

US Labor Shortages

CHALLENGES AND SOLUTIONS



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Challenges and Solutions

by Gad Levanon, Elizabeth Crofoot, Frank Steemers, and Robin Erickson

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Executive Summary

In October 2009, the unemployment rate in the United States was 10 percent. When The Conference Board released our first labor shortages report in September 2014,¹ the unemployment rate was 6.2 percent. In November 2019, it was down to 3.5 percent. In a span of 10 years, the US economy moved from having the weakest labor market since the Great Depression to one of the tightest² in history. The result is a labor market with critical shortages, especially for blue-collar and manual services employers who are experiencing much tighter labor markets than employers of highly educated white-collar workers—the exact opposite of prevailing trends in recent decades. As a result, blue-collar employers are struggling to fill positions.

Based on results from The Conference Board Labor Shortages Solutions Survey, 85 percent of companies in “mostly blue-collar industries³” reported recruiting difficulties versus 64 percent among companies in “mostly white-collar industries.” Further, almost a quarter (23 percent) of companies in mostly white-collar industries report having neither recruitment nor retention difficulties, whereas this is true for only 8 percent of companies in mostly blue-collar industries.

Unprecedented conditions: Why labor shortages are happening and the challenges they pose

For decades, employers complained about the difficulty of finding qualified workers even in loose labor markets when widespread shortages did not exist.⁴ In this report, we argue that this time is different. Employers’ complaints have merit, and the labor shortages problem is having a strong impact on the US economy. If not addressed, the problem could get worse, yet most US labor-market thought leaders are currently much more focused on the risk of massive technological unemployment in the distant future than on the existing labor shortages. If left unchecked, today’s conditions could easily develop into one of the worst labor shortages of the last 50 years.

1 Gad Levanon, Bert Colijn, Ben Cheng, and Michael Paterra, *From Not Enough Jobs to Not Enough Workers: What Retiring Baby Boomers and the Coming Labor Shortage Mean for Your Company*, The Conference Board Research Report, September 2014.

2 For definitions of “tight” and “loose” labor markets, see “Defining tight labor markets,” page 14.

3 Mostly blue-collar (white-collar) industries refer to those for which more than 50 percent of survey respondents identifying with that industry responded that the general distribution of workers in their company was mostly blue-collar (white-collar). **Mostly blue-collar industries** refer to: agriculture, forestry, and fishing; mining and quarrying; manufacturing; construction; and transportation and storage. **Mostly white-collar industries** refer to: financial, insurance, and real estate activities; business, consulting and professional services; education; healthcare, pharmaceutical; computer, technology, and information services; and government, public administration, and nonprofit.

4 Peter Capelli, *Skill Gaps, Skill Shortages and Skill Mismatches: Evidence for the US*, National Bureau of Economic Research, August 2014.

Several trends have contributed to a dramatic decrease in the labor supply ...

The extreme shift in labor market conditions in the past decade is not a coincidence, but the result of a perfect storm in which several long-term trends have converged simultaneously.

Working-age population growth is slowing to a halt. The massive retirement of the large baby boomer generation is bringing growth in the working-age population to a halt—a trend that will continue through 2030. This is the main reason why this era of shortages is so different. Never before have such a large number of retirements and almost zero growth in the working-age population happened before.

The working-age population of noncollege graduates is already shrinking. As a growing share of young adults are enrolling in four-year colleges, the number of working-age people with a bachelor's degree is solidly and uninterruptedly increasing by about 2 percent annually. On the flip side, the number without a bachelor's degree is shrinking.

The recovery in labor force participation has been disappointing. Overall, the tight labor market has led to an increase in labor force participation in recent years. But the improvement has not been remotely fast enough to prevent the labor market from tightening and has been somewhat disappointing, especially for men, and especially compared to other advanced economies in the last decade.

A large increase in disability rates. An important reason for the somewhat disappointing labor force participation rates is the large increase in recent decades in the number of people not in the labor force due to disability—almost all of whom lack a college degree.

Compared with earlier decades, young men without a college degree are less likely to be in the labor force. That decline in participation is partly because they are much more likely to be single, living with their parents, and have less of a need to earn income. These trends are more structural than cyclical and will be hard to reverse.

The large drop in labor force participation of 16-24-year-olds. While good from a societal perspective since it is a result of higher education attainment at this age, the steep decline in the labor force participation of young people (aged 16 to 24) significantly reduces the supply of workers in occupations that typically hire young and less-educated workers.

The combination of these trends—a stagnant working-age population due to massive retirements, and disappointing labor force participation rates for several key demographics—is leading to a labor force with a rapidly growing share of college graduates, most of them uninterested in blue-collar and manual services jobs, and a shrinking number of noncollege graduates. As a result, labor shortages in blue-collar and manual services occupations are now more real than ever.

... while the demand for blue-collar and manual services workers is increasing

A decline in the supply of blue-collar and manual services workers would not have been a problem if the demand for them was shrinking as well. But this is not the case. The demand for these workers continues to grow, partly due to the unprecedented slowdown in labor productivity in the past decade. The effect has been especially acute in manufacturing, where labor productivity has remained essentially flat since 2010, after averaging over 4-percent growth annually between 1989 and 2007. The inability to raise productivity in manufacturing and the coincident slowdown in offshoring of production jobs has led to the fastest growth in manufacturing employment since the 1970s.

Further, the spread of e-commerce has led to strong growth in demand for other blue-collar and manual services workers. From 2013 to 2018, employment in transportation and warehousing industries increased by over 20 percent, compared to 9 percent in the total economy. Employment in personal care and health support jobs has been increasing rapidly, as well.

Employers are deeply affected

The culmination of these trends, coupled with the longest economic expansion in US history, has led to one of the tightest labor markets ever, with unemployment reaching the lowest rate of the past 50 years. The current labor market is also the tightest we've seen for some blue-collar and manual services occupations. Such a massive shift in labor markets poses large implications for employers and workers.

The tightening labor market has already affected hiring and retention. The perceived difficulty of hiring qualified workers and the time to fill positions is already the highest on record. Willingly or not, employers are hiring less-educated workers, which is partially responsible for historically high levels of concern about labor quality. Meanwhile, employee retention rates are declining due to increased employment opportunities. Voluntary quit rates are already well above 2007 rates.

How higher wages are affecting the labor market—and dampening profits

In The Conference Board Labor Shortages Solutions Survey,⁵ we asked employers about the recruitment and retention strategies they use to specifically tackle labor shortages. Our results show that companies employ multiple solutions in response to labor shortages, some using more methods than others.

5 For the first time (between April 19 and June 17, 2019), The Conference Board Labor Shortages Solutions Survey surveyed business leaders about the specific actions their organizations were taking to address recruitment and retention difficulties, as well as the adverse business outcomes that companies had experienced as a result of the labor shortage problem. We collected 225 responses identifying the business impact and response from a pool of 11 possible outcomes and 59 possible solutions to labor shortages. For more information, see "The Conference Board Labor Shortages Solutions Survey," on page 40.

Higher wages have led to historic levels of pay compression

The most basic and intuitive way to solve labor shortages is to raise wages. And indeed, in our Labor Shortages Solutions Survey, this was the most used solution for both recruitment and retention challenges. Given the variation of tightness across occupations, it is not surprising that most of the wage acceleration is occurring in blue-collar and manual services jobs, where wage growth is already above prerecession rates. Wage growth for management and professional workers, which includes close to 40 percent of the workforce and most of total compensation, is accelerating more moderately, which is one reason why, despite the historically tight labor market, overall wage growth is still well below prerecession rates.

The Conference Board Salary Increase Budgets Survey for 2020⁶ provides an additional unique explanation for why wage growth has not yet fully recovered after the Great Recession (2008–2009). The survey shows that employers have been slow to raise the salary structure in their companies despite a rapid increase in wages for new hires. As a result, wages for new hires are accelerating much faster than salary increase budgets.

In recent years, the faster wage growth of new hires has led to historic levels of pay compression—when the wage premium for experience shrinks—so that more experienced workers feel that their pay advantage is no longer significant. Such pay compression is leading to higher labor turnover of more experienced workers who can easily find new jobs in this tight labor market.

Employers of mostly blue-collar workers have been much more affected by shortages than those of mostly white-collar workers.

In such an environment, employers will feel some additional pressure to raise wages faster for existing workers, which may actually be a cost savings in disguise. A short-term focus on avoiding wage increases could backfire as the costs associated with voluntary turnover—both the tangible costs (e.g., compensation and recruitment costs to replace, lost productivity and profitability) and intangible costs (e.g., lower employee morale, lost institutional knowledge, lost client relationships)—are often higher than the costs of retaining employees, especially for hard-to-fill positions.

Accelerating wages are squeezing corporate profits

The accelerations in wages and quit rates, along with slow labor productivity growth, are reducing US corporate profits. From the peak in the fourth quarter of 2014 to the second quarter of 2019, profits in the nonfinancial corporate sector have dropped by 17 percent,

6 The Conference Board has been surveying compensation executives with its [Annual Salary Increase Budgets Survey](#) since 1985. The survey asks about two main components of compensation: *salary structure movement* and *salary increase budget*. This year, 229 organizations completed the survey, which was fielded between April 16 and June 21, 2019. Data were requested for four employment categories: nonexempt hourly (nonunion), nonexempt salaried, exempt, and executive. For more information, read: Gad Levanon, Judit Torok, and Frank Steemers, [US Salary Increase Budgets for 2020](#), The Conference Board, November 2019.

and by 46 percent in manufacturing. The tighter labor market for blue-collar workers is squeezing the employers that hire many of them.

With the US economy projected to slow and labor shortages escalating, the pressure on corporate profits is likely to increase in the coming years. If the current trend continues, profitability rates will soon drop to historic lows. Lower profits make companies more reluctant to spend, a trend that may slow down economic growth even further and risk the sustainability of the current economic expansion. In addition, the drop in corporate profits and growing labor costs may force more industries to raise prices and lead to a higher overall inflation rate.

Company Solutions: Taking a multistrategy approach to combat labor shortages

Because the most recent US example of an extended period of tight labor markets was in the late 1990s, most executives working today have never experienced one. We decided to find out more about how business leaders have been working to solve their hiring and retention problems and to share this important information.

The Conference Board Labor Shortages Solutions Survey asked 225 business leaders, mostly HR practitioners, about the adverse business outcomes their companies have experienced due to recruitment and retention challenges and what their organizations have done to solve the problem. Our goal with the survey was to find out which solutions firms were leveraging most and least frequently from a pool of 59 possible solutions to recruitment and retention difficulties.

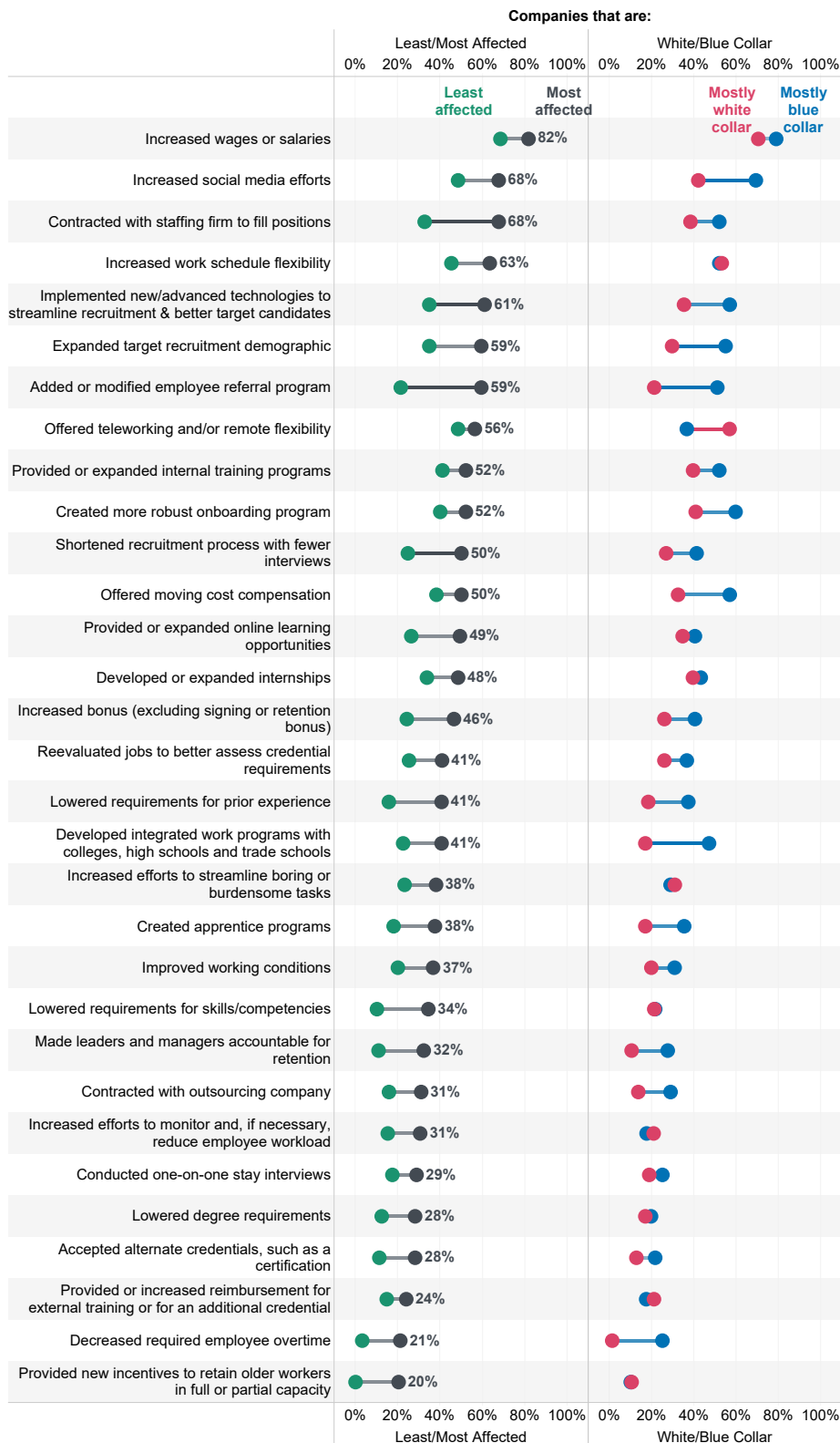
We divided our sample of survey respondents into “more affected” or “less affected” depending on their responses to the adverse business outcomes questions. We then compared the solutions implemented by the two groups (Executive Summary Chart). Not surprisingly, more affected companies are also more active in solving the problem. Companies typically use many solutions to deal with labor shortages. Because no one solution will solve the labor shortages problem, especially in a tight labor market, the mix of implemented solutions will vary for most companies.

We find that companies that employ mostly blue-collar workers have been much more affected by labor shortages than mostly white-collar companies. For example, 37 percent of blue-collar-heavy companies reported a *measurable adverse impact on the company’s bottom line (profitability)* versus just 9 percent of white-collar-heavy companies reporting the same effect. As a result, employers of mostly blue-collar workers report being more active in pursuing solutions to labor shortages.

The biggest difference between “more affected” companies and “less affected” ones was that companies feeling the most affected by labor shortages said they were making changes to the recruitment process. Such changes *included adding or modifying employee referral programs, contracting with staffing firms to fill positions, and implementing new/advanced technologies to streamline recruitment and better target candidates*. More affected companies were also more likely to report *shortening the recruitment process with fewer interviews* and making faster hiring decisions.

Companies use a mix of solutions to combat labor shortages

Percentage of companies using each solution to address recruitment and/or retention difficulties, by companies most and least affected by labor shortages and by companies with mostly blue- or white-collar workers



Note: Companies most (least) affected by labor shortages refer to those that indicated that they were affected by five or more (less than five) adverse business outcomes (see Chart 13, p. 28) as a result of recruitment or retention difficulties.

Source: The Conference Board Labor Shortages Solutions Survey, 2019

In addition to changing the recruitment process, companies most affected by shortages were much more likely to *reevaluate jobs to better assess credential requirements*. Many of these companies lowered requirements for prior experience and/or *lowered requirements for skills/competencies*. A smaller but still meaningful proportion of those most affected *accepted alternate credentials and/or lowered degree requirements*. A very popular strategy, especially among blue-collar employers, was to *expand the target recruitment demographic*, which partly explains why we have seen a large increase in the share of minorities in many types of jobs.

Lowering hiring requirements often creates a need for investing more in improving the skills and development of new recruits. Many forward-thinking companies are actively creating talent pipelines by cultivating connections with local high schools, trade schools, and universities with the goal of improving technical curricula and developing internships and apprenticeships. In addition, these companies have been more intensely *providing or expanding online learning opportunities*.

The US workforce is becoming more diverse, with the share of women in several blue-collar occupations rising dramatically in recent years.

Companies suffering the most recruitment and retention difficulties are making stronger efforts to make the company a more attractive place to work by *improving working conditions* (such as work environment, job hours, and responsibilities); *increasing work schedule flexibility*; *increasing efforts to monitor and, if necessary, reduce employee workload*; and *decreasing required employee overtime*. In addition, they are *increasing efforts to streamline boring or burdensome tasks*.

Among white-collar employers, many companies are expanding the usage of *teleworking and/or remote flexibility*. This marks the first time in history that advanced remote working technologies are available during a prolonged tight labor market.

Companies that are more significantly affected by labor shortages have a greater focus on implementing tactical improvements to their retention efforts, such as *making leaders and managers accountable for retention* and *conducting one-on-one stay interviews*. But in general, recruitment solutions were generally used more intensely than retention solutions.

The effects of a tight labor market may be more visible and more intensely felt in recruiting than in labor turnover. As a result, some companies may not be as proactive in retention efforts, which may be shortsighted. In many cases, as mentioned earlier, the cost of losing a good worker is many times larger than the cost of retaining that worker, especially in a period of elevated labor turnover and historic levels of pay compression.

Surprisingly, the survey found that the lowest ranked retention strategy overall was *providing new incentives to retain older workers in full or partial capacity*. For most employers, retaining mature workers is not as high a priority as we had expected, partly because of the cost of benefits and productivity concerns and partly because many workers over the age of 55 are working longer regardless of the limited incentives from employers to delay retirement.

Also low on the list of potential solutions for our respondents was relocation. Relocating operations within the US or offshoring them are solutions that relatively few employers are implementing. These solutions are complex and are more likely to be implemented after other solutions have been tried first. Still, we are seeing some trends in location choice. For example, the share of manufacturing employment in the Northeast is rapidly declining but is growing in the West and some parts of the South Atlantic.

Another potential solution that is frequently discussed is relying more heavily on nontraditional workers. While *contracting with staffing firm to fill positions* was among the top solutions used by companies most affected by labor shortages, other sources of external talent, such as using an outsourcing company or hiring independent contractors—especially through an online labor platform like Upwork—were among the least popular solutions overall. At the moment, the gig economy is still a very small part of the labor market. Although solid evidence of a rapid increase in the usage of contingent work is lacking, the gig economy will continue to grow, raising the questions: by how much, how soon, and in which types of jobs?⁷

Labor force participation rates have improved less than hoped for—with some exceptions

When wages and recruiting intensity are higher, more people join the labor market. Although the overall recovery in labor force participation since the Great Recession has been weak, the tight labor market for less-educated workers has placed upward pressure on participation rates for several underrepresented demographic groups. Employers, especially in blue-collar industries, are intentionally expanding recruiting efforts to underrepresented populations, as our Labor Shortages Solutions Survey reveals.

For example, participation rates among black workers and young Hispanic women—historically well below national averages—have increased significantly in recent years. For example, in 1994, 64 percent of Hispanic women 16 to 24 years old were working or in school, but this number has risen to 84 percent in October 2019. For black workers, the increase from 71 to 82 is also impressive. These trends increase the supply of workers for blue-collar and manual services roles, the types of jobs disproportionately filled by black workers and Hispanic women.

While companies can take specific actions to alleviate labor shortages, fully resolving the problem is not possible without substantial improvement in productivity growth.

As a result of the tight labor market and demographic trends, the US workforce is becoming more diverse—but not only across racial and ethnic lines. The share of women in several blue-collar occupations has been rising dramatically in recent years. In addition, the share of workers aged 55 and older in employment has been rising as well, though,

7 For more information about the gig economy and nontraditional workers in the US labor market, see, Gad Levanon, Elizabeth Crofoot, Brian Schaitkin, *Contrary to the Hype—Real Trends in Nontraditional Work*, The Conference Board, October 2018.

not because of recruiting or retention efforts, but because of an aging workforce and their choice to extend their working years.

Government policy solutions can increase labor force participation

Companies are limited in their ability to grow the overall labor force participation of the country. Governments need to help. As research from The Conference Board has previously established, the role of governments in reducing labor shortages could be large. Higher labor force participation is needed immediately and through the next 10 to 15 years.⁸ Governments could improve participation by improving health outcomes for working-age individuals, by reducing the number of incarcerated people, by making work more attractive and nonwork less attractive from a tax/benefits perspective, and by removing existing barriers to labor market participation.

Increasing the number of working-age people quickly could only be done by increasing immigration. In the current political environment, a major immigration increase is unlikely, but priorities may well change as the damage from a labor shortage becomes more obvious over the coming decade.⁹

However, analyzing the potential for government policy to reduce labor shortages in the US is beyond the scope of this paper. The topic was extensively covered by a study from the policy arm of The Conference Board, the Committee for Economic Development (CED).¹⁰

Can higher labor productivity compensate for worker shortages?

Without significant improvement on the dismal productivity growth of the last decade, the chances of resolving the labor shortage problem are slim to none. One would expect, and studies show,¹¹ that in a period when finding qualified workers is difficult and labor is becoming more expensive, employers have a bigger incentive to become more productive and cut labor costs.

Indeed, there are growing signs that improvement in productivity growth has finally arrived. Between the second quarters of 2017 and 2019, labor productivity advanced at an annual rate of 1.7 percent—the fastest rate since the immediate recovery after the Great Recession, a period when annual labor productivity grew by less than 1 percent on average. The improvement in labor productivity occurred at the same time when, on average, employment growth significantly slowed in occupations that are prone to automation. Much of the automation in recent years has occurred in routine office and administrative jobs and in sales occupations. We have yet to see a significant recovery in productivity in blue-collar industries. In the past two years, productivity in manufacturing has remained essentially flat.

8 [Growing the American Workforce](#). The Committee for Economic Development of The Conference Board (CED), October 2019.

9 Brian Schaitkin, [Importing a Solution: Can Immigration Help Mitigate Looming Labor Shortages?](#) The Conference Board, September 2016.

10 Read the policy brief [Immigration Policy That Works: Bringing Foreign-Born Workers into High-Shortage Occupations to Grow Our Economy](#), Committee for Economic Development of The Conference Board, June 2017.

11 Daron Acemoglu and Pascual Restrepo, [“Demographics and Automation,”](#) National Bureau of Economic Research Working Paper No. 22421, March 2018.

Adoption of new technologies and improvement in labor productivity vary significantly across companies and industries and within the same industry.¹² For example, while the share of routine office workers in overall employment dropped across almost all industries in the past one to two decades, industries that comprise larger and more technologically advanced companies seemed to have experienced a larger drop in that share. Additional gains in labor productivity could be made, especially when the need to cut costs becomes more intense.

All demographics of workers are benefitting from low unemployment

This report focuses on the implications for employers, but tight labor markets have major implications for workers as well—mostly positive. They are less likely to be unemployed, more likely to experience faster wage growth, and are more likely to work in a job they are happy with. Job satisfaction significantly improved in 2018—the eighth straight year of improvement.¹³ Satisfaction is rising the fastest with economic components that are especially related to labor market conditions, such as wages and job security.

The prolonged tight labor market in blue-collar and manual services jobs is having a societal impact as well. As discussed above, populations that have previously struggled to participate in the labor market are now enjoying historically positive labor market conditions, leading to the lowest poverty rates ever for black and Hispanic workers. Finally, the long-run trend of rising wage inequality¹⁴ has stopped and even reversed in recent years. These trends are likely to continue.

The next decade: The outlook for workers and employers

Labor shortages are becoming one of the main barriers for future expansion of the US economy, especially in industries that hire many blue-collar and manual services workers. Is this a passing phase or a chronic problem? In the next year, we expect further tightening of the labor market to intensify the labor shortage problem. At some point during the next several years, a recession is likely to occur. A recession would reduce the labor shortages problem for a few years, but, beyond that, whether labor shortages persist depends on structural developments in the US economy.

From a demographic perspective, the situation is only going to deteriorate in the coming decade as working-age population growth will be closer to zero and the decline in the number of noncollege graduates will accelerate.

Amid these multiple structural factors that have created these labor shortages, we find that it would take a virtual miracle to maintain the growth rate in standard of living we have historically enjoyed, measured by GDP per capita, in the coming decade. Even to achieve a humble goal of raising GDP per capita by 1.5 percent annually over the next decade, the US would need to either significantly improve its labor productivity growth and labor force participation or introduce more immigrants to the country's labor supply.

12 Cindy Cunningham, Lucia Foster, Cheryl Grim, John Haltiwanger, Sabrina Wulff Pabilonia, Jay Stewart, and Zoltan Wolf, “[Dispersion in Dispersion: Measuring Establishment-Level Differences in Productivity](#),” US Census Bureau Working Paper No. CES 18-25R, September 2019.

13 See: Gad Levanon, Robin Erickson, Allen Li, and Calvin Rong, [Job Satisfaction 2019: Satisfaction Continues to Rapidly Increase in a Very Tight Labor Market](#), The Conference Board 2019.

14 Despite the decline in wage inequality, income inequality is still on an upward trend primarily due to the rapid growth in rental and dividend income, which is predominantly in incomes of households at the higher end of the income distribution.

Insights for What's Ahead

- 1 Blue-collar labor shortages will likely continue through at least 2030.** We could see rising wages and slow revenue growth squeeze profitability rates to levels not seen since the early 1990s. While a recession would reduce labor pressures eventually, it probably wouldn't counteract other structural trends in the short term.
- 2 A push for much stronger growth in labor productivity and automation is needed to offset growing labor shortages.** Despite some recent improvement—especially in eliminating easily automated tasks—spurring productivity and automation will require significant reorganization of business processes, which companies haven't been incentivized to do during times of relatively cheap, abundant labor.
- 3 Future economic growth is under threat due to a lack of workers. In the next decade, the pool of working-age people will barely grow.** We predict that the US will not be able to maintain its long-run average growth in GDP per capita over the next 10 to 15 years unless workforce participation dramatically improves and immigration increases.
- 4 Companies in sectors most affected by labor shortages and those hiring blue-collar workers are more proactive in exploring solutions to shortages.** As labor shortages continue to spread, we expect more companies to make tactical improvements to their recruiting efforts, make jobs more attractive, and widen the talent pool by expanding target recruitment groups and relaxing hiring criteria.
- 5 Organizations are struggling to retain employees who can find higher wages by switching jobs.** Rapid wage acceleration for new hires is contributing to historic levels of pay compression—while the wage premium for experience shrinks. Looking ahead, more companies will hold managers directly accountable for retention, including by conducting stay interviews.
- 6 Higher wages and more recruitment of underrepresented demographics are raising workforce participation rates, especially for black and Hispanic workers.** But overall participation rates for most of these demographic groups are still low compared to other groups.
- 7 Tight labor markets are changing the manual labor landscape.** US blue-collar and manual services workers will continue to experience improved job satisfaction, as wages rise and wage inequality continues to shrink. In addition, the lower wage premium for a college degree could lead more young people to enter the labor market directly instead of enrolling in college.

