second look by prospective employers when unemployment is at 6 percent are much more likely to get a chance with a jobless rate of less than 4 percent.

Two of my key policy recommendations—lower-for-longer monetary policy and sustained fiscal support through a full employment fund—would help to achieve higher labor force participation. Monetary policy that avoids the zero lower bound paired with aggressive stimulus when needed by the Federal Reserve would prolong high-pressure recoveries. Even in tight labor markets, fiscal support would help (a) prepare workers with deep skill deficits for the ramped-up employer demand in their areas, and (b) keep new workers in the job market when demand falters.

This last point is worth underscoring. Once strong labor demand pulls new workers into the job market, our policy goal should be to keep them there, avoiding the last-in, first-out cycle that has often prevailed. A robust full employment fund could help with direct job creation in weak economies (and weak geographical pockets in otherwise strong national economies), and in so doing could potentially turn a cyclical benefit into a lasting, structural one.

Bernstein is Senior Fellow at the Center on Budget and Policy Priorities. He is the author of the Hamilton Project policy proposal "The Importance of Strong Labor Demand" (2018).

Weak Demand for Non-College-Educated Workers

The competitive labor market model (described in appendix A) is at best a very incomplete characterization of how firms and workers actually interact. Nevertheless, it does provide a useful framework for thinking about the wage and employment implications of labor market factors. Generally speaking, factors that limit labor supply will lower participation while raising wages; factors that limit labor demand will lower participation while lowering wages (CEA 2016). Wages have been declining or have remained stagnant for workers with less education over the past 40 years while participation has also decreased.¹² This suggests that demand-limiting forces are more consistent with the long-term decline in labor force participation.¹³

To see this, it is helpful to examine how wages have changed for workers with different levels of educational attainment. Though our focus is labor force participation, to understand the underlying drivers of changes in participation it is necessary to explore both wages and employment. In figures 9a and 9b we show median hourly wages for men and women at every age between 25 and 54—an age–wage profile—by level of educational attainment and by year (1980 and 2018).

Two significant findings are apparent in figures 9a and 9b. First, wage gaps by educational attainment are large and have grown larger over time. Wages for college-educated male workers have increased, while wages for men with a high school diploma or less have fallen, widening the gap between education levels. The gap has also increased for women, though wages stagnated rather than declined for those with a high school diploma or less.¹⁴ Second, the college age–wage profile has steepened while the less than high school age–wage profile (for men) has flattened. One way to interpret these shifts is to note that the returns to age (and labor market experience) have risen for the college educated and fallen for those with a high school diploma or less.¹⁵

Figure 9a paints a picture of rising returns to education and deteriorating labor demand for low-skilled men in particular.¹⁶ To be clear, some of the downward shift in wages for non-college-educated men is due to the changing composition of those groups. That is, the job readiness and productivity of a typical high school–educated worker may have declined over time as college became more common,

drawing away the highest-performing members of the high school–educated group. But this composition effect is likely not the primary driver of falling wages for low-skilled workers relative to high-skilled workers (Carneiro and Lee 2011; Juhn, Kim, and Vella 2005).

Why is labor demand falling for low-skilled workers? This remains an open question, but trade and technology are often considered to be important factors, particularly when it comes to the manufacturing sector. As the share of manufacturing employment has fallen, non-college-educated men have suffered substantial wage and employment losses (Charles, Hurst, and Schwartz 2018). Deterioration in non-college-educated labor demand has often come in the form of mass layoffs and other job displacement, rather than in small wage reductions for a broad group of workers.¹⁷ Job displacement has persistent negative effects on workers' labor market outcomes (Jacobson, LaLonde, and Sullivan 1993) that magnify the effects of declining labor demand.¹⁸

Autor, Dorn, and Hanson (2013) examine the effect of increasing imports from China on local U.S. labor markets. Using initial patterns of employment in those local markets, they distinguish between places that were especially susceptible to competition from Chinese imports and places that were not. Perhaps surprisingly, the authors find that the effects of increased Chinese import competition were not limited to reductions in manufacturing employment, but instead extended to decreases in nonmanufacturing employment. Labor force participation declined substantially for those of working age: For every \$1,000 per worker of additional Chinese imports, the number of labor force nonparticipants rose by 2.1 percent.¹⁹ Eriksson et al. (2019) show that the China shock was disproportionately focused on areas where the adult population had less education. In addition, the labor market impacts of the shock were worse—adjusting for the size of the shock—in areas where the average education level was lower.

Technology can have a sizable impact. If technological change creates jobs for workers with more education and conversely reduces jobs for workers with less education it can produce an important relative shift in demand for different types of workers (Goldin and Katz 2009). Of course, technological

FIGURE 9A.

Median Wage for Men by Age and Educational Attainment, 1980 and 2018

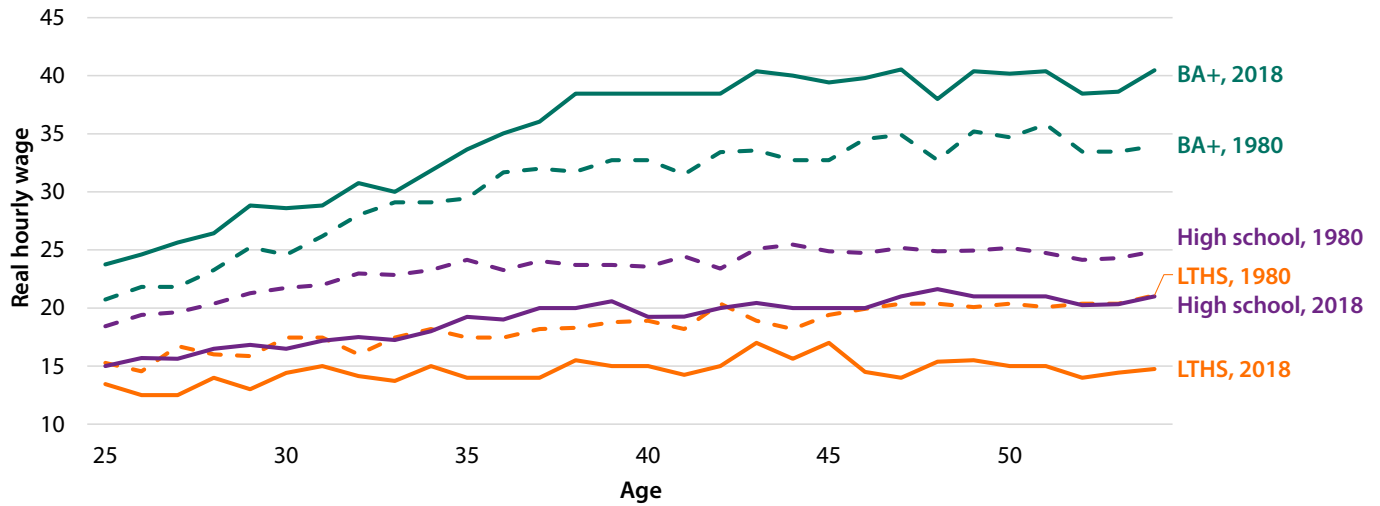
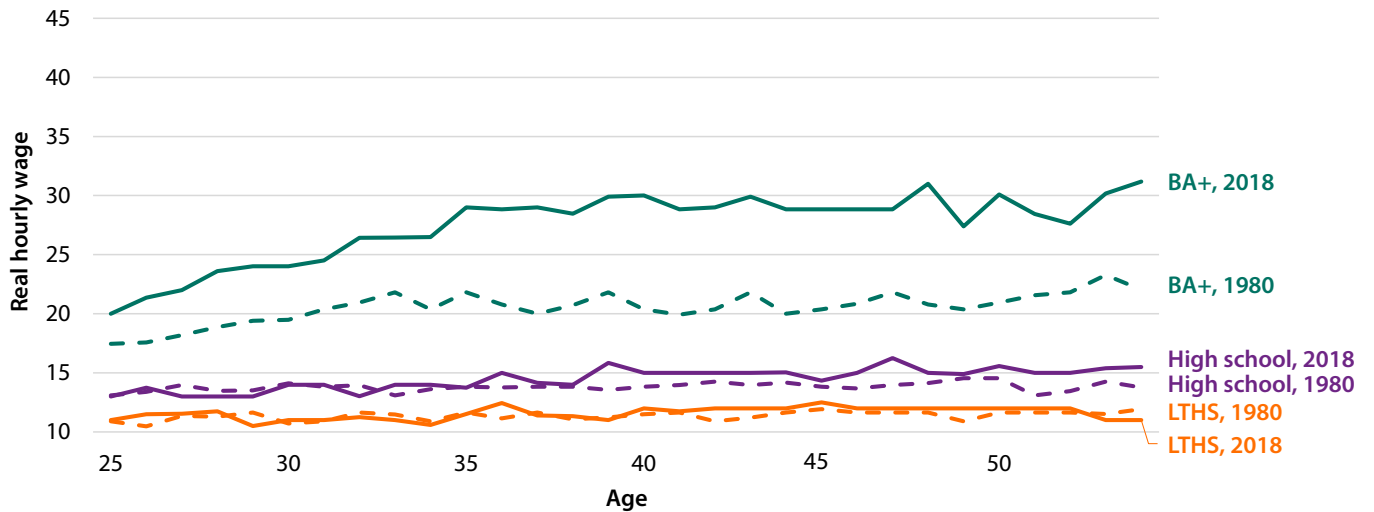


FIGURE 9B.

Median Wage for Women by Age and Educational Attainment, 1980 and 2018



Source: BLS 1980, 2018 (CPS outgoing rotation group); authors' calculations.

Note: Data are adjusted to 2018 dollars using the CPI-U-RS. "BA+" refers to a four-year degree or more. "LTHS" refers to less than high school. "High school" refers to those with a high school degree and no college experience.



shocks can also raise participation and employment: By one estimate the oil and gas production boom in the United States during the period 2005–12 raised national employment by 0.4 percentage points (Feyrer, Mansur, and Sacerdote 2017).

Other changes in the structure of labor markets are also important. Though recent evidence suggests that labor market concentration (i.e., labor market monopsony) has probably not increased over time (Hershbein, Macaluso, and Yeh 2018; Qiu and Sojourner 2019; Rinz 2018), other sources of employer power to set wages may have increased. These sources can include, for example, employer collusion, search costs and labor market frictions, job lock from employer-sponsored benefits, and the proliferation of non-compete agreements—which are now a common feature of the low-skilled labor market (CEA 2016). Employer market power can depress LFPR and wages: Employers who face upward sloping labor supply curves will choose to hire too few workers relative to the number they would hire in a competitive labor market.²⁰

Moreover, impediments to business and labor market dynamism can weaken labor demand as fewer new firms are formed, leading to fewer opportunities for workers (including both college and non-college workers). Two Hamilton Project

analyses describe how markets have become less competitive and dynamic in recent decades, with negative effects on wage growth (Shambaugh, Nunn, and Liu 2018; Shambaugh et al. 2018).

POLICY RESPONSES TO WEAK DEMAND FOR NON-COLLEGE WORKERS

There are two types of policies that can be implemented to raise the returns to work for non-college-educated workers. The first type aims to supplement market wages through the tax and transfer system, including through employment and wage subsidies. The second type aims to raise the wages that employers are willing to pay either by increasing the skills and hence the productivity of workers, or by limiting employer power and making markets more competitive and dynamic.

After-Tax Policies

The Earned Income Tax Credit (EITC) is the largest government program that raises the after-tax return to work for low-wage workers (\$63 billion spent in 2018). The EITC is conditional on work, increases with a taxpayer's earnings up to a set value that depends on their filing status and number of children, and eventually phases out as earnings increase further. Research on EITC expansions has generally indicated

BOX 4.

The Earned Income Tax Credit and Labor Force Participation

By Jesse Rothstein

One factor depressing labor force participation is declining or stagnating real wages throughout large segments of the labor market. Throughout the lower half of the distribution, wages have barely kept up with inflation, and have fallen far short of productivity growth. With low returns to work, many do not find it worthwhile, especially considering the high cost to work some people face (e.g., child care, transportation, etc.).

The EITC is designed to offset this—in other words to make work pay. By supplementing inadequate market wages for low-wage workers, it creates a substantial additional incentive for labor force participation. Extensive evidence shows that it has been successful at increasing participation among low-skilled single mothers, the group targeted by the program.

More could be done here. The maximum EITC has not increased in real terms in nearly a quarter century, and an increase in its value would raise the incentive effect. More important, the EITC could be expanded to be as generous for childless adults as it is for single parents. Each of these changes would increase incentives to work and raise participation.

The EITC isn't the sole solution. It would be much better to increase demand for low-skilled workers' labor, and to increase their market wages. But until that is accomplished, the EITC can help to maintain these workers' labor force participation even when the market is signaling that they are not valued.

Jesse Rothstein is professor of public policy and economics, and director of the Institute for Research on Labor and Employment & the California Policy Lab, University of California, Berkeley. He is an author of the Hamilton Project proposal "Making Work Pay through an Expanded EITC" (2017) with Hillary Hoynes and Krista Ruffini.

that the program raises employment for eligible populations (Eissa and Hoynes 2011; Eissa and Liebman 1996; Meyer and Rosenbaum 2001; though see Kleven 2019 for a contrary view).

Authors writing for The Hamilton Project have cited this and other evidence in their proposals to extend the EITC (Hoynes 2014; Hoynes, Rothstein, and Ruffini 2017; Scholz 2007). One of those authors, Jesse Rothstein, describes his view of the participation effects of the EITC in box 4.

Employment subsidies can be provided through other programs as well. Two examples are provided in Hamilton Project proposals on subsidized employment through the TANF program (Dutta-Gupta 2019) and geographically targeted subsidized jobs (Neumark 2018).

Before-Tax Policies

A wide array of policies can have meaningful effects on demand for workers who do not have a college degree. The most direct policy measure is one that builds skills, whether inside or outside the formal education system. Within the postsecondary education system, authors writing for The Hamilton Project have proposed to improve college access (Dynarski and Scott-Clayton 2007; Hoxby and Turner 2013), quality (Chou, Looney, and Watson 2017; Long 2014), and completion (Deming 2017), with a particular emphasis on barriers confronting disadvantaged students.²¹

Obtaining a college degree is not the only way to build skills. Authors Holzer (2007a, 2011, 2014); Jacobson and LaLonde (2013); and McConnell, Perez-Johnson, and Berk (2014) propose to improve workforce training, while Lerman (2014) specifically focuses on apprenticeships. Other Hamilton Project proposals—Jacobson, LaLonde, and Sullivan (2011); and Lalonde and Sullivan (2010)—aim to support displaced

BOX 5.

Better Skills for Higher Participation

By Harry J. Holzer

One of the reasons for the decline in labor force participation in the United States, especially among men without bachelor's degrees, is that their wages have stagnated over time, especially relative to more-educated workers. In fact, good-paying jobs are still available to American workers without bachelor's degrees, but they usually require some postsecondary education or training that employers seek and value.

Yet many problems plague students who seek such training. Completion rates in community college programs are very low, while some credentials that students receive have little market value. Most community colleges have too little funding to provide guidance and other supports that students need, and face weak incentives to respond to the job market. For-profit colleges consume enormous resources while providing fairly weak education. Employers provide too little work-based learning (such as apprenticeships) and are disconnected from the colleges.

We therefore need to strengthen the various pathways to credentials with labor market value other than the bachelor's degree. Students need more guidance and supports. Community colleges need more public funding but also stronger incentives to respond to labor market needs; and for-profit colleges need strong regulation. Finally, employers need financial and technical assistance to provide work-based learning, and to engage with local education and training institutions so they can deliver the training they value.

In a set of Hamilton Project proposals, I have outlined a number of ways to invest more resources (Holzer 2007b) and improve these pathways (Holzer 2014) in order to strengthen the skills of workers without a bachelor's degree (Holzer 2011) and improve their potential earnings. Doing so could help draw millions back into the labor force and ensure younger workers do not become disconnected from work.

Harry J. Holzer is the John LaFarge Jr. SJ Professor of Public Policy, McCourt School of Public Policy at Georgetown University. He is the author of three Hamilton Project proposals: "Better Workers for Better Jobs: Improving Worker Advancement in the Low-Wage Labor Market" (2007b), "Raising Job Quality and Skills for American Workers: Creating More-Effective Education and Workforce Development Systems in the States" (2011), and "Improving Employment Outcomes for Disadvantaged Students" (2014).

workers in particular, since they suffer from persistently poor labor market outcomes in the wake of job loss.²² Yet other Hamilton Project proposals would strengthen reemployment services (Jacobson 2009; Kugler 2015). In box 5 Harry Holzer discusses his proposals to increase skills and how they could boost labor force participation.

Beyond skill-building, there are a host of ways to boost wage growth and (in some cases) increase demand for low-skilled labor. Many of these are discussed in the Hamilton Project volume *Revitalizing Wage Growth: Policies to Get American Workers a Raise* (Shambaugh and Nunn 2018b). There is no single solution, but policymakers could take actions to improve the bargaining power of workers (Shierholz 2018), protect low-income workers from monopsony and collusion (Krueger and Posner 2018), remove abusive non-competes (Marx 2018), and enhance pay transparency (Harris 2018).

Geographic Gaps in Participation

Labor force participation varies dramatically across the country. Some of this variation is simply a matter of differing proportions of children, working-age adults, and the elderly, but there are strikingly large gaps even for the prime-age working population. Prime-age LFPR is fully 17.7 percentage points higher in the top quintile of counties by participation (with an average of 87.8 percent) than it is in the bottom quintile of counties (with an average of 70.1 percent).