Unprecedented Conditions

Why Labor Shortages Are Happening and the Challenges They Pose

In October 2009, the unemployment rate in the United States was 10 percent. When we released our first labor shortages report in September 2014, the unemployment rate was 6.2 percent. As of November 2019, it was down to 3.5 percent, the lowest in 50 years. The so-called U6 measure—the broadest measure of labor market slack that includes not only the unemployed but also those working part-time for economic reasons and those not actively seeking but willing to work—declined to 6.9 percent in November 2019, its lowest rate since 2000.

In a span of 10 years, the US economy moved from the weakest labor market since the Great Depression to one of the tightest. The result is a labor market experiencing critical labor shortages, especially in blue-collar and manual services occupations.

Management and professional occupations account for close to 40 percent of all workers and a substantial majority of total wages. Nearly all such positions require a bachelor's degree. The unemployment rate for these white-collar occupations is similar to 2007 rates, suggesting an only moderately tight labor market for these jobs. In addition, the labor market for these occupations has barely tightened in the past one to two years.

Defining tight labor markets

How do we define labor market conditions?

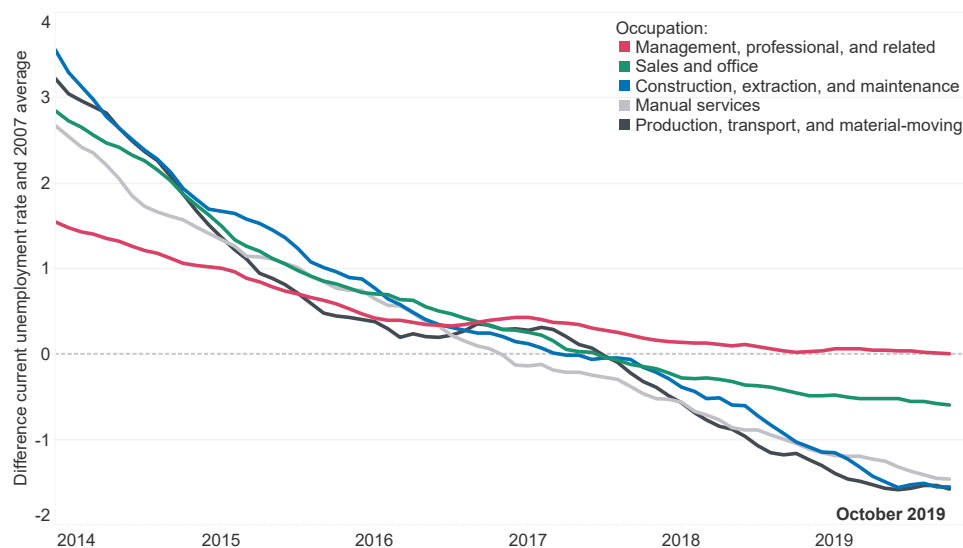
- *Loose labor markets* still have considerable room for hiring.
- Labor markets are considered *normal* when firms start to have some hiring difficulties.
- Economies with *tight labor markets* experience more severe hiring difficulties than normal, and wage pressures start to increase.
- In very *tight labor markets*, employers have severe hiring difficulties and wage accelerations.

However, for all other occupations in the US labor market, especially blue-collar and manual services, (jobs that typically do not require a college degree), unemployment rates have dropped well below 2007 levels and continue to fall rapidly (Chart 1). In many of these occupations, unemployment rates are now the lowest ever recorded. It is, therefore, not surprising that recruiting difficulties are at historic highs in these occupations.

Chart 1

The unemployment rates for blue-collar and manual services workers are now well below 2007 levels

Difference between current unemployment rate and 2007 average, by occupation group, 12-month moving average, January 2014 to October 2019



Source: US Bureau of Labor Statistics

What are blue-collar, manual services, and white-collar occupations?

Blue-collar occupations include: construction, extraction, farming, installation, maintenance, repair, production, and transportation and material moving.

Manual services occupations include: health care support, protective service, food preparation and serving, building and grounds cleaning, and personal care, and service occupations.

White-collar occupations include: management, business, financial, and professional occupations that require generally at least a bachelor's degree, as well as jobs that require less education, such as sales, office, and administrative support occupations.

Based on our Labor Shortages Solutions Survey results, 85 percent of “blue-collar industries” reported recruiting difficulties versus 62 percent among mostly white-collar industries. Over a quarter (26 percent) of companies in “white-collar industries” are having neither recruitment nor retention difficulties, whereas this is true for only 8 percent of companies in blue-collar industries.

Employers often complain about the difficulty of finding qualified workers—even in periods of weak labor markets. According to the National Federation of Independent Businesses (NFIB), even in 2009–2010, the period with the weakest labor market since the Great Depression, 10 percent of respondents said they had positions that were hard to fill. In this report, we argue that this time is quantifiably different. Employers’ complaints have merit, and the labor shortages problem is deeply affecting the US economy.

Several workforce trends have contributed to dramatic changes in US labor markets

Indeed, the extreme shift in labor market conditions in the past decade is not a coincidence but the result of a perfect storm in which several long-term trends have converged at the same time.

Working-age population growth is coming to a halt. As the large baby boomer generation has begun retiring in recent years, the working age population is growing more slowly than at any other time in US history—essentially coming to a halt. Prior to the Great Recession, the number of all retirees increased by about 400,000 a year, but since 2011 it surged threefold to about 1.2 million new retirees annually. This rise helped to create additional job openings for unemployed people, contributing to the tightening of the US labor market. The trend of high retirement levels will continue through 2030, as the youngest baby boomers age out of the workforce.

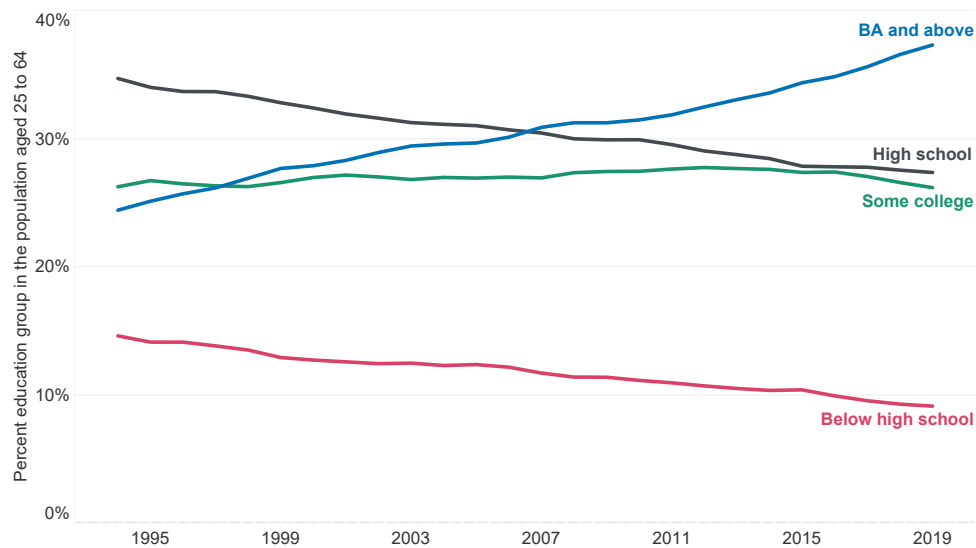
For noncollege graduates, the working-age population is already shrinking. But within the overall trend of slowing working-age population growth, two opposing trends emerge. While the portion of the working-age population with a bachelor’s degree is solidly and uninterruptedly growing at about 2 percent annually, the portion without a bachelor’s degree is rapidly shrinking. This is a result of the growing share of young adults choosing to go to a four-year college, especially since the Great Recession (Chart 2).

The recovery in labor force participation has been disappointing. Overall, the tight labor market is leading to an increase in labor force participation in recent years. But the improvement has not been remotely fast enough to prevent the labor market from tightening and has been somewhat disappointing. The labor force participation rate for the core working-age population, those 25 to 54 years old, remains below prerecession rates and 2000 rates, especially for men (Chart 3).

Chart 2

US population is becoming more educated

The share of the population, aged 25 to 64 by education, 1994 to 2019



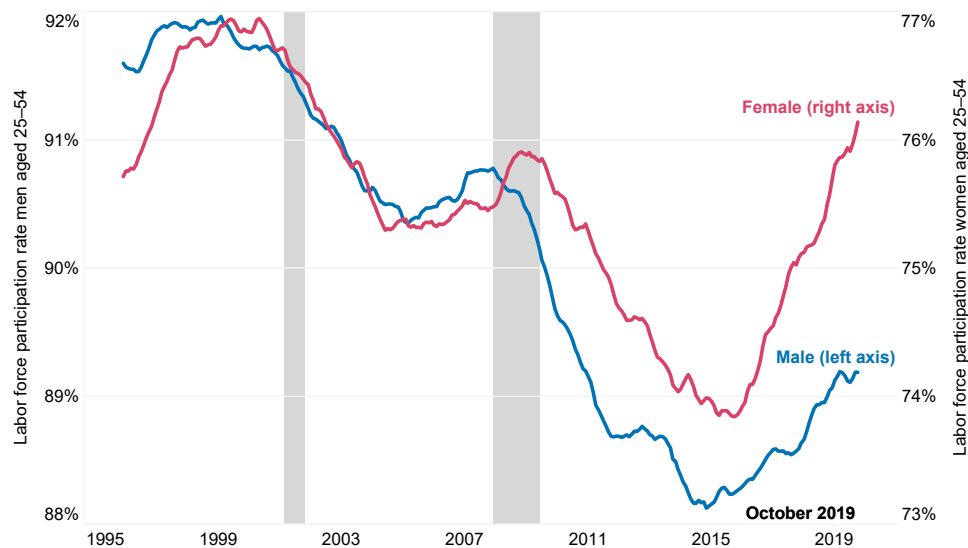
Note: 2019 represents the average of November 2018 to October 2019.

Source: The Conference Board, using microdata from IPUMS-CPS, University of Minnesota

Chart 3

The share of the population in the labor force is surprisingly low compared to the late 1990s and 2007

Labor force participation rates for men and women, aged 25 to 54, 12-month moving average, December 1995 to October 2019



Note: Shaded areas represent recessions.

Source: US Bureau of Labor Statistics

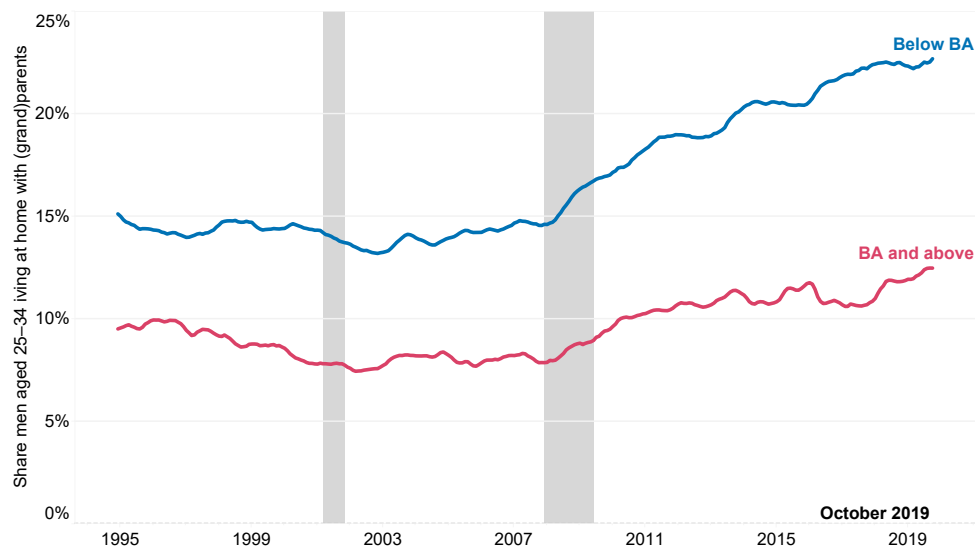
Especially for less-educated men, labor force participation has remained weak and is largely a result of structural changes in family structure, according to a recent article by Ariel Binder and John Bound.¹⁵ In recent decades the share of less-educated men forming and maintaining marriages declined significantly, and the share living with their parents or other relatives rose significantly (Chart 4). This trend is less visible among college graduates and women.

The decline in the need to support a family and the greater ability to draw income support from relatives significantly reduces the incentives for young men to participate in the labor force (Chart 5).¹⁶

Chart 4

Almost a quarter of men, 25 to 34 without a BA, live at home with their parents...

Share of men, aged 25 to 34, living at home with parents or grandparents, by education, 12-month moving average, December 1994 to October 2019



Note: Shaded areas represent recessions.

Source: The Conference Board, using microdata from IPUMS-CPS, University of Minnesota

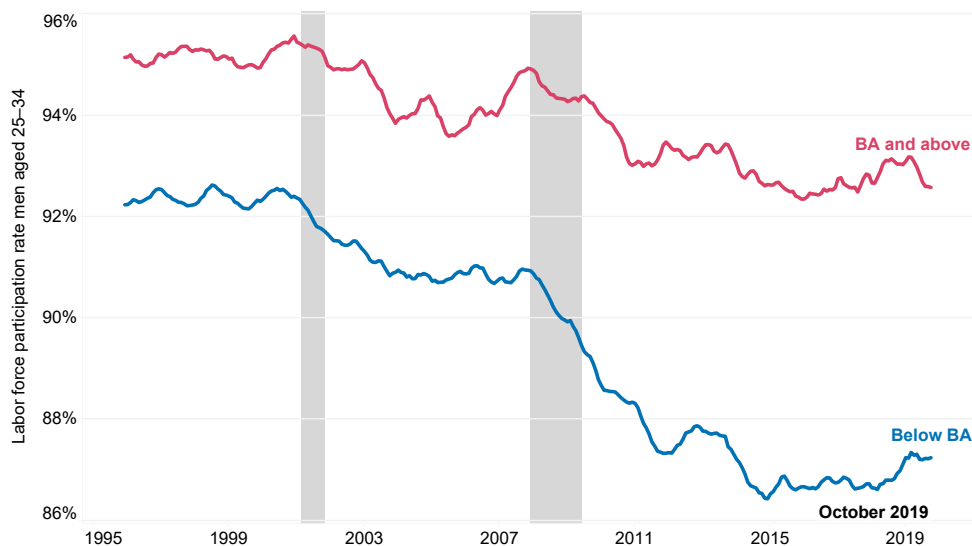
15 Ariel J. Binder and John Bound, "The Declining Labor Market Prospects of Less-Educated Men," National Bureau of Economic Research Working Paper No. 25577, October 2019.

16 The drop in the labor force participation of young men without a BA is not solely the result of permanent withdrawal from the labor force. Much of the drop is a result of an increase in the number of young men who are attached to the labor force but are taking breaks in between jobs. To read more, see John Coglianese, *The Rise of In-and-Outs: Declining Labor Force Participation of Prime Age Men*, Harvard University, 2018.

Chart 5

...And, therefore, participate less in the labor market

Labor force participation rates for men, aged 25 to 34, 12-month moving average, December 1995 to October 2019



Note: Shaded areas represent recessions.

Source: The Conference Board, using microdata from IPUMS-CPS, University of Minnesota

Increase in disability rates—an important factor in low labor force participation rates.

Another important reason for the somewhat disappointing labor force participation rates has been the high rates of people not in the labor force due to disability. Through 2014, the share of people not in the labor force due to disability had continuously increased for more than 20 years. Potential reasons include the aging of the US workforce, the opioid crisis,¹⁷ the automation and offshoring of US manufacturing jobs,¹⁸ and, as some have pointed to, the change in disability benefits for musculoskeletal conditions.¹⁹ ²⁰

Since 2014, this trend seems to have stopped or even slightly reversed, but disability rates remain historically elevated. As Chart 6 shows, disability is especially prevalent among people with lower educational attainment. Indeed, the increase in the share of people not in the labor force due to disability has been the greatest among those with low education levels.

Regions especially affected by the decline in manufacturing and some mining industries, such as the Rust Belt and industrial South, have particularly high concentrations of people out of the labor force due to disability. As a result, the share of available blue-collar and manual services workers is smaller in these regions than in other parts of the country (Chart 7).

17 Alan B. Krueger, "Where Have All the Workers Gone? An inquiry into the decline of the U.S. labor force participation rate," Brookings Papers on Economic Activity, September 2017.

18 David H. Autor, David Dorn, Gordon Hanson, and Jae Song, "Trade Adjustment: Worker-Level Evidence," Quarterly Journal of Economics, September 2014.

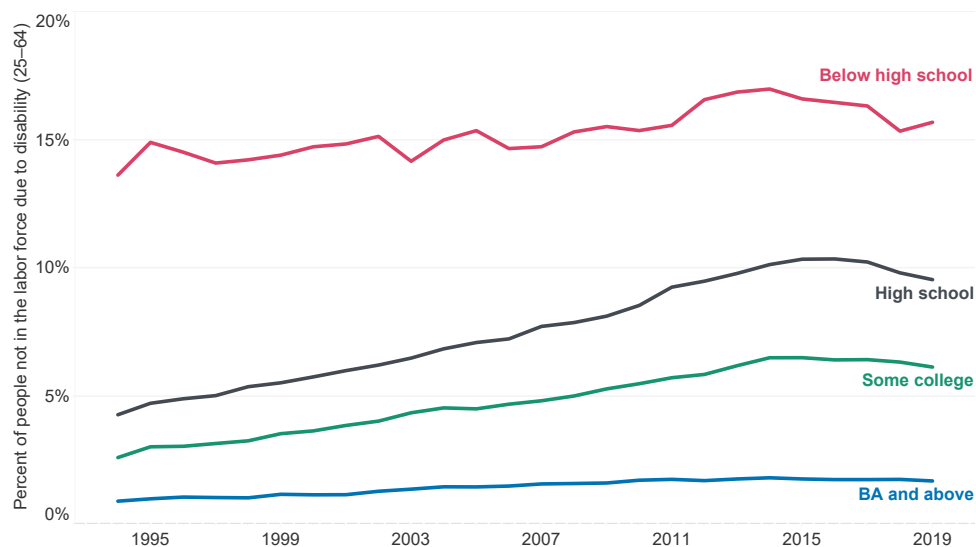
19 Jeffrey B. Liebman, "Understanding the Increase in Disability Benefit Receipt in the United States," Journal of Economic Perspectives 29, no. 2 (Spring 2015): 123–150.

20 Ernie Tedeschi, "Will Employment Keep Growing? Disabled Workers Offer a Clue," New York Times, March 15, 2018.

Chart 6

The incidence of disability is highest for those with low educational attainment

People not in the labor force due to disability aged 25 to 64, as share of the total population aged 25 to 64, by education, 1994 to 2019.



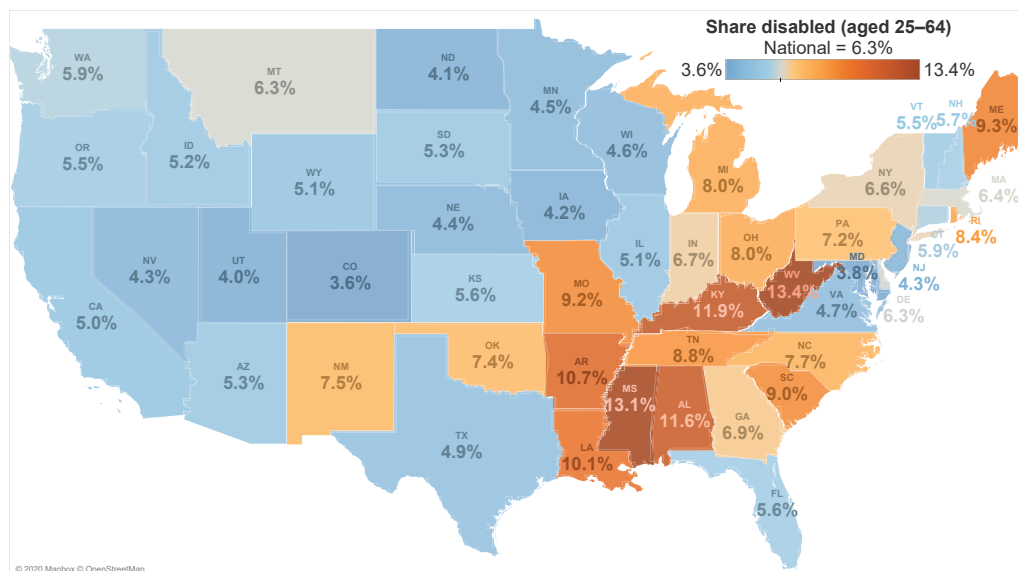
Note: 2019 represents the average of November 2018 to October 2019.

Source: The Conference Board, using microdata from IPUMS-CPS, University of Minnesota

Chart 7

Heaviest concentrations of disability exist in the Rust Belt and industrial South

People not in the labor force due to disability, aged 25 to 64, as share of the total population aged 25 to 64, average of November 2018 to October 2019



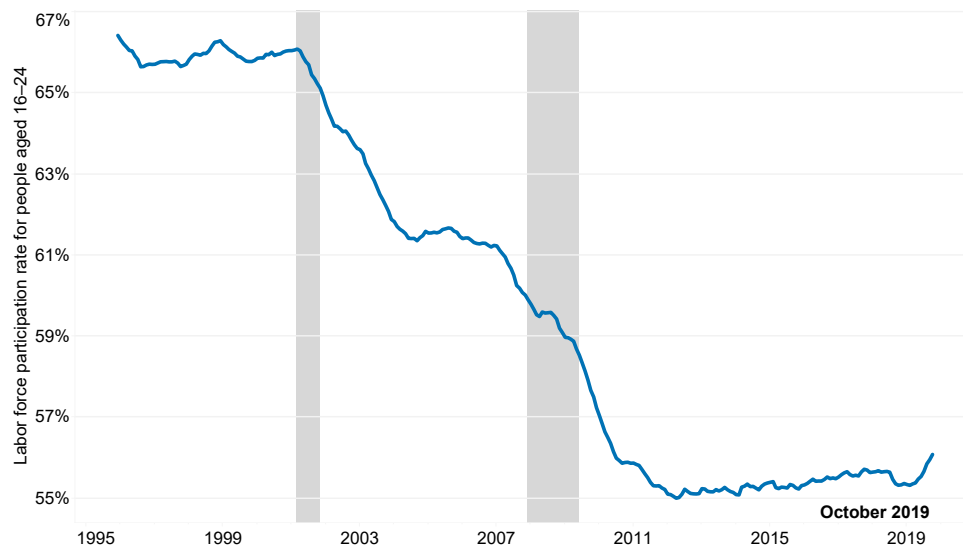
Source: The Conference Board, using microdata from IPUMS-CPS, University of Minnesota

The large drop in the participation rates of 16–24-year-olds is further reducing the supply of less-educated workers. Because this trend is a result of higher education attainment for this age group, it is a positive trend from a societal perspective. But the decline in participation of 16–24-year-olds significantly reduces the supply of workers in occupations that typically hire young and less-educated workers (Chart 8). Example occupations include jobs in food services and recreation, retail sales, childcare, helpers in production and repair and various clerical jobs.

Chart 8

Higher college enrollment rates lead to fewer young workers participating in the labor market

Labor force participation rate for people, aged 16 to 24, 12-month moving average, December 1995 to October 2019



Note: Shaded areas represent recessions.

Source: The Conference Board, using microdata from IPUMS-CPS, University of Minnesota

Labor force participation rates for women and those 55 and older have improved but only marginally. After declining about 2 percent since the Great Recession, female labor force participation rates for those aged 25 to 54 have been increasing over the last couple of years and are now back to 2007 levels. Further tightening of the labor market will likely continue to pull more women into the labor market. These improvements, however, are small in an international context. While female labor force participation rates in the US were as high as those in Northern and Western Europe at the start of this century, at 76 percent, they are now well below the 83 percent in Northern and Western Europe (Chart 9). The higher incidence of part-time work among women in Europe and Japan, as well as government-funded childcare-support policies explain part of the divergence.^{21 22}

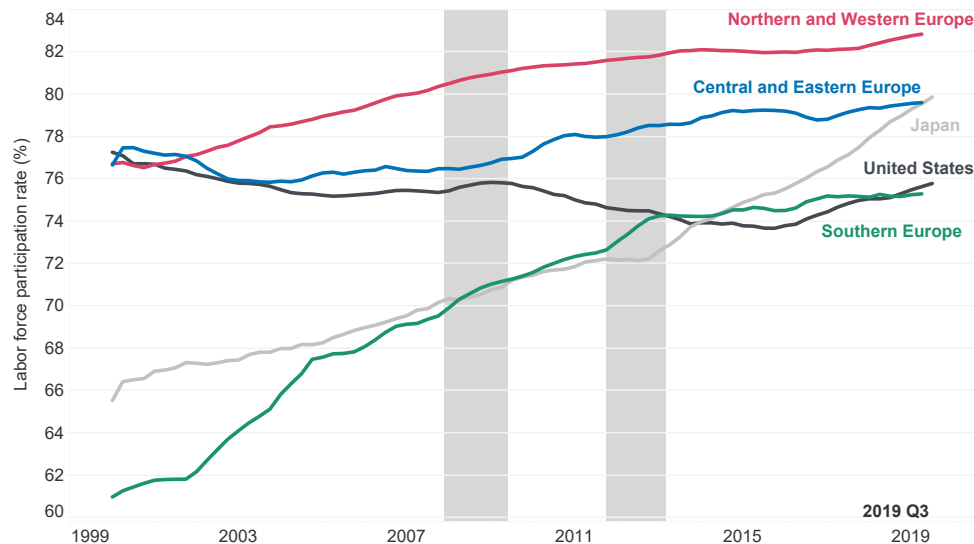
21 Jay Shambaugh, Ryan Nunn, and Becca Portman, *Lessons from the Rise of Women's Labor Force Participation in Japan*, The Brookings Institution, November 2017; Takashi Oshio, Emiko Usui, Satoshi Shimizutani, *Labor Force Participation of the Elderly in Japan*, National Bureau of Economic Research Working Paper No. 24614, May 2018.

22 To learn more about global labor markets, read Gad Levanon and Frank Steemers, *Quarterly Global Labor Market Outlook*, The Conference Board, August 2019.

Chart 9

Increased participation of women would provide an additional source of labor, offsetting retiring baby boomers

The labor force participation rate for women aged 25 to 54, four-quarter moving average, 2000Q4 to 2019Q3



Note: Shaded areas represent recessions.

Sources: OECD; Eurostat; calculations by The Conference Board

In addition, labor force participation of people aged 55 and above has only marginally improved over the last couple of years. With the large baby boomer cohort all now 55 years old and older, the workforce has more workers over 55 than ever before, but there remains potential for even more employment by this group if participation rates start to pick up.