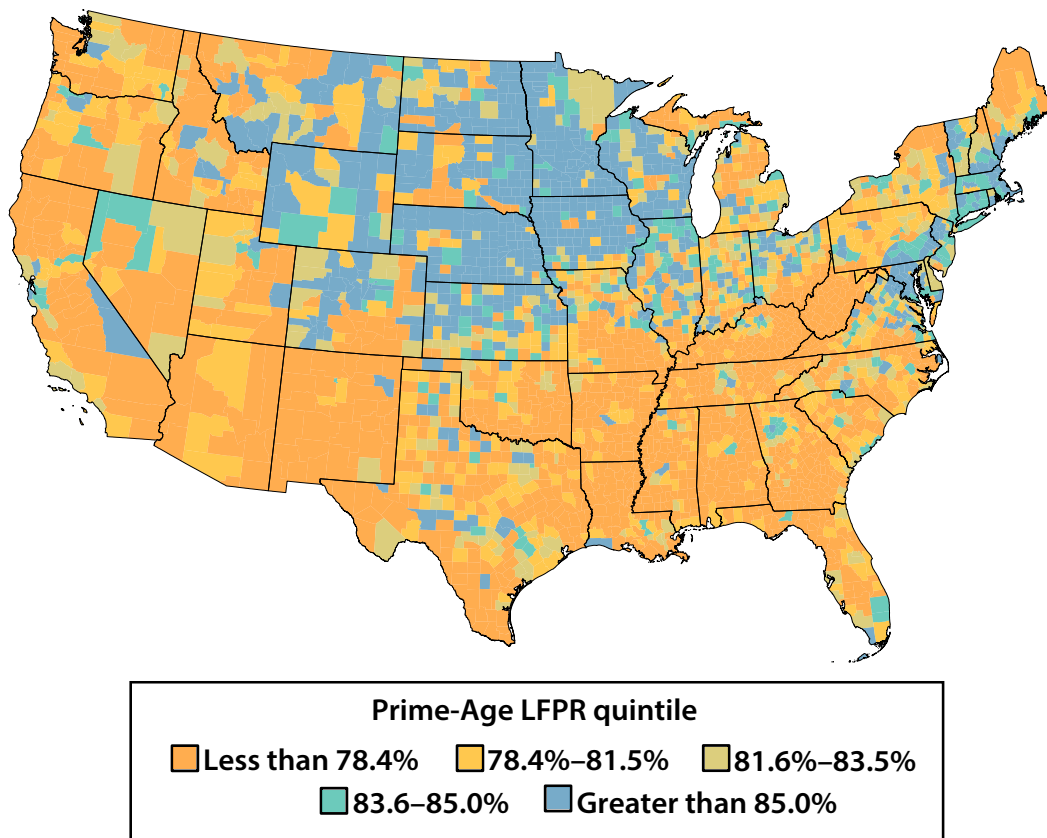
This is large by almost any measure. Consider that national prime-age LFPR fell 4 percentage points from its high in 1999 of 84.6 percent to its low of 80.6 percent in 2015. The difference across counties of 17.7 percentage points is more

than four times that of the decline in LFPR over the past 20 years.

Figure 10 shows these gaps by grouping counties into quintiles of prime-age labor force participation rates. The overall pattern revealed by figure 10 is that of urban areas with higher prime-age labor force participation rates than most rural areas. The Northeast corridor, Silicon Valley, and cities like Atlanta (roughly 84 percent in its surrounding counties) and Nashville (84.8 percent) in low-LFPR regions feature relatively high participation rates. By contrast, nearly the entire state of West Virginia is in the bottom quintile of participation. However, there are notable exceptions to this urban-rural divide. Rural areas in several Midwestern states,

FIGURE 10.

Prime-Age Labor Force Participation Rate by County



Source: U.S. Census Bureau 2013–17 (5-year American Community Survey); authors' calculations.

Note: Data are for 2013–17. Quintiles are population weighted based on prime-age county population.

including Iowa, Minnesota, Nebraska, and North and South Dakota have high prime-age participation rates. And the counties of some large cities are characterized by low prime-age LFPR, including Detroit (77.2 percent) and Philadelphia (77 percent).

Whereas regional convergence once meant faster growth in poorer regions, that process of convergence has largely ceased (Nunn, Parsons, and Shambaugh 2018b). Places with low LFPR in the past continue to have low LFPR today, and the persistence of county LFPR has grown only stronger over time (authors' calculations, not shown).

Labor Force Participation and the Vitality Index

In addition to labor force participation there are a variety of factors that help signify whether a place is struggling or thriving. Using data on these factors, we previously created a county-level measure of economic and social well-being that we call the Vitality Index (Nunn, Parsons, and Shambaugh 2018b).²³

In order to examine the relationship between LFPR and the success or struggle experienced by places, figure 11 shows average county LFPR for the total 16 and older population by quintiles of the Vitality Index in 2000 and 2017.²⁴ It yields two insights: First, counties with higher economic vitality have substantially higher LFPR. In 2017 average LFPR in the most vital counties was 68 percent while average LFPR in the least vital counties was only 55 percent.²⁵ Second, participation has declined in every quintile, for struggling and thriving places alike, and by roughly the same amount. In part, this common decline represents aging trends across the country, but neither

the aging trends nor the portion of the LFPR decline that is not explained by aging appears to be worse in the weaker counties.²⁶

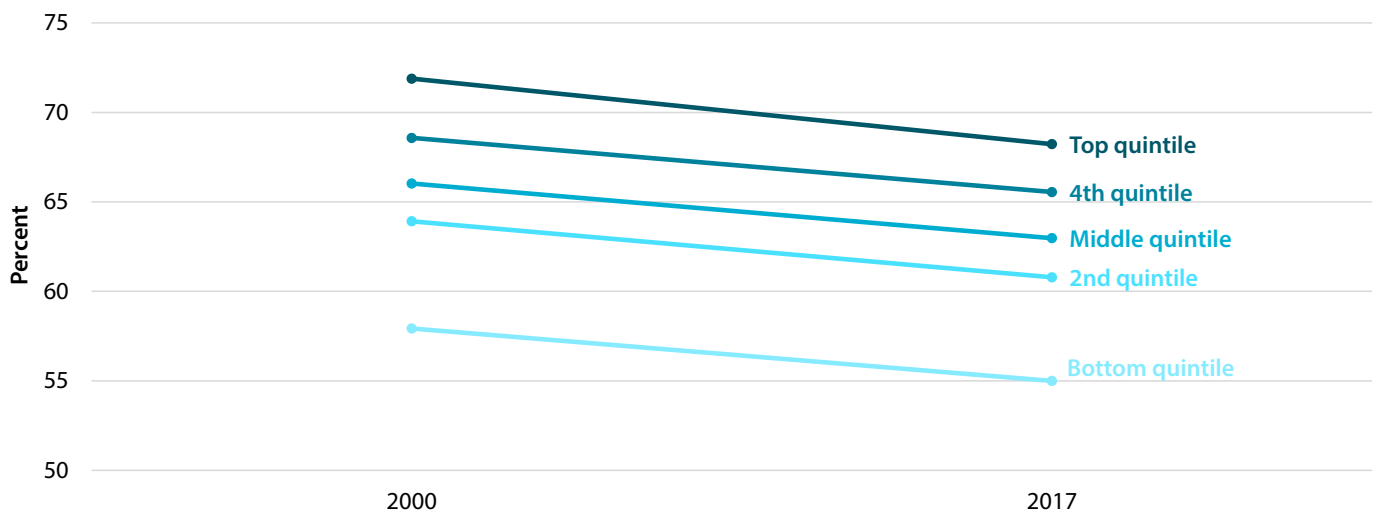
What Drives Geographic Variation in Participation?

What sets high- and low-participation places apart? Many of the impediments to higher LFPR discussed in other sections of this strategy paper are relevant to the geographic gaps in participation presented here. But there are also location-specific forces that drive variation in LFPR.

Some researchers have attributed lower employment and participation to spatial mismatch—too many job openings in thriving places and too few job openings in distressed areas (Ihlanfeldt and Sjoquist 1998). The geographic pockets of innovation and creativity are distant from where many job seekers live (Glaeser and Hausman, forthcoming).

Low-participation places may suffer from weakness in both labor demand and labor supply, though disentangling the two is difficult in this context. Regional economists emphasize the importance of agglomeration economies—the efficiencies in production that accompany dense concentrations of firms and workers. A dense network of firms (e.g., Silicon Valley) can generate and benefit from innovation spillovers that raise productivity (Moretti 2012); dense labor markets provide workers with a range of opportunities and the potential for more-efficient matches (Bleakley and Lin 2012; Wheeler 2008). Some evidence suggests that agglomeration economies have grown stronger for high-skilled workers, while remaining stable or weakening for less-skilled workers (Baum-Snow, Freedman, and Pavan 2018).

FIGURE 11. Labor Force Participation Rate by Vitality Index Quintile, 2000 and 2017



Source: BLS 2000–17 (Local Area Unemployment Statistics; LAUS); Nunn, Parsons, and Shambaugh 2018b; authors' calculations.
 Note: Quintiles are set based on 2000 Vitality Index scores. LFPR data include individuals 16 and older. Vitality quintiles are weighted by 2000 county population. LFPR is weighted by 16+ county population in the given year. See Nunn, Parsons, and Shambaugh (2018b) for a description of how the Vitality Index is constructed.

Less-dense places are excluded from the benefits that come along with agglomeration and may suffer persistently low labor demand as a result. Especially when these places have experienced declines in labor demand, labor force participation will be depressed.

Struggling places often face budgetary pressures that limit their ability to supply valuable local public goods. Firms are attracted to places with high-quality public goods including schools, transportation infrastructure, and broadband (Kim and Orazem 2016), and the inability to invest in public goods can lead to further weakening of labor demand. In addition, more-educated workers have tended to concentrate in places with high levels of amenities (Albouy 2016; Berry and Glaeser 2005).

All of these disparities are made more persistent by changes in migration patterns. Both inter- and intra-state mobility has decreased over time in the United States (Molloy, Smith, and Wozniak 2011). Workers have become less likely to relocate for a new job (Davis and Haltiwanger 2014; Molloy, Smith, and Wozniak 2014), and mobility has become less responsive to changes in labor demand (Dao, Furceri, and Loungani 2017). Moreover, those people who do move tend not to flow from low- to high-vitality counties: Only 13 percent of people leaving the least-successful counties move into the most-successful counties, compared to 56 percent who stay in the bottom two quintiles (Nunn, Parsons, and Shambaugh 2018a, 2018b).

In turn, declining migration to high-vitality places is associated with high housing costs and restrictive land use regulations in many desirable locations. Places with more-restrictive land use regulations, which raise the cost of housing, are less able to respond to labor demand shocks (Saks 2008). Indeed, Ganong and Shoag (2017) argue that high housing prices in booming areas deter low-skilled migration, though as Autor (2019) shows, a declining urban wage premium for less-educated workers may also contribute to their reduced mobility.

It is important to note that regional inequalities did not occur in a vacuum. Spatial inequality is intricately tied in with racial inequality, especially given U.S. policies that reinforced those inequalities by shaping the spatial distribution of the Black population or disparately impacting Black individuals because of their location. Hardy, Logan, and Parman (2018) document the concentration of the Black population and the historic role of racially discriminatory policies in creating current regional inequalities. To the extent that inequities in education, incarceration, and other policies—in addition to employer discrimination—can lower participation for Black Americans, their geographic concentration may generate regional gaps in participation.

POLICY RESPONSES TO GEOGRAPHIC GAPS IN PARTICIPATION

The large, persistent geographic gaps in labor force participation and other key variables point to underlying problems that policy could address. In the modern labor market context of reduced interstate migration and the lack of geographic convergence, there is a role for carefully considered place-based policies.

Place-based policies have a history of mixed success. It is especially important to learn from this history and then to craft evidence-based responses to the problems of struggling places, and in particular to the problem of low labor force participation in those places. A recent Hamilton Project volume, *Place-Based Policies for Shared Economic Growth* (Shambaugh and Nunn 2018a), includes several proposals to help people in struggling places: redirecting intergovernmental grants to places with the most need (Gordon 2018), linking struggling places to the benefits of research universities (Baron, Kantor, and Whalley 2018), and improving local health, poverty, and educational outcomes with insights from development economics (Smith 2018). That volume also includes a proposal by David Neumark to directly increase labor force participation with a geographically targeted jobs subsidy (2018). In box 6, Neumark describes how to raise LFPR with place-based policies.

Experts writing for The Hamilton Project have contributed several other proposals to improve local outcomes, including labor force participation. For example, Timothy Bartik (2010) proposed a suite of policies—including job training driven by local employer demand, subsidized business consulting, and the creation of revitalized Empowerment Zones—to boost employment in distressed areas.

In addition to policies that directly aim to benefit struggling places, there is a role for policies that help people find jobs wherever they are most plentiful. For example, land use restrictions that unnecessarily limit growth in thriving locations are one important impediment to accessing employment opportunity. Daniel Shoag (2019) proposes a suite of land use reforms that would help reduce barriers to accessing high-productivity places. In another mobility-related Hamilton Project proposal, Jens Ludwig and Steven Raphael (2010) propose a national mobility bank that would finance workers' moves to areas with greater economic opportunity, thereby raising labor force participation. Abigail Wozniak (2018) suggests larger Pell grants for poor students from places without a local college or university to improve education and mobility for those from struggling regions. And Matthew Turner (2019) proposes ways to improve transportation policy and thereby enhance the access that low-income workers have to employment opportunity.

BOX 6.

How to Boost Labor Force Participation in Struggling Neighborhoods

By David Neumark

Many places struggle with low labor demand, in part because they are characterized by high levels of concentrated poverty, a workforce with low skills, inadequate and decaying infrastructure, persistent crime, and other ills. The gaps in employment rates across counties and neighborhoods are sizable and suggest substantial room to increase overall labor force participation by lifting up those in communities that have fallen far behind the highest-participation places.

In principle, place-based policies could be an effective way to boost labor demand and therefore labor force participation. But many place-based policies have been unsuccessful, failing to deliver cost-effective benefits to disadvantaged communities. Previous policies have too often failed to generate job growth or poverty reductions, and instead may have done more to benefit landowners and those who move into a community in response to subsidies. However, based on what we have learned from our failures, we can design better policies that avoid these mistakes.

Place-based policies should subsidize employment in places that are struggling, focusing on jobs that build skills valued in the private sector, and that contribute to local public goods that can lay the foundation for more job creation. My proposal—Rebuilding Communities Job Subsidies—would directly increase labor force participation by boosting workers’ careers over the long run through the acquisition of skills that are valued in the private sector. It would provide subsidies to low-income households in areas encompassing four to six Census tracts in which, on average, 40 percent or more of individuals are below the poverty line. At the local level, Rebuilding Communities Job Subsidies would be managed by local nonprofit organizations, in partnership with local employers and community groups, and perhaps larger nonprofits based elsewhere. Together these groups can identify local needs that the subsidized jobs will help address and jobs that provide skills that are more likely to lead to higher-wage private sector jobs. Doing so can improve communities, help those in poverty, and contribute to increasing nationwide labor force participation.

Neumark is Distinguished Professor of Economics at the University of California, Irvine. He is the author of the Hamilton Project policy proposal “Rebuilding Communities Jobs Subsidies” (2018).

Barriers to Participation for Specific Groups

Weakness in labor demand is likely the primary explanation for declining male (and, after 2000, female) prime-age labor force participation. However, labor supply factors have also contributed to the decline in participation of certain groups like middle-aged men, whose participation is affected by disability insurance. More importantly, there are many long-standing barriers to labor force participation that affect LFPR levels of particular groups, if not the *change* over time. Some of these barriers can be removed or ameliorated by public policy, allowing for increased participation and the fuller use of workers’ talents.

We do not closely examine every relevant impediment to participation. One important example is discrimination: Researchers have demonstrated its role in limiting economic opportunity for women and racial minorities. In many cases this is documented using controlled experiments showing lower rates of interviews or call-backs for candidates that were identical except for race or gender.²⁷ Lower participation rates for Black men and for women relative to White men could be influenced by explicit discrimination, among other factors. Policies that attempt to limit discrimination in the

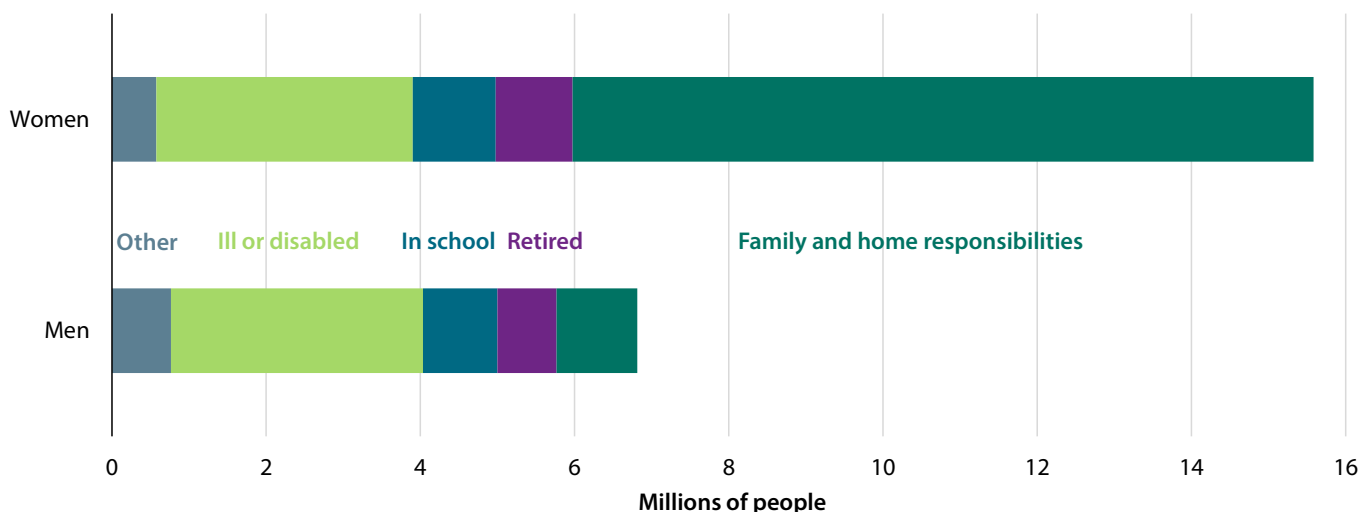
labor market may therefore support labor force participation, though such policies are beyond the scope of this paper.

Another potentially important factor is occupational licensing—a core labor market institution that has extended its reach from roughly 5 percent of workers in the 1950s to 22 percent in 2018—the requirements for which are in many instances more burdensome than is necessary to protect public health and safety (White House 2015; BLS 2019). The lack of comprehensive data on licensing prior to the 2010s makes it difficult to examine its effects on participation trends, but recent evidence suggests large employment-reducing effects of occupational licensing (Blair and Chung 2019). Morris Kleiner (2015) proposes reform of licensing rules in ways that would minimize these effects.

The analysis that follows is organized by the reasons stated by individuals for their labor force nonparticipation.²⁸ Figure 12 shows these reasons separately by gender.²⁹ One striking pattern is that, with the exception of family and home responsibilities (which 9.6 million female nonparticipants cite as their activity outside of the labor force compared to just 1.0 million male nonparticipants), men and women have

FIGURE 12.

Number of Prime-Age Labor Force Nonparticipants by Reason and Gender



Source: BLS 2018 (CPS); authors’ calculations.

Note: Data are for 2018.

broadly similar reasons for labor force nonparticipation. Disability and illness are the most cited reasons for nonparticipation after family and home responsibilities, accounting for roughly equal numbers of male and female nonparticipants (3.3 million each). However, as demonstrated in a previous Hamilton Project analysis (Schanzenbach, Bauer, et al. 2017), the fraction of nonparticipants reporting disability and illness has not increased since 2006.

Caregiving stands out in figure 12 as a quantitatively important determinant of nonparticipation and represents the largest number of individuals that one could plausibly try to shift into the labor force. Of course, many individuals would choose to devote themselves to nonmarket caregiving work regardless of public policy. But some people prefer to work and do not do so because of remediable impediments to their participation. We discuss the tax code, child care, and other challenges below.

Disability, poor health, and the policies that exist to insure against these conditions are also barriers to participation for many people. As with caregivers, some of the disabled would likely not work under any reasonable public policy, but in other cases policy design is important. If disability insurance rules discourage transitions back to work, give employers little incentive to accommodate people with disabilities, or encourage nonparticipation in weak labor markets, changes in those rules could raise LFPR (Maestas, Mullen, and Strand 2013; Autor and Duggan 2010). We discuss these considerations below.

Unfortunately, figure 12 and all such analyses miss an important dimension of the labor force participation problem: incarceration. Incarcerated individuals are not included in the federal government's count of potential labor force participants (i.e., the denominator of LFPR). Below we consider how the treatment of incarceration in the official statistics alters our assessment of labor force participation. We also focus on the challenge of labor force reentry for those with criminal records.

FAMILY CAREGIVING

Caregiving, whether for young children or aging relatives, is often extremely expensive when conducted through the market (Cascio 2017). For some people—in many cases, women with children—this expense is enough to deter labor market participation. Before considering the appropriate policy responses to this fact, we examine the role that caregiving responsibilities plays in the work decisions of many families.

Figure 12 examines the reasons for nonparticipation of all those outside the labor force. However, many of those individuals do not want work and would not be interested in it even if any impediments to their participation were removed.

To focus more narrowly on those who *would* like to work, figure 13 examines the subset of nonparticipants (1.8 million) who report wanting a job. Among those nonparticipants, 34.9 percent of women report family responsibilities as their reason for not searching for a job—more than any other reason. Men also give family responsibilities as a reason (13.3 percent of men), but are more likely than women to report disability and poor health, or an inability to find work, as reasons for not conducting a job search.

These estimates suggest that family responsibilities—much of which are associated with child care—are the single most important contributor to nonparticipation among women who would prefer to work. This is reflected in the fact that female participation varies dramatically by the age of youngest child. In 2018 women with children under the age of three had participation rates that were a full 12.3 percentage points lower than those with children between six and eleven (i.e., women who benefit from availability of public school during the work day). It is especially difficult to secure child care for young children, and doubly so for low-income families when children have not yet reached public school age (Cascio 2017).

The high cost of child care can be a barrier to women who would otherwise prefer to work. In states that have less expensive child care and longer school days, maternal employment is higher (Ruppanner, Moller, and Sayer 2019). Efforts to make child care, pre-kindergarten, and kindergarten more accessible have had positive effects on maternal employment and participation (Cascio and Schanzenbach 2013; Blau and Tekin 2007; Gelbach 2002).³⁰

The need for child care does not affect all women's LFPR in the same way. The more education that mothers have, the more likely they are to participate in the labor force (results not shown). This reflects both means and motive: Women with more education have higher family incomes, allowing them to afford child care; their higher wages also provide more inducement for them to stay in the labor force.

Regardless of age of youngest child, married women have lower participation rates than single women (figure 14). This situation largely reflects the preferences and resources available to married families, but is also a product of the disincentive in the tax code for secondary earners (Kearney and Turner 2013).

Parents of young children, and particularly mothers, face several obstacles to labor force participation. Moving in and out of the labor force around childbirth—or simply staying in the labor force—is complicated by the lack of paid parental leave (Blau and Kahn 2013). Rather than take a temporary spell of absence, working mothers sometimes leave the labor force entirely. Consistent with this logic, short periods of paid leave likely have beneficial LFPR effects.³¹

FIGURE 13.

Reasons that Prime-Age Nonparticipants Who Want a Job Are Not Looking for Work, by Gender



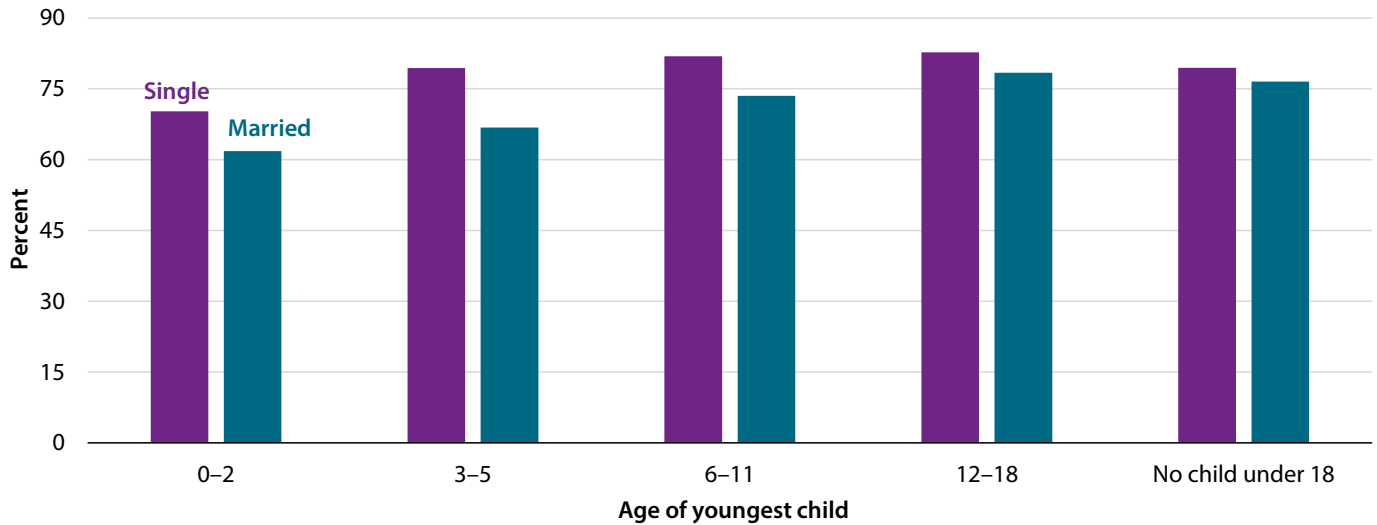
Source: BLS 2018 (CPS); authors' calculations.

Note: Data are for 2018. Figure shows the share of men or women reporting a given reason for nonparticipation. The sample includes those who are not looking for work, have indicated that they want a jobs, and have not looked for work in the past four weeks. "Other" includes "employers think too young/too old," other types of discrimination, and other unspecified reasons.



FIGURE 14.

Prime-Age Female Labor Force Participation Rate by Marital Status and Age of Youngest Child



Source: BLS 2018 (CPS); author's calculations.

Note: Data are for 2018. "Married" is defined by women who have a spouse in the household or not in the household. "Single" is defined as all other women, including separated, divorced, widowed, and never married/single women. "No child under 18" refers to all women who either do not have children, have children (of any age) who do not live in their household, or have children 18 and over who do live in their household.



Policy Responses to Caregiving-Related Participation Barriers

Many jobs in the United States are structured in ways that make it difficult for workers to balance employment and caregiving responsibilities. To remain in the labor force long term, some workers need temporary leave from the labor force after childbirth, intermittent leave for caregiving, or affordable child care.

A number of Hamilton Project proposals address each of these impediments to labor force participation. One proposal (Ruhm 2017) would introduce 12 weeks of mandatory

paid leave, helping mothers to stay in the labor force after childbirth. A complementary proposal (Maestas 2017) would mandate earned sick leave to support labor force participation by those with health problems as well as those with occasional caregiving responsibilities.

In box 7 Elizabeth Cascio describes her proposal to restructure and reallocate child-care subsidies from high- to low-income families and from families with older children to those with younger children. Ziliak (2014) proposes a similar restructuring of child-care subsidies that would benefit the low- to middle-income families that struggle the most with balancing work and child care.

BOX 7.

Public Investments in Child Care

By Elizabeth U. Cascio

The year 2000 marked the end of a sustained rise in the labor force participation of women with young children. Although this change did not coincide with a sharp increase in the price of child care, child-care costs remain salient in a mother's labor supply decisions. Annual out-of-pocket outlays on high-quality full-time infant and toddler care can rival if not exceed the costs of attending a four-year public college or university. Yet, unlike in the higher education case, there has been limited federal effort to make high-quality child care widely affordable. As a result, some mothers who would like to work choose not to; others choose to work but place their young children in care that could compromise their development. These choices generate losses to the economy today and into the future.

Federal child-care policy is not only limited, but also disproportionately benefits populations for which high-quality child care is more affordable. In particular, state governments and school boards implicitly subsidize universal child care through public education, generating large reductions in anticipated child-care costs—or a large implicit child-care subsidy—for children ages five and older. However, federal subsidies and tax credits subsidize the care of school-aged and younger children at the same rate. In addition, whereas federal subsidies are means-tested, federal tax credits are strongly regressive, primarily benefiting higher-income families with positive tax liability where mothers are already highly likely to be working.

As I propose in a 2017 Hamilton Project paper (Cascio 2017), a reallocation of existing federal tax benefits for child care would make higher-quality care more affordable for the families where it is most out of reach. My proposal is to scrap existing federal child-care tax credits in favor of a single refundable child-care tax credit that is more generous to lower-income families and families with children under the age of five. Scrapping those tax credits would reduce the out-of-pocket costs associated with higher-quality care for lower-income families, encouraging mothers with young children to enter the labor force or, if already working, to upgrade child-care providers. On the supply side, quality could be supported by continued investments by all levels of government in direct public provision—particularly in the form of universal pre-kindergarten programs for four-year-olds—and in Quality Rating and Improvement Systems, which disseminate information about quality in the private child-care market.

In short, especially if coupled with modest increases in funding, a reallocation of existing federal child-care benefits would go a long way toward reducing the financial burden of child care, encouraging maternal employment, and supporting child development, particularly in populations where child-care costs are most burdensome and consequential.

Elizabeth U. Cascio is associate professor of economics at Dartmouth College. She authored the Hamilton Project proposal “Public Investments in Child Care” (2017).

When weighing the relative merits of labor force participation and nonparticipation, many married women are discouraged from working by the tax system's bias against secondary earners (Kearney and Turner 2013; LaLumia 2017). In box 8 Melissa Kearney describes how secondary earner taxation could be altered to support married women's labor force participation.

HEALTH, DISABILITY, AND DRUG AND ALCOHOL ABUSE

Illness and disability account for nearly 30 percent of prime-age nonparticipation, according to individuals' survey responses (figure 12). Understanding how health affects labor supply, and how this relationship may have changed over time, is especially important in an aging society such as that in the United States. Given the large share of nonemployment

BOX 8.

Reducing the Tax Penalty on Working Spouses

By Melissa S. Kearney

Prime-age women's labor force participation rose steadily from 1960 to 2000, but has fallen since then and is now lower than it was in 2000. Increasing take-home pay would be one approach to increase female labor force participation. An obvious way to do this for married women would be to reduce the implicit tax penalty that the U.S. federal income tax code imposes on working spouses in dual-earning couples. This reduction could be achieved through a secondary earner tax deduction, along the lines of what I proposed with Lesley Turner in a 2013 Hamilton Project proposal (Kearney and Turner 2013).³² A secondary earner tax deduction would allow some married couples to pay a lower amount in net taxes, while allowing others to receive a larger EITC than under current law. The revenue losses associated with such a deduction could be lessened by phasing out the deduction at higher levels of earnings, as we proposed.

The U.S. federal income tax system has an implicit bias against dual-earner couples. I refer to this feature of the tax code as a "secondary earner tax penalty." This implicit bias comes from the fact that the family-based nature of the U.S. federal income tax code—established in 1948 when one-earner families were the norm—pools the income of married earners and subjects their combined income to a progressive schedule of marginal tax rates. As a result, the income brought in by a second earner in the family will often be taxed at a higher marginal tax rate than the initial earnings of the primary earner, or as compared to the marginal tax rate they would have faced if unmarried. For low-income families, earnings brought in by a second earner often lead to reductions in their family's EITC, or wipe it out entirely. Consistent with the predictions of a standard labor supply model, empirical evidence shows that the EITC increases labor force participation among single mothers, but decreases labor supply among married mothers.

This implicit secondary earner tax penalty is undesirable on both efficiency and equity grounds. First, this element of the tax code discourages spousal labor supply. Some observers view this as a feature, noting that by reducing the take-home pay of spouses, more women will choose to stay at home to raise children and take care of family matters. But for those who view female labor force participation favorably, this aspect of the tax code reflects outdated norms about marriage and employment and should be recognized as a drag on individual and aggregate productivity. Second, the secondary earner penalty reduces the disposable income available to the majority of families in which both spouses do work outside the home, thereby making it harder for them to materially support their families. Third, to the extent that many women in heterosexual marriages are, even today, secondary earners in their family—either because their earnings are lower than their husband's or because they are the ones more likely to scale back their hours of market work to take care of family responsibilities—this feature of the tax code is tantamount to a tax on working married women. It should thus be of primary interest to those committed to the cause of equal (take-home) pay for women.

Melissa S. Kearney is the Neil Moskowitz Professor of Economics at the University of Maryland. Kearney served as director of The Hamilton Project from 2013 to 2015. She is a coauthor of the Hamilton Project proposal "Giving Secondary Earners a Tax Break: A Proposal to Help Low- and Middle-Income Families," (2013) with Lesley Turner.

explained by poor health and disability, it is clear that policies to improve peoples' health or make disability less of a barrier to employment have an opportunity to meaningfully lift the participation rate. But the evidence also indicates that public policy *responses* to poor health and disability can depress labor force participation, making it necessary to understand these relationships as well.

In a previous Hamilton Project analysis, Schanzenbach, Mumford, et al. (2016) showed that the self-reported health of the prime-age population has declined while the health of older Americans has improved.³³ Some of the decline in young and middle-age health was associated with drug and alcohol abuse. As described in work by Anne Case and Angus Deaton (2015), mortality rates for 45- to 54-year-old White non-Hispanics have increased markedly in the past 20 years, with the increase driven by overdoses, alcohol-related liver diseases, and suicide.³⁴

Recent research has also suggested a connection between poor health, associated use of medication, and LFPR. Prime-age male nonparticipants are far more likely than either the employed or the unemployed to report serious pain; nearly one third of prime-age male nonparticipants report using prescription pain medication during the previous day (Krueger 2017).

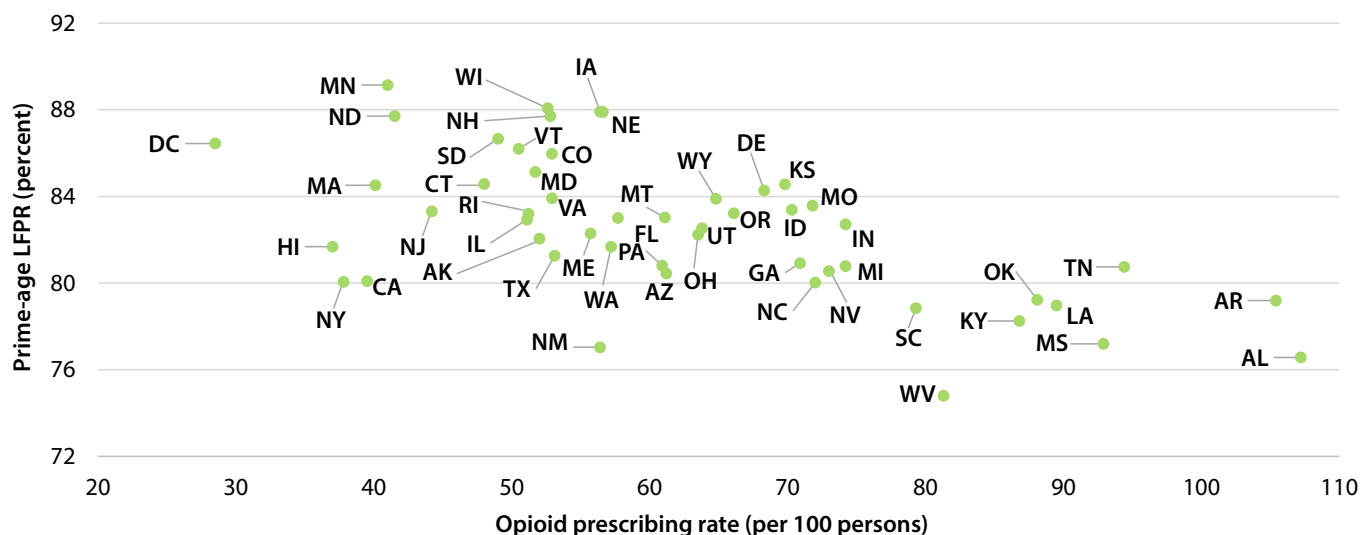
In figure 15 we show the correlation between a location's rate of opioid prescriptions and its prime-age participation rate. There is an apparent strong negative correlation: Alabama, the

state with the highest prescription rate with 107 prescriptions per 100 people, has a prime-age LFPR of 76.6 percent, while the District of Columbia has the lowest prescription rate (28.5 prescriptions per 100 people) and a prime-age LFPR of 86.4 percent.

It is difficult to know whether poor health (and substance use or abuse) is truly connected to nonparticipation—there could be causation from opioid prescription rates to participation if individuals become addicted and are unable to remain in the labor force. The connection also could run in the other direction, given that being out of the labor market could generate depression, addiction, or other health problems. In addition, the correlation could be due to an unknown third factor (Case and Deaton 2017)—perhaps related to the health status of a place—that leads to both higher prescription rates and lower employment.