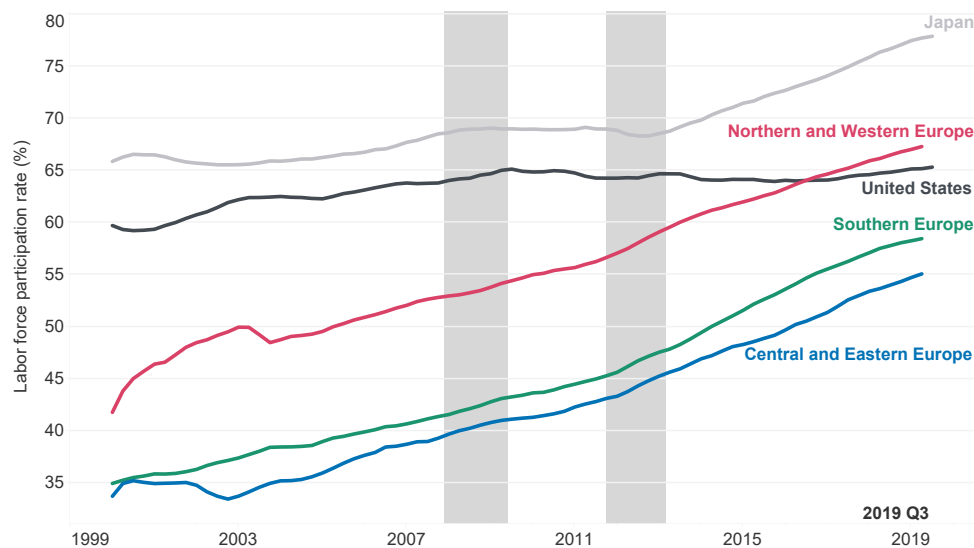
As with female participation, in comparison with other advanced economies, the labor force participation rates for older workers have not shown the same improvements. Participation rates for workers aged 55 to 64 in the US are low compared with rates in Japan and Europe—two other mature economies with aging populations (Chart 10).²³

²³ For more information and business implications of an aging workforce from a European perspective, read, Marion Devine and Ilaria Maselli, *Turning Silver into Gold: Tapping into the Mature Workforce to Close Europe's Widening Talent Gaps*, The Conference Board, July 2017.

Chart 10

In Japan and Europe, labor force participation rates for workers over 55 are increasing—but only marginally in the US

The labor force participation rate people aged 55 to 64, four-quarter moving average, 2000Q4 to 2019Q3



Note: Shaded areas represent recessions.

Sources: OECD; Eurostat; calculations by The Conference Board

Potential decline in the labor supply of undocumented immigrants. While hiring undocumented workers has always been illegal, recent changes in enforcement may have reduced the number of available undocumented immigrant workers. Understandably, these changes are having a larger impact on blue-collar and manual services occupations than on white-collar ones. In a 2016 study by The Conference Board, we found that almost all occupations with a high estimated share of undocumented workers are within the blue-collar or manual services jobs.²⁴ Undocumented immigrants tend to concentrate in construction, agriculture, food preparation and service, cleaning-related occupations, and production—especially clothing and textile.

Overall result is a shrinking supply of noncollege graduates

In sum, a combination of trends has resulted in a decreasing number of noncollege graduates to fill blue-collar and manual services jobs. They include:

- General labor supply trends, such as almost no growth in the working-age population, and slow growth in participation among prime-age men, women, and older workers;
- Specific noncollege trends, including an already shrinking working-age population, very low participation rates for young men without a college degree, higher rates of disability, and fewer undocumented immigrants.

²⁴ Brian Schaitkin, *Importing a Solution: Can Immigration Help Mitigate Looming Labor Shortages?* The Conference Board, September 2016.

It is also worth noting that, with some exceptions, most people with a bachelor's degree are unlikely to end up working in a blue-collar or manual services occupation, especially in a tight labor market.

This level of decline in the supply of blue-collar and manual services workers would not be a problem if the demand for them was shrinking as well. Yet the demand for these workers continues to grow.

The labor productivity slowdown of the last decade is unprecedented

Over the last nine years, labor productivity in the US nonfarm business sector increased by just 0.9 percent per year, compared to 2 to 3 percent annually in the decade prior to the Great Recession. The slow productivity growth means that employers need to increase employment more rapidly to meet demand, thus tightening the labor market further.

With the voluntary quits rate well above the 2007 rate and the time needed to fill positions reaching historic highs, many companies are operating with unfilled positions and overstretched workforces. Blue-collar industries are experiencing an especially high rate of labor turnover.

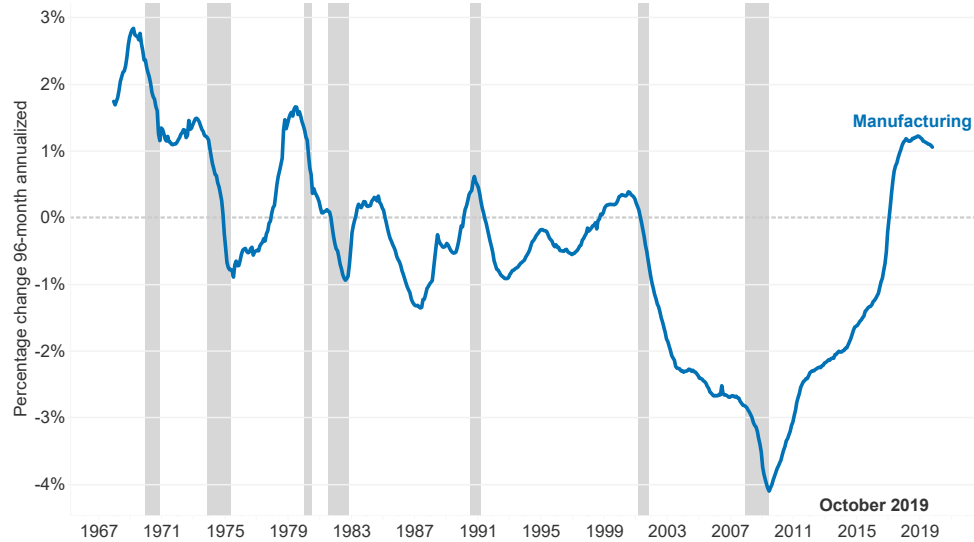
In manufacturing, the largest employer of blue-collar workers, the decline in productivity growth in the past nine years has been even more remarkable, remaining essentially flat after having averaged over 4 percent annually between 1989 and 2007. The inability to raise productivity in manufacturing and the coincident slowdown in offshoring of production jobs led to the fastest growth in manufacturing employment since the 1970s (Chart 11).

Manufacturing is not the only blue-collar industry experiencing rapid employment growth. From 2013 to 2018, employment in transportation and warehousing industries increased by over 20 percent, versus 9 percent in the total economy. This has been partly caused by the rapid growth of e-commerce during this period, which rapidly expanded the demand for home deliveries. In the couriers and messengers industry and the warehousing and storage industry, employment grew by an amazing 33 and 59 percent respectively during the same period. In the past three years, the number of workers added to transportation and material-moving occupations was roughly equal to the number of workers added to all other blue-collar occupations combined (Chart 12).

Chart 11

After years of decline, employment has started to grow again in manufacturing

Manufacturing employment, eight-year annualized percentage change, December 1967 to October 2019



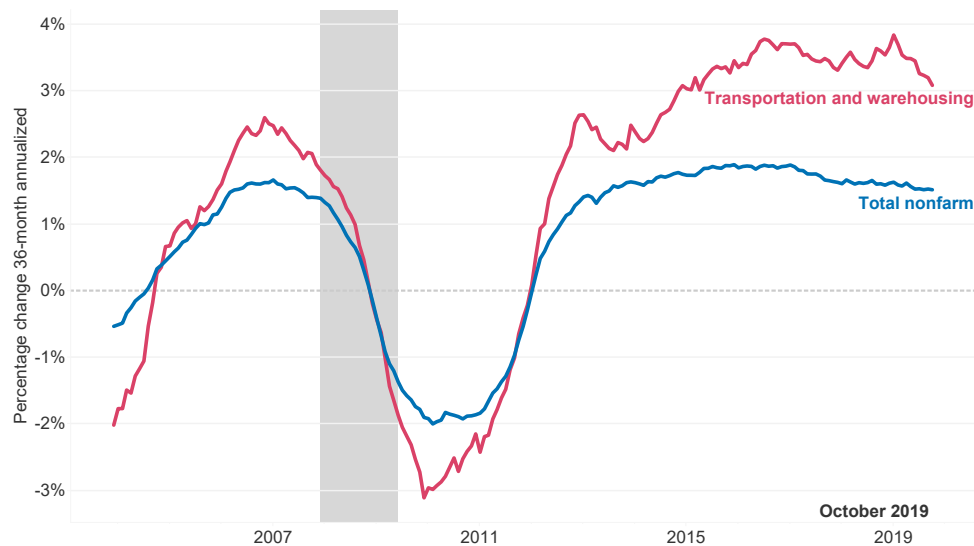
Note: Shaded areas represent recessions.

Source: US Bureau of Labor Statistics

Chart 12

Employment growth in transportation and warehousing is double the national average

Employment growth in transportation and warehousing and total nonfarm, 36-month annualized percentage change, December 2003 to October 2019



Note: Shaded areas represent recessions.

Source: US Bureau of Labor Statistics

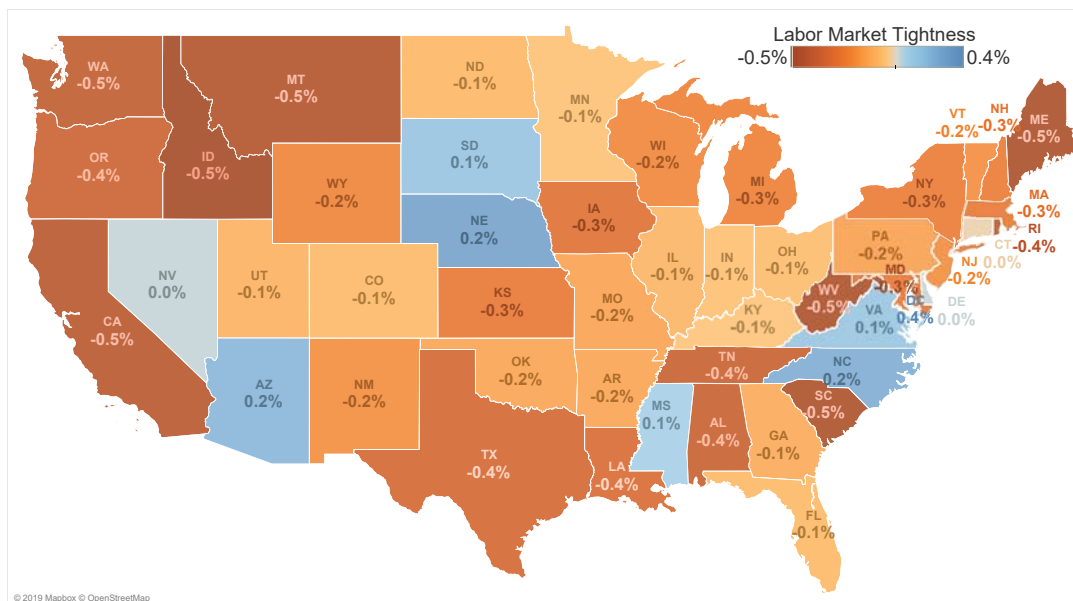
It depends on where you live: a look at labor market tightness by state

Researchers from the Federal Reserve Bank of Richmond created a measure of labor market tightness by considering the relative shares of all people in the working-age population and weighting them by the likelihood of reentering employment. Short-term unemployed people are assigned the highest rate, and people who are retired or disabled are assigned the lowest weight. We apply the same method to create measures of labor market tightness by state with the addition of one more step. The average unemployment rate varies across states. In some places, the natural rate of unemployment is lower than others. In our measure, we adjust for that by comparing current labor market tightness to the average labor market tightness in expansion years between 1994 and 2007.

In the chart, we show labor market tightness measured by state for people without a bachelor's degree—the group that supplies most of the workers to blue-collar and manual services jobs. The map shows that the Pacific area, particularly California, is very tight, while the South Atlantic is among the loosest.

Labor markets in the Pacific area are very tight for blue-collar employers

Labor market tightness by state for people without a bachelor's degree, the difference between the average of the last 12 months and the average of nonrecession years in the period 1994–2007.



Note: Red means tighter and blue means a looser labor market. Our Labor Market Tightness measure follows the method used for the [Nonemployment Index](#), created by Hornstein, Kudlyak, and Lange from the Federal Reserve Bank of Richmond. We apply the method on a state level and only for the population without a bachelor's degree. The numbers represent the difference between the average of the last 12 months compared to the average of the nonrecession period between 1994 and 2007, which functions as a base period of normal labor market conditions. The last 12 months represent November 2018 to October 2019.

Source: The Conference Board is using microdata from the [Current Population Survey](#)

In this expansion, every part of California became tighter. Some regions became tighter faster than others. In 2010, the Pacific region was the least tight region in the country. While employment growth in California has been solid, people in the working-age population have been migrating out of the state, resulting in an only modest increase in the working-age population. As a result, California's labor market for people without a bachelor's degree has been tightening rapidly in recent years and is now one of the tightest in the entire country.

Overall though, changes in labor market tightness are more dramatic over time than across regions. All regions are already quite tight.

For companies, shortages result in unfilled positions, higher labor turnover, and quality concerns

According to the National Federation of Independent Business (NFIB) survey, which disproportionally surveys employers of blue-collar and manual services workers, it is now harder to find qualified workers than at any other period during the survey's history, which dates to 1973.

Relatively speaking, more workers are switching jobs than in previous years. The voluntary quits rate is growing and is well above the 2007 rate, and the time needed to fill positions has reached historic highs. Many companies are operating with unfilled positions, and the burden on the existing workforce is growing. Industries that hire many blue-collar workers, such as manufacturing and transportation, are experiencing an especially high rate of labor turnover.

Concerns about labor quality and cost have followed. In a tighter labor market, when employers have to reach further down the résumé pile, they are more likely to consider candidates who are not fully qualified for given job requirements. According to the NFIB, more applicants do not have enough skills or education, and some may have been out of the labor market for many years. In the NFIB survey, the share of businesses that cited labor quality as their main concern rose from 7 percent in 2013 to an all-time high of 24 percent for the 12-month period ending in September 2019, making labor quality the highest-ranked concern among independent businesses. What's more, a recent survey of members of The Conference Board found that dissatisfaction with worker performance seems to be more prevalent in blue-collar occupations.

Employers struggle with the adverse results of labor shortages

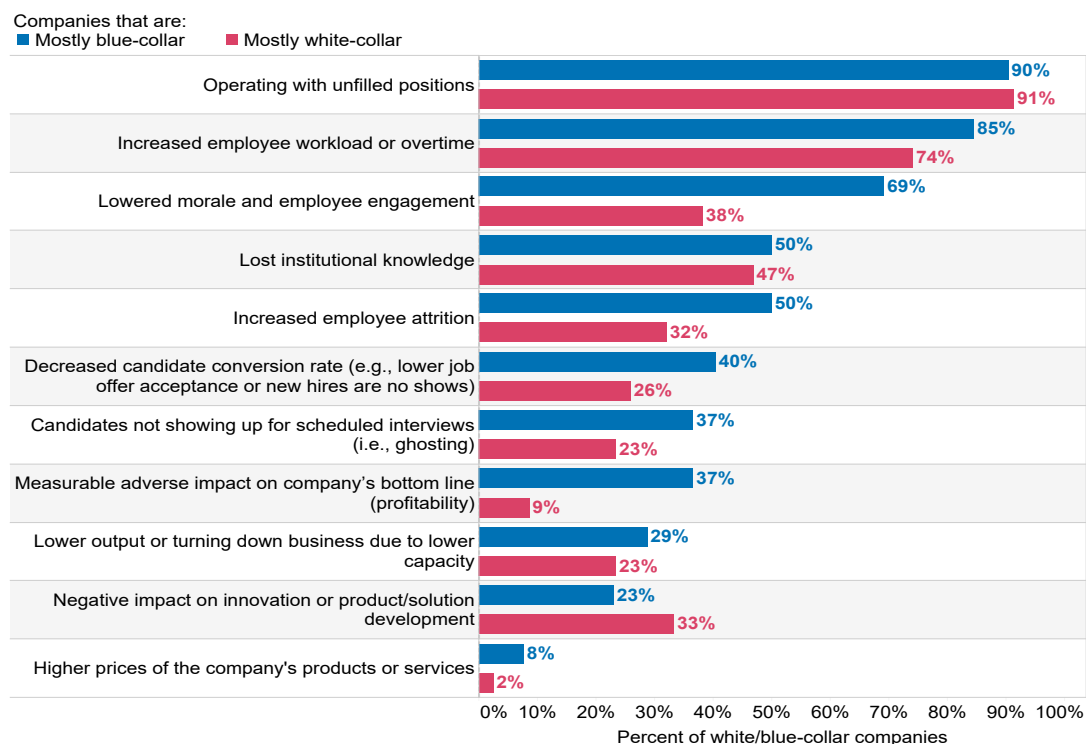
As part of The Conference Board Labor Shortages Solutions Survey (for details, see "The Conference Board Labor Shortages Solutions Survey" on page 40), we asked mostly HR practitioners about the specific business outcomes that have occurred as a result of recruitment and/or retention difficulties. With blue-collar occupations facing some of the most severe labor shortages, it is not surprising that the effects of the talent crunch are being felt more severely by companies composed of mostly blue-collar workers (see Chart 13, in which most of the blue bars are larger than the corresponding white bars for each outcome).

When compared to mostly white-collar companies, a much greater share of mostly blue-collar firms saw *lowered morale and employee engagement* and a *measurable adverse impact on the company's bottom line*. Blue-collar-heavy companies have also had greater difficulty both recruiting and retaining workers, as they were more likely to report *candidates not showing up for scheduled interviews*, a *decreased candidate conversion rate*, and *increased employee attrition*. Not surprisingly, we find that 29 percent of mostly blue-collar companies have *lowered output or turned down business due to lower capacity*, consistent with the National Association of Manufacturers' (NAM) finding that 28 percent of manufacturers have declined new business opportunities due to a lack of workers.²⁵

25 Chad Moutray, *A Hiring Engine: A Breakdown of the Job Openings in Manufacturing*, National Association of Manufacturers, May 2019.

Chart 13

Business outcomes as a result of recruitment and/or retention difficulties



Source: The Conference Board Labor Shortages Solutions Survey, 2019

Overall, regardless of a company's make-up of workers, about 90 percent of survey respondents indicated that they were *operating with unfilled positions* as a result of labor shortages, while most had experienced *increased employee workload or overtime*, and about half had suffered from *lost institutional knowledge*.

Indeed, a larger proportion of white-collar- than blue-collar-heavy companies experienced a *negative impact on innovation or product/solution development*. Looking ahead, as challenges around sourcing and retaining top talent continue to curb innovation, deter new business, and increase labor costs, more companies will start to feel the squeeze on profits and added pressure to raise prices—outcomes that have not yet fully materialized, especially among companies more dependent on white-collar occupations.

The range of business outcomes and their uneven impact across US companies suggest that there is no universal approach to solving the labor shortage problem. Instead, companies will have to employ a range of recruitment and retention strategies, often in combination, to enhance their workforce. The Conference Board Labor Shortages Solutions Survey and subsequent interviews of talent acquisition leaders provide numerous examples of practices and initiatives that are being implemented toward the successful recruitment and retention of workers (see section “Company Solutions: Taking a Multistrategy Approach to Combat Labor Shortages,” on page 39).

How Higher Wages Are Affecting the Labor Market—and Dampening Profits

In a tight labor market, it makes sense that employers would raise wages to recruit and retain employees, and we have seen evidence of that occurring. But not all workers are seeing the same level of wage growth, while many employers are feeling the squeeze on their profits—an effect that may worsen as shortages intensify.

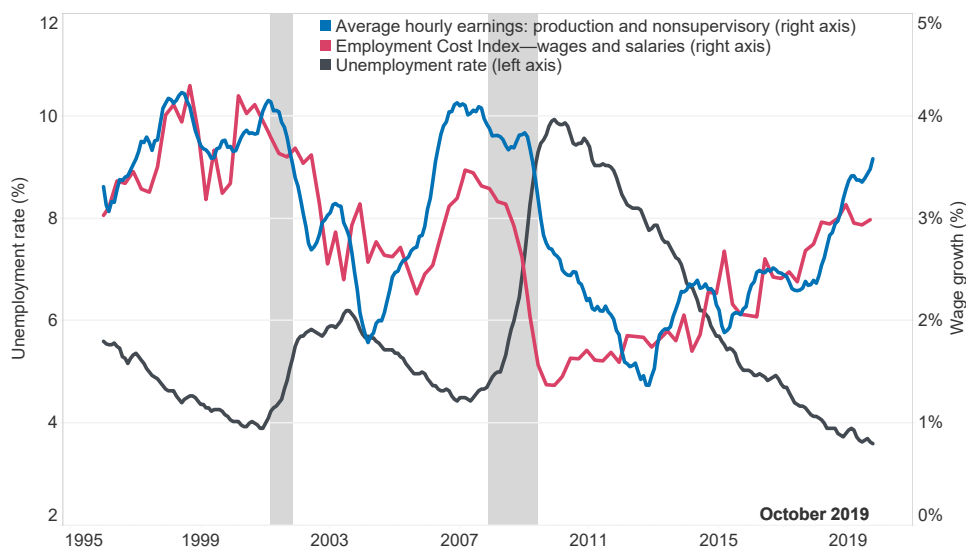
The number one solution: Raising wages and salaries²⁶

Given the level of recruitment and retention difficulties, it is not surprising that wages have been rapidly accelerating in recent years (Chart 14). Based on The Conference Board Labor Shortages Solutions Survey (see “The Conference Board Labor Shortages Solutions Survey” on page 40), 75 percent of participating companies indicated they were increasing wages and salaries, making it the most cited solution to the recruitment and retention difficulties prevalent in this tight labor market.

Chart 14

Wage growth is accelerating but remains below prerecession rates.

The unemployment rate and year-over-year percentage change in wages, 3-month moving and quarterly averages, January 1996 to October 2019



Note: Shaded areas represent recessions.

Source: US Bureau of Labor Statistics

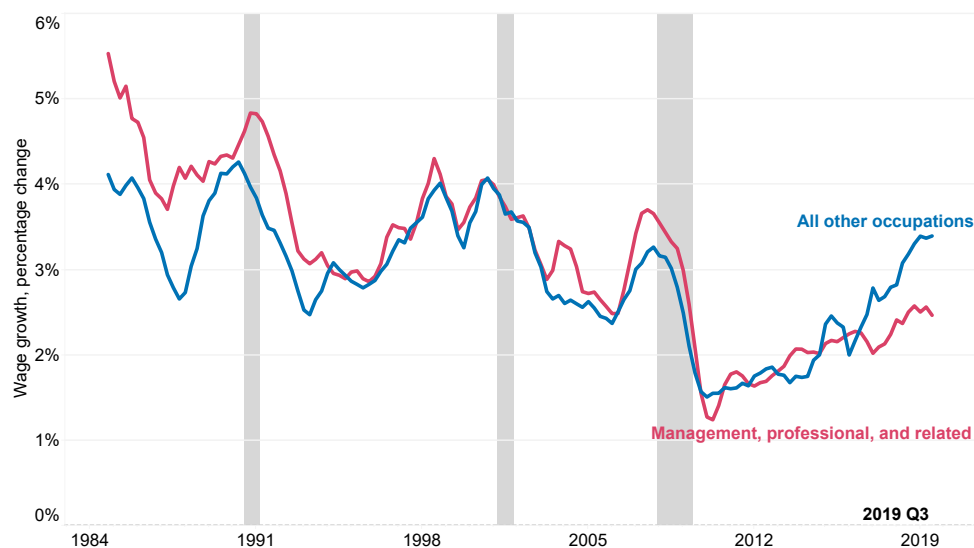
26 This section partly relies on our Salary Increase Budgets Survey: Gad Levanon, Judit Torok, and Frank Steemers, *US Salary Increase Budgets for 2020*, The Conference Board, November 2019.

Given that labor markets are tighter for blue-collar and manual services workers than for white-collar professionals, it is not surprising that the wage acceleration in recent years has been greatest in occupations that require less formal education than do white-collar occupations. In most blue-collar, manual services, sales, and office occupations, wage growth rates are rapidly accelerating, already exceeding 2007 rates, and, for the first time since the 1980s, wage growth for this group is clearly outpacing the growth for management, professional, and related occupations (Chart 15). Also driving these wage gains are the minimum wage hikes that many states have implemented in recent years, affecting workers and occupations at the bottom of the wage income distribution.

Chart 15

Wages are growing faster for blue-collar, manual services, sales, and office workers

Year-over-year growth in the Employment Cost Index (wages and salaries), by occupation group, four-quarter moving average, 1984Q4 to 2019Q3



Note: Shaded area represents recessions.

Sources: US Bureau of Labor Statistics and calculations by The Conference Board

Despite the historically tight labor market, overall wage growth is still below prerecession rates. The reasons for that have been generating a busy public debate in recent years. Some possible reasons why wages have not been growing as fast as in previous decades:

- 1 Because most high earners come from management and professional occupations and the share of these occupations in total labor compensation is well above 50 percent, growth in total labor compensation is held down by this group's compensation, which has not increased as much as that of other occupational groups.

- 2 A second explanation is that while labor markets are indeed very tight, which is pushing wage growth higher, other determinants of wage growth are moving in the opposite direction. Measures of nominal and real GDP as well as measures of price inflation are all well below 2007 rates. It is not surprising that wages are growing a little more slowly at a time when sales and revenues are growing much more slowly compared to recent decades.
- 3 Another potential explanation is that the labor market is indeed tighter now than in 2007, but wage growth, and especially salary increase budgets, are lagging and have not fully adjusted to the tighter labor market. If that explanation is correct, wages are likely to accelerate.

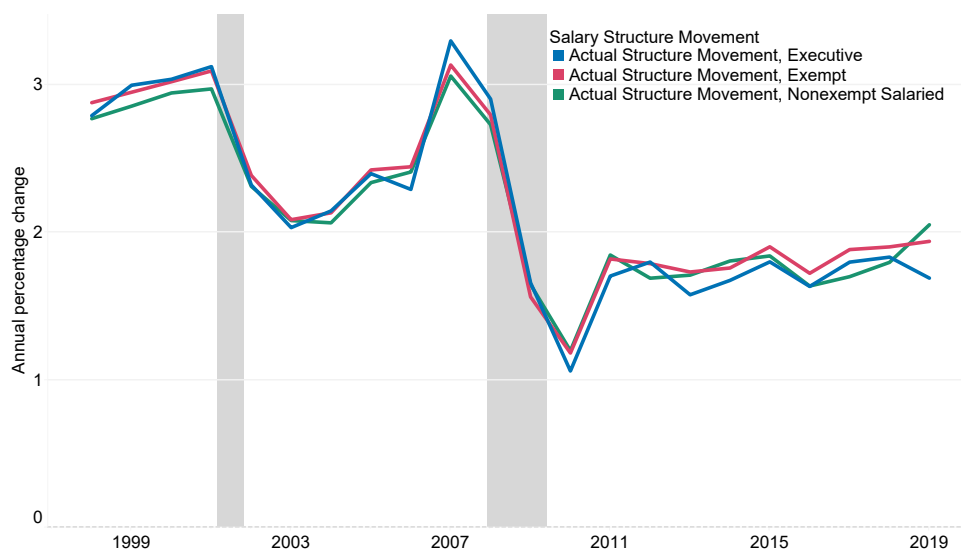
In line with the last explanation, The Conference Board Salary Increase Budgets Survey provides a unique explanation for why wages have been accelerating more modestly in recent years than many analysts had expected. The survey shows that employers have been slow to raise the salary structure in their companies despite a rapid increase in wages for new hires. As a result, overall wage growth is accelerating much faster than salary increase budgets.