Harris et al. (2019) examine variation in the presence of very-high-volume opioid prescribers in a given county, finding a link between more prescriptions and lower participation. Other researchers are more skeptical about the link: Currie, Jin, and Schnell (2019) estimate that an increase in opioid prescription rates slightly raised employment rates for women and had no effect on rates for men. These differences in findings could be accounted for by the different data and methodological approaches: Currie, Jin, and Schnell examine variation in average county prescription rates rather than high-volume prescribing, which may have unique effects.³⁵

FIGURE 15.
Prime-Age Labor Force Participation Rate and Opioid Prescription Rate by State



Source: BLS 2017 (CPS); Centers for Disease Control and Prevention 2017; authors' calculations.
Note: Data are for 2017. The opioid prescribing rate is the retail opioid prescriptions dispensed per 100 persons per year.

Disability Insurance

Poor health and disability have direct effects on labor force participation, but public policies constructed to aid the ill and disabled are also important. Over the past 60 years, the rate of disability payments receipt has increased from roughly 0.1 percent to 3.5 percent of the population aged 16 and older.³⁶ Rising disability insurance receipt is associated with lower LFPR for certain groups, most notably high school–educated 45- to 54-year-old men (Binder and Bound 2019). As access to disability insurance has increased and low-skilled wages have stagnated, a rising fraction of the prime-age population has exited the labor market and entered the disability rolls (Autor and Duggan 2003; Maestas, Mullen, and Strand 2013).³⁷

Much of the increase in disability receipt is associated with serious health problems—including mental health conditions—for which it was initially more difficult to access disability insurance. Moreover, the LFPR impact of disability policy does not occur solely through changes in workers' behaviors: It also affects employers' decisions and fails to provide incentives for efficient disability accommodations

(Autor and Duggan 2010). Most comprehensive analyses of LFPR such as Abraham and Kearney (forthcoming) and Montes (2018) suggest that disability insurance has played only a small role in the decline of labor force participation. That said, given the large number of individuals on disability who are out of the labor force, there is an opportunity to restructure disability insurance programs in a way that would better encourage labor force participation.

Policy Responses to Health-Related Barriers to Participation

Public policy could attempt to address health- and disability-related nonparticipation in at least two ways. First, it could aim to improve health and thereby make it easier for people to work.³⁸ Policies to substantially improve health outcomes are beyond the scope of this paper. One possible example is that efforts to diminish substance abuse could, in addition to their other benefits, pay off in the form of higher LFPR. Schanzenbach, Nunn, and Bauer (2016) discuss some of the options for reducing substance abuse. The evidence on opioid prescription rates discussed above suggests that limiting high-volume opioid prescribers may have benefits.

BOX 9.

Disability Insurance Reform and Labor Force Participation

By Mark Duggan

In 2010 David Autor and I released a proposal for reforming the Social Security Disability Insurance Program (SSDI) to increase employment and economic well-being among individuals with disabilities. At that time, SSDI enrollment had been steadily increasing since the mid-1980s, ultimately peaking at 5.0 percent of adults aged 25 to 64 years old in 2014. The primary drivers of this growth were the aging of the population, an increase in the fraction of women insured for the program, and an expansion of the program's medical eligibility criteria. Previous research demonstrated that this final change led to a significant increase in SSDI enrollment and a reduction in employment among individuals with disabilities.

The key feature of our reform was to add a front end to the SSDI program that would provide support services to workers with disabilities so they could remain employed, while simultaneously providing financial incentives to employers to accommodate workers with disabilities. Employers would be required to purchase short-term disability coverage from private insurers for this front-end coverage. To the extent that these changes would allow some individuals with disabilities who might have otherwise applied for SSDI to remain employed, these changes would raise labor force participation. Individuals with severe disabilities could bypass this front-end system and apply directly to SSDI.

During the past several years, the fraction of adults receiving SSDI has been steadily declining. The likely drivers of this change are the steadily improving economy and an increase in the stringency of medical screening by administrative law judges. Despite this decline, there are still good reasons to modernize the program given the potential benefits to workers with disabilities and given SSDI's incentive effects.

Mark Duggan is professor of business and public policy at the Wharton School, University of Pennsylvania. With David Autor he coauthored the Hamilton Project proposal "Supporting Work: A Proposal for Modernizing the U.S. Disability Insurance System" (2010).

Second, disability insurance policy can be adjusted so that employers have the right incentives to accommodate workers with disabilities and workers have the right incentives to participate in the labor force to the extent of their capabilities. Liebman and Smalligan (2013) propose early interventions that help workers remain in the labor force rather than enter the disability rolls. Autor and Duggan (2010) focus on employer accommodation for workers with disabilities, proposing that employers be required to purchase private disability insurance. Through experience rating of this insurance—which would entail higher premiums when more employees claim private disability benefits—employers would have an incentive to structure jobs so as to keep disabled workers on the payroll. In box 9 Mark Duggan describes the LFPR role of disability insurance and how it can be reformed to support labor force participation.

INCARCERATION AND COLLATERAL CONSEQUENCES

In 2016, 2.2 million people were incarcerated and 4.5 million were under community supervision (including parole and probation), totaling some 6.6 million people living under correctional supervision (Bureau of Justice Statistics [BJS] 2018). It is more difficult to calculate the number of people who have been incarcerated at some point in the past, but estimates of the working-age population with a felony conviction range from 12 million to 14 million (Schmitt and Warner 2011). The magnitude of these figures—and the negative consequences of incarceration for labor force outcomes—make them an important part of the overall LFPR picture (CBO 2016).

The labor force participation rate is defined as the labor force (employed and unemployed) divided by the civilian noninstitutional population, which excludes those who are incarcerated. In a direct sense this definition overstates the share of the population that is working: incorporating the incarcerated population (a departure from the standard definition of the potential labor force) lowers prime-age male LFPR in 2017 from 88.6 percent to 87.2 percent (authors' calculations, not shown). Moreover, because incarcerated individuals have lower levels of educational attainment and pre-incarceration labor force attachment, removing them from the statistical picture raises the reported rate even relative to a counterfactual in which inmates were not incarcerated and therefore able to work (CEA 2016).

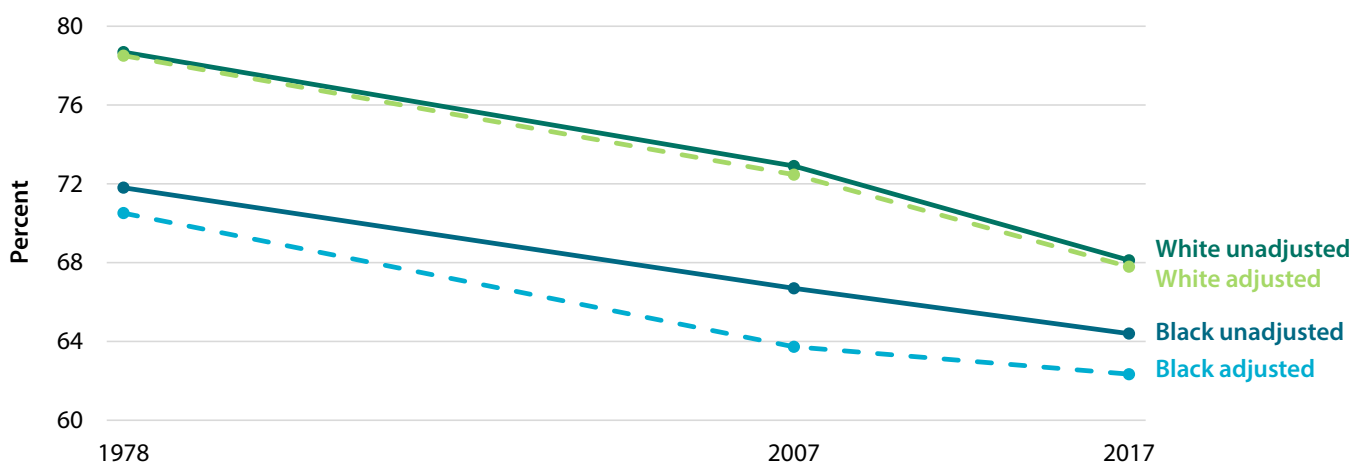
Incarceration matters much more for male LFPR than for female LFPR, and more for Black men than for White men: While Black Americans represented 12 percent of the U.S. population in 2017, they made up one third of the U.S. prison population (Gramlich 2019).³⁹

Figure 16 shows the direct effect of including the incarcerated on Black and White men's labor force participation rates (overall, not prime-age). Even at the peak of U.S. correctional supervision in 2007, White male LFPR was little affected, while Black male LFPR was substantially reduced (from 66.7 percent to 63.7 percent in 2007).

For those who are not currently incarcerated but who have had interactions with the criminal justice system, labor market outcomes (including labor force participation) are

FIGURE 16.

Male Labor Force Participation Rate Adjusted for Incarceration by Race, 1978, 2007, and 2017



Source: BJS 1980, 2009, 2019; BLS 1978, 2007, 2017 (CPS); authors' calculations.

Note: Conventional labor force participation rates exclude the incarcerated population. Adjusted participation rates include the incarcerated population in the total population; in other words, incarcerated individuals are included in the denominator of LFPR. In 1978 the white and black categories include Hispanics; in 2007 and 2017 the white and black categories exclude Hispanics. Data for labor force and population include individuals 16 and older. Data on incarceration are the estimated number of sentenced prisoners under state or federal jurisdiction for all ages. However, there is a relatively small number of juvenile prisoners.

often impaired. Individuals who have been incarcerated have fewer employment opportunities and lower rates of employment after release (Holzer 2007a; Mueller-Smith 2015). Of course, those who interact with the criminal justice system often have preexisting disadvantages that limit their labor market options. But interactions with the criminal justice system can cause labor market deficits: Forgone human capital accumulation, hiring restrictions, higher likelihood of recidivism, and discrimination are some of the primary channels through which these deficits occur.

In survey data most firms expressed at least some reservations about hiring applicants with criminal records—a larger share than objected to hiring workers with lengthy spells of unemployment, former welfare recipients, or those from other stigmatized groups (Holzer 2007a). Aversion to hiring applicants with criminal records results in much lower rates of interview call-backs and job offers for Black applicants than for White applicants (Pager 2003; Pager and Quillian 2005; Pager, Bonikowski, and Western 2009). Moreover, it is often illegal for those with criminal records to enter occupations that require licensure, even when the nature of the criminal conviction does not suggest a specific risk to the public (Rodriguez and Avery 2016; Schanzenbach, Nunn, et al. 2016).

Holzer (2007a) shows that when individuals withdraw from the labor market because of a spell of incarceration, they lose valuable job networks that can provide them with important information on potential jobs. Focusing on pretrial detention, other researchers find that, for similar individuals, pretrial detention due to being assigned a stricter judge leads to

increased recidivism and worse labor market outcomes, with the largest effect appearing to come from those who are detained and plead guilty, thus acquiring a criminal record at higher rates than those who are released prior to trial (Dobbie, Goldin, and Yang 2018; Dobbie and Yang 2019).

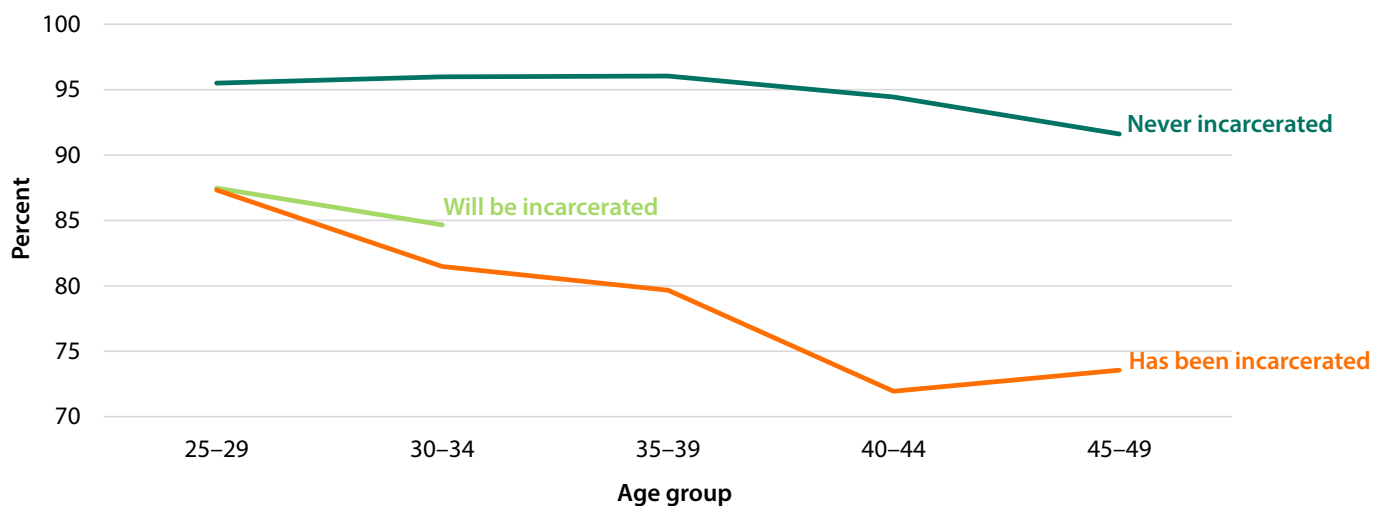
Figure 17 shows the participation rates of individuals who have been incarcerated, those who will become incarcerated at some point in their future, and those who are never incarcerated during the ages we consider. Both those who have been incarcerated and those who will be incarcerated have lower labor force participation than those never incarcerated, especially for older individuals.⁴⁰ The fact that those who have been incarcerated and those who will later in life be incarcerated have similar LFPR at younger ages highlights the possibility that an apparent incarceration effect can include the actual impact of incarceration as well as other barriers to work related to individual characteristics, racial discrimination, or challenges in specific communities. Still, as described above, some research shows clear negative impacts of incarceration on labor outcomes.

Policy Responses to the Collateral Consequences of Incarceration

Reducing the punitiveness of the U.S. criminal justice system would increase LFPR through two channels. Most directly, a reduction in the incarcerated fraction of Americans would increase labor supply. In a 2014 Hamilton Project proposal, Raphael and Stoll (2014) explain how this could be accomplished without impairing public safety. A key aspect of their proposal is to align the incentives of county governments (which make decisions that affect incarceration duration) and

FIGURE 17.

Male Labor Force Participation Rates by Incarceration History and Age Group



Source: BLS 1980–2006 (NLSY79); authors' calculations.

Notes: Data include only men age 25–49 and exclude anyone who is currently incarcerated. We exclude points on the “Will be incarcerated” series where the sample size is insufficient to provide a precise estimate. Data are pooled across NLSY waves collected from 1980 through 2006.

state governments (which pay for incarceration). In another Hamilton Project proposal, Hawken and Kleiman (2016) develop a concrete, gradual pathway from prison to freedom that would allow for earlier release.⁴¹ In a recent Hamilton Project proposal, Dobbie and Yang (2019) propose to reduce the extent of pretrial detention, thereby avoiding labor market and other costs associated with unnecessary incarceration.

At least as important is to improve labor market outcomes for those who have been released (or for those with convictions who were not previously incarcerated). In a 2016 Hamilton Project proposal, Anne Piehl (2016) discussed reforms that would mitigate labor market disadvantages for those with criminal records; Piehl describes her proposed approach in box 10.⁴²

BOX 10.

Criminal Justice Reform and Labor Force Participation

By Anne Morrison Piehl

The consequences of interactions with the criminal justice system last far beyond any sentence. Responding to rising crime rates from the 1960s through the early 1990s—and overreacting to that increase—has led to a large number of people with criminal histories. As time passes following a conviction, these criminal records become uninformative about the likelihood of future offending and therefore only serve to continually punish former offenders. Criminal records can result in bans from public programs such as housing and create barriers to employment, either directly through licensing restrictions or indirectly through employer behavior. Now that public safety in the country has dramatically improved since the 1990s, policymakers should look to reduce the social cost of criminal enforcement by limiting the persistent negative effects of criminal records. This will have benefits both for the individuals concerned and the broader labor market.

In my 2016 policy memo for The Hamilton Project, I outline several principles for reducing the negative spillovers from this earlier era. First, as states reduce punitiveness of their criminal justice regimes either by recalibrating sentences or by decriminalizing certain behavior, they can automatically extend those new definitions to past offenders. Policymakers should avoid piling on restrictions for qualifying for these reforms (e.g., having no unpaid fines) because doing so reduces both the fairness and the efficiency of this approach, sometimes undermining it entirely.

Second, states should place a time limit on information about past convictions. The relevance of past criminal convictions to employment or public benefits programs decreases over time. Placing a time limit on how information about past convictions can be shared—varying with the criminal conduct and purpose of inquiry—would help people with criminal records reenter the formal labor market and raise their labor force participation. Research provides guidance on how to do this in a way that balances the needs of potential employers to minimize hiring risk against the social benefits of encouraging past offenders to connect to the legitimate labor market. This in turn would connect past offenders to the tax system, social security, and other government obligations and safety net protections.

Together these policy principles will make a step toward reducing the harmful collateral consequences of the crime and incarceration bulge of the late 20th century while helping to concentrate punishment on those with greater culpability and risk.

Anne Morrison Piehl is professor of economics and former director of the Program in Criminal Justice at Rutgers University and a research associate at the National Bureau of Economic Research. She is the author of the Hamilton Project Memo “Putting Time Limits on the Punitiveness of the Criminal Justice System” (2016).

Conclusion

High labor force participation is a crucial part of achieving broadly shared economic growth. A high participation rate helps generate more output and resources, and wide participation implies more people sharing in the benefits of that output. Beyond that, people derive meaning and satisfaction from work, and ensuring that individuals have an opportunity to participate in the labor market and find quality employment is an essential role for public policy.

For the last 20 years, labor force participation has been trending down in the United States. A large portion of this decline is due to the aging of the population, with a higher share of adults over age 65 and retirees. At the same time, a portion of the decline can be traced to reduced likelihood of working for prime-age individuals (25–54), especially men, as well as youth (aged 16–24) who are increasingly pursuing education and not working while in school.

After a sizable drop in participation during the Great Recession, the long recovery has seen some rebound in

participation. Macroeconomic policy that aims to keep the economy closer to potential output and that can help limit or avoid recessions can be a meaningful part of ensuring broad labor force participation.

Looking within broad trends in labor force participation, there are sizable gaps in participation across groups in the United States. Women are less likely to be in the market labor force than men. Black men are less likely to be in the labor force than White men. Adults who did not graduate from high school participate at much lower rates (and work for much less pay). Those who are caregivers in their family, those facing health and disability challenges, and those with a history of incarceration are all far less likely to work than other adults. Policies aimed at either lifting returns to work for lower-wage workers or improving skills and training may help those with less education to achieve better labor market outcomes. In addition, policies to help overcome the specific challenges facing caregivers, the disabled, and the formerly incarcerated can all be an important part of sustaining the recent trend of rising participation.

Appendix A. Understanding Labor Force Participation through Labor Supply and Demand

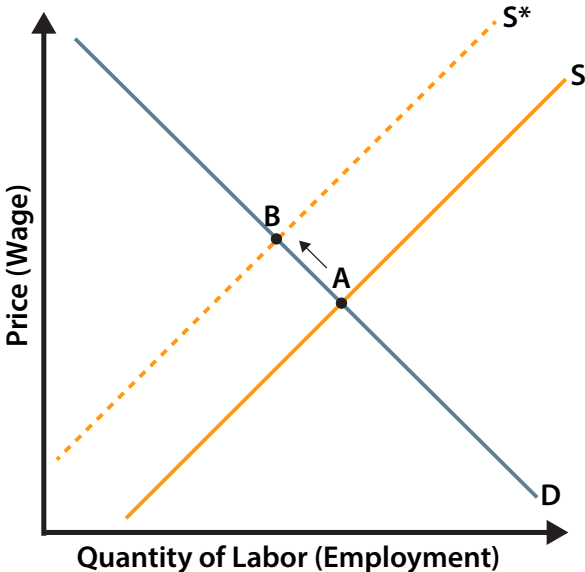
The basic model of the labor market is concerned with the interaction of labor supply (the willingness of individuals to work at a given wage) and labor demand (the willingness of employers to hire at a given wage).⁴³ Wages and employment (or participation, which for this purpose is similar to employment) are set where labor supply and labor demand curves meet.

Differences in participation across demographic groups or changes in labor force participation can be explained by shifts in the supply curve, the demand curve, or both. If the supply curve shifts inward due, for example, to an increase in the desire to retire early, as depicted in figure 1a, wages will rise while the quantity of labor falls. If instead the demand curve shifts inward, as depicted in figure 1b, because of, for example, a cyclical economic downturn, the quantity of labor falls and the wages also fall.

Similarly, one can compare the labor markets experienced by two groups of workers at the same point in time. If the labor *demand* curve for workers with a high school diploma is lower than the demand curve for workers with a college degree, wages and participation for college-educated workers will be higher, all else equal. If instead the labor *supply* curve is lower for high school-educated workers, participation will be higher for college-educated workers but wages will be lower.

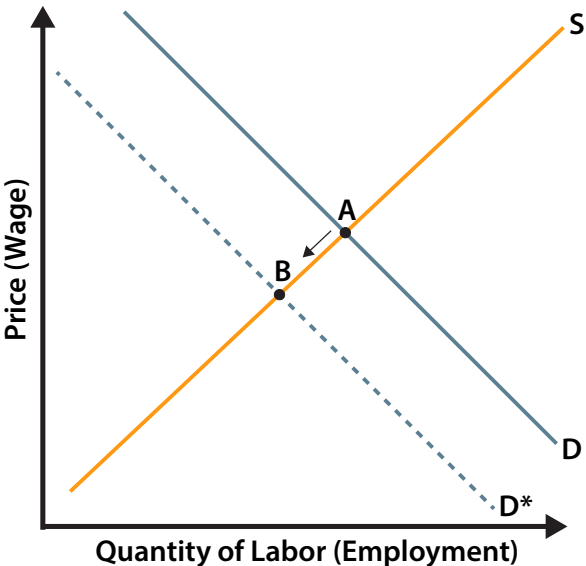
Demand-side factors are likely the cause of the decline over the past few decades in LFPR for less-educated workers, who experienced declining wages relative to more-educated workers (Abraham and Kearney, forthcoming; CEA 2016). However, both demand- and supply-side factors can help explain the large disparities in participation for specific groups.

APPENDIX FIGURE A.1A.
Shift in Labor Supply Curve



Source: CEA 2016.

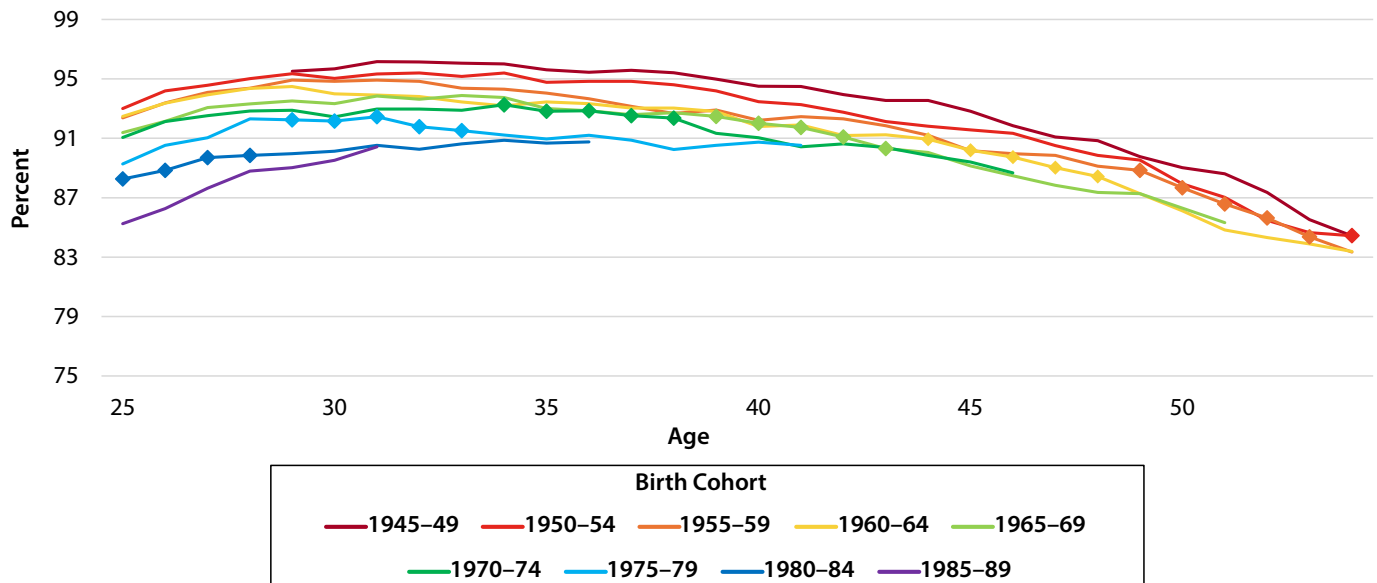
APPENDIX FIGURE A.1B.
Shift in Labor Demand Curve



Appendix B. Additional Figures

APPENDIX FIGURE B.1

Male Labor Force Participation Rate by Age, Birth Cohort, and Great Recession Status



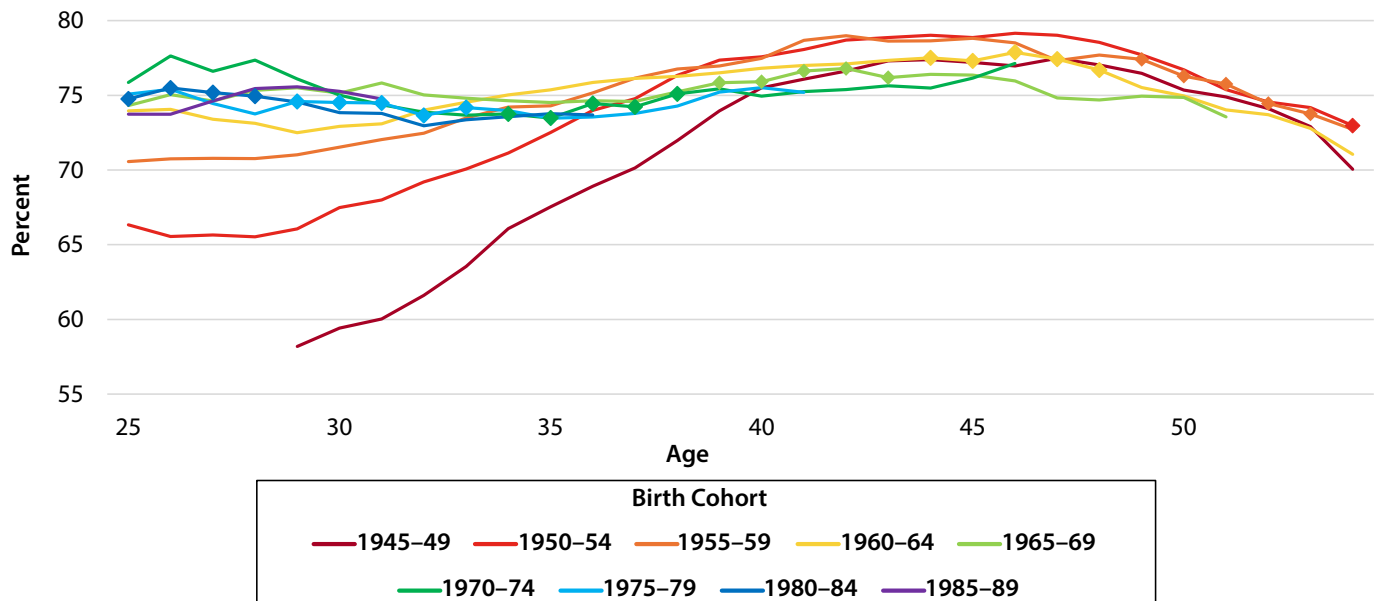
Source: BLS 1976–2018 (CPS); authors' calculations.

Note: Markers note the ages at which the individuals in the cohort were in 2008. The figure shows the average of available cohorts when we lack data for some single-year cohorts within a five-year group. However, we do not display estimates when data for fewer than three single-year cohorts are available. Data extend through 2018.



APPENDIX FIGURE B.2

Female Labor Force Participation Rate by Age, Birth Cohort, and Great Recession Status



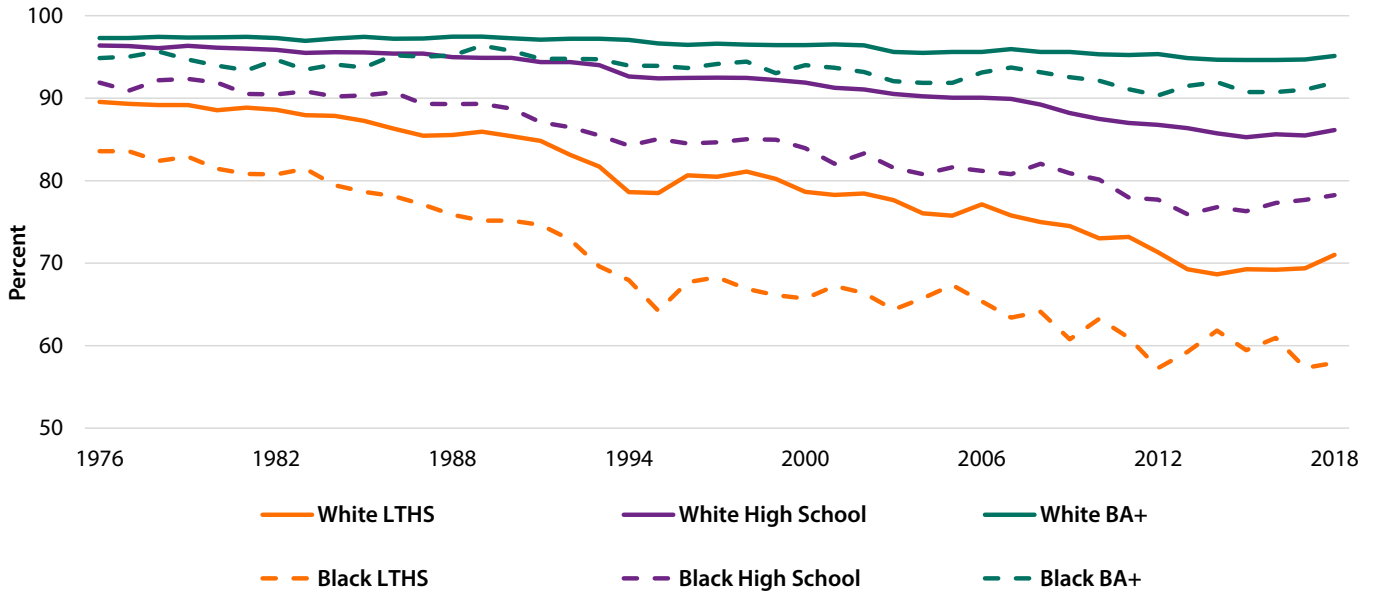
Source: BLS 1976–2018 (CPS); authors' calculations.

Note: Markers note the ages at which the individuals in the cohort were in 2008. The figure shows the average of available cohorts when we lack data for some single-year cohorts within a five-year group. However, we do not display estimates when data for fewer than three single-year cohorts are available. Data extend through 2018.



APPENDIX FIGURE B.3

Male Prime-age Labor Force Participation Rate by Race and Educational Attainment, 1976–2018



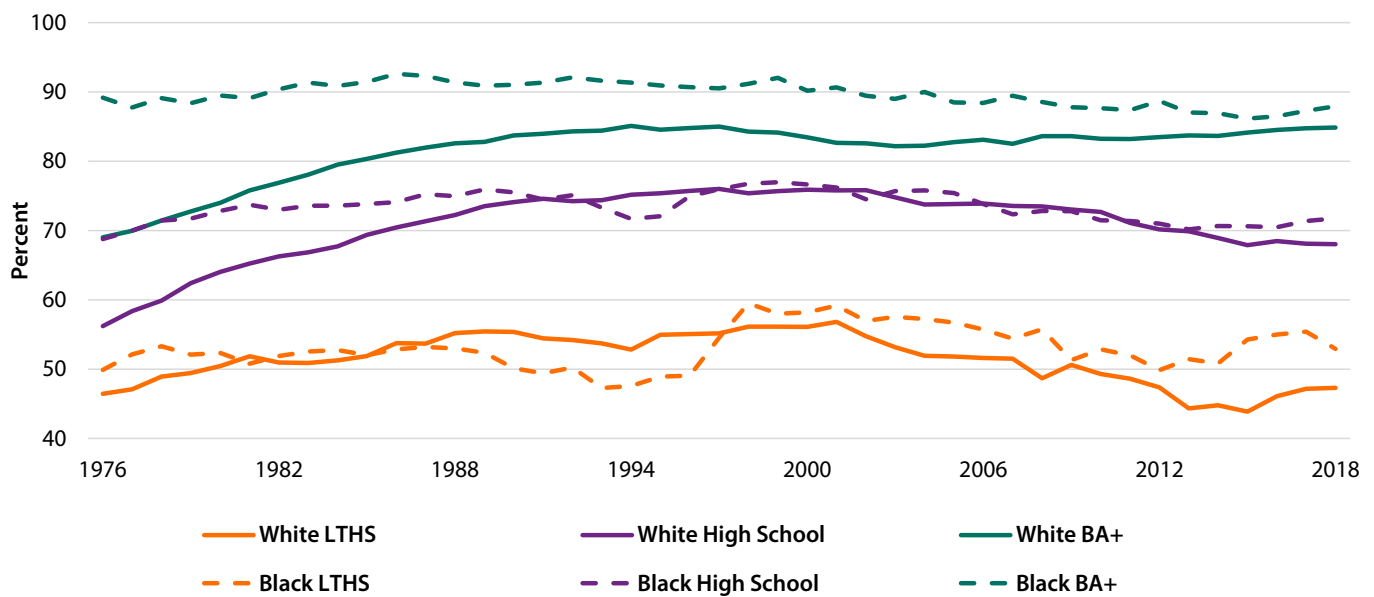
Source: BLS 1976–2018 (CPS) and authors’ calculations.

Note: “BA+” refers to a four-year degree or more. “LTHS” refers to less than high school. “White” is the white non-Hispanic population and “Black” is the non-Hispanic black population.



APPENDIX FIGURE B.4

Female Prime-age Labor Force Participation Rate by Race and Educational Attainment, 1976–2018



Source: BLS 1976–2018 (CPS) and authors’ calculations.

Note: “BA+” refers to a four-year degree or more. “LTHS” refers to less than high school. “White” is the white non-Hispanic population and “Black” is the non-Hispanic black population.