Chart 16 shows the salary structure movement for several groups of workers. During the Great Recession, salary structure movement collapsed to its lowest rate ever; it recovered to almost 2 percent in 2011, but since then has shown almost no acceleration and has remained well below prerecession rates. This suggests that employers are raising salary structures much more slowly than they did before the Great Recession. Chart 17 shows that salary increase budgets have behaved in the same way.

Chart 16

Salary structure movement remains well below prerecession rates

Average actual salary structure movements, percent change from previous year, by category, 1998 to 2019



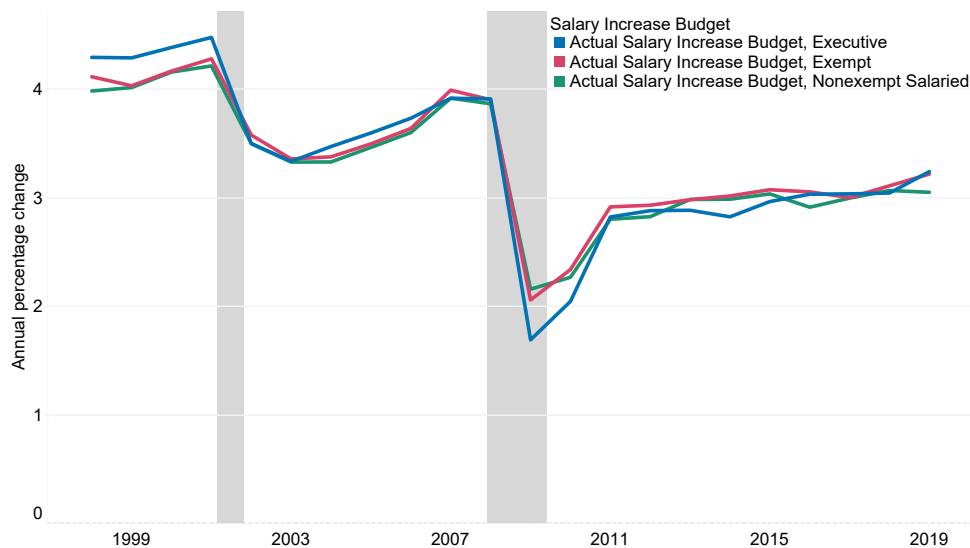
Note: Shaded areas represent recessions.

Source: The Conference Board

Chart 17

Salary increase budgets also remain well below prerecession rates

Average actual salary increase budget, percent change from previous year, by category, 1998 to 2019



Note: Shaded areas represent recessions.

Source: The Conference Board

About The Conference Board Salary Increase Budgets Survey²⁷

This year, 229 organizations completed the survey, which was fielded between April 16 and June 21, 2019.²⁸ We requested data for four employment categories: nonexempt hourly (nonunion), nonexempt salaried, exempt, and executive.

Definitions:

Salary increase budget refers to the pool of money an organization dedicates to salary increases for the coming year. It is represented as a percentage of current payroll; the salary increase budget is calculated using a predetermined total percentage of base pay (excluding overtime, bonuses, etc.). The budget is used for awarding merit or performance increases to individual employees. It may also be used for pay adjustments, such as promotional increases.

Salary structure movement or adjustment refers to the changes (usually annual) to the salary structure of a compensation program. Organizations make these adjustments to the minimums, midpoints, and maximums of their pay ranges to account for changes in the cost of living and salary markets within the industry.

²⁷ For the full report, see Gad Levanon et al., *US Salary Increase Budgets for 2020*, The Conference Board, November 2019.

²⁸ Eleven organizations indicated that they provided information for their specific business units or did not answer this question; their responses are not included in the analysis.

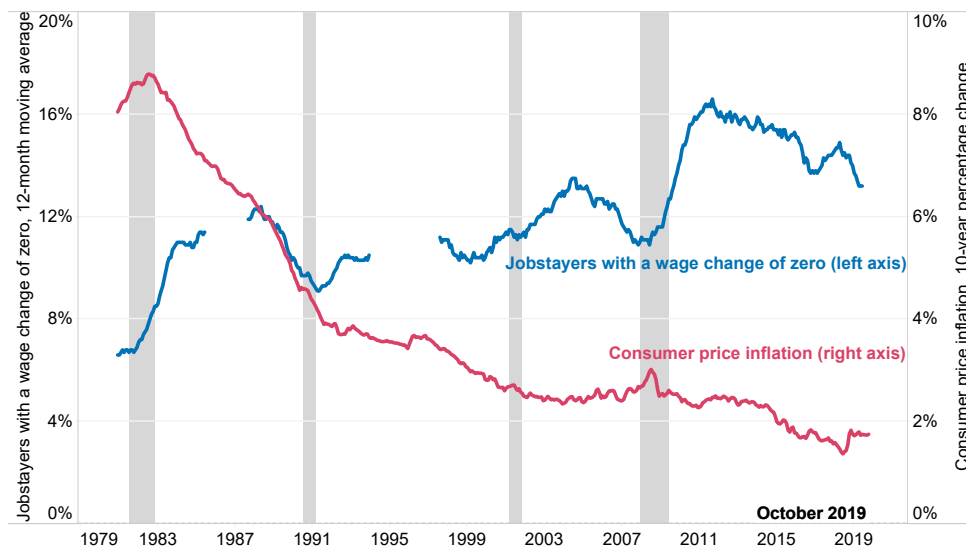
Why is overall wage growth rising while salary increase budgets remain mostly flat?

- 1 The expansion of the past decade is characterized by a tightening labor market but relatively slow economic growth and weak price inflation. The tightening labor market has had a strong impact on the wages of new hires, which have been accelerating rapidly in recent years.
- 2 Wage increases for new hires are not typically included in salary increase budgets.
- 3 In addition, salary increase budgets generally do not include promotional increases or market adjustments, including large adjustments to comply with rapidly rising minimum wage laws in recent years.
- 4 Salary structure movements and salary increase budgets may be more affected by cost of living adjustments than by labor market conditions, and, in the past decade, inflation has remained more muted than at any time since the 1960s. It has been documented that when inflation declines, a smaller share of workers receive cost of living adjustments.²⁹ This may also explain why the share of jobstayers (workers who stayed in their jobs over the past 12 months) with no change in wages over the past 12 months has been well above historical rates over the past decade (Chart 18).

Chart 18

Still a relatively large share of jobstayers do not experience any wage increases

Jobstayers with a wage change of zero, 12-month moving average, and consumer price inflation, 10-year percentage change, December 1980 to October 2019



Note: Shaded areas represent recessions. Data is not reported in some periods due to breaks in the source data.

Sources: US Bureau of Labor Statistics and the Federal Reserve Bank of San Francisco

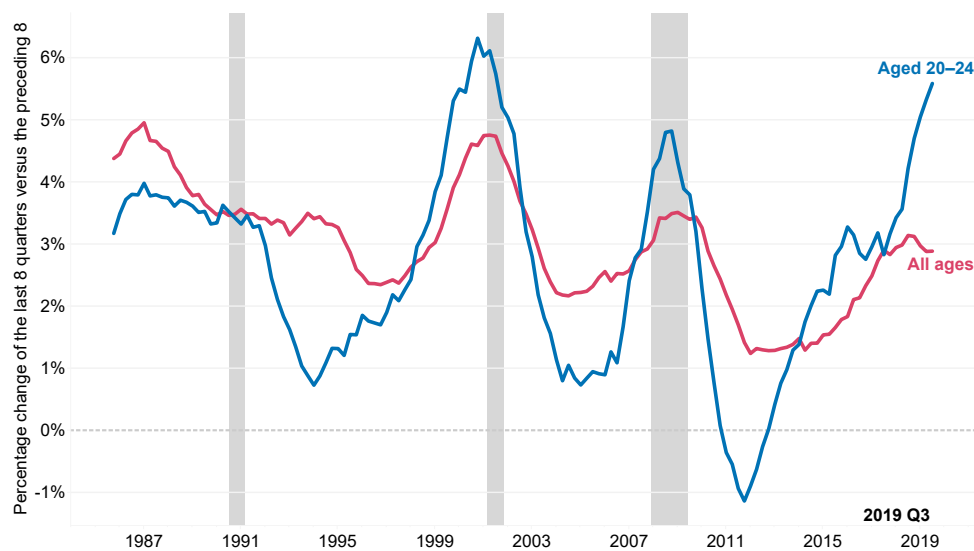
²⁹ "In 1976, 61 percent of union workers covered by major collective bargaining contracts had COLA provisions, but by the end of 1995, when the US Bureau of Labor Statistics stopped collecting data on collective bargaining settlements, COLA coverage had fallen to 22 percent." James F. Ragan, Jr. and Bernt Bratsberg, "Un-Cola: Why Have Cost-of-Living Clauses Disappeared from Union Contracts and Will They Return?" *Southern Economic Journal* 67, no. 2, (October 2000), 304–324.

Faster wage growth for new hires is partly reflected in the wage growth of young workers (most of them new hires), rather than overall wage growth. Chart 19 shows the wage growth of workers 20–24 years old versus all workers. In every past period of a tight labor market, wages for younger workers have tended to accelerate faster than those of the general population. Recently the wage growth rates of young workers surpassed prefinancial crisis levels and are almost at the rates they were in 2000. However, wage growth for all workers, which is heavily affected by existing workers (exclusive of new hires), is still below 2007 rates.

Chart 19

Wages for young workers, a proxy for new hires, are rising faster than total wages

Wages for workers ages 20–24 and all other workers age 16 and older, last eight quarters versus the eight preceding quarters, annualized percentage change, 1985Q41 to 2019Q3



Note: Shaded areas represent recessions.

Sources: US Bureau of Labor Statistics and calculations by The Conference Board

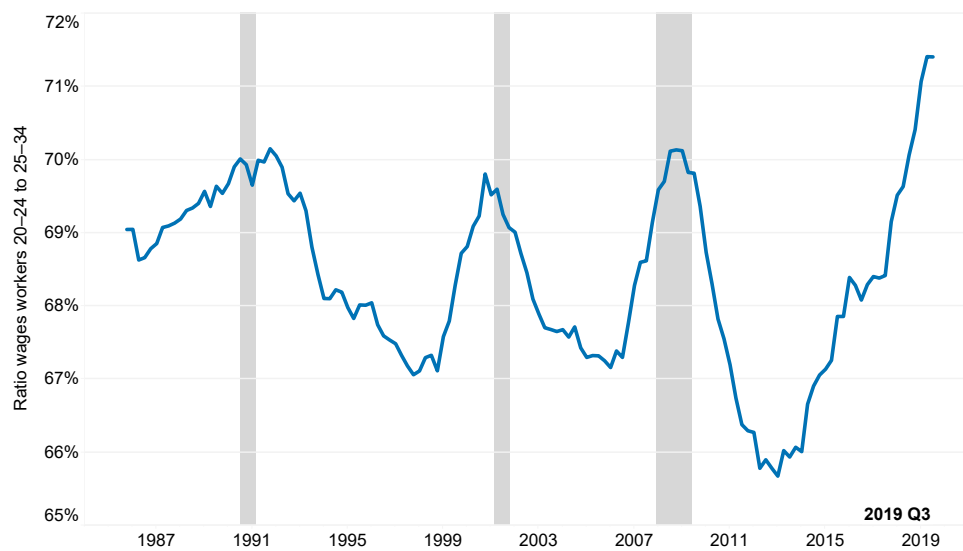
In recent years, faster wage growth for new hires has led to historic levels of wage compression. Wage compression occurs when current workers are paid the same as or less than new hires in the same position, or when the wage premium for experience shrinks so that more experienced workers feel their pay advantage is no longer significant.

Chart 20 shows the ratio of the wages of workers aged 20–24 years versus those of workers aged 25–34. This segmentation creates a proxy for two groups: we assume the younger group consists of a much larger share of new hires; the older one consists of more experienced workers. In recent years, the ratio between the two has reached its highest level since the early 1980s. Such pay compression could lead to higher labor turnover. An August 2017 Pearl Meyer survey³⁰ found that “80 percent of survey respondents said that salary compression has either a high or moderate impact on employee retention.” In extreme cases, it could lead to pay inequities that violate equal pay laws.

Chart 20

The wage gap between new entrants and existing workers is at its lowest in 36 years

Ratio of the wages of workers 20–24 years of age versus those of workers 25–34 years of age, eight-quarter moving average, 1985Q4 to 2019Q3



Note: Shaded areas represent recessions.

Sources: US Bureau of Labor Statistics and calculations by The Conference Board

30 Rebecca Toman, *The Squeeze Is On: Get a Grip on Salary Compression*, WorldatWork-Pearl Mayer, November 2017.

The incidence of pay compression is more frequent now because within the span of a decade, the US shifted from having its weakest labor market since the Great Depression to one of its tightest. Workers who entered the labor market at the beginning of the decade enjoyed a much less generous “welcoming committee” compared to recent job entrants who start with salaries that are higher than those of existing employees.

Despite competition for talent, moderate wage growth expected

As Charts 16 and 17 show, salary structure movement and salary increase budgets accelerated somewhat in 2019. Rapid wage growth for new hires is generating pay compression that could lead to higher labor turnover. Increasingly, higher levels of pay transparency are becoming the norm. Employers should assume employees are aware of their relative compensation levels.

In such an environment, there will be some additional pressure on employers to raise wages faster for existing workers. They could raise regular wage levels or other types of compensation such as signing bonuses, variable pay, and merit bonuses for high performers. When capacity for raising salaries is limited, discussing the issue in frank “stay interviews” with valuable existing workers is a better approach than hoping they haven’t noticed the pay gaps. In such cases, employers could consider individual nonmonetary awards. That strategy can backfire, however, because it is often more costly to replace an employee than it is to retain one with a pay increase.

Despite such pressures, future acceleration in wage growth is likely to be muted as corporate profits continue to decline due to rising labor costs. Our survey shows that 2019 estimates of salary increase budgets for 2020 are only slightly higher than they were in 2018.

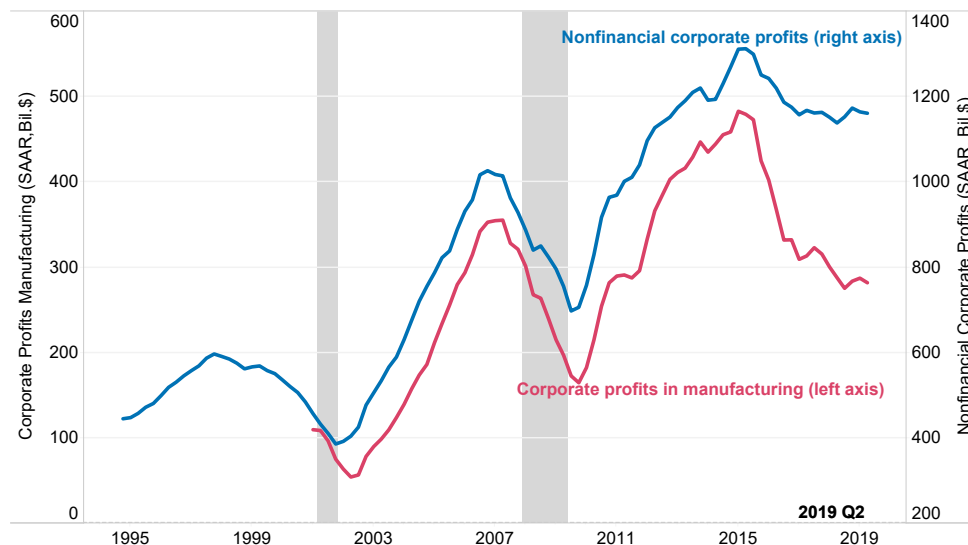
Rising wages squeeze profits

The accelerations in wages and quit rates and the slow labor productivity growth are squeezing corporate profits in the United States. In the second quarter of 2019, total corporate profits in the US were down 5 percent relative to their peak in the third quarter of 2014. Profits in the nonfinancial sector dropped by 16 percent during this time, with manufacturing profits taking the biggest hit and dropping 44 percent, from \$478 billion in the third quarter of 2014 to \$266 billion in the second quarter of 2019 (Chart 21).

Chart 21

Corporate profits are declining for nonfinancial corporations—especially in manufacturing

Corporate profits, four-quarter moving average, seasonally adjusted, 1994Q4 to 2019Q2



Note 1: Shaded areas represent recessions.

Note 2: Nonfinancial corporate profits are adjusted for inventory valuation and capital-consumption. Manufacturing profits are only adjusted for inventory valuation.

Source: US Bureau of Economic Analysis

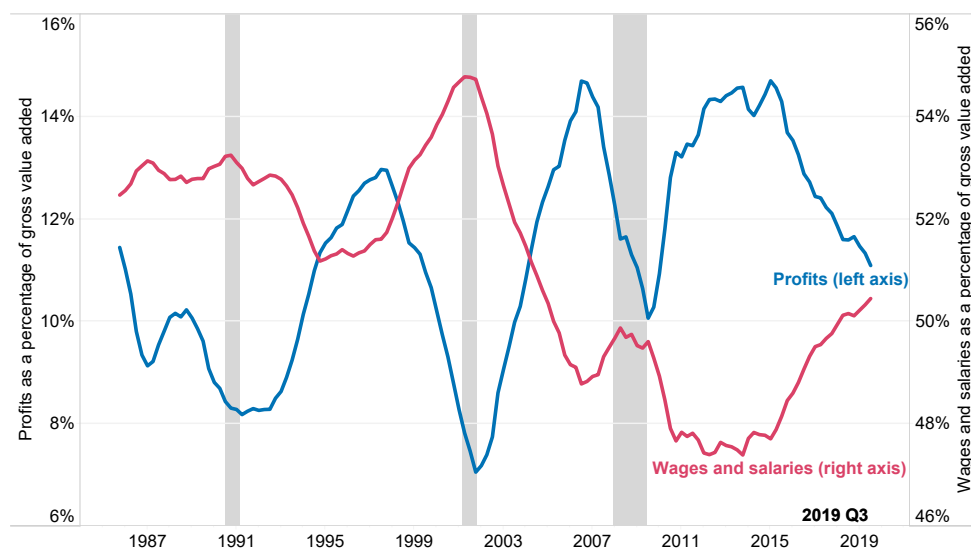
Moving forward, as wages accelerate, many companies will continue to see negative effects on the bottom line. As a useful reminder, between 1997 and 2000, one of the strongest periods in the history of the US economy, corporate profits in the nonfinancial domestic sector declined by more than 20 percent (Chart 21). Those were years of unusually low unemployment, which drove labor costs to grow faster than revenues. We are now in a period when labor markets are also very tight, but economic and productivity growth are nowhere close to the rates of the late 1990s. As a result, corporate profits are even more vulnerable now than they were then.

When looking at wages and salaries in relation to gross value added (revenues minus purchased inputs) in the nonfinancial corporate sector, Chart 22 shows that the share of wages and salaries has been rapidly growing in recent years, leading to a significant drop in profitability. With the US economy projected to slow while labor shortages continue to escalate, the squeeze on corporate profits is likely to become more severe. If the current trend continues, profitability rates will drop to historic lows. Profit declines make companies more reluctant to spend—a self-perpetuating trend that may slow down economic growth even further.

Chart 22

Labor costs have started to eat into corporate profits

Corporate profits (with inventory valuation and capital-consumption adjustment) and wages and salaries, as a share of gross value added of nonfinancial corporations, four-quarter moving average, seasonally adjusted, 1985Q4 to 2019Q3



Note: Shaded areas represent recessions.

Source: US Bureau of Economic Analysis

Company Solutions

Taking a Multistrategy Approach to Combat Labor Shortages

Because the most recent US example of an extended period of tight labor markets was in the late 1990s, most executives working today have never experienced one. We decided to find out more about how business leaders have been working to solve their hiring and retention problems and to share this important information.

In the spring of 2019, The Conference Board Labor Shortages Solutions Survey asked 225 business leaders, mostly HR practitioners, about the adverse business outcomes their companies were experiencing due to recruitment and retention problems (Chart 13) and what their organizations were doing to solve the problems (Chart 23). Our goal with the survey was to find out which solutions firms were leveraging most and least frequently from a pool of 59 possible solutions (see Appendix Table, page 82) to these challenges.

Companies typically use a combination of solutions to deal with labor shortages. There is not one magic bullet solution that will solve the labor shortages problem, especially in a tight labor market, so the mix of implemented solutions will vary for most companies.

Increasing wages is an important but insufficient solution to labor problems

Based on The Conference Board Labor Shortages Solutions Survey, 75 percent of participating companies indicated they had *increased wages and salaries*, making it the overall number one solution to the recruitment and retention difficulties prevalent in a tight labor market. Predictably, companies most affected by labor shortages were more likely to increase wages and salaries than those that were least affected (82 versus 68 percent, see Appendix Table).

However, our survey results suggest that increasing worker pay only helps to a point. Employers must take further steps to draw potential candidates and retain current employees. In addition to increasing compensation, some of the most common solutions include expanding the labor pool to underrepresented demographics, automation, and other recruitment and retention strategies, which we discuss in the following section.

The other critical strategies companies are using to alleviate labor challenges

After raising wages, top solutions cited by respondents to our solutions survey fall into five categories, including:

- 1 Implementing tactical improvements to recruiting efforts
- 2 Widening the talent pool: relaxing hiring criteria
- 3 Increasing training and developing talent pipelines
- 4 Making the company a more attractive place to work
- 5 Implementing tactical improvements to retention efforts

The Conference Board Labor Shortages Solutions Survey

Between April and June 2019, The Conference Board surveyed talent acquisition leaders in 225 companies ranging from small firms to large multinational enterprises to uncover the specific solutions that they are using to combat the labor shortage.³¹ Companies could choose to identify in one of four ways: 1) having difficulty recruiting workers, 2) having difficulty retaining workers, 3) having difficulty both recruiting and retaining workers, or 4) having neither difficulty.

Of the companies surveyed, 70 percent said they faced recruitment challenges, whereas less than half (48 percent) reported having retention problems. Overall, over three-quarters (76 percent) of respondents said they were having difficulties recruiting workers, retaining workers, or both. Only 20 percent indicated neither recruiting nor retaining workers was a problem; these results were not included in our analysis.

Based on each company's unique labor problem, companies selected from 59 possible actions (see Appendix Table) to reduce recruitment and retention challenges among blue- and white-collar occupations.

To garner the most effective solutions, we identify the actions used by companies that have been "most affected" by labor shortages, defined as those companies that indicated they were affected by five or more adverse business outcomes as a result of recruitment or retention difficulties. In contrast, we define companies "least affected" by labor shortages as those affected by less than five adverse business outcomes. In this report, we highlight the solutions that have both been used most frequently and have the largest gaps in usage intensity between firms most and least affected by labor shortages (see Chart 23). In other words, we focus on the solutions that have been implemented by firms to specifically solve the labor shortage problem.

Solutions showing little to no gap in usage intensity between lightly and heavily affected companies—such as enhancing the company culture, the employment brand, or corporate social responsibility (see Appendix Table)—are often pursued as part of a general talent acquisition or business strategy regardless of labor shortages. By contrast, many of the solutions with the largest usage intensity gaps are tactical recruitment and retention solutions, or the low hanging fruit that can be implemented relatively easily by talent acquisition teams with less coordination or buy-in from other parts of the organization and, often, at relatively low cost. (See discussion on implementing tactical improvements to recruitment and retention efforts on pages 42 and 52, respectively.)

Participating companies primarily reflected large enterprises in services industries. Nearly two-thirds (65 percent) generated revenues over \$1 billion. Fully 70 percent were services-oriented,³² including companies in business, consulting, and professional services (12 percent); financial, insurance, and real estate activities (11 percent); and healthcare and pharmaceuticals (11 percent). Among the remaining 30 percent of respondents in nonservices industries, manufacturing establishments accounted for more than a fifth (21 percent) of total participants.

Given the larger weight of services in the sample, it's not surprising that nearly half of respondents (48 percent) described the general distribution of workers in their company as mostly white-collar, while only 31 percent said that their workers were mostly blue-collar. Just over a fifth (21 percent) of survey participants indicated that their company's workforce was equally split between white- and blue-collar workers.

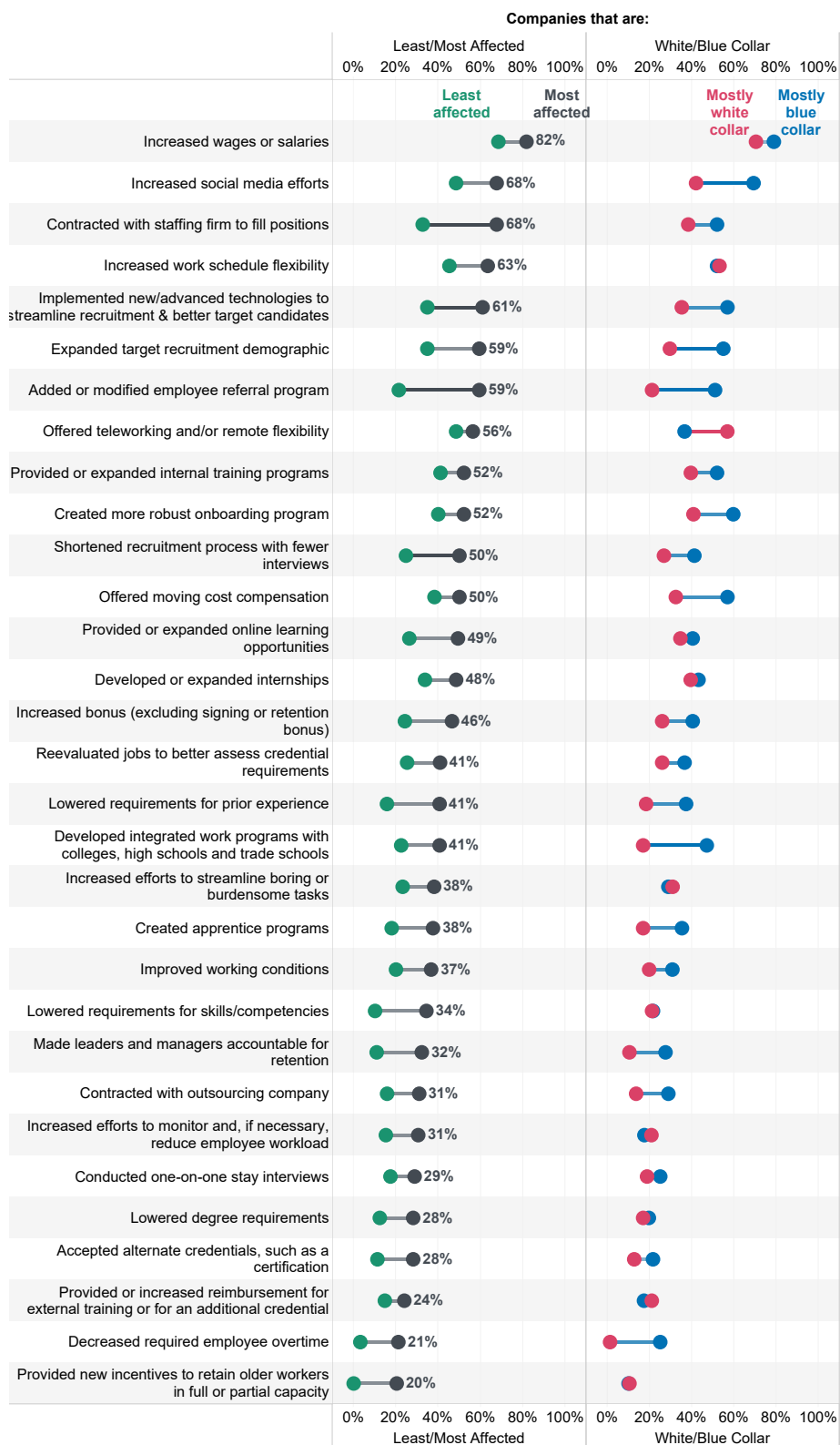
31 The Conference Board survey included small- and medium-size firms with revenues less than \$10 million (or with less than 100 employees); midmarket companies with revenues between \$10 million and less than \$1 billion (or between 100 and less than 1,000 employees); and large enterprises with revenues \$1 billion or greater (or with 1,000 or more employees).