Endnotes

1. At age 30 participation rates have fallen from about 95 percent for those born between 1945 and 1949 to about 90 percent for those born between 1985 and 1989. At age 50 participation rates have fallen from about 89 percent in the oldest cohorts pictured to 86 percent for the youngest cohorts pictured.
2. As recently as 2015, half of the overall decline was attributable to within-group declines, but the rebound in participation since then for a number of age groups has meant that the bulk of the cumulative decline can now be explained by aging.
3. Other approaches to adjusting for population aging—or consideration of different time periods—can produce somewhat different results, but all are consistent with the predominant role of population aging in accounting for the post-2000 decline in LFPR. Eppsteiner, Furman, and Powell (2019) hold group-specific LFPRs fixed (rather than population shares, as in figure 4) and find that nearly all of the decline in LFPR from 2017:Q2 to 2018:Q4 was due to population aging. Examining employment rates rather than LFPR, Abraham and Kearney (forthcoming) implement a different decomposition and find that population aging contributes 2.6 percentage points to the 3.8 percentage point decline in the employment rate from 1999 to 2018. As discussed below, they also note, though, that some groups (16–54) saw sizable within group declines that explain a sizable portion of the overall decline, but this is offset by within group increases for older workers.
4. Figure 5 also shows clearly that women’s participation growth from 2000 to 2018 has outperformed men in each age group. Within age groups, changes in women’s participation have been less of a drag on LFPR than those of men, suggesting the broad cultural shifts seen during prior decades continue, if obscured somewhat by the aging of the population.
5. Age clearly matters: Less than 10 percent of those over age 75 are in the labor force, as compared to 83 percent of those in their early 40s. It seems clear that a population with far more people over 80 or under 8 will have a lower participation rate than one with many people between 25 and 54. Nevertheless, it also seems clear that older individuals are better able to work today than they were in the past. If age-specific trends were incorporated into an LFPR analysis, allowing for the better ability to work at older ages, calculated age-adjusted LFPR would fall from 2000–18 by more than a simple demographic adjustment suggests.
6. The composition of educational groups has shifted over time as more people have entered the ranks of the college educated. See Carneiro and Lee (2011) and Juhn, Kim and Vella (2005).
7. Researchers often emphasize the role of downward wage rigidity (Altonji and Devereux 2000; Hall 1975; Lebow, Saks, and Wilson 1999). However, recent evidence suggests that nominal wage cuts are observed relatively frequently, if not as commonly as would be expected in an economy with perfectly flexible wages (Elsby and Solon 2019; Kurmann and McEntarfer 2019). Even if wages do in some cases decline, if they exhibit some degree of downward rigidity, the effect of labor demand shocks on unemployment or nonparticipation will be larger than would otherwise be the case.
8. However, it is important to note that flows into unemployment from nonparticipation actually rise during recessions, whereas flows from nonparticipation to employment fall sharply (Elsby, Hobijn, and Sahin 2015).
9. It is worth noting that CBO revises its measure of potential labor force participation over time depending on what happens to actual labor force participation rates. For example, in its January 2007 release of the budget outlook (CBO 2007), CBO found that actual LFPR was below potential LFPR. Today, potential LFPR for 2006 has been revised down such that actual LFPR exceeded potential (CBO 2019b). More dramatically, CBO’s 2007 projection of potential LFPR for 2017 was just over 64 percent, whereas today CBO states that potential LFPR in 2017 was 63.2 percent.
10. Note that CBO judges participation rates to be at their potential in early 2019. If older individuals are able to continue to increase participation beyond their current LFPR, or if more of the fall in prime-age participation can be reversed, it is possible that participation rates could rise and that potential rates for 2017 or 2018 could be revised back up toward where they were estimated to be in 2007.
11. See Daly (2019) for a discussion of monetary policymaking challenges in 2019.
12. As is standard in the research literature, we will sometimes use the (sometimes inapt) term “low-skilled” to describe those with less education. In many cases, low-wage workers with lower levels of education have substantial skills and perform difficult tasks.
13. Early work on demand-based explanations can be found in Juhn, Murphy, and Topel (1991, 2002); summaries and current assessments are provided by Abraham and Kearney (forthcoming), Binder and Bound (2019), and CEA (2016). Binder and Bound, though, point out that the relatively smooth decline in LFPR is not consistent with wage patterns in that wages have not fallen smoothly over time.
14. Not seen in this snapshot is the fact that the wage premium for college graduates compared with high school graduates leveled off in the early 2000s, remaining at a high level but not growing higher. See, for example, Shambaugh et al. (2017).
15. This analysis is similar to that of Elsby and Shapiro (2012), which provides a detailed analysis of falling returns to labor market experience and concludes that this decline, along with slowing productivity growth, can account for the fall in male employment between 1968 and 2006.
16. See Goldin and Katz (2009) for analysis of shifts in the supply of and demand for educated workers. Bound and Holzer (2000) also provide a detailed account of the importance of local demand shifts for less-educated workers in particular.
17. Binder and Bound (2019) point out that this helps to reconcile the consensus view that uncompensated labor supply elasticities are close to zero—meaning that wage reductions should have little effect on participation—with the view that labor demand shifts are the primary explanation of falling non-college-educated LFPR.
18. One factor that is likely not an important contributor to falling demand for low-skilled labor is immigration (Blau and Mackie 2017; Abraham and Kearney, forthcoming).
19. See also Acemoglu et al. (2016) for analysis of employment losses from Chinese import competition.
20. The ways that low-wage work is often structured—for example, poor conditions of work such as on-demand scheduling—can make employment inaccessible for some people, including those with care responsibilities. These conditions are to some extent a function of weak labor demand, because poor work conditions are typically not immutable characteristics of jobs.
21. There is a large body of Hamilton Project analyses and proposals related to human capital investments that are not cited here; for a summary see Shambaugh, Bauer, and Breitwieser (2018).
22. A Hamilton Project proposal by Abraham and Houseman (2014) would encourage more and better use of work-sharing, which would limit disemployment in the wake of recessions.
23. Our Vitality Index is a composite measure that includes median household income, poverty rates, life expectancy, prime-age employment to population ratio, housing vacancy rates, and the unemployment rate. The index is constructed to identify the common county-level factor that underlies these variables, making it easier to analyze the ways in which struggling and flourishing places tend to differ. More information can be found in the accompanying online technical appendix to Nunn, Parsons, and Shambaugh (2018b).

24. Because of data limitations, we cannot reliably estimate the county-level LFPR for prime-age workers in a way that is comparable across long stretches of time. Hence we use overall, not prime-age, LFPR.
25. The prime-age employment to population ratio—closely related to LFPR—is one of the measures that makes up the Vitality Index. However, the statistical procedure we use to construct the index gives the employment to population ratio a low weight.
26. This parallel long-run decline in LFPR occurred even though job growth has not been evenly spread across the country in recent years. Low-vitality rural counties experienced substantially slower employment growth during the recovery from the Great Recession (Liu et al. 2019).
27. See, for example, Bertrand and Mullainathan (2004) and Goldin and Rouse (2000). Racial disparities can be amplified by the stratification of labor market networks, as discussed in Hellerstein, McInerney, and Neumark (2011).
28. Estimates provided in figure 12 are derived from responses to the monthly CPS survey. These estimates are therefore slightly different than those produced by other researchers using the Annual Social and Economic Supplement of the CPS.
29. In another Hamilton Project analysis (Bauer, Schanzenbach, and Shambaugh 2018) and in Coglianesi (2018) it is evident that many current nonparticipants have recently left the labor force. Nonparticipation is often a temporary state; as described in box 1, it can be difficult to capture in a static analysis of the kind implemented in figure 12.
30. International evidence suggests that more-accessible child care can increase maternal labor force participation (Del Boca 2002; Givord and Marbot 2015; Lefebvre and Merrigan 2008; Nollenberger and Rodríguez-Planas 2015; Olivetti and Petrongolo 2017). See Havnes and Mogstad (2011) for an opposing view.
31. See the evidence described in Ruhm (2017).
32. Modified versions of our proposal were included in legislation proposed by Senator Murray in 2014 (Kearney and Turner 2014), as well as in the Obama Administration's 2016 budget (Lundeen 2015). The presidential campaign of Governor Jeb Bush released a tax proposal in 2016 that would have allowed secondary earners to file separately (Greenberg 2016).
33. Using biomarkers of physiological stress, that analysis also indicated that stress has over time become more negatively associated with income; in other words, low-income individuals now experience more physiological stress relative to high-income individuals than was the case in the late 1970s.
34. However, mortality rates for non-whites and for older non-Hispanic whites continue to decline in recent decades.
35. Other differences include Currie, Jin, and Schnell's (2019) use of county fixed effects and their use of Quarterly Census of Employment and Wages data rather than Local Area Unemployment Statistics data (which implies a focus on place of employment rather than place of residence).
36. While this rate is for the total 16 and older population, the rate is even higher for the prime-age population (Autor and Duggan 2010). However, it should be noted that disability insurance take-up has fallen slightly in recent years (Montes 2018).
37. Veterans' disability benefits also have large negative effects on LFPR (Autor and Duggan 2007; Autor, Duggan, Greenberg, and Lyle 2016; Autor, Duggan, and Lyle 2011; Coile, Duggan, and Guo 2015).
38. Some recent efforts to improve health and health care access do not appear to have changed employment (Baicker et al. 2014; Leung and Mas 2016;), but some do show clear beneficial effects on outcomes like bankruptcy, mental health, and self-reported health status (Finkelstein et al. 2012).
39. Rates of incarceration are often disproportionate to rates of criminal activity. For example, in spite of using and selling illicit drugs at roughly similar rates, Black drug-related incarceration is 6.5 times that of white drug-related incarceration (Schanzenbach et al. 2016).
40. The figure shows only the participation rates of those who will later become incarcerated up through age 30–34 since the sample size for "incarcerated in the future" becomes insufficient above that age.
41. Western (2008) provides a related Hamilton Project proposal for facilitating labor market reentry.
42. In another Hamilton Project proposal, Doleac (2016) describes aspects of the challenges confronting policymakers who would like to support labor market reentry, developing guidelines for effective policies.
43. This discussion draws heavily on a similar passage in CEA (2016).

References

- Aaronson, Stephanie R., Mary C. Daly, William Wascher, and David W. Wilcox. 2019. "Okun Revisited: Who Benefits Most from a Strong Economy?" Conference draft. *Brookings Papers on Economic Activity* (Spring).
- Aaronson, Stephanie, Bruce Fallick, Andrew Figura, Jonathan Pingle, , and William Wascher. 2006. "The Recent Decline in the Labor Force Participation Rate and Its Implications for Potential Labor Supply." *Brookings Papers on Economic Activity* (Spring): 69–154.
- Aaronson, Stephanie, Felix Galbis-Reig, Tomaz Cajner, Christopher Smith, Bruce Fallick, and William Wascher. 2014. "Labor Force Participation: Recent Developments and Future Prospects." *Brookings Papers on Economic Activity* (Fall): 197–275.
- Abraham, Katharine, and Susan Houseman. 2014. "Encouraging Work Sharing to Reduce Unemployment." In *Policies to Address Poverty in America*, edited by Melissa S. Kearney and Benjamin H. Harris, 129–36. Washington, DC: The Hamilton Project.
- Abraham, Katharine G., and Melissa S. Kearney. Forthcoming. "Explaining the Decline in the U.S. Employment-to-Population Ratio: A Review of the Evidence." *Journal of Economic Literature*.
- Acemoglu, Daron, David Autor, David Dorn, Gordon H. Hanson, and Brendan Price. 2016. "Import Competition and the Great US Employment Sag of the 2000s." *Journal of Labor Economics* 34 (S1, 2): S141–S198.
- Ahn, Hie Joo, and James D. Hamilton 2019. "Measuring Labor-Force Participation and the Incidence and Duration of Unemployment." Finance and Economics Discussion Series 2019-035. Washington, DC: Board of Governors of the Federal Reserve System.
- Albouy, David. 2016. "What Are Cities Worth? Land Rents, Local Productivity, and the Total Value of Amenities." *The Review of Economics and Statistics* 98 (3): 477–87.
- Altonji, J., and P. Devereux. 2000. "The Extent and Consequences of Downward Nominal Wage Rigidity." *Research in Labor Economics* 19: 383–431.
- Autor, David H. 2019. "Work of the Past, Work of the Future." *American Economic Association Papers and Proceedings* 109: 1–32.
- Autor, David H., and Mark G. Duggan. 2003. "The Rise in the Disability Rolls and the Decline in Unemployment." *Quarterly Journal of Economics* 118 (1): 157–205.
- . 2007. "Distinguishing Income from Substitution Effects in Disability Insurance." *American Economic Review* 97 (2): 119–24.
- . 2010. "Supporting Work: A Proposal for Modernizing the U.S. Disability Insurance System." Policy Proposal, jointly released the Center for American Progress and The Hamilton Project, Brookings Institution, Washington, DC.
- Autor, David H., David Dorn, and Gordon H. Hanson. 2013. "The China Syndrome: Local Labor Market Effects of Import Competition in the United States." *American Economic Review* 103 (6): 2121–68.
- Autor, David H., Mark Duggan, Kyle Greenberg, and David S. Lyle. 2016. "The Impact of Disability Benefits on Labor Supply: Evidence from the VA's Disability Compensation Program." *American Economic Journal: Applied Economics* 8 (3): 31–68.
- Autor, David H., Mark Duggan, and David S. Lyle. 2011. "Battle Scars? The Puzzling Decline in Employment and Rise in Disability Receipt among Vietnam Era Veterans." *American Economic Review* 101 (3): 339–44.
- Baicker, Katherine, Amy Finkelstein, Jae Song, and Sarah Taubman. 2014. "The Impact of Medicaid on Labor Market Activity and Program Participation: Evidence from the Oregon Health Insurance Experiment." *American Economic Review* 104 (5): 322–28.
- Baily, Martin N., and Benjamin H. Harris. 2019. *Working Longer Policies: Framing the Issues*. Washington, DC: Brookings Institution.
- Baron, E. Jason, Shawn Kantor, and Alexander Whalley. 2018. "Extending the Reach of Research Universities: A Proposal for Productivity Growth in Lagging Communities." In *Place-Based Policies for Shared Economic Growth*, edited by Jay Shambaugh and Ryan Nunn, 157–84. Washington, DC: The Hamilton Project.
- Bartik, Timothy J. 2010. "Bringing Jobs to People: How Federal Policy Can Target Job Creation for Economically Distressed Areas." Policy Proposal, The Hamilton Project, Brookings Institution, Washington, DC.
- Bauer, Lauren, Emily Moss, Ryan Nunn, and Jay Shambaugh. 2019. "Employment, Education and the Time Use of American Youth." Economic Analysis, The Hamilton Project, Brookings Institution, Washington, DC.
- Bauer, Lauren, Patrick Liu, and Jay Shambaugh. 2019, April 4. "Is the Continued Rise of Older Americans in the Workforce Necessary for Future Growth?" Blog. The Hamilton Project, Brookings Institution, Washington, DC.
- Bauer, Lauren, Diane Whitmore Schanzenbach, and Jay Shambaugh. 2018. "Work Requirements and Safety Net Programs." Economic Analysis, The Hamilton Project, Brookings Institution, Washington, DC.

- Baum-Snow, Nathaniel, Matthew Freedman, and Ronni Pavan. 2018. "Why Has Urban Inequality Increased?" *American Economic Journal: Applied Economics* 10 (4): 1–42.
- Bernstein, Jared. 2018. "The Importance of Strong Labor Demand." Policy Proposal 2018-03. In *Revitalizing Wage Growth: Policies to Get American Workers a Raise*, edited by Jay Shambaugh and Ryan Nunn, 93–116. Washington, DC: The Hamilton Project.
- Berry, Christopher R., and Edward L. Glaser. 2005. "The Divergence of Human Capital Levels across Cities." *Papers in Regional Science* 84 (3): 407–44.
- Bertrand, Marianne, and Sendhil Mullainathan. 2004. "Are Emily and Greg More Employable Than Lakisha and Jamal? A Field Experiment on Labor Market Discrimination." *American Economic Review* 94 (4): 991–1013.
- Binder, Ariel J., and John Bound. 2019. "The Declining Labor Market Prospects of Less-Educated Men." Working Paper 25577, National Bureau of Economic Research, Cambridge, MA.
- Bitler, Marianne, and Hilary Hoynes. 2016. "Strengthening Temporary Assistance for Needy Families." Policy Proposal 2016-04, The Hamilton Project, Brookings Institution, Washington, DC.
- Black, Sandra E., Diane Whitmore Schanzenbach, and Audrey Breitwieser. 2017. "The Recent Decline in Women's Labor Force Participation." In *The 51%: Driving Growth through Women's Economic Participation*, edited by Diane Whitmore Schanzenbach and Ryan Nunn, 5–18. Washington, DC: The Hamilton Project.
- Blair, Peter Q., and Bobby W. Chung. 2019. "How Much of Barrier to Entry Is Occupational Licensing?" *British Journal of Industrial Relations*. Special Issue, Early view online: May 8, 2019.
- Blau, Francine D., and Lawrence M. Kahn. 2013. "Female Labor Supply: Why Is the United States Falling Behind?" *American Economic Review* 103 (3): 251–56.
- Blau, Francine D., and Christopher Mackie, eds. 2017. *The Economic and Fiscal Consequences of Immigration*. Washington, DC: The National Academies Press.
- Blau, David, and Erdal Tekin. 2007. "The Determinants and Consequences of Child Care Subsidies for Single Mothers in the USA." *Journal of Population Economics* 20 (4): 719–41.
- Bleakley, Hoyt, and Jeffrey Lin. 2012. "Thick-Market Effects and Churning in the Labor Market: Evidence from U.S. cities." *Journal of Urban Economics* 72 (2–3): 87–103.
- Blinder, Alan S. 2016. "Fiscal Policy Reconsidered." Policy Proposal 2016-05, The Hamilton Project, Brookings Institution, Washington, DC.
- Bound, John, and Harry J. Holzer. 2000. "Demand Shifts, Population Adjustments, and Labor Market Outcomes during the 1980s." *Journal of Labor Economics* 18 (1): 20–54.
- Boushey, Heather, Ryan Nunn, Jimmy O'Donnell, and Jay Shambaugh. 2019. "The Damage Done by Recessions and How to Respond." Framing Paper. In *Recession Ready: Fiscal Policies to Stabilize the American Economy*, edited by Heather Boushey, Ryan Nunn, and Jay Shambaugh, 11–48. Washington, DC: The Hamilton Project and the Washington Center for Equitable Growth.
- Boushey, Heather, Ryan Nunn, and Jay Shambaugh, eds. 2019. *Recession Ready: Fiscal Policies to Stabilize the American Economy*. Washington, DC: The Hamilton Project and the Washington Center for Equitable Growth.
- Bureau of Labor Statistics (BLS). 1948–2019. "The Employment Situation." Bureau of Labor Statistics, U.S. Department of Labor, Washington, DC. Retrieved from Haver Analytics.
- . 1976–2018. "Current Population Survey (CPS)." Bureau of Labor Statistics, U.S. Department of Labor, Washington, DC. Retrieved from IPUMS-CPS, University of Minnesota, Minneapolis, MN.
- . 1980–2018. "Current Population Survey, Outgoing Rotation Group." Bureau of Labor Statistics, U.S. Department of Labor, Washington, DC. Retrieved from the Center for Economic and Policy Research, Washington, DC.
- . 1980–2006. "National Longitudinal Survey of Youth 1979 (NLSY79)." Bureau of Labor Statistics, U.S. Department of Labor, Washington, DC.
- . 2000–17. "Local Area Unemployment Statistics (LAUS)." Bureau of Labor Statistics, U.S. Department of Labor, Washington, DC.
- . 2019. "Table 49. Certification and Licensing Status of the Civilian Noninstitutional Population 16 Years and Over by Employment Status, 2018 Annual Averages." Labor Force Statistics from the Current Population Survey. Last Modified January 18, 2019. Bureau of Labor Statistics, U.S. Department of Labor, Washington, DC.
- Bureau of Justice Statistics (BJS). 1980. "Prisoners in State and Federal Institutions on December 31, 1978; Table 7." National Prisoner Statistics Bulletin No. SD-NPS-PSF-6. Bureau of Justice Statistics, U.S. Department of Justice, Washington, DC.