32 This distribution is largely reflective of the overall US economy, which is approximately 70 percent services.

Chart 23

Companies use a mix of solutions to combat labor challenges

Percentage of companies using each solution to address recruitment and/or retention difficulties, by companies most and least affected by labor shortages and by companies with mostly blue- or white-collar workers



Note: Companies most (least) affected by labor shortages refer to those that indicated that they were affected by five or more (less than five) adverse business outcomes (see Chart 13, p. 28) as a result of recruitment or retention difficulties.

Source: The Conference Board Labor Shortages Solutions Survey, 2019

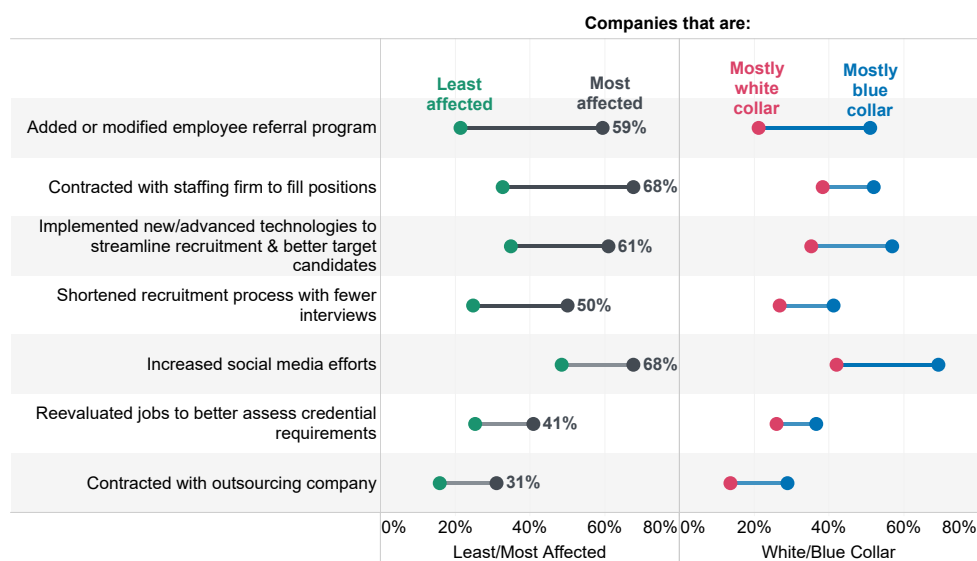
Implementing tactical improvements to recruitment efforts

The biggest difference between companies hard hit by labor shortages and others is in tactical changes to the recruitment process. Companies that experienced significant labor shortage effects—including *decreased candidate conversion rates* and *candidates not showing up for scheduled interviews*—were far more likely than companies least affected to implement tactical improvements to their recruiting efforts (Chart 24).

Chart 24

Companies that are most affected by labor shortages focus more on implementing tactical improvements to recruiting than companies that are least affected

Percentage of companies using each solution to address recruitment and/or retention difficulties, by companies most and least affected by labor shortages and by companies with mostly blue- or white-collar workers



Note: Companies most (least) affected by labor shortages refer to those that indicated that they were affected by five or more (less than five) adverse business outcomes (see Chart 13, p. 28) as a result of recruitment or retention difficulties. Solutions are ranked by the size of the gap, or the difference in usage intensity, between companies most and least affected by labor shortages.

Source: The Conference Board Labor Shortages Solutions Survey, 2019

MAKING RECRUITMENT EASIER, MORE EFFECTIVE

For example, *adding or modifying employee referral programs* or *shortening the recruitment process with fewer interviews* are actions that talent acquisition teams can take relatively autonomously, with little or no coordination with other departments. Indeed, among all solutions, the greatest difference (a 38-percentage-point gap) in usage intensity between companies most and least affected by labor shortages was seen for *adding or modifying employee referral programs* (Chart 24), suggesting that referral programs are among the easiest and most effective tools for both recruiting talent and motivating current employees. At one extreme, Workiva, a cloud-based software firm, attributes 30 percent of its recruitment to referrals. Employees who refer new hires get a chance to spin an oversize prize wheel for a chance to win up to \$2,500.³³

33 Patricia Cohen, "In Iowa, Jobs Are Plentiful but Workers Are Not," *The New York Times*, January 28, 2016.

The most affected firms have also used other tactical recruitment strategies, such as *implementing new/advanced technologies to streamline recruitment and better target candidates* or *increasing social media efforts* more intensely. One trucking company, aiming to keep the interest of potential drivers, has implemented technology that automatically calls, emails, and/or texts candidates within an hour of receiving their application. Several companies we interviewed have also installed new software that aggregates recruitment leads across several online job and social media sites into a single system. Indeed, *increasing social media efforts* (interviewees said they had primarily increased usage of Facebook) was the second most popular strategy among companies with mostly blue-collar workers (69 percent), behind *increasing wages and salaries*, and was ranked third overall (68 percent) among companies most affected by labor shortages (Chart 24).

BORROWING EXTERNAL TALENT

Sourcing external talent was another commonly used solution to labor shortages. *Contracting with staffing firms to fill positions* was more concentrated among companies most affected by labor shortages, with over two-thirds (68 percent) of highly affected companies using it to address recruitment difficulties compared to only one-third of those least affected. On the other hand, while *contracting with an outsourcing company* was used by almost one-third (31 percent) of firms most affected, this and other strategies for sourcing external talent (such as *implementing new efforts to hire independent contractors* or *hiring using an online labor platform*³⁴) were among the least popular overall (Appendix Table, page 82). During follow-up interviews with respondent employers, some interviewees indicated that, given the tight labor market, the freelance or gig economy had been largely tapped out of talent and that they were scraping the bottom of the barrel when using staffing firms or other outsourcing channels. For these companies, as an alternative to borrowing talent, their focus had shifted to finding candidates with core competencies and then training new hires for specific skills internally.

REEVALUATING JOB REQUIREMENTS

Part of this shift toward hiring for foundational skill sets involved *reevaluating jobs to better assess credential requirements*, another tactical recruitment strategy used more intensely by the most affected firms (Chart 25). In some companies we spoke to, hiring managers were separating the must-have skills from the nice-to-have skills and reworking job descriptions based on the qualifications and competencies actually needed to perform the role. In practice, this strategy was often coupled with efforts to widen the talent pool by relaxing hiring criteria, such as education and work experience requirements, and increasing training or developing talent pipelines to fill knowledge gaps, as we explain in the following sections.

34 Hiring using an online labor platform refers to “cloud-” or “crowd” sourcing through platforms such as Upwork and TopCoder.

Widening the talent pool: relaxing hiring criteria

As one talent management leader in manufacturing put it, “Hiring managers have to be open to looking for a different skill profile and growing their own talent.” Even if that entails “hiring for 50 percent of what you need and training the rest.”

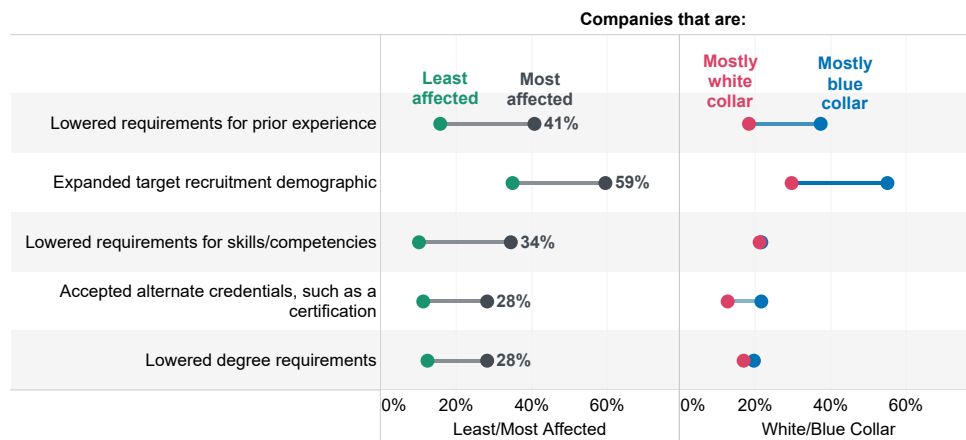
ADJUSTING REQUIREMENTS TO REACH MORE CANDIDATES

We find that companies facing the most adverse business outcomes due to labor shortages are more willing to relax their hiring criteria in order to reach a broader pool of potential candidates than those companies experiencing fewer negative outcomes. Forty-one percent of the most affected employers *lowered requirements for prior experience* and over a third (34 percent) lowered *requirements for skills/competencies* compared to just 16 and 10 percent, respectively, of companies least affected by labor shortages. A smaller but still meaningful proportion of those most affected (28 percent for both) *accepted alternate credentials, such as a certification and lowered degree requirements*, compared to just 11 and 12 percent, respectively, of their least affected counterparts (Chart 25).

Chart 25

Companies that are most affected by labor shortages focus more on widening the talent pool by expanding target recruitment groups and relaxing hiring criteria than least affected companies

Percentage of companies using each solution to address recruitment and/or retention difficulties, by companies most and least affected by labor shortages and by companies with mostly blue- or white-collar workers



Note: Companies most (least) affected by labor shortages refer to those that indicated that they were affected by five or more (less than five) adverse business outcomes (see Chart 13 on p. 28) as a result of recruitment or retention difficulties. Solutions are ranked by the size of the gap, or the difference in usage intensity, between companies most and least affected by labor shortages.

Source: The Conference Board Labor Shortages Solutions Survey, 2019

Employers of mostly blue-collar workers were also more willing to lower experience requirements and to accept alternate credentials than employers of mostly white-collar workers, yet both were similarly hesitant to lower skill or degree requirements. Notably, strategies aiming to relax hiring criteria were among the least popular for white-collar workers (Appendix Table).

While it's easy to presume that companies most affected by labor shortages are compromising on labor quality in order to find available workers, our follow-up interviews with survey respondents revealed that many companies, rather than billing it as "lowering standards," are focused on hiring trainable candidates with fundamental competencies, technical aptitude, and transferable skill sets—across both blue- and white-collar roles. Interviewed talent acquisition leaders universally expressed the sentiment, "We can teach you what you need to know as long as you have the foundation to excel in this position."

In that light, several manufacturers we interviewed had indeed eliminated high school degree requirements for certain entry-level production roles and BA/BS requirements for some IT positions. After clarifying hiring manager wants versus needs, these companies had also adjusted experience requirements downward to better reflect what was actually needed to do the job.

In a tight labor market when there's less talent available, even companies with a strong employment brand must react to the reality of the job market. IBM, for example, began accepting IT candidates without a four-year degree but who had graduated from a coding boot camp or a related vocational program. Similarly, positions such as baristas at Starbucks or event managers at Hilton hotels no longer require a college degree.³⁵

Increasing training and developing talent pipelines

As a result of labor shortages and employers being pushed to search for workers who can learn on the job, companies coping with the most adverse business outcomes are investing more in increasing training and developing future talent pipelines than those experiencing fewer negative outcomes.

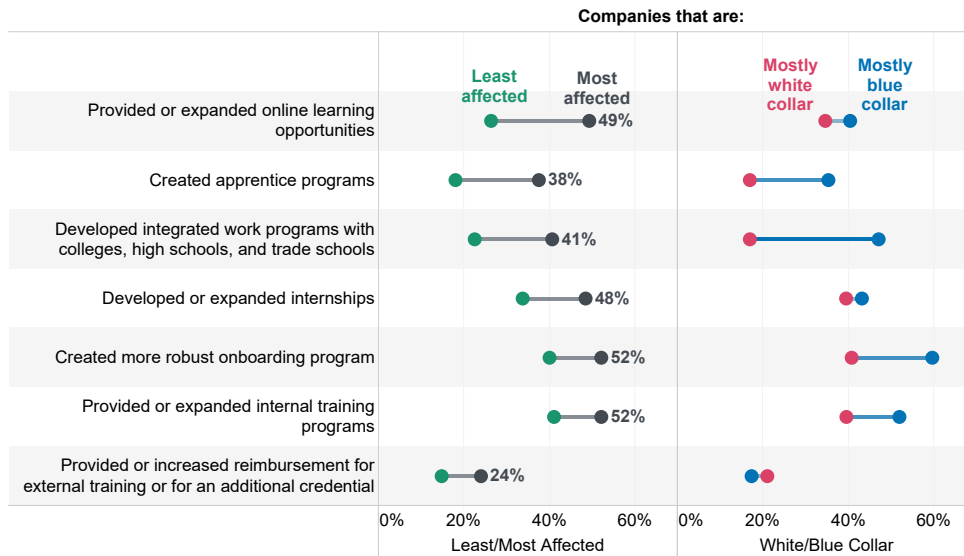
Specifically, firms most affected by recruitment and retention difficulties are more intensely *providing or expanding online learning opportunities* (such as through LinkedIn or Skillsoft), *creating more robust onboarding programs*, and *providing or expanding internal training programs* (such as in person and organizational online learnings). Although less common, almost a quarter (24 percent) of heavily affected companies are more willing to *provide or increase reimbursement for external training or for an additional credential such as a certification*. We find, however, that most companies are hesitant to dole out direct financial assistance for outside training and education and, instead, opt to fund internal or online training and onboarding programs, which are more cost effective (Chart 26).

35 Courtney Connley, "Google, Apple and 12 Other Companies That No Longer Require Employees to Have a College Degree," CNBC, October 8, 2018.

Chart 26

Companies that are most affected by labor shortages are investing more in training and in developing future talent pipelines than companies that are least affected

Percentage of companies using each solution to address recruitment and/or retention difficulties, by companies most and least affected by labor shortages and by companies with mostly blue- or white-collar workers



Note: Companies most (least) affected by labor shortages refer to those that indicated that they were affected by five or more (less than five) adverse business outcomes (see Chart 13, p. 28) as a result of recruitment or retention difficulties. Solutions are ranked by the size of the gap, or the difference in usage intensity, between companies most and least affected by labor shortages.

Source: The Conference Board Labor Shortages Solutions Survey, 2019

Aware that demographic trends will only exacerbate labor shortages in the future, some companies are implementing training programs with future needs in mind. Amazon, for example, plans to create new training programs that will prepare its workforce for automation and other advanced technologies.³⁶ Given that the costs associated with recruitment and employee attrition (such as lost productivity and profitability, lower employee morale, lost institutional knowledge, and lost client relationships) can be especially high in a tight labor market, retaining an existing employee by training him or her for a future job can be more cost effective than hiring someone new.³⁷ One chemical manufacturer we interviewed, for example, recruited for hard-to-fill production roles from within, identifying high-potential employees in maintenance positions and training them for a production-worker career path.

36 Chip Cutter, "Amazon to Retrain a Third of Its US Workforce," *The Wall Street Journal*, July 11, 2019.

37 Robin Erickson, *Calculating the True Cost of Voluntary Turnover: The Surprising ROI of Retention*. Bersin, Deloitte Consulting, LLP, 2016.

BLUE-COLLAR EMPLOYERS INVEST IN TRAINING

We also find that employers of mostly blue-collar workers are investing much more in training initiatives than employers of mostly white-collar workers, with the exception that reimbursement for outside training is generally more limited for blue-collar than for white-collar workers (Chart 26). Among mostly blue-collar employers, over half (52 percent) have *provided or expanded internal training programs* and 60 percent have *created a more robust onboarding program* (for example, extending the duration or developing a dedicated onboarding portal), making it one of the most commonly used strategies for blue-collar workers overall (Appendix Table). Given a younger workforce that increasingly seeks a company with a shared value system,³⁸ companies are using orientation programs not only to train new recruits on the day-to-day but also to communicate their culture and operating philosophy—solutions designed to increase retention rates from day one.

Forward-thinking companies are actively creating talent pipelines by cultivating connections with local high schools, trade schools, and universities with the goal to improve technical curricula and to develop integrated work programs

PARTNERING WITH SCHOOLS TO BUILD LABOR PIPELINES

For sectors experiencing especially severe labor shortages, such as manufacturing and construction, establishing a future pipeline of qualified candidates will be critical to their ability to meet future consumer needs. Forward-thinking companies are actively creating talent pipelines by cultivating connections with local high schools, trade schools, and universities with the goal of improving technical curricula and developing internships, apprenticeships, and other positive experiences for younger generations that illuminate career paths in those industries.

Indeed, 41 percent of companies most affected by labor shortages indicated they had *developed integrated work programs with colleges, high schools, and trade schools*, while only 22 percent of those least affected had used this approach to address labor shortages. Among all solutions, developing integrated work programs within the community had the greatest difference (a 30-percentage-point gap) in usage intensity between companies composed of mostly blue- and white-collar workers (Chart 26). This large gap highlights the importance of establishing talent pipelines for filling blue-collar roles. Companies most affected by labor shortages were also more likely to *develop or expand internships* (48 versus 34 percent) or *create apprentice programs* (38 versus 18 percent) than their least-affected counterparts.

38 Rebecca L. Ray, Evan Sinar, Richard S. Wellins, Eleese Wright, Amanda Popiela, Amy Ye, and Matthew Paese, *Divergent Views/ Common Ground: The Leadership Perspectives of C-Suite Executives and Millennial Leaders*, The Conference Board, May 2017.

For example, Nidec Corporation, a manufacturer of electric motors, has developed a “reverse internship” in partnership with a local technical college.³⁹ Receiving pay as part-time employees, students work at a satellite “microsite” right on campus where they have access to the company’s electric motors and can learn the company’s assembly and maintenance procedures. Students get hands-on experience while Nidec establishes direct access to a new cohort of skilled workers.

Many manufacturing and construction companies are combating vast misperceptions that work opportunities in these industries are limited to antiquated manual labor tasks with little opportunity for career development. The Manufacturing Institute’s [Manufacturing Day](#) gives companies the opportunity to highlight modern manufacturing careers by opening their doors to students, parents, and teachers in the community. While large companies like Dell, ExxonMobil, and GM participate in the event, smaller manufacturers have the most to gain from cultivating a local labor pool.

Making the company a more attractive place to work

Making the company a more attractive place to work can help both attract potential candidates and retain current employees. As we found in the Labor Shortages Solutions Survey, in a tight labor market, organizations often operate with unfilled positions, doing “more with less.” Under these pressures, companies suffering the most recruitment and retention difficulties more intensely *decreased required employee overtime, improved working conditions* (such as work environment, job hours, and responsibilities), and *increased efforts to streamline boring or burdensome tasks* than companies facing fewer labor shortage challenges (Chart 27).

SHORT-STAFFED COMPANIES OVERLOAD EMPLOYEES, “MOST AFFECTED” ATTEMPT TO REDUCE WORKLOAD

Attempts to streamline tasks by automating or improving processes were slightly more geared toward white-collar than blue-collar workers, while efforts to improve working conditions or reduce overtime were concentrated among blue-collar workers. In fact, among a total of 59 possible solutions presented to survey respondents, *decreased required employee overtime* was the solution ranked last among companies with mostly white-collar workers, highlighting that, despite retention difficulties, employers are still squeezing all they can out of their salaried staff.

Widespread vacancies, coupled with the urge to do more with less, increases the workload of remaining employees, decreasing their work/life balance and lowering job satisfaction, morale, and engagement.⁴⁰ While 80 percent of survey respondents indicated that they had *increased employee workload or overtime* as an adverse effect of labor shortages, only 23 percent had *lowered output or turned down business due to lower capacity* (Chart 13), suggesting that, in a tight labor market, squeezing the most out of existing employees is the norm. The upshot is burnout and decreased worker well-being, which can result in higher health insurance costs and higher attrition in a tight labor market.

39 Carla Otto, “Tackling the Skills Gap with a Technical School Partnership,” *Industry Week*, April 24, 2019.

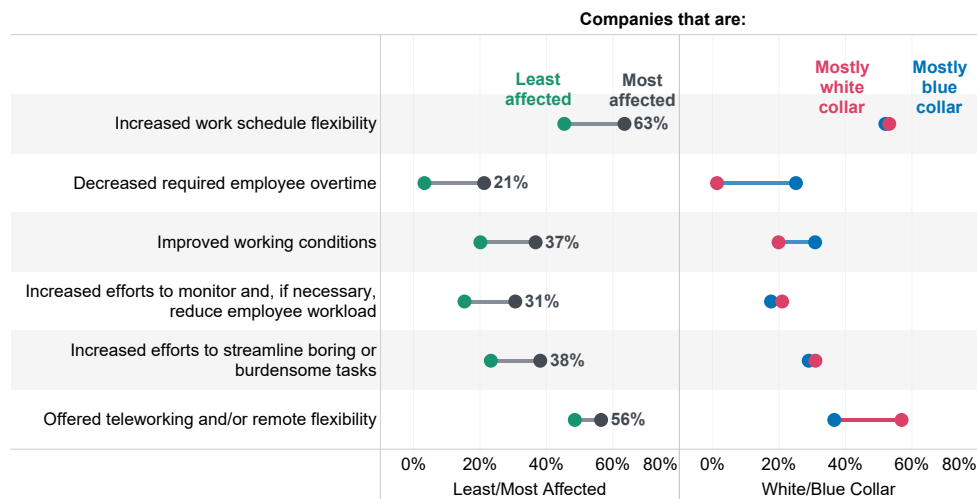
40 Stephen Young and Patrick Kulesa, [Employee Experience in High-Performance Organizations](#), Willis Towers Watson, July 20, 2018.

Companies experiencing the most adverse outcomes due to labor shortages were, therefore, more likely to have *increased efforts to monitor, and, if necessary, reduce, employee workload* than companies experiencing the fewest outcomes (Chart 27).

Chart 27

Companies that are most affected by labor shortages make more efforts to improve the workplace than least affected companies

Percentage of companies using each solution to address recruitment and/or retention difficulties, by companies most and least affected by labor shortages and by companies with mostly blue- or white-collar workers



Note: Companies most (least) affected by labor shortages refer to those that indicated that they were affected by five or more (less than five) adverse business outcomes (see Chart 13, p. 28) as a result of recruitment or retention difficulties. Solutions are ranked by the size of the gap, or the difference in usage intensity, between companies most and least affected by labor shortages.

Source: The Conference Board Labor Shortages Solutions Survey, 2019

BOTH BLUE- AND WHITE-COLLAR EMPLOYERS OFFERING MORE FLEXIBILITY

Companies most significantly affected by labor shortages were also more focused on developing policies around flexibility than companies least affected. Among the most affected firms, 63 percent *increased work schedule flexibility* and 56 percent *offered teleworking and/or remote flexibility*, compared to 45 and 48 percent, respectively, for firms least affected by labor shortages. In addition to remote work, compressed or shortened work weeks, floating holidays, and shift swapping all provide more schedule flexibility.

Interestingly, implementing flexible and remote work policies aimed at providing greater work/life balance were used more for white-collar than for blue-collar workers. Both telework and offering more flexible work schedules were among the top five solutions for companies composed of mostly white-collar workers (Appendix Table).

Survey results that blue-collar employers are almost as likely as white-collar employers to *increase work schedule flexibility* (Chart 27) suggest a growing willingness to embrace flexibility for blue-collar occupations, even for production line work that tends to run on a certain schedule or in a specific sequence. One manufacturer we spoke to models its scheduling on that of hospitals and restaurants, allowing workers to pick their own schedules—including half shifts and floating start times—that work best for them and their families.

In another company's experience, anticipated bottlenecks in production from letting workers choose their own schedules never materialized. Instead, the added flexibility boosted morale and reduced employee absences. In a tight labor market, while prospective or current employees appreciate retail discounts, on-site gyms, or other perks, many are looking for flexible hours and the ability to pick shifts to work around responsibilities such as caretaking, other jobs, or a semiretirement schedule.

An acceleration in remote work has helped reduce shortages in many white-collar occupations.

REMOTE WORK IS ON THE RISE

Similar to workplace flexibility, another top solution for making the company more attractive for both recruiting and retention is *offering teleworking and/or remote flexibility*. This is the first prolonged tight labor market in which advanced remote working technologies are available to employers. Our analysis of the latest data from the American Community Survey (ACS) suggests that the teleworking trend is not slowing down (Chart 28). Although several large companies including Yahoo, Bank of America, Aetna, and IBM have reduced or eliminated teleworking by their employees in recent years,⁴¹ these actions have failed to halt the continued growth of working primarily from home among employees of other companies.

For example, the share of teleworking roles among jobs added to the economy since the end of the Great Recession is much higher than the share of teleworking roles in the overall economy. Between 2010 and 2017, 16 percent of all white-collar jobs added to the economy were filled by workers primarily working from home.

The share of teleworkers differs widely across occupations (Chart 28). Most of the acceleration occurred in high-skilled white-collar occupations, which helps reduce shortages in these occupations. The fastest growth is in computer-related occupations, rising from about 2.5 percent in the early 2000s to about 9 percent in 2017. Business, financial, legal, and management occupations also experienced a rapid growth in teleworking, increasing from below 2 percent in the early 2000s to about 5.5 percent in 2017.

41 Gad Levanon and Frank Steemers, "[Teleworking Continues to Rapidly Expand](#)," *The Conference Board Labor Markets Institute Blogs*, March 2019.

THE LIST OF OCCUPATIONS EXPANDS FOR TELEWORKERS

The share of full-time teleworkers is especially high for management specialists, claims adjusters, appraisers, and examiners, of which around 13 percent work from home, up from 5 to 6 percent since the early 2000s. Among healthcare practitioners and education professionals, the share of teleworkers is still quite small, though growing.

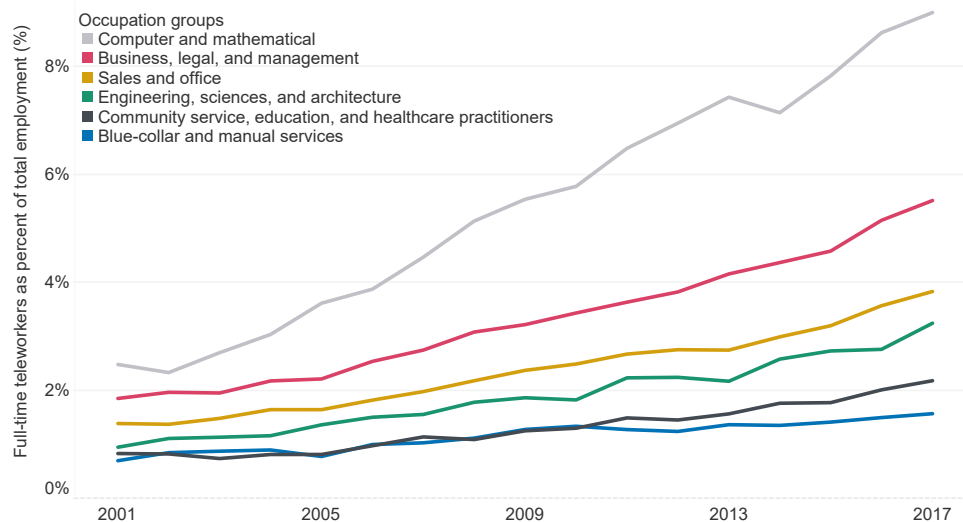
Decisions to allow teleworking will differ among firms, but generally the following factors seem to increase the probability of teleworking: the ability to accurately monitor the employee, the frequency of travelling (more days on the road means fewer days at the office), the comfort of the typical employee with advanced remote-working technology, the need for a quiet working space, the independence of the task, and the reduced importance of sitting with colleagues in the same physical space.

In many white-collar occupations, the growth in teleworking is becoming one of the most important work-related trends. We expect the number of white-collar teleworkers to continue expanding while blue-collar workers will still face physical limits on their ability to work from home.

Chart 28

Most teleworking growth is visible in high-skilled, white-collar occupations

Share of full-time teleworkers by occupation, 2001–2017



Note: Full-time teleworkers are defined as those who are employees, excluding part-time workers, self-employed, and people in military occupations, who responded to a question from the American Community Survey that they work primarily from home.

Source: The Conference Board, using microdata from IPUMS-ACS, University of Minnesota

Implementing tactical improvements to retention efforts

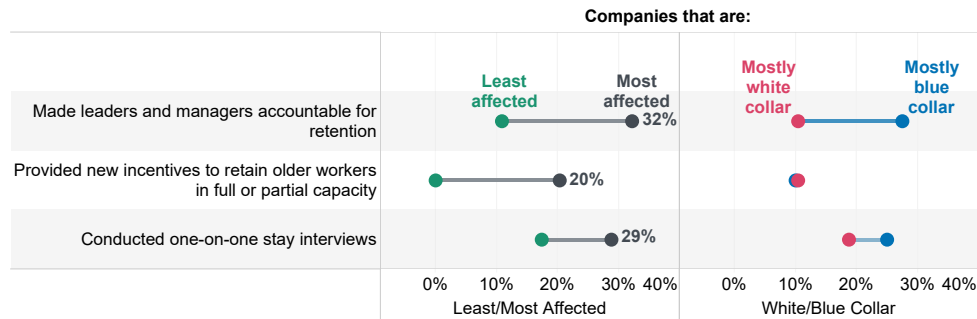
Research shows that when unemployment is low, voluntary turnover (the quits rate) is high because employees are willing to take the risk of leaving their current position, knowing that jobs are more plentiful if a new job doesn't work out. As of September 2019, the quits rate was 2.3 percent—the same rate as in 2001 before the onset of the dot-com recession.⁴²

In this labor market environment, retention difficulties are at an all-time high. Employers most affected by labor shortages—which have seen a greater incidence of *increased employee attrition*, *lost institutional knowledge*, and *increased employee workload or overtime* (Chart 13)—were more likely than companies least affected to implement tactical improvements to their retention efforts. However, the difference in usage intensity between heavily and lightly affected companies was greater for tactical recruitment than for tactical retention solutions (an average gap of 17.6 percentage points versus 9.5 percentage points, respectively), indicating that solutions targeting recruitment difficulties were generally used more intensely than solutions targeting retention difficulties. As mentioned earlier, given that the cost of losing a good worker is often many times larger than the cost of retaining that worker, companies should be as proactive in retaining employees as in recruiting them.

Chart 29

Companies that are most affected by labor shortages focus more on implementing tactical improvements to retention efforts than companies that are least affected

Percentage of respondents using each solution to address retention difficulties, by respondents most and least affected by labor shortages



Note: Companies most (least) affected by labor shortages refer to those that indicated that they were affected by five or more (less than five) adverse business outcomes (see Chart 13, p. 28) as a result of recruitment or retention difficulties. Solutions are ranked by the size of the gap, or the difference in usage intensity, between companies most and least affected by labor shortages.

Source: The Conference Board Labor Shortages Solutions Survey, 2019

42 "Job Openings and Labor Turnover—July 2019," Bureau of Labor Statistics, Table 4, November 5, 2019.

PROVIDING INCENTIVES TO RETAIN WORKERS

Among the tactical approaches to retaining employees, companies heavily affected by labor shortages were more likely to *make leaders and managers accountable for retention* and to *conduct one-on-one stay interviews to determine potential incentives* than companies least affected by labor shortages (Chart 29). With turnover rates at 90 percent, one long-haul trucking company we interviewed started scoring leader conversations with drivers and offering retention awards for leaders that kept the most drivers. And with turnover highest within the first 90 days, the same company also conducted stay interviews with new hires through a third party on day seven and day 45 as a way to identify what might cause them to leave in advance of any turnover intentions.

Surprisingly, *providing new incentives to retain older workers in full or partial capacity* was the least popular retention strategy and one of the bottom-ranked labor shortages solutions overall (Appendix Table). Used by only 10 percent of mostly blue-collar and mostly white-collar companies, we find that retaining mature workers is not an urgent need for either blue- or white-collar roles. Yet one-fifth (20 percent) of companies most affected by labor shortages reported increasing efforts to retain workers 55 and older (Chart 29), validating that they are a targeted demographic in expanding the labor pool. For examples of how companies are targeting their mature workforce, see the discussion in “Offering flexibility, less stress, and less physical demands helps retain mature workers” on page 59.

Labor force participation rates have improved—for some

So, is it possible to raise labor force participation rates to increase the number of workers in the US as a balm to the labor shortage problem? Unfortunately, despite the longest economic expansion in US history and one of the tightest labor markets ever, the recovery in labor force participation has been largely disappointing, especially for men (For more detail on participation rates, see page 10.)

But some exceptions have emerged. They include large improvement in participation rates among black workers and young Hispanic women—the same groups that have historically seen participation rates well below national averages. Because these groups occupy a disproportionately large share of blue-collar and manual services jobs, these trends increase the supply of workers for blue-collar occupations.

As a result of the tight labor market and demographic trends, the US workforce is becoming more diverse—and not just across racial and ethnic lines. The share of women in several blue-collar occupations has been rising dramatically in recent years. In addition, the share of workers 55 and older in employment has been rising as well, though probably not because of intentional recruiting or retention efforts. (See “Implementing tactical improvements to retention efforts” on page 52 for survey results regarding retaining mature workers.)

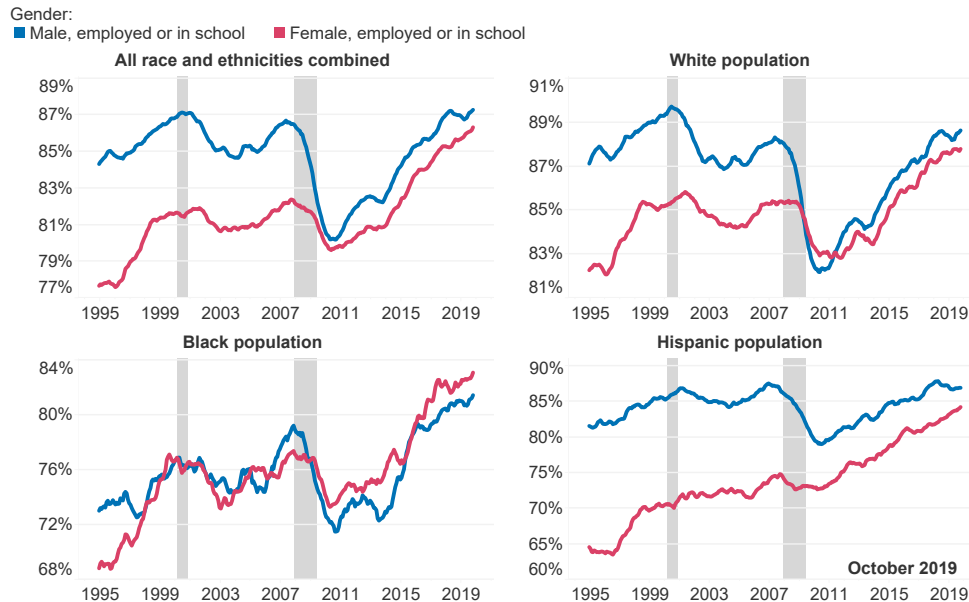
More young minorities are working or in school

One of the population groups most affected by the tight labor market are young people from underrepresented groups. Three groups of young minorities are most likely not to be in work or school: black men, black women and Hispanic women. All these groups experienced a significant increase in the share of 16- to 24-year-olds in work or school compared to prerecession rates (Chart 30).

Chart 30

Fewer young people are not in school or work, most visibly among Hispanic women

Share of men and women in school or work, aged 16–24, 12-month moving average, December 1994 to October 2019



Note: Shaded areas represent recessions.

Source: The Conference Board using microdata from IPUMS-CPS, University of Minnesota

The largest rise was for Hispanic women, partly due to the shrinking share of young Hispanic women who are not in the labor force because they are taking care of home or family.⁴³ For white non-Hispanic women and black men and women, the share of people aged 16–24 in work or school is now the highest on record as well.

The workforce is becoming more diversified

The combination of these workforce participation trends is leading to major changes in the composition of the workforce in many occupations:

- 1 The share of older workers (55-plus) and 65-plus) is rapidly rising
- 2 The share of black workers is rapidly rising
- 3 The share of Hispanic workers is also on the rise, and within this group, the growth in young women is especially visible
- 4 The share of women in several male-dominated blue-collar occupations, especially transportation jobs, is seeing a sharp upswing

43 Whitney M. Striffler, "Young Hispanic Women Investing More in Education: Good News for Labor Force Participation," Federal Reserve Bank of Atlanta, March 26, 2019.

The growing shares of these groups is partly due to supply because these underrepresented populations are more likely to be the ones to enter the workforce from the sidelines when labor markets are tight. But their growth also reflects intentional efforts by companies to expand their recruiting efforts to underrepresented demographics. For black and Hispanic workers, their share in employment is outpacing their share of the overall population (Chart 31). For example, between the early 2000s and 2019, Hispanic women in their twenties experienced an increase of 2 percent in the share in the population, while their share in employment grew by almost 3 percent.

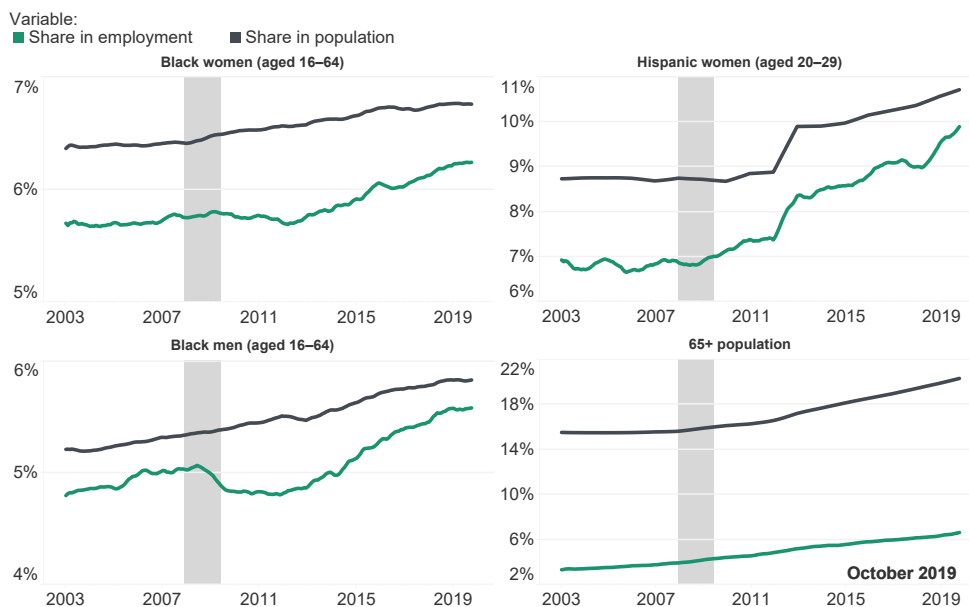
For black workers, the increases in employment are visible across all occupations but are most visible in blue-collar occupations (Chart 32).

The growth in the share of Hispanic women ages 20–30 in manual services and sales and office jobs has been remarkable (Chart 33). Again, much of the increase is a result of a decline in the amount of family-related responsibilities at this age.

Chart 31

The share of black men and women and Hispanic women in employment is outpacing their share in the population

Share of underrepresented demographic groups in employment and population, 12-month moving average, January 2003 to October 2019



Note 1: Shaded areas represent recessions.

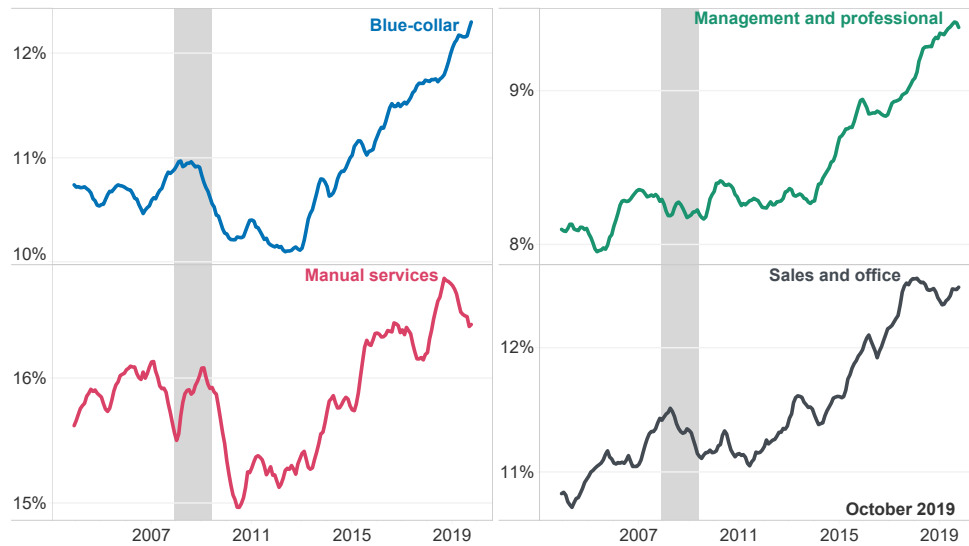
Note 2: In 2012, population demographics were recalibrated, especially impacting the share of Hispanic women in the population.

Source: The Conference Board, using microdata from IPUMS-CPS, University of Minnesota

Chart 32

The share of black workers has increased across all occupations

The share of black workers in employment by occupation, aged 16 to 64, 12-month moving average, December 2003 to October 2019



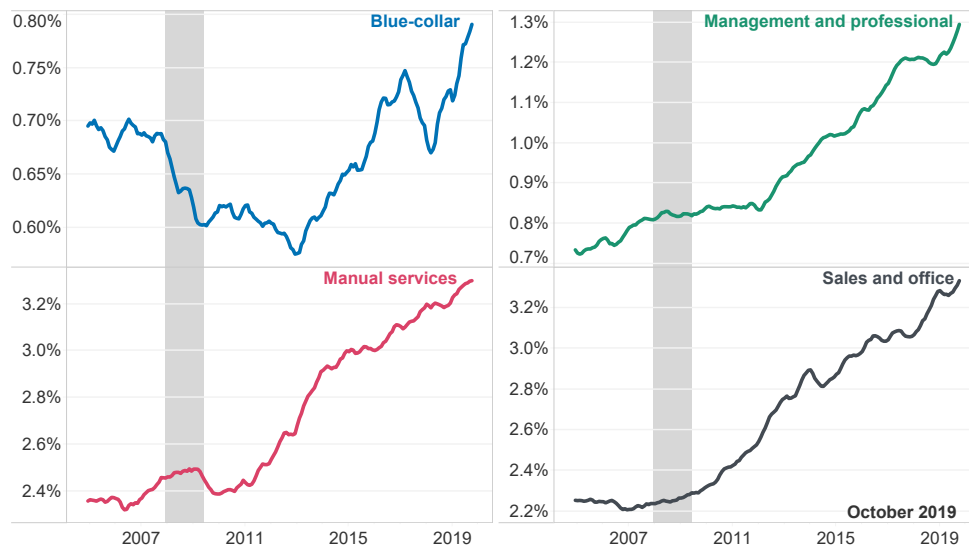
Note: Shaded areas represent recessions.

Source: The Conference Board, using microdata from IPUMS-CPS, University of Minnesota

Chart 33

More young Hispanic women are working

Share of Hispanic women, aged 20–29, 24-month moving average, December 2005 to October 2019



Note: Shaded areas represent recessions.

Source: The Conference Board, using microdata from IPUMS-CPS, University of Minnesota

Employers are expanding recruiting to underrepresented demographics

Companies facing the most severe recruitment difficulties are widening their talent pools much more actively than companies with fewer recruitment problems, primarily by expanding their target recruitment demographic. Based on results from The Conference Board Labor Shortages Solutions Survey (see “The Conference Board Labor Shortage Solutions Survey,” on page 40), 59 percent of companies most affected by labor shortages increased their efforts to recruit underserved populations such as women, mature workers, the disabled, immigrants, and veterans, compared to just 35 percent of least affected companies. Notably, expanding the target demographic was used by 55 percent of blue-collar-heavy companies compared to only 30 percent of primarily white-collar companies, making it one of the recruitment tactics used more intensely to fill blue-collar than white-collar roles.

More women take on blue-collar roles, but potential for growth remains

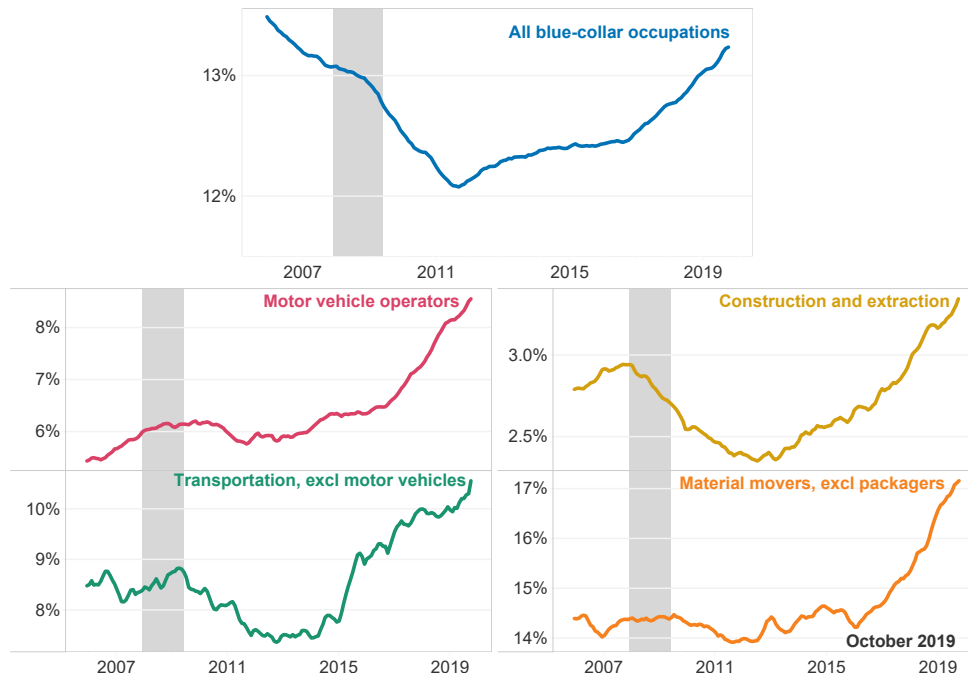
The share of employed women has especially increased in some male-dominated occupations, such as transportation, material-moving, construction, and extraction (Chart 34). Part of this increase is related to especially tight labor markets for blue-collar workers.

Especially in transportation occupations, such as short- and long-haul trucking and delivery drivers, the share of female workers is clearly picking up. The share of women who are motor vehicle operators is now well above prerecession rates (Chart 34).

Chart 34

Employers are hiring more women in male-dominated occupations, most visibly in transportation occupations

Share of women in blue-collar occupations, 12-month moving average, December 2005 to October 2019



Note: Shaded areas represent recessions.

Source: The Conference Board, using microdata from IPUMS-CPS, University of Minnesota

The transportation, manufacturing, and construction industries are among those that have the most to gain from targeting an alternative workforce, especially women. Companies successfully recruiting women in these historically male-dominated industries are tailoring the work to fit women's needs and implementing measures to make the workplace safer and more inclusive for women.

For example, some trucking companies, are offering "female-friendly" vehicle packages, consisting of ergonomically designed seats and automatic transmissions; altering routes to get female drivers, especially those with families, home more often; and even paying for hotel rooms so women can avoid sleeping in truck rest stops, which are often unsafe for solo female drivers.^{44 45} With a focus on women's health and safety, some construction companies are attracting women by investing in smaller personal protective equipment—such as hard hats, safety goggles, respirators, and fall-protection harnesses—that better fits women's bodies.⁴⁶

To promote a more inclusive environment, some manufacturing companies are elevating female role models and launching mentorship programs for both blue- and white-collar roles. For example, through the Manufacturing Institute's [Science, Technology, Engineering and Production \(STEP\) Ahead](#) initiative, companies such as Caterpillar, Proctor & Gamble, and 3M recognize the successes of female employees and give them a platform to inspire other women to join the industry.

The share of mature workers in the workforce is steadily increasing, the result of an aging population and a trend to delay retirement—either by choice or financial necessity.

Employers are not keen on retaining mature workers

While companies value the talents, contributions, and institutional knowledge of mature workers (those aged 55 and older), research finds that worker age is of great concern to employers. A recent study by researchers at North Carolina State University (NCSU) and Stanford surveyed 143 HR managers and showed that employers may be reluctant to invest in retention efforts of mature workers for four main reasons:⁴⁷

- 1 Many companies already have a large proportion of mature workers on their payrolls. Sixty-five percent of employers surveyed indicated that workers were retiring later than their organizations would like. In addition, half of employers surveyed had not seen the mass retirements that they would have expected over the last five years.

44 Charlotte Lee, "[Trucking Companies Are \(Finally\) Recruiting More Women](#)," *Supply Chain Trends* by Elementum, January 23, 2018.

45 Frank Morris, "[Trucking Industry Looks to Women to Help Alleviate Driver Shortage](#)," NPR, February 12, 2019.

46 Ian Harvey, "[Proper Fitting Work Wear for Women a Safety Must](#)," *Daily Commercial News*, July 2, 2019.

47 Robert L. Clark, Steven Nyce, Beth Ritter, and John B. Shoven, "[Employer Concerns and Responses to an Aging Workforce](#)," National Bureau of Economic Research Working Paper No. 25572, February 2019.

- 2 Most employers are concerned about the increasing compensation costs associated with retaining mature workers, including rising wages and salaries (flagged by 73 percent) and rising benefits costs (flagged by 79 percent). As mature workers' health deteriorates, increasing benefit costs for this population have largely been driven by the growing costs of providing health insurance.⁴⁸
- 3 Many employers (60 percent) are concerned that an aging workforce leads to declining worker productivity.
- 4 Companies are also concerned that delayed retirements reduce the promotion opportunities of younger workers (63 percent) and can ultimately lead to an unbalanced workforce structure (63 percent).

The NCSU and Stanford researchers also conducted a separate survey of 142 risk managers.⁴⁹ They found that most companies (83 percent) classified the risk of losing talent and knowledge due to anticipated employee retirements as equal to or greater than other labor market risks (such as recruitment challenges and turnover of younger workers), but nearly half (47 percent) were not doing anything about it.

These results are in line with The Conference Board Labor Shortages Survey, which found that *providing new incentives to retain older workers in full or partial capacity* was the lowest-ranked retention strategy, and one of the bottom-ranked solutions overall. And while one-fifth (20 percent) of the most heavily affected companies did report using this tactic, none of the least affected companies did so. Given current labor shortages, we were surprised by this result. As the workforce continues to age and the labor shortages environment intensifies, more companies should be concerned about retaining workers in the 55-and-over category. In the near term, we expect more companies to turn to this strategy.

Offering flexibility, less stress, and less physical demands helps retain mature workers

Despite the reluctance to retain mature workers, their share in employment is steadily increasing for a couple of reasons. Most importantly, the aging of the US population is driving the shift to a more mature workforce. In addition, many workers are delaying retirement, either by choice or because they have insufficient retirement savings.⁵⁰

As seen in Charts 35 and 36, the share of workers 55 and above and 65 and above is growing in all occupation groups.

48 Gary Burtless, [Age Related Health Costs and Job Prospects of Older Workers](#), The Brookings Institution, October 2017.

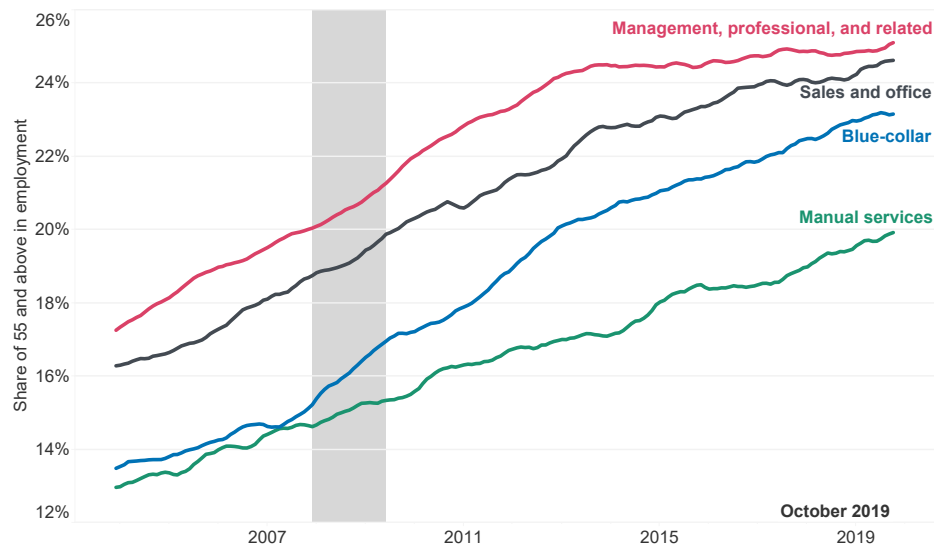
49 Robert L. Clark, et. al. [Employer Concerns and Responses to an Aging Workforce](#).

50 To learn more, read Gad Levanon, Ben Cheng, and Jeremy Goldman, [US Workers Delaying Retirement: What Businesses Can Learn from the Trends of Who, Where, and Why](#), The Conference Board, May 2011.