- . 2009. “Prisoners in 2007; Appendix Table 7.” Bulletin NCJ 224280. Bureau of Justice Statistics, U.S. Department of Justice, Washington, DC.
- . 2018. “Correctional Populations in the United States, 2016.” April, NCJ 251211. Bureau of Justice Statistics, U.S. Department of Justice, Washington, DC.
- . 2019. “Prisoners in 2017; Table 8.” Bulletin NCJ 252156. Bureau of Justice Statistics, U.S. Department of Justice, Washington, DC.
- Carneiro, Pedro, and Sokbae Lee. 2011. “Trends in Quality-Adjusted Skill Premia in the United States, 1960–2000.” *American Economic Review* 101 (6): 2309–49.
- Cascio, Elizabeth U. 2017. “Public Investments in Child Care.” Policy Proposal 2017-14. In *The 51%: Driving Growth through Women’s Economic Participation*, edited by Diane Whitmore Schanzenbach and Ryan Nunn, 123–42. Washington, DC: The Hamilton Project.
- Cascio, Elizabeth U., and Diane Whitmore Schanzenbach. 2013. “The Impacts of Expanding Access to High-Quality Preschool Education.” *Brookings Papers on Economic Activity* (Fall): 127–92.
- Case, Anne, and Angus Deaton. 2015. “Rising Morbidity and Mortality in Midlife among White Non-Hispanic Americans in the 21st Century.” *Proceedings of the National Academy of Sciences of the United States of America* 112 (49): 15078–83.
- . 2017. “Mortality and Morbidity in the 21st Century.” *Brookings Papers on Economic Activity* (Spring): 397–476.
- Centers for Disease Control and Prevention. 2017. “U.S. State Prescribing Rates, 2017.” Centers for Disease Control and Prevention, Atlanta, GA.
- Charles, Kerwin, Erik Hurst, and Mariel Schwartz. 2018. “The Transformation of Manufacturing and the Decline in U.S. Employment.” Working Paper 24468, National Bureau of Economic Research, Cambridge, MA.
- Chodorow-Reich, Gabriel, and John Coglianesi. 2019. “Unemployment Insurance and Macroeconomic Stabilization.” Policy proposal 2019-07. In *Recession Ready: Fiscal Policies to Stabilize the American Economy*, edited by Heather Boushey, Ryan Nunn, and Jay Shambaugh, 153–80. Washington, DC: The Hamilton Project and the Washington Center for Equitable Growth.
- Chou, Tiffany, Adam Looney, and Tara Watson. 2017. “A Risk Sharing Proposal for Student Loans.” Policy Proposal 2017-04. The Hamilton Project, Brookings Institution, Washington, DC.
- Coglianesi, John. 2018. “The Rise of In-and-Outs: Declining Labor Force Participation of Prime Age Men.” Job Market Paper, Harvard University, Cambridge, MA.
- Coile, Courtney, Mark Duggan, and Audrey Guo. 2015. “Veterans’ Labor Force Participation: What Role Does the VA’s Disability Compensation Program Play?” *American Economic Review* 105 (5): 131–36.
- Congressional Budget Office (CBO). 2007. *The Budget and Economic Outlook: Fiscal Years 2008 to 2017*. Washington, DC: Congressional Budget Office.
- . 2016. *Trends in Joblessness and Incarceration of Young Men*. Washington, DC: Congressional Budget Office.
- . 2018. *Factors Affecting the Labor Force Participation of People Ages 25 to 54*. Washington, DC: Congressional Budget Office.
- . 2019a. “Budget and Economic Data, Historical Data and Economic Projections, Aug 2019.” Congressional Budget Office, Washington, DC. Accessed September 9, 2019, at <https://www.cbo.gov/about/products/budget-economic-data#11>.
- . 2019b. *An Update to the Budget and Economic Outlook: 2019 to 2029*. Washington, DC: Congressional Budget Office.
- Council of Economic Advisers (CEA). 2014. “The Labor Force Participation Rate Since 2007: Causes and Policy Implications.” Council of Economic Advisers, White House, Washington, DC.
- . 2016. “The Long-Term Decline in Prime-Age Male Labor Force Participation.” Council of Economic Advisers, White House, Washington, DC.
- Currie, Janet, Jonas Y. Jin, and Molly Schnell. 2019. “U.S. Employment and Opioids: Is There a Connection?” Working Paper 24440, National Bureau of Economic Research, Cambridge, MA.
- Daly, Mary C. 2019. “A New Balancing Act: Monetary Policy Tradeoffs in a Changing World.” FRBSF Economic Letter 2019-23. Federal Reserve Bank of San Francisco, San Francisco, CA.
- Dao, Mai, Davide Furceri, and Prakash Loungani. 2017. “Regional Labor Market Adjustment in the United States: Trend and Cycle.” *Review of Economics and Statistics* 99 (2): 243–57.
- Davis, Steven J., and John Haltiwanger. 2014. “Labor Market Fluidity and Economic Performance.” Working Paper 20479, National Bureau of Economic Research, Cambridge, MA.
- Del Boca, Daniela. 2002. “The effect of child care and part time opportunities on participation and fertility decisions in Italy.” *Journal of Population Economics* 15 (3): 549–73.

- Deming, David J. 2017. "Increasing College Completion with a Federal Higher Education Matching Grant." Policy Proposal 2017-03, The Hamilton Project, Brookings Institution, Washington, DC.
- Dobbie, Will, Jacob Goldin, and Crystal S. Yang. 2018. "The Effects of Pretrial Detention on Conviction, Future Crime, and Employment: Evidence from Randomly Assigned Judges." *American Economic Review* 108 (2): 201–40.
- Dobbie, Will, and Crystal S. Yang. 2019. "Proposals for Improving the U.S. Pretrial System." Policy Proposal 2019-05, The Hamilton Project, Brookings Institution, Washington, DC.
- Doleac, Jennifer. 2016. "Increasing Employment for Individuals with Criminal Records." Policy Proposal 2016-02, The Hamilton Project, Brookings Institution, Washington, DC.
- Dutta-Gupta, Indivar. 2019. "Improving TANF's Countercyclicalities through Increased Basic Assistance and Subsidized Jobs." Policy proposal 2019-08. In *Recession Ready: Fiscal Policies to Stabilize the American Economy*, edited by Heather Boushey, Ryan Nunn, and Jay Shambaugh, 181–216. Washington, DC: The Hamilton Project and the Washington Center for Equitable Growth.
- Dynarski, Susan M., and Judith Scott-Clayton. 2007. "College Grants on a Postcard: A Proposal for Simple and Predictable Federal Student Aid." Policy Proposal 2007-01, The Hamilton Project, Brookings Institution, Washington, DC.
- Eissa, Nada, and Hilary Hoynes. 2011. "Redistribution and Tax Expenditures: The Earned Income Tax Credit." *National Tax Journal* 64 (2): 689–729.
- Eissa, Nada, and Jeffrey B. Liebman. 1996. "Labor Supply Response to the Earned Income Tax Credit." *Quarterly Journal of Economics* 111 (2): 605–37.
- Elsby, Michael W. L., Bart Hobijn, and Ayşegül Sahin. 2015. "On the Importance of the Participation Margin for Labor Market Fluctuations." *Journal of Monetary Economics* 72 (May): 64–82.
- Elsby, Michael W. L., and Matthew D. Shapiro. 2012. "Why Does Trend Growth Affect Equilibrium Employment? A New Explanation of an Old Puzzle." *American Economic Review* 102 (4): 1378–413.
- Elsby, Michael W. L., and Gary Solon. 2019. "How Prevalent Is Downward Rigidity in Nominal Wages? International Evidence from Payroll Records and Pay Slips." *Journal of Economic Perspectives* 33 (3): 185–201.
- Eppsteiner, Harris, Jason Furman, and Wilson Powell III. 2019, January 11. "Adjusted for Aging, the US Employment Rate Continued to Rise Above Its Pre-Recession Level in 2018." *Realtime Economic Issues Watch* (blog), Peterson Institute for International Economics, Washington, DC.
- Eriksson, Katherine, Katheryn Russ, Jay C. Shambaugh, and Minfei Xu. 2019. Trade Shocks and the Shifting Landscape of U.S. Manufacturing." Working Paper 25646, National Bureau of Economic Research, Cambridge, MA.
- Feyrer, James, Erin T. Mansur, and Bruce Sacerdote. 2017. "Geographic Dispersion of Economic Shocks: Evidence from the Fracking Revolution." *American Economic Review* 107 (4): 1313–34.
- Fiedler, Matthew, Jason Furman, and Wilson Powell III. 2019. "Increasing Federal Support for State Medicaid and CHIP Programs in Response to Economic Downturns." Policy proposal 2019-09. In *Recession Ready: Fiscal Policies to Stabilize the American Economy*, edited by Heather Boushey, Ryan Nunn, and Jay Shambaugh, 93–128. Washington, DC: The Hamilton Project and the Washington Center for Equitable Growth.
- Finkelstein, Amy, Sarah Taubman, Bill Wright, Mira Bernstein, Jonathan Gruber, Joseph P. Newhouse, Heidi Allen, Katherine Baicker, and the Oregon Health Study Group. 2012. "The Oregon Health Insurance Experiment: Evidence from the First Year." *The Quarterly Journal of Economics* 127 (3): 1057–106.
- Ganong, Peter, and Daniel W. Shoag. 2017. "Why Has Regional Income Convergence in the U.S. Declined?" *Journal of Urban Economics* 102 (November): 76–90.
- Gelbach, Jonah B. 2002. "Public Schooling for Young Children and Maternal Labor Supply." *American Economic Review* 92 (1): 307–22.
- Givord, Pauline, and Claire Marbot. 2015. "Does the Cost of Child Care Affect Female Labor Market Participation? An Evaluation of a French Reform of Childcare Subsidies." *Labour Economics* 36: 99–111.
- Glaeser, Edward L., and Naomi Hausman. Forthcoming. "The Spatial Mismatch between Innovation and Joblessness." In *Innovation Policy and the Economy*, Volume 20, edited by Josh Lerner and Scott Stern.
- Goldin, Claudia. 2006. "The Quiet Revolution That Transformed Women's Employment, Education, and Family." *American Economic Review* 96 (2): 1–21.
- Goldin, Claudia, and Lawrence Katz. 2009. *The Race between Education and Technology*. Cambridge, MA: Harvard University Press.

- Goldin, Claudia, and Cecilia Rouse. 2000. "Orchestrating Impartiality: The Impact of "Blind" Auditions on Female Musicians." *American Economic Review* 90 (4): 715–41.
- Gordon, Tracy. 2018. "Harnessing the U.S. Intergovernmental Grant System for Place-Based Assistance in Recession and Recovery." Policy Proposal 2018-12. In *Place-Based Policies for Shared Economic Growth*, edited by Jay Shambaugh and Ryan Nunn, 123–56. Washington, DC: The Hamilton Project.
- Gramlich, John. 2019. "The Gap between the Number of Blacks and Whites in Prison Is Shrinking." Pew Research Center, Washington, DC.
- Greenberg, Scott. 2016. "Encouraging Work for Secondary Earners: A Possible Area of Bipartisan Compromise." Tax Foundation, Washington, DC.
- Hall, Robert E. 1975. "The Rigidity of Wages and the Persistence of Unemployment." *Brookings Papers on Economic Activity* 1975 (2): 301–49.
- Hardy, Bradley L., Trevon D. Logan, and John Parman. 2018. "The Historical Role of Race and Policy for Regional Inequality." In *Place-Based Policies for Shared Economic Growth*, edited by Jay Shambaugh and Ryan Nunn, 43–70. Washington, DC: The Hamilton Project.
- Harris, Benjamin. 2018. "Information Is Power: Fostering Labor Market Competition through Transparent Wages." Policy Proposal 2018-06. In *Revitalizing Wage Growth: Policies to Get American Workers a Raise*, edited by Jay Shambaugh and Ryan Nunn, 157–76. Washington, DC: The Hamilton Project.
- Harris, Matthew C., Lawrence M. Kessler, Matthew N. Murray, and Beth Glenn. 2019. "Prescription Opioids and Labor Market Pains: The Effect of Schedule II Opioids on Labor Force Participation and Unemployment." *Journal of Human Resources* (February).
- Haughwout, Andrew. 2019. "Infrastructure Investment as an Automatic Stabilizer." Policy Proposal 2019-10. In *Recession Ready: Fiscal Policies to Stabilize the American Economy*, edited by Heather Boushey, Ryan Nunn, and Jay Shambaugh, 129–52. Washington, DC: The Hamilton Project and the Washington Center for Equitable Growth.
- Havnes, Tarjei, and Magne Mogstad. 2011. "Money for Nothing? Universal Child Care and Maternal Employment." *Journal of Public Economics* 95 (11–12): 1455–65.
- Hawken, Angela, and Mark Kleiman. 2016. "Graduated Reintegration: Smoothing the Transition from Prison to Community." Policy Proposal 2016-03, The Hamilton Project, Brookings Institution, Washington, DC.
- Hellerstein, Judith K., Melissa McInerney, and David Neumark. 2011. "Neighborhoods and Coworkers: The Importance of Residential Labor Market Networks." *Journal of Labor Economics* 29 (4): 659–95.
- Hershbein, Brad, Claudia Macaluso, and Chen Yeh. 2018. "Monopsony and Concentration in the Labor Market: Evidence from Vacancy and Employment Data." Working Paper. University of Illinois at Urbana-Champaign, and W.E. Upjohn Institute.
- Holzer, Harry J. 2007a. "Better Workers for Better Jobs: Improving Worker Advancement in the Low-Wage Labor Market." Discussion Paper 2007–15, The Hamilton Project, Brookings Institution, Washington, DC.
- . 2007b. "Collateral Costs: The Effects of Incarceration on the Employment and Earnings of Young Workers." Discussion Paper 3118, IZA, Bonn, Germany.
- . 2011. "Raising Job Quality and Skills for American Workers: Creating More-Effective Education and Workforce Development Systems in the States." Policy Proposal 2011-10, The Hamilton Project, Brookings Institution, Washington, DC.
- . 2014. "Improving Employment Outcomes for Disadvantaged Students." In *Policies to Address Poverty in America*, edited by Melissa S. Kearney and Benjamin H. Harris, 87–96. Washington, DC: The Hamilton Project.
- Hoxby, Caroline, and Sarah Turner. 2013. "Expanding College Opportunities for High-Achieving, Low-Income Students." Working Paper 12-014, Stanford Institute for Economic Policy Research, Stanford University, Stanford, CA.
- Hoynes, Hilary. 2014. "Building on the Success of the Earned Income Tax Credit." In *Policies to Address Poverty in America*, edited by Melissa S. Kearney and Benjamin H. Harris, 119–28. Washington, DC: The Hamilton Project.
- Hoynes, Hilary, Jesse Rothstein, and Krista Ruffini. 2017. "Making Work Pay Better Through an Expanded Earned Income Tax Credit." Policy Proposal 2017-09. In *The 51%: Driving Growth through Women's Economic Participation*, edited by Diane Whitmore Schanzenbach and Ryan Nunn, 57–70. Washington, DC: The Hamilton Project.
- Hoynes, Hilary, and Diane Whitmore Schanzenbach. 2019. "Strengthening SNAP as an Automatic Stabilizer." Policy Proposal 2019-10. In *Recession Ready: Fiscal Policies to Stabilize the American Economy*, edited by Heather Boushey, Ryan Nunn, and Jay Shambaugh, 217–38. Washington, DC: The Hamilton Project and the Washington Center for Equitable Growth.

- Ihlanfeldt, Keith, and David L. Sjoquist. 1998. "The Spatial Mismatch Hypothesis: A Review of Recent Studies and Their Implications for Welfare Reform." *Housing Policy Debate* 9 (4): 849–92.
- Jacobson, Louis S. 2009. "Strengthening One-Stop Career Centers: Helping More Unemployed Workers Find Jobs and Build Skills." Policy Proposal 2009–01, The Hamilton Project, Brookings Institution, Washington, DC.
- Jacobson, Louis S., and Robert J. LaLonde. 2013. "Using Data to Improve the Performance of Workforce Training." Paper jointly released by Results for America and The Hamilton Project, Washington, DC.
- Jacobson, Louis S., Robert J. LaLonde, and Daniel G. Sullivan. 1993. "Earnings Losses of Displaced Workers." *American Economic Review* 83 (4): 685–709.
- . 2011. "Policies to Reduce High-Tenured Displaced Workers' Earnings Losses Through Retraining." Policy Proposal 2011–11, The Hamilton Project, Brookings Institution, Washington, DC.
- Juhn, Chinhui, Dae Il Kim, and Vella. 2005. "The Expansion of College Education in the United States: Is There Evidence of Declining Cohort Quality?" *Economic Inquiry* 43 (2): 303–15.
- Juhn, Chinhui, Kevin M. Murphy, and Robert H. Topel. 1991. "Why Has the Natural Rate of Unemployment Increased over Time?" *Brookings Papers on Economic Activity* (2): 75–142.
- . 2002. "Current Unemployment, Historically Contemplated." *Brookings Papers on Economic Activity* (1): 79–136.
- Kearney, Melissa S., and Lesley Turner. 2013. "Giving Secondary Earners a Tax Break: A Proposal to Help Low- and Middle-Income Families." Policy Proposal 2013-07, The Hamilton Project, Brookings Institution, Washington, DC.
- . 2014, March 27. "New Tax Legislation Would Increase the Return to Work for Low- and Middle-Income Working Families." Blog. The Hamilton Project, Brookings Institution, Washington, DC.
- Kim, Younjun, and Peter F. Orazem. 2017. "Broadband Internet and New Firm Location Decisions in Rural Areas." *American Journal of Agricultural Economics* 99 (1): 285–302.
- Kleiner, Morris M. 2015. "Reforming Occupational Licensing Policies." Policy Proposal 2015-01, The Hamilton Project, Brookings Institution, Washington, DC.
- Kleven, Henrik. 2019. "The EITC and the Extensive Margin: A Reappraisal." Working paper, Princeton University, Princeton, NJ.
- Krueger, Alan B. 2017. "Where Have All the Workers Gone? An Inquiry into the Decline of the U.S. Labor Force Participation Rate." *Brookings Papers on Economic Activity* (Fall): 1–87.
- Krueger, Alan B., and Eric A. Posner. 2018. "A Proposal for Protecting Low-Income Workers from Monopsony and Collusion." Policy Proposal 2018-05, The Hamilton Project, Brookings Institution, Washington, DC.
- Kugler, Adriana. 2015. "Strengthening Reemployment in the Unemployment Insurance System." Policy Proposal 2015-02, The Hamilton Project, Brookings Institution, Washington, DC.
- Kurmann, André and Erika McEntarfer. 2019. "Downward Nominal Wage Rigidity in the United States: New Evidence from Worker-Firm Linked Data." WP 2019-01, LeBow College of Business Drexel University School of Economics Working Paper Series. Drexel University, Philadelphia, PA.
- Lalonde, Robert J., and Daniel G. Sullivan. 2010. "Retraining Displaced Workers." Policy Brief, The Hamilton Project, Brookings Institution, Washington, DC.
- LaLumia, Sara. 2017. "Tax Policies to Encourage Women's Labor Force Participation." Policy Proposal 2017-10. In *The 51%: Driving Growth through Women's Economic Participation*, edited by Diane Whitmore Schanzenbach and Ryan Nunn, 71–80. Washington, DC: The Hamilton Project.
- Lebow, David E., Raven E. Saks, and Beth Anne Wilson. 1999. "Downward Nominal Wage Rigidity: Evidence from the Employment Cost Index." FEDS Working Paper 99-31.
- Lefebvre, Pierre, and Philip Merrigan. 2008. "Child-Care Policy and the Labor Supply of Mothers with Young Children: A Natural Experiment from Canada." *Journal of Labor Economics* 26 (3): 519–48.
- Lerman, Robert. 2014. "Expanding Apprenticeship Opportunities in the United States." In *Policies to Address Poverty in America*, edited by Melissa S. Kearney and Benjamin H. Harris, 79–86. Washington, DC: The Hamilton Project.
- Leung, Pauline, and Alexandre Mas. 2016. "Employment Effects of the ACA Medicaid Expansions." Working Paper 22540, National Bureau of Economic Research, Cambridge, MA.
- Liebman, Jeffrey B., and Jack A. Smalligan. 2013. "An Evidence-Based Path to Disability Insurance Reform." In *15 Ways to Rethink the Federal Budget*, edited by Michael Greenstone, Max Harris, Karen Li, Adam Looney, and Jeremy Patashnik, 27–30. Washington, DC: The Hamilton Project.

- Liu, Patrick, Ryan Nunn, Jana Parsons, and Jay Shambaugh. 2019, March 7. “Has Job Growth Reached America’s Struggling Places?” Blog. The Hamilton Project, Brookings Institution, Washington, DC.
- Long, Bridget Terry. 2014. “Addressing the Academic Barriers to Higher Education.” In *Policies to Address Poverty in America*, edited by Melissa S. Kearney and Benjamin H. Harris, 67–78. Washington, DC: The Hamilton Project.
- Ludwig, Jens, and Steven Raphael. 2010. “The Mobility Bank: Increasing Residential Mobility to Boost Economic Mobility.” Discussion Paper, The Hamilton Project, Brookings Institution, Washington, DC.
- Lundeen, Andrew. 2015. “Proposed Tax Changes in President Obama’s Fiscal Year 2016 Budget.” Tax Foundation, Washington, DC.
- Maestas, Nicole. 2017. “Expanding Access to Earned Sick Leave to Support Caregiving.” Policy Proposal 2017-12. In *The 51%: Driving Growth through Women’s Economic Participation*, edited by Diane Whitmore Schanzenbach and Ryan Nunn, 93–106. Washington, DC: The Hamilton Project.
- Maestas, Nicole, Kathleen J. Mullen, and Alexander Strand. 2013. “Does Disability Insurance Receipt Discourage Work? Using Examiner Assignment to Estimate Causal Effects of SSDI Receipt.” *American Economic Review* 103 (5): 1797–829.
- Marx, Matt. 2018. “Reforming Non-Competes to Support Workers.” Policy Proposal 2018-04, The Hamilton Project, Brookings Institution, Washington, DC.
- McConnell, Sheena, Irma Perez-Johnson, and Jillian Berk. 2014. “Providing Disadvantaged Workers with Skills to Succeed in the Labor Market.” In *Policies to Address Poverty in America*, edited by Melissa S. Kearney and Benjamin H. Harris, 97–108. Washington, DC: The Hamilton Project.
- Meyer, Bruce D., and Dan T. Rosenbaum. 2001. “Welfare, the Earned Income Tax Credit, and the Labor Supply of Single Mothers.” *Quarterly Journal of Economics* (3): 1063–114.
- Modestino, Alicia Sasser, Daniel Shoag, and Joshua Balance. 2016. “Downskilling: Changes in Employer Skill Requirements over the Business Cycle.” *Labour Economics* 41 (August): 333–47.
- . 2019. “Upskilling: Do Employers Demand Greater Skill When Workers are Plentiful?” Review of Economics and Statistics (online): 1–46.
- Molloy, Raven, Christopher L. Smith, and Abigail Wozniak. 2011. “Internal Migration in the United States.” *Journal of Economic Perspectives* 25 (3): 173–96.
- . 2014. “Declining Migration within the U.S.: The Role of the Labor Market.” Working Paper 20065, National Bureau of Economic Research, Cambridge, MA.
- Montes, Joshua. 2018. “CBO’s Projection of Labor Force Participation Rates.” Working Paper 2018-04. Congressional Budget Office, Washington, DC.
- Moretti, Enrico. 2012. *The New Geography of Jobs*. Boston, MA: Houghton Mifflin Harcourt.
- Mueller-Smith, Michael. 2015. “The Criminal and Labor Market Impacts of Incarceration.” Working paper, University of Michigan, Ann Arbor, MI.
- Neumark, David. 2018. “Rebuilding Communities Job Subsidies.” Policy Proposal 2018-13. In *Place-Based Policies for Shared Economic Growth*, edited by Jay Shambaugh and Ryan Nunn, 71–122. Washington, DC: The Hamilton Project.
- Nollenberger, Natalia, and Núria Rodríguez-Planas. 2015. “Full-Time Universal Childcare in a Context of Low Maternal Employment: Quasi-Experimental Evidence from Spain.” *Labour Economics* 36 (October): 124–36.
- Nunn, Ryan, Jana Parsons, and Jay Shambaugh. 2018a, November 19. “Americans Aren’t Moving to Economic Opportunity.” Blog. The Hamilton Project, Brookings Institution, Washington, DC.
- . 2018b. “The Geography of Prosperity.” Framing Paper. In *Place-Based Policies for Shared Economic Growth*, edited by Jay Shambaugh and Ryan Nunn, 11–42. Washington, DC: The Hamilton Project.
- Okun, Arthur M. 1973. “Upward Mobility in a High-Pressure Economy.” *Brookings Papers on Economic Activity* (1): 207–61.
- Olivetti, Claudia, and Barbara Petrongolo. 2017. “The Economic Consequences of Family Policies: Lessons from a Century of Legislation in High-Income Countries.” *Journal of Economic Perspectives* 31 (1): 205–30.
- Pager, Devah. 2003. “The Mark of a Criminal Record.” *American Journal of Sociology* 108 (5): 937–75.
- Pager, Devah, and Lincoln Quillian. 2005. “Walking the Talk? What Employers Say Versus What They Do.” *American Sociological Review* 70 (3): 355–80.
- Pager, Devah, Bart Bonikowski, and Bruce Western. 2009. “Discrimination in a Low-Wage Labor Market: A Field Experiment.” *American Sociological Review* 74 (5): 777–99.
- Piehl, Anne Morrison. 2016. “Putting Time Limits on the Punitiveness of the Criminal Justice System.” Policy Memo 2016-03, The Hamilton Project, Brookings Institution, Washington, DC.

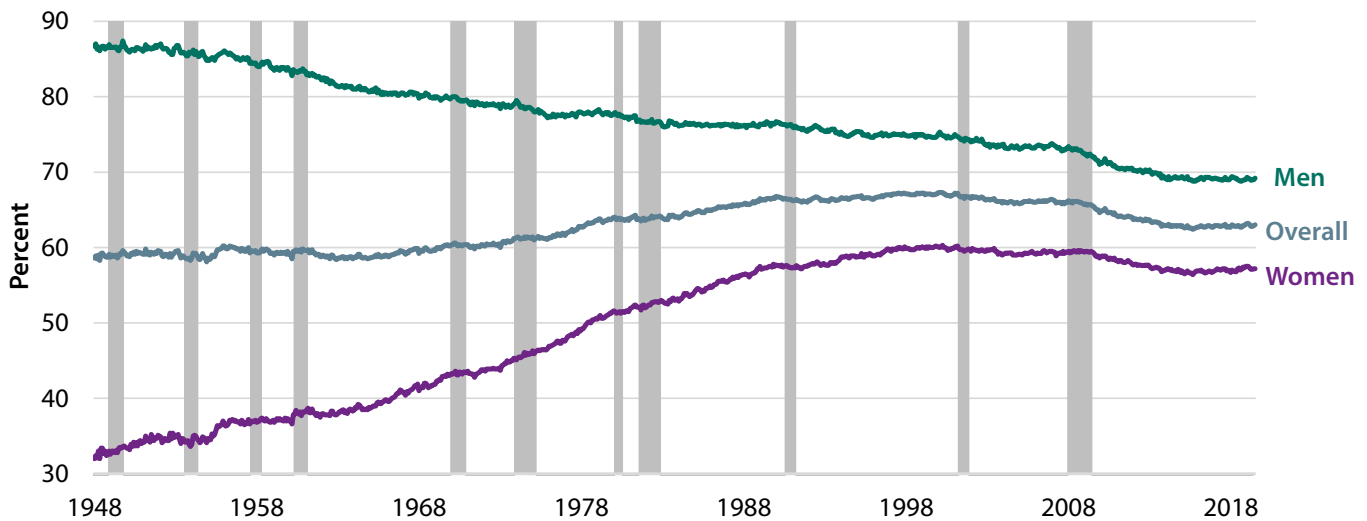
- Qiu, Yue, and Aaron Sojourner. 2019. "Labor-Market Concentration and Labor Compensation." Discussion Paper 12089, IZA, Bonn, Germany.
- Raphael, Steven, and Michael Stoll. 2014. "A New Approach to Reducing Incarceration While Maintaining Low Rates of Crime." Policy Proposal 2014-03, The Hamilton Project, Brookings Institution, Washington, DC.
- Rinz, Kevin. 2018. "Labor Market Concentration, Earnings Inequality, and Earnings Mobility." Working Paper 2018-10. Center for Administrative Records Research and Applications, U.S. Census Bureau, Washington, DC.
- Rodriguez, Michelle Natividad, and Beth Avery. 2016. "Unlicensed & Untapped: Removing Barriers to State Occupational Licenses for People with Records." National Employment Law Project, New York, NY.
- Ruhm, Christopher J. 2017. "A National Paid Parental Leave Policy for the United States." Policy Proposal 2017-13. In *The 51%: Driving Growth through Women's Economic Participation*, edited by Diane Whitmore Schanzenbach and Ryan Nunn, 107–22. Washington, DC: The Hamilton Project.
- Ruppanner, Leah, Stephanie Moller, and Liana Sayer. 2019. "Expensive Childcare and Short School Days = Lower Maternal Employment and More Time in Childcare? Evidence from the American Time Use Survey." *Socius: Sociological Research for a Dynamic World* 5: 1–14.
- Sahm, Claudia. 2019. "Direct Stimulus Payments to Individuals." Policy Proposal 2019-12. In *Recession Ready: Fiscal Policies to Stabilize the American Economy*, edited by Heather Boushey, Ryan Nunn, and Jay Shambaugh, 67–92. Washington, DC: The Hamilton Project and the Washington Center for Equitable Growth.
- Saks, Raven E. 2008. "Job Creation and Housing Construction: Constraints on Metropolitan Area Employment Growth." *Journal of Urban Economics* 64 (1): 178–95.
- Schanzenbach, Diane Whitmore, Lauren Bauer, Ryan Nunn, and Megan Mumford. 2017. "Who Is Out of the Labor Force?" Economic Analysis, The Hamilton Project, Brookings Institution, Washington, DC.
- Schanzenbach, Diane Whitmore, Megan Mumford, Ryan Nunn, and Lauren Bauer. 2016. "Money Lightens the Load." Economic Analysis, The Hamilton Project, Brookings Institution, Washington, DC.
- Schanzenbach, Diane Whitmore, Ryan Nunn, and Lauren Bauer. 2016. "The Changing Landscape of American Life Expectancy." Framing Paper, The Hamilton Project, Brookings Institution, Washington, DC.
- Schanzenbach, Diane Whitmore, Ryan Nunn, Lauren Bauer, Audrey Breitwieser. 2017. "The Closing of the Jobs Gap: A Decade of Recession and Recovery." Economic Analysis, The Hamilton Project, Brookings Institution, Washington, DC.
- Schanzenbach, Diane Whitmore, Ryan Nunn, Lauren Bauer, Audrey Breitwieser, Megan Mumford, and Greg Nantz. 2016. "Twelve Facts about Incarceration and Prisoner Reentry." Economic Facts, The Hamilton Project, Brookings Institution, Washington, DC.
- Schmitt, John, and Kris Warner. 2011. "Ex-Offenders and the Labor Market." *Journal of Labor and Society* 14 (1): 1–124.
- Scholz, John Karl. 2007. "Employment-Based Tax Credits for Low-Skilled Workers." Policy Proposal 2007-14, The Hamilton Project, Brookings Institution, Washington, DC.
- Shambaugh, Jay, Lauren Bauer, and Audrey Breitwieser. 2018. "Returning to Education: The Hamilton Project on Human Capital and Wages." Framing Paper. In *Revitalizing Wage Growth: Policies to Get American Workers a Raise*, edited by Jay Shambaugh and Ryan Nunn, 25–50. Washington, DC: The Hamilton Project.
- Shambaugh, Jay, and Ryan Nunn, eds. 2018a. *Place-Based Policies for Shared Economic Growth*. Washington, DC: The Hamilton Project.
- Shambaugh, Jay, and Ryan Nunn, eds. 2018b. *Revitalizing Wage Growth: Policies to Get American Workers a Raise*. Washington, DC: The Hamilton Project.
- Shambaugh, Jay, Ryan Nunn, Audrey Breitwieser, and Patrick Liu. 2018. "The State of Competition and Dynamism: Facts about Concentration, Start-Ups, and Related Policies." Economic Facts, The Hamilton Project, Brookings Institution, Washington, DC.
- Shambaugh, Jay, Ryan Nunn, and Patrick Liu. 2018. "How Declining Dynamism Affects Wages." Framing Paper. In *Revitalizing Wage Growth: Policies to Get American Workers a Raise*, edited by Jay Shambaugh and Ryan Nunn, 11–24. Washington, DC: The Hamilton Project.
- Shambaugh, Jay, Ryan Nunn, Patrick Liu, and Greg Nantz. 2017. "Thirteen Facts about Wage Growth." Economic Facts, The Hamilton Project, Brookings Institution, Washington, DC.
- Sheiner, Louise, and Michael Ng. 2019. "How Stabilizing Has Fiscal Policy Been?" Framing Paper. In *Recession Ready: Fiscal Policies to Stabilize the American Economy*, edited by Heather Boushey, Ryan Nunn, and Jay Shambaugh, 49–66. Washington, DC: The Hamilton Project and the Washington Center for Equitable Growth.

- Shierholz, Heidi. 2018. "Strengthening Labor Standards and Institutions to Promote Wage Growth." Policy Proposal 2018-07. In *Revitalizing Wage Growth: Policies to Get American Workers a Raise*, edited by Jay Shambaugh and Ryan Nunn, 177–94. Washington, DC: The Hamilton Project.
- Shoag, Daniel. 2019. "Removing Barriers to Accessing High-Productivity Places." Policy Proposal 2019-02, The Hamilton Project, Brookings Institution, Washington, DC.
- Smith, Stephen C. 2018. "Development Economics Meets the Challenges of Lagging U.S. Areas: Applications to Education, Health and Nutrition, Behavior, and Infrastructure." Policy Proposal 2018-14. In *Place-Based Policies for Shared Economic Growth*, edited by Jay Shambaugh and Ryan Nunn, 185–242. Washington, DC: The Hamilton Project.
- Turner, Matthew A. 2019. "Local Transportation Policy and Economic Opportunity." Policy Proposal 2019-03, The Hamilton Project, Brookings Institution, Washington, DC.
- U.S. Census Bureau. 2013–17. "American Community Survey (ACS), 5-year." U.S. Census Bureau, Suitland, MD.
- Western, Bruce. 2008. "From Prison to Work: A Proposal for a National Prisoner Reentry Program." Policy Proposal 2008-16, The Hamilton Project, Brookings Institution, Washington, DC.
- Wheeler, Christopher H. 2008. "Local Market Scale and the Pattern of Job Changes among Young Men." *Regional Science and Urban Economics* 38 (2): 101–18.
- White House. 2015. "Occupational Licensing: A Framework for Policymakers." Prepared by the Department of the Treasury Office of Economic Policy, the Council of Economic Advisers, and the Department of Labor. White House, Washington, DC.
- Wozniak, Abigail. 2018. "Coming and Going: Encouraging Geographic Mobility at College Entry and Exit to Lift Wages." Policy Proposal 2018-02, The Hamilton Project, Brookings Institution, Washington, DC.
- Yagan, Danny. Forthcoming. "Employment 'Hysteresis' from the Great Recession." *Journal of Political Economy*.
- Ziliak, James P. 2014. "Supporting Low-Income Workers through Refundable Child-Care Credits." In *Policies to Address Poverty in America*, edited by Melissa S. Kearney and Benjamin H. Harris, 109–18. Washington, DC: The Hamilton Project.
- . 2016. "Modernizing SNAP Benefits." Policy Proposal 2016-06, The Hamilton Project, Brookings Institution, Washington, DC.

Abstract

Over the last two decades the U.S. labor force participation rate has fallen. We explore this decline, emphasizing the effect of population aging as well as patterns by age, gender, race, and education, and assessing potential explanations. The Hamilton Project has offered evidence-based policy proposals for more than a decade on a variety of topics that often have important implications for labor force participation, even if those proposals are primarily aimed at other subjects like poverty, wage growth, regional inequality, or women's role in the economy. In this paper, we discuss these proposals as they relate to the goal of increasing participation, with a special focus on impediments to increased participation from aggregate demand, demand for non-college-educated workers, geographic gaps in participation, caregiving responsibilities, health and disability, and criminal justice.

FIGURE 1.
Labor Force Participation Rate by Gender, 1948–2019



Source: Bureau of Labor Statistics (BLS) 1948–2019.

Note: Data include individuals 16 and older. Data are monthly, seasonally adjusted, and extend through July 2019. Gray bars denote recessions.



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