Chart 35

The share of mature workers in employment is increasing, especially in blue-collar occupations

Share of workers aged 55 and above in employment by occupation group, 12-month moving average, December 2003 to October 2019



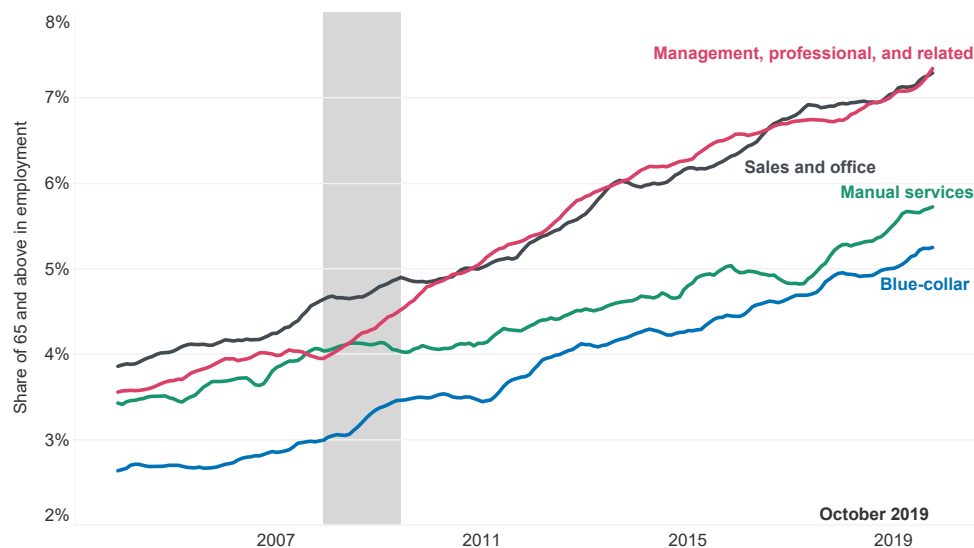
Note: Shaded area represents recession.

Source: The Conference Board, using microdata from IPUMS-CPS, University of Minnesota

Chart 36

Delaying retirement is more difficult in physically demanding blue-collar jobs

Share of workers aged 65 and above in employment by occupation group, 12-month moving average, December 2003 to October 2019



Note: Shaded area represents recession.

Source: The Conference Board, using microdata from IPUMS-CPS, University of Minnesota

Yet as workers age, and as health concerns rise, there is a growing wedge between workers' ability to perform the job and the demands of the job. According to a survey conducted by the RAND Corporation, mature workers prefer jobs with certain characteristics that make it more likely for them to continue employment as they age, including jobs with:⁵¹

- 1 Flexible work schedules where workers determine their own working hours;
- 2 Lower stress levels;
- 3 Lower physical demands that do not require as much muscular strength or physical effort;
- 4 Lower cognitive demands, including jobs with simpler tasks that require relatively fewer and lower level skills and less concentration; and that do not require monitoring or processing large amounts of information;
- 5 Shorter commute times (less than 60 minutes a day) and/or remote work flexibility; and
- 6 Opportunities for social interaction with friendly and interested coworkers.

Overall, the study finds that a flexible work schedule, followed by reduced stress and lower physical effort, are the most important job characteristics that influence a mature worker's decision to either remain in or rejoin the labor force. The research further indicates that providing these work conditions would increase the labor supply of workers aged 70 and above by 10 to 15 percent—a result equivalent to increasing wages by 20 percent.

Employers that offer jobs with these characteristics can more effectively attract mature workers from the sidelines and increase the probability that current workers will extend their work life. Fittingly, company programs dedicated to retaining older workers often focus on providing them with scheduling flexibility along with additional opportunities for engagement, accommodation, and training.

In one example, Michelin's phased "preretirement" program, which allows workers age 55 and older to scale back to part-time work, coupled with the opportunity to train and mentor younger colleagues, delays older worker exits and the loss of their institutional knowledge.⁵² However, formal phased retirement programs are generally not as popular among either employers or employees. Based on the NCSU/Stanford study, while only 9 percent of companies reported having a formal program, a majority (55 percent) used an informal approach to phasing workers into retirement that was implemented on a case-by-case basis.⁵³ Surprisingly, from an employee perspective, providing a phased retirement option where workers can scale back from full-time to part-time work was not found to be as effective in encouraging mature workers to delay retirement as allowing flexible schedules.⁵⁴

51 P  ter Hudomiet, Michael D. Hurd, Andrew Parker, and Susann Rohwedder, *The Effects of Job Characteristics on Retirement*, National Bureau of Economic Research Working Paper No. 26332, October 2019.

52 Steven Greenhouse, "How Some Companies Encourage Older Workers to Stay," *The Charlotte Observer*, May 17, 2014.

53 Robert L. Clark, et. al., *Employer Concerns and Responses to an Aging Workforce*.

54 Hudomiet et al., *Job Characteristics Retirement*.

To alleviate the labor crunch, employers should improve work policies and practices that accommodate women, mature workers, veterans, immigrants, the disabled, and other underrepresented groups.

Like other groups, mature workers are also interested in lifelong learning. With an alternative focus on training, one military shipbuilding company provides apprenticeship opportunities to older workers (especially to those looking for a career change), while an electricity company offers “returnships” for senior-level retirees who want to go back to work.⁵⁵ Fidelity Investments offers wellness courses such as losing weight, reducing stress, and smoking cessation geared toward keeping their most experienced workers healthier for longer.⁵⁶

And one manufacturer we interviewed that was aiming to better accommodate mature workers went so far as to pursue additional investments in automation and robotics as a way to adapt work to employees facing physical limitations.

Ultimately, many companies with large and aging workforces have not yet experienced the massive retirements that they had expected. As a result, companies do not report prioritizing mature worker recruitment or retention efforts and, generally, do not have formalized programs in place for retiring workers. Instead, many employers report using their retirees for consulting work only in special circumstances. To continue to delay a mass exodus of retirees, it will be imperative that companies offer jobs with characteristics that appeal to mature workers and begin to prioritize programs that further incentivize workers to stay.

The disabled population: employment is mostly growing in government jobs

While the overall share of disabled individuals in the population and in employment has not changed much in recent years, in government-related occupations such as community and social services, the share of disabled in employment has increased (Chart 37). To alleviate the labor crunch, employers should continue to review their work policies and practices in place to accommodate the disabled.⁵⁷

55 Kerry Hannon, “Five Workplaces That Embrace Older Workers,” *Forbes*, November, 18, 2016.

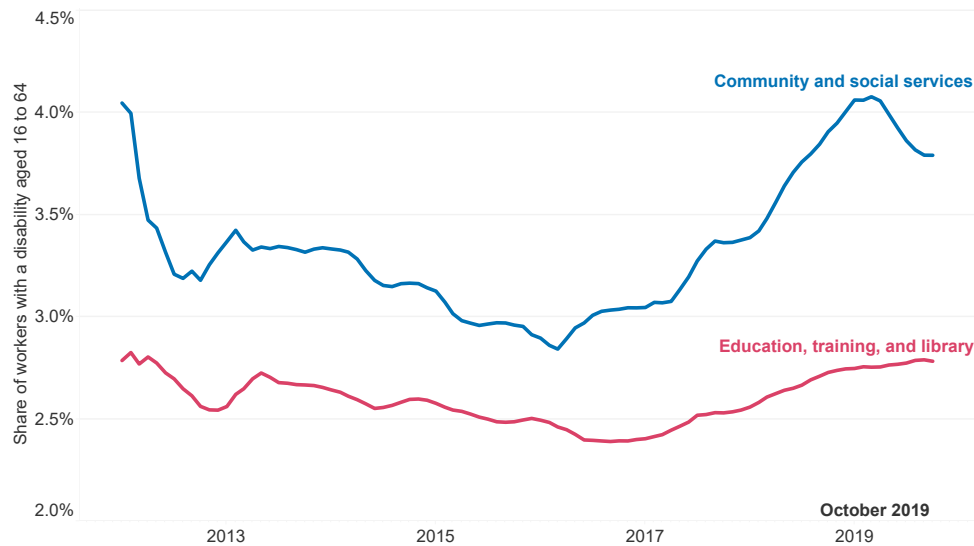
56 Steven Greenhouse, “How Some Companies Encourage Older Workers to Stay,” *The Charlotte Observer*, May 17, 2014.

57 To learn more about The Conference Board research on employees with disabilities and the workplace, see *Leveling the Playing Field: Attracting, Engaging, and Advancing People with Disabilities*, The Conference Board Research Working Group on Improving Employment Outcomes for People with Disabilities, February 2013.

Chart 37

The share of workers with a disability increased primarily in community and social services occupations

Share of workers with a disability by occupation, aged 16 to 64, 36-month moving average, December 2012 to October 2019



Source: The Conference Board, using microdata from IPUMS-CPS, University of Minnesota

Businesses that are struggling to fill entry-level positions are also building partnerships with local organizations to recruit disabled workers. One manufacturer surveyed by The Conference Board partnered with a local nonprofit called [RCS](#) to contract mentally and developmentally disabled adults for packaging and assembly services. Similarly, the Ritz Carlton in Central Park has partnered with the [NYC: AtWork](#) program to hire people with disabilities for kitchen steward and other manual services roles.⁵⁸

Other organizations attract people with disabilities through special recruitment and training initiatives. SAP's Autism at Work program, launched in 2013, recruits individuals on the spectrum not only for roles in technology, engineering, and mathematics—for which they often have a natural affinity—but also for roles in customer support and HR. Once on board, the program includes a six-week training program covering basic business and workplace etiquette skills, as well as a support network that includes a "buddy," a mentor, an HR partner, and an external life skills coach. To develop a pipeline of autistic talent, SAP has also added internships and high-school mentorships to the program.⁵⁹

58 Justin Brannan and Victor Calise, "Advancing Efforts to Hire People with Disabilities Across New York's Economy," *Gotham Gazette*, April 25, 2019.

59 Sian Phillips, "Autism at Work: Why it Works for SAP," *The Telegraph*, April 4, 2019.

Microsoft, EY, Ford, and JPMorgan Chase also have hiring programs that reach out to the autistic community and others with neurodivergent conditions. These programs target “out of the box” talent with the aim to spur innovation and develop creative solutions and products for an increasingly diverse market.⁶⁰

Tapping the immigrant and veteran populations through training programs and community partnerships

As part of an overall strategy to expand their workforce, some companies are tapping into local immigrant populations. One manufacturer we interviewed indicated that they were specifically targeting their local Hmong population by hiring specialists in the Hmong dialect spoken in the area and offering employees English-as-a-second-language training. Similarly, Legal Sea Foods and Whole Foods Market have offered onsite English courses, which workers can attend while on the clock. The investment not only attracts non-English speaking immigrants, but can also increase employee engagement and, in turn, retention, which are correlated to improved English proficiency.⁶¹

Military veterans represent another underutilized population. Veterans often have experience working on high-tech machinery and equipment—skills that are easily transferable to manufacturing. They also often have security clearances that can be valuable in cybersecurity roles and other positions where employees must be trusted with sensitive information. In follow-up interviews with Conference Board researchers, several manufacturers indicated that they were heavily recruiting veterans by developing relationships with local military bases and working with transitional officers, or by partnering with programs such as [Operation Reboot](#) or [Heroes Make America](#) that assist veterans with the transition from military service to the private sector.

The recent increase in the share of employment among those with lower education levels seems to be driven by companies that are lowering education requirements.

Other organizations recruit veterans through training programs. Microsoft and more than 500 other companies such as Facebook, Oracle, and Southwest Airlines (where military veterans constitute 13 percent of the airlines’ employees), have used the [Microsoft Software & Systems Academy](#) as a tool to recruit veterans.⁶² The program is an 18-week bootcamp in database, cloud, and cybersecurity technology and administration offered to service members *before* their military separation date. The program’s cross-industry participation has helped to address the veteran employment and skills gap by providing active service members with training, certifications, and job placement opportunities.

60 Susan Galer, “Autism at Work Programs: When Your Workforce Reflects the Diversity of Your Customers,” *Forbes*, September 19, 2018.

61 Sacha Pfeiffer, “For More Firms, Teaching English Is in Business Plan,” *The Boston Globe*, January 7, 2017.

62 “Microsoft Software & Systems Academy Celebrates 500-Company Hiring Milestone,” Microsoft Military Affairs, July 11, 2019.

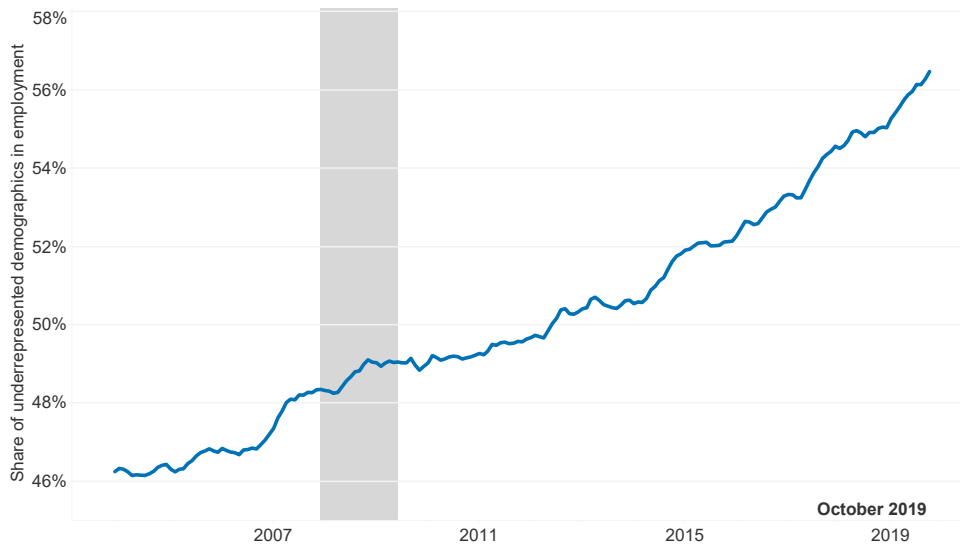
In transportation, the share of underrepresented groups is rising fast

The share of underrepresented people in employment has been rising sharply in recent years. In some groups of occupations, the increase has been dramatic. For example, in transportation-related occupations, which are experiencing acute shortages, the share of black, Hispanic, women and over-65 workers was less than 50 percent in 2012; their share is now about 56 percent and will likely continue to rise (Chart 38).

Chart 38

Especially in transportation and material-moving, the workforce is becoming more diverse

Share of women, black and Hispanic workers, and workers 65 and older in transportation and material-moving occupations, 12-month moving average, December 2003 to October 2019



Note: Shaded area represents recession.

Source: The Conference Board, using microdata from IPUMS-CPS, University of Minnesota

Facing recruitment challenges, employers hire less-educated workers

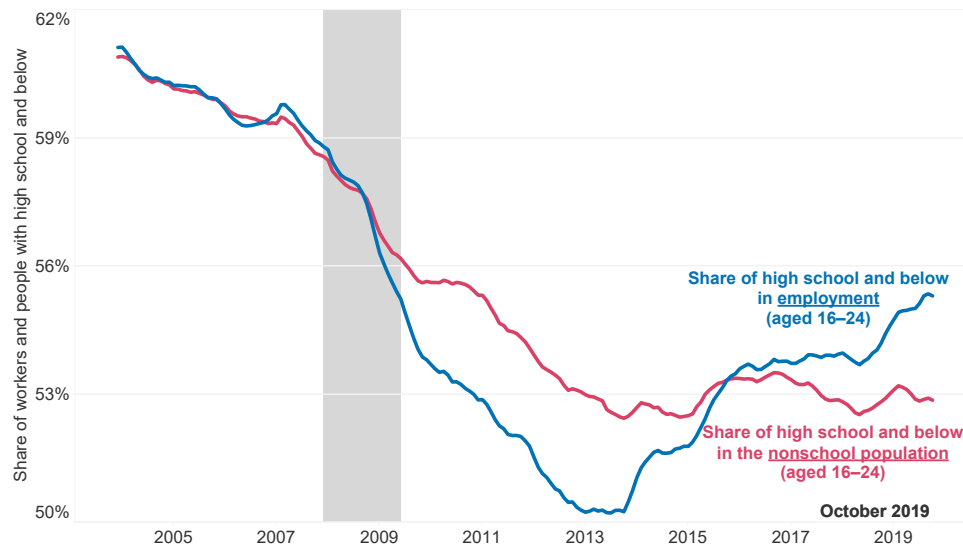
Tightening labor markets have led companies to lower education requirements when recruiting and to provide basic training for workers. Chart 39 shows that in recent years, the share of people with only a high school degree or less among new workers has increased in occupations that typically do not require a BA. While increased school enrollment rates for those 16–24 years old explains part of the decline up to 2013, the recent increase in the share of employment among those with lower education levels seems to be driven by companies that are lowering education requirements. On a national level, the unemployment rate for less-educated people is now at an all-time low, though there remains room for further increases in their participation rates.⁶³

63 For more on downskilling, read our blog: Gad Levanon and Frank Steemers, "[Downskilling: Employers Can No Longer Have Their Cake and Eat It Too](#)," Labor Markets Center Blog, The Conference Board, February 16, 2018.

Chart 39

Employers are lowering educational entry requirements as the labor market tightens

People with a high school degree or below, aged 16 to 24, as share in employment or the population excluding those in school aged 16 to 24, 12-month moving average, December 2003 to October 2019



Note: Shaded areas represent recessions.

Source: The Conference Board, using microdata from IPUMS-CPS, University of Minnesota

The increase in the share of those with lower educational attainment has occurred in blue-collar jobs but is greatest in sales and office occupations. From 2013 to 2019, the share in this occupation group increased from 42 to 47 percent. In healthcare support, we see little growth, which appears to be driven by certification requirements.⁶⁴

A major barrier in a tight labor market is that many companies don't fill roles with available candidates, choosing instead to search for the mythical candidate who meets all hiring criteria. Based on our Labor Shortages Solutions Survey (see "The Conference Board Labor Shortages Solutions Survey" on page 40), only a quarter (25 percent) of all respondents indicated that they had *lowered requirements for prior experience*, and even fewer had *lowered requirements for skills/competencies* (20 percent), *lowered degree requirements* (18 percent), or *accepted alternative credentials, such as a certification* (18 percent). For further discussion of company-level solutions to labor shortages associated with loosening degree and skill requirements, see "Widening the talent pool: relaxing hiring criteria" on page 44.

⁶⁴ Based on CPS data, in almost all of the most granular healthcare support occupations, 90 percent or more in the occupations hold a job certification. This is higher compared to the other occupation groups that generally do not require a BA.

Can higher labor productivity compensate for worker shortages?

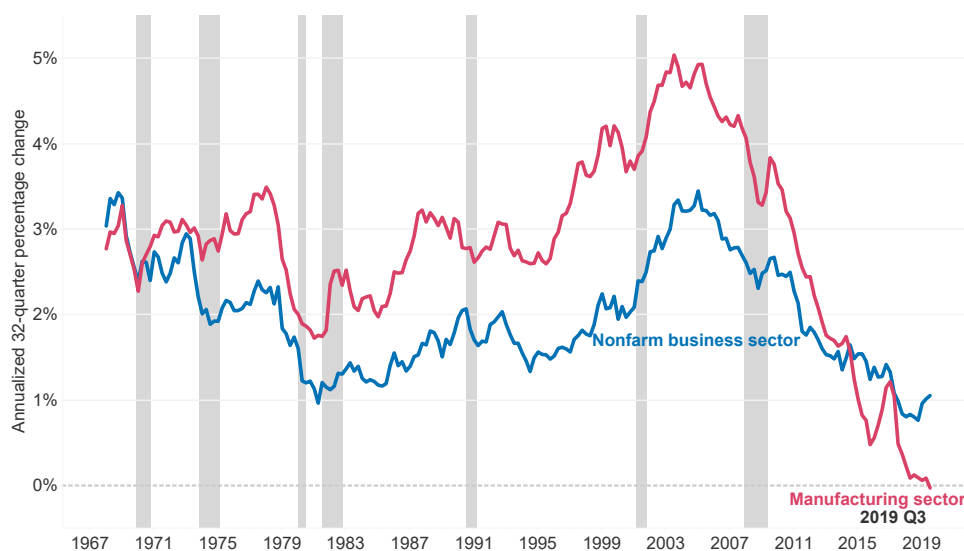
One of the most common solutions for reducing labor shortages is automating tasks and jobs and taking other measures to increase labor productivity.

Yet in recent years, the US and global economy has seen a major slowdown in labor productivity growth—the change in the output one worker produces per hour of work. Despite all the perceived innovation around us, from 2010 to 2018, labor productivity in the US grew more slowly than in any other period in US history—below 1 percent annually (Chart 18). The slowdown was especially stark in manufacturing; in the past eight years, labor productivity in manufacturing did not grow at all. In comparison, in the eight years between 1995 and 2003, labor productivity in manufacturing grew on average by about 5 percent (Chart 40).

Chart 40

Labor productivity growth over the last eight years is the lowest ever recorded

Real output per hour for the nonfarm business sector and manufacturing, 32-quarter percentage change, annualized, 1968Q1 to 2019Q3



Note: Shaded areas represent recessions.

Source: US Bureau of Labor Statistics

One reason for the weaker than expected labor productivity growth in recent years is a result of many occupations that experts predicted would be automated but are showing no signs of disappearing; on the contrary, many have been growing rapidly in recent years (Table 1). Although these occupations have not experienced much automation, some are likely to be the next frontier of future automation. More automation seems to be on the horizon, particularly in office, administration and sales occupations, though it is not fully visible yet (Table 2).

Table 1

Blue-collar and manual services occupations that were predicted to be automated have continued to grow rapidly

Occupation	Probability of automation	Employment growth 2013–2018	Employment 2013	Employment 2018
Packaging and filling machine operators and tenders	98.0%	6.2%	372,210	395,330
Inspectors, testers, sorters, samplers, and weighers	97.6%	18.2%	471,750	557,510
Hosts and hostesses, restaurant, lounge, and coffee shop	97.5%	15.5%	360,970	416,950
Cooks, restaurant	96.3%	26.8%	1,057,550	1,340,810
Landscaping and groundskeeping workers	95.4%	8.8%	839,780	913,480
Operating engineers and other construction equipment operators	94.9%	12.5%	340,950	383,480
Welders, cutters, solderers, and brazers	94.1%	10.5%	352,250	389,190
Cement masons and concrete finishers	94.0%	31.4%	141,910	186,400
Industrial truck and tractor operators	93.5%	19.7%	504,560	604,130
Combined food preparation and serving workers, including fast food	92.4%	21.6%	3,022,880	3,676,180
Construction laborers	87.7%	21.4%	824,970	1,001,470
Parking lot attendants	87.4%	12.1%	130,190	145,900
Computer-controlled machine tool operators, metal and plastic	86.5%	5.9%	139,930	148,150
Laborers and freight, stock, and material movers	84.5%	26.6%	2,284,650	2,893,180
Security guards	83.9%	4.5%	1,066,730	1,114,380

Source: Frey and Osborne (2013) projections of probability of automation, Bureau of Labor Statistics for employment by occupation

Table 2

Some office occupations may be automated soon

Occupation	Probability of automation	Employment growth 2013–2018	Employment 2013	Employment 2018
Insurance claims and policy processing clerks	98.4%	16.3%	236,160	274,560
Loan officers	98.4%	1.0%	301,860	304,950
Credit analysts	97.9%	12.5%	66,490	74,820
Parts salespersons	97.8%	15.2%	221,270	254,870
Claims adjusters, examiners, and investigators	97.8%	4.4%	275,500	287,730
Cashiers	97.1%	8.7%	3,343,470	3,635,550
Office clerks, general	95.6%	5.0%	2,832,010	2,972,930
Receptionists and information clerks	95.6%	7.2%	973,580	1,043,630
Paralegals and legal assistants	94.5%	14.2%	271,320	309,940
Hotel, motel, and resort desk clerks	94.3%	11.1%	234,750	260,780
Accountants and auditors	93.5%	7.8%	1,168,330	1,259,930
Insurance sales agents	91.9%	11.1%	354,460	393,830
Loan interviewers and clerks	91.9%	4.4%	213,270	222,620
Pharmacy technicians	91.7%	15.2%	362,690	417,860
Medical records and health information technicians	91.0%	15.4%	180,760	208,650

Source: Frey and Osborne (2013) projections of probability of automation, Bureau of Labor Statistics for employment by occupation

Part of the slowdown may stem from labor market slack and low wages throughout most of the period following the financial crisis, which reduced the incentive to automate and cut labor costs. If that explanation is true, then the recent tightening of the labor market and acceleration in wages should lead to a recovery in labor productivity.

A recent study by Daron Acemoglu and Pascual Restrepo⁶⁵ adds support to the hypothesis that labor scarcity influences the adoption of labor-replacing technology. They find that “countries undergoing more rapid aging—measured as an increase in the ratio of workers above 56 to those between 26 and 55—invest significantly more in robotics.” They also estimate the effects of aging on the adoption of robots across metro areas in the United States and confirm the relationship between demographic change and the adoption of robots.

Signs that labor productivity and automation are on the rise

There are growing signs that the long-awaited improvement in productivity growth has finally arrived. During 2018, the business sector experienced a strong acceleration in revenues, but employment growth barely accelerated. As such, between the second quarters of 2017 and 2019, labor productivity grew by 1.7 percent annual rate, the highest rate since 2010 (Chart 41). In recent years, the economy has experienced bouts of accelerating labor productivity that quickly died down. The current acceleration may have more staying power because the labor market is so tight. In many industries, recruiting is very difficult, and employers are forced to increase production without rapidly increasing headcount.

Other evidence of a recent recovery in productivity is emerging. With an increase in automation activity, one would expect to see a larger effect on employment in occupations that are more prone to automation. We expect that automation will reduce the demand for certain tasks in some occupations, which will ultimately lead to slower growth or even a decline in the employment of the occupation in question. To test this hypothesis, we need to identify the most easily automated occupations. We used a study that assigned a probability of automation to a large number of occupations. We define occupations with an automation probability of 90 percent and above as “highly automatable.” All other occupations are grouped under “other occupations.” The results can be found in Chart 42.

Chart 42 shows the employment growth rate in two periods: 2012–2015 and 2015–2018. In the second period, labor markets were significantly tighter. The results are quite striking. The employment growth in occupations with high probability of automation dropped significantly in the second period, whereas employment growth for all other occupations remained essentially unchanged.

Adoption of new technologies and improvement in labor productivity varies significantly across companies, across industries and within the same industry.⁶⁶ Researchers in the US Census find “that on average, the manufacturing plant at the 75th percentile of the within-industry labor productivity distribution is more than twice as productive as the plant at the 25th percentile.”

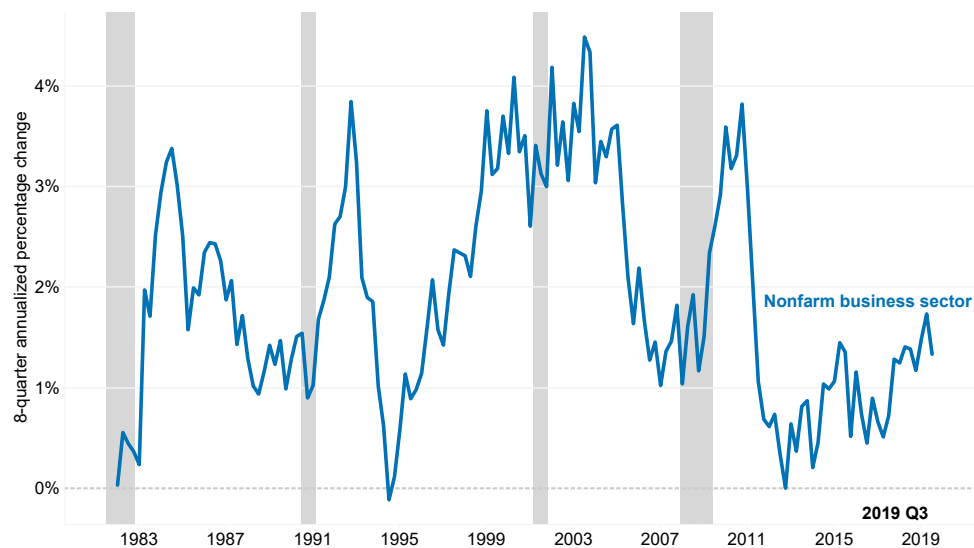
65 Daron Acemoglu and Pascual Restrepo, “[Demographics and Automation](#),” National Bureau of Economics Working Paper No. 24421, March 2018.

66 Cunningham et al., “[Dispersion in Dispersion](#),” US Census Bureau Working Paper No. CES 18-25R, September 2019.

Chart 41

Has the long-awaited improvement in productivity growth finally arrived?

Real output per hour worked for the nonfarm business sector, eight-quarter annualized percentage change, 1982Q1 to 2019Q3

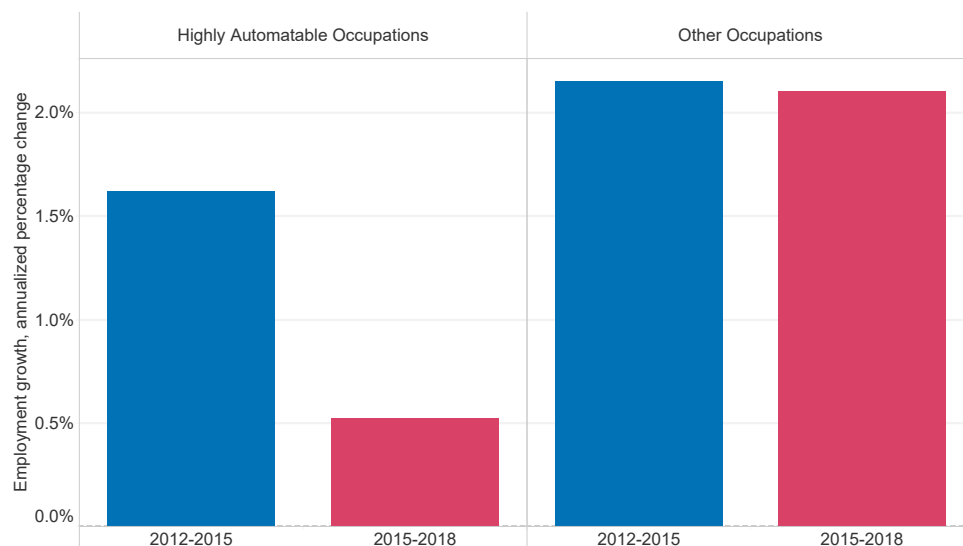


Note: Shaded areas represent recessions. Source: US Bureau of Labor Statistics

Chart 42

Slowing job growth in highly automatable occupations is a sign businesses may be increasing automation

Employment growth, grouped by occupational projections of probability of automation, annualized percentage change, 2012–2015 and 2015–2018



Note: We use Frey and Osborne (2013) projections of probability of automation to group occupations in “highly automatable,” which we define as occupations with a probability of 90 percent and above, and “other occupations,” which includes all occupations with a probability below 90 percent.

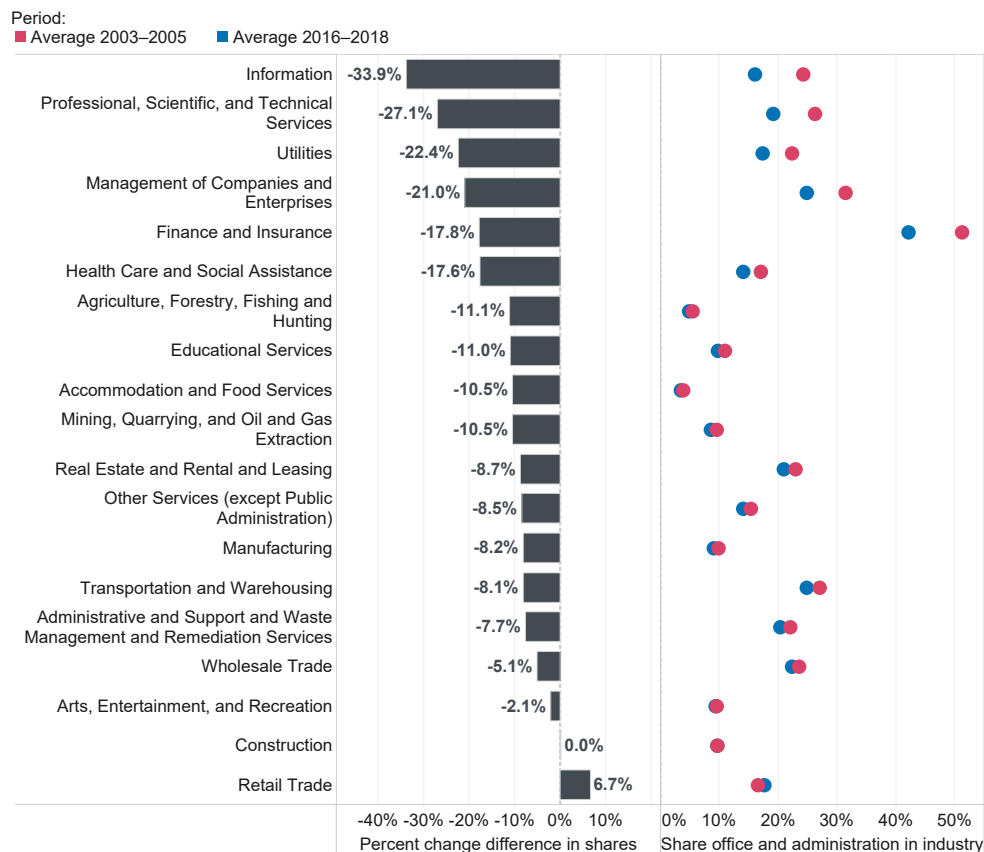
Sources: US Bureau of Labor Statistics’ Occupational Employment Statistics, Frey and Osborne (2013), and The Conference Board

Across industries we find large variation in the change in the share of routine office workers. While the share of routine office workers in overall employment dropped across almost all industries in the past one to two decades, industries that comprise larger and more technologically advanced companies seemed to have experienced a larger drop in that share (Chart 43). In sum, additional gains in labor productivity can be made, especially when the need to cut costs becomes more intense.

Chart 43

The share of office and administrative support occupations has declined faster in industries with more technologically advanced companies

The share of office and administrative support occupations by industry and the percentage change difference in the shares, average of 2003–2005 and 2016–2018



Source: US Bureau of Labor Statistics

Whatever the reason, more than at any other time during this decade, we see indications of a comeback in automation. Because labor shortages are so acute for jobs that do not require a college degree, we expect automation to have the most impact in those occupations.

Note that because automation is not directly measured in this report, we are unable to identify the exact source of the acceleration in labor productivity. Likewise, we cannot say for sure whether labor market tightness and rising wages have spurred increased labor productivity. It might be just pure luck that technology is beginning to pay off at the time businesses need it most.

The Decade Ahead

The Outlook for Workers and Employers

Labor shortages: A phase or here to stay?

Labor shortages are becoming one of the main barriers for sustaining a healthy US economy, especially in industries that hire many blue-collar and manual services workers. In the next year, we expect further tightening of the labor market to intensify the labor shortage problem. But at some point during the next few years, a recession is almost certain to occur, which would reduce the labor shortages problem in the short term.

Whether shortages persist beyond that period depends on structural developments in the US economy. If current trends continue, the US will not be able to maintain the growth rate in standard of living we have historically enjoyed, and that is, indeed, a concern.

Shrinking pool of workers limits economic growth

Baby boomers are going to continue to retire in large numbers through 2030. When they retire, they stop working but don't stop consuming. In fact, they consume almost as much as when they were working, just differently.⁶⁷ Despite a slowdown, total population growth will remain much higher than the growth of the working-age population (aged 18 to 64) through 2030. In other words, the ratio of working people to total population is declining. Why is the working-age population expected to grow so slowly?

One of the main predictions central to the concerns about labor shortages is the US Census forecast, which currently shows almost no growth in the US working-age population (defined as persons ages 18–64) through 2030 (Chart 44). This is markedly different from other periods in US history. Even in the early 2000s, the working-age population grew by more than 1 percent annually, and, before that, had grown around 2 percent per year.

When projecting net growth in the working-age population, we need to consider three variables: new entrants versus leavers, death, and immigration. First, and most importantly, there is the gap between the number of 17-year-olds versus the number of 64-year-olds. The former are going to join the working-age population next year, while the latter will most likely exit. In the simplest of terms, the bigger the number of 17-year-olds entering the workforce compared to the number of 64-year-olds exiting, the larger the net entrance to the working-age population.

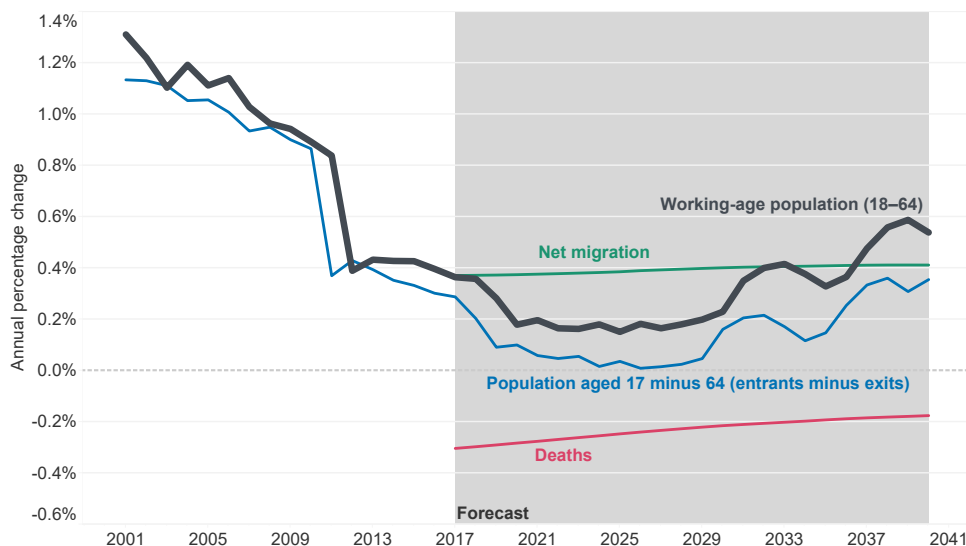
⁶⁷ For more information on demographic trends and consumption, read Gad Levanon, Brian Anderson, Ben Cheng, and Frank Steemers, *The Impact of Demographic Trends on US Consumer Spending*, The Conference Board, September 2018.

The expected slowdown in working-age population growth is due to baby boomers exiting the workforce in almost greater numbers than the young people entering it. This has not typically been the case. In the beginning of the 21st century, the trend was very different—with about 2 million more 17-year-olds than 64-year-olds in 2000. But this gap shrank significantly to roughly 720,000 by 2011 when the oldest baby boomers were turning 65. In the next decade, working-age population growth will be almost zero, meaning the number of entrants (from Generation Z) and the number of leavers will be more or less equal.

Chart 44

The working-age population will barely grow through 2030

Growth in the working-age population (18–64) and its contributions, annual percentage change, 2001 to 2040, forecast from 2017 onwards



Note: Shaded area represents forecast.

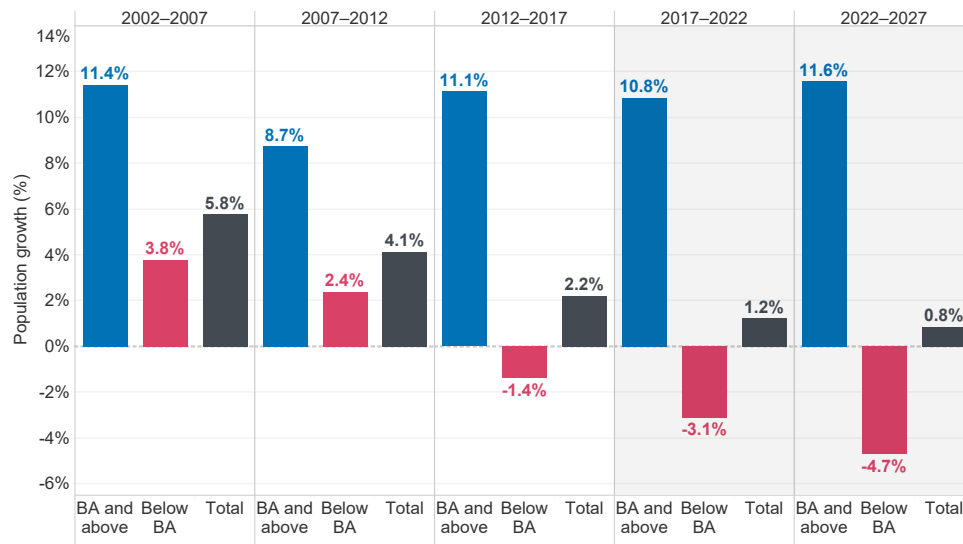
Sources: US Census Bureau 2017 population projections; calculations by The Conference Board

In addition to a shrinking pool of workers, two opposing mini trends emerge: While the number of workers with a bachelor's degree is solidly and uninterruptedly growing at about 2 percent annually, the number without a bachelor's degree is shrinking (Chart 45). Further reducing the supply of noncollege graduates is the large departure from the labor force of disabled people since the 1990s and the low labor force participation of young men (as discussed on page 18).

Chart 45

The number of working-age people without a bachelor's degree is expected to rapidly shrink in the coming decade

Working-age population (aged 20 to 64) growth by education, 5-year percentage change, 2002 to 2027



Note: Shaded area represents forecast.

Sources: US Census Bureau Population Projections, 2017; IPUMS-ACS, University of Minnesota; The Conference Board

Maintaining the US standard of living through increased participation and productivity

Two macro-level potential outcomes could resolve the labor constraint: 1) growing the labor force through increased labor force participation and 2) reducing the demand for workers through higher labor productivity. The question is, how much do labor force participation and labor productivity need to grow through 2030 to maintain the rates of improvement in the US standard of living?

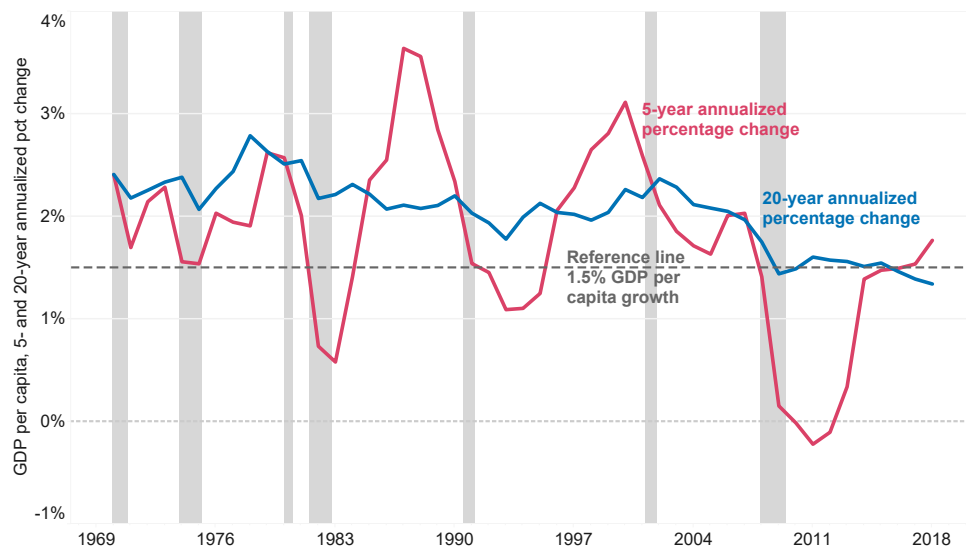
We use GDP per capita because it is the most common measure of standard of living. We quantify several scenarios of productivity growth and labor force participation that will be required to achieve GDP per capita goals.

Throughout most of the post-war era, until the Great Recession, GDP per capita growth was at the 2–2.5 percent range. After the Great Recession, it fell sharply and did not quite recover to prerecession rates (Chart 46).

Chart 46

GDP per capita—US standard of living—may further decrease over the next decade

GDP per capita, 5- and 20-year percentage change annualized, 1970 to 2018



Note: Shaded areas represent recessions.

Sources: US Bureau of Economic Analysis

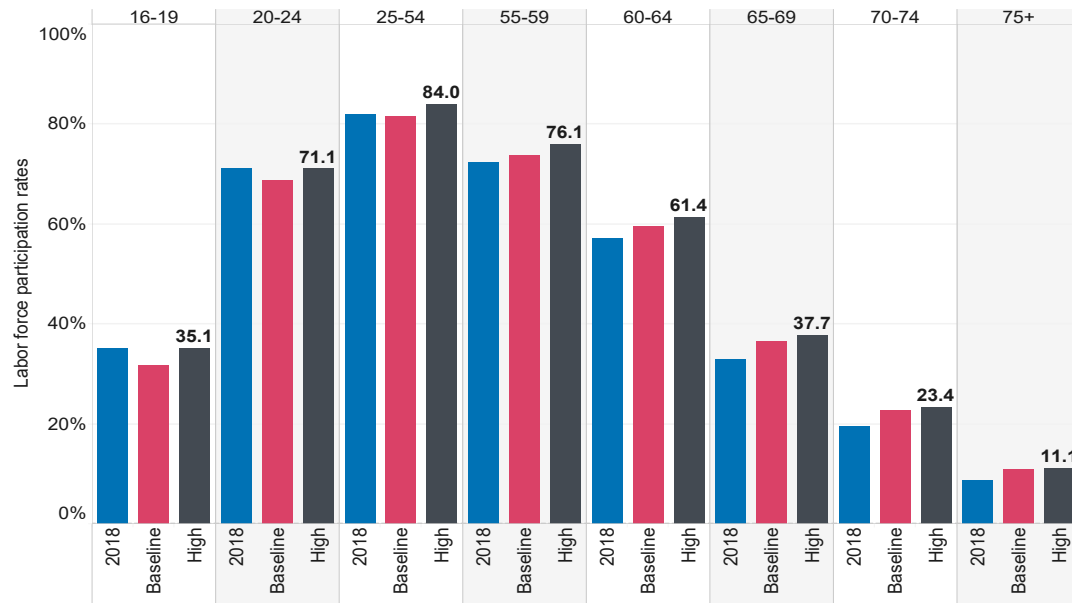
The outlook for GDP growth will depend on whether it is possible to increase labor force participation and productivity and to what degree for both. Higher labor force participation rates would mean that a larger share of the population is contributing to the economy, and, in this way, increasing GDP per capita. Faster productivity growth would mean that society is getting more output from their existing workers, which would also result in a rise in GDP per capita. To study the combinations of labor force participation and productivity growth rates that would be needed to achieve post-war era rates, we examined three goals of GDP per capita growth through 2030: 1.5, 2, and 2.5 percent.

Chart 47 shows two labor force participation scenarios by age, for the year 2030, next to the actual labor force participation rate in 2018. What we call the baseline scenario is the projection of the Bureau of Labor Statistics (BLS) for labor force participation rates in 2026. For the high scenario, we assume a more optimistic scenario. For the labor force participation assumptions, see Table 3.

Chart 47

Labor force participation rates would have to increase to maintain the current growth in standard of living

2030 labor force participation rates by age, for the baseline and high scenario, compared to the 2018 actual rate



Note: In the chart, “Baseline Scenario” refers to the 2026 labor force participation rates projections by the US Bureau of Labor Statistics, which we use for our 2030 projection; “High Scenario” represents The Conference Board’s optimistic projections of labor force participation rates for 2030.

Sources: US Bureau of Labor Statistics and The Conference Board

Table 3

2030 labor force participation rates and other assumptions for the two scenarios

Labor force participation rate assumptions	Scenarios	
	Baseline	High
Under 25	Will continue the long-run declining trend	No further decline but remain at 2018 rates
25 to 54	Almost identical to the 2018 actual rate	Reach the all-time record high of 84 percent from 2000
55 and above	Will continue the long-run increasing trend	Reach higher than the BLS projection, by the same rate of change as we assumed for the 25–54 group.
Other assumptions		Average hours worked per person will remain the same The unemployment rate by age group in 2030 will be similar to 2017 rates

Note: In the chart, “Baseline Scenario” refers to the 2026 labor force participation rates projections by the US Bureau of Labor Statistics, which we use for our 2030 projection; “High Scenario” represents The Conference Board’s optimistic projections of labor force participation rates for 2030.

Sources: US Bureau of Labor Statistics and The Conference Board

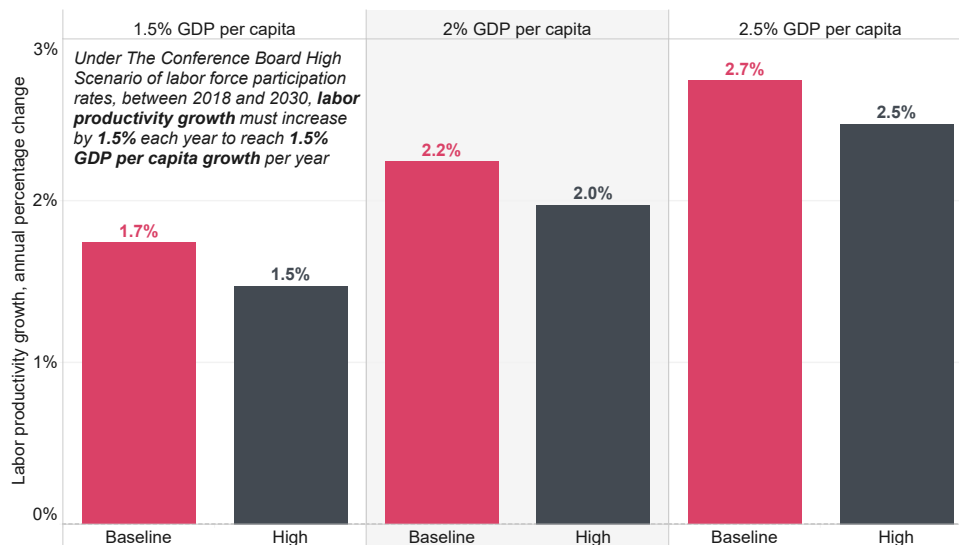
Under the labor force participation assumptions from the US Bureau of Labor Statistics and The Conference Board, using the other assumptions on the unemployment rate and average hours worked per person, and given population projections by age group from the US Census Bureau, the overall employment growth from 2018 to 2030 will be 5.3 percent, according to the base scenario, and 8.6 percent according to the high scenario. Those are historically very low rates. Between the Great Depression and the Great Recession in 2008, the 12-year employment growth rate was never below 17 percent. Because economic growth is the sum of the growth rate of employment and productivity, it follows that very strong productivity growth would be needed to offset this rate of slow employment growth.

What are the productivity growth rates from 2018 to 2030 that would be needed to achieve the GDP per capita goals? Chart 48 shows this required growth rate for the two labor force participation scenarios and for the three GDP per capita targets.

Chart 48

It will be difficult to maintain the current growth in the standard of living, unless labor productivity growth takes off

Annual labor productivity growth needed to accomplish GDP per capita targets, 2018 to 2030, under the two labor force participation rate scenarios



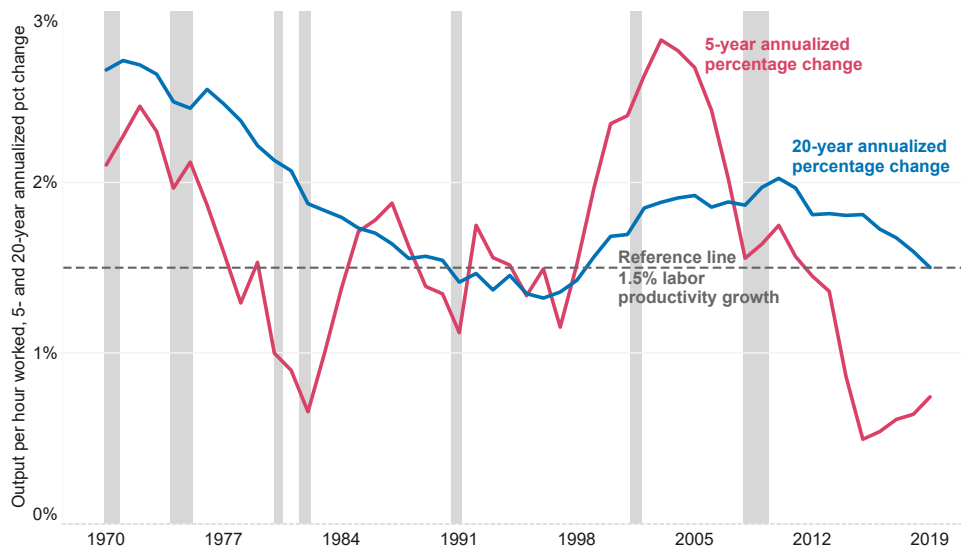
Sources: US Bureau of Labor Statistics; US Census Bureau; The Conference Board

The results show that reaching GDP per capita targets of 2 percent and above seem out of reach given the recent history of productivity growth. To achieve even a modest 1.5 percent GDP per capita growth would require labor productivity growth of 1.5 to 1.7 percent, which would mean more than doubling the labor productivity growth rate of recent years. As Chart 49 demonstrates, labor productivity growth has been well below 1 percent growth per year over the last five years (see blue line). Given this track record, it is unlikely—though not impossible—that productivity growth rates will double to achieve 1.5 percent GDP per capita growth in the near future.

Chart 49

Labor productivity growth has been slowing over the last two decades, something difficult to reverse in the future

Output per hour worked, 5- and 20-year percentage change annualized, 1970 to 2019



Note: Shaded areas represent recessions.

Sources: US Bureau of Labor Statistics and The Conference Board

Even using the most optimistic assumptions about growing the pool of available workers and productivity, the US will not be able to maintain its current standard of living unless the US government acts to significantly increase immigration, improve labor force participation, and, together with employers, raise labor productivity growth.

Despite such gloomy projections, there is hope. As discussed in the previous section, some positive signs suggest the US economy is at least moving in the right direction. First, in the past couple of years, labor productivity seems to be accelerating,⁶⁸ and jobs that are more likely to be automated are indeed seeing more automation. (See “Signs that labor productivity and automation are on the rise” on page 69 for more detail.) Second, the improvement in labor force participation discussed previously, especially among groups in the population that were typically less connected to the labor market, should help expand the labor supply (See “The workforce is becoming more diversified” on page 54 for more detail.)

68 Gad Levanon, “Automation Is Making a Comeback,” Labor Markets Blog, The Conference Board, May 31, 2019.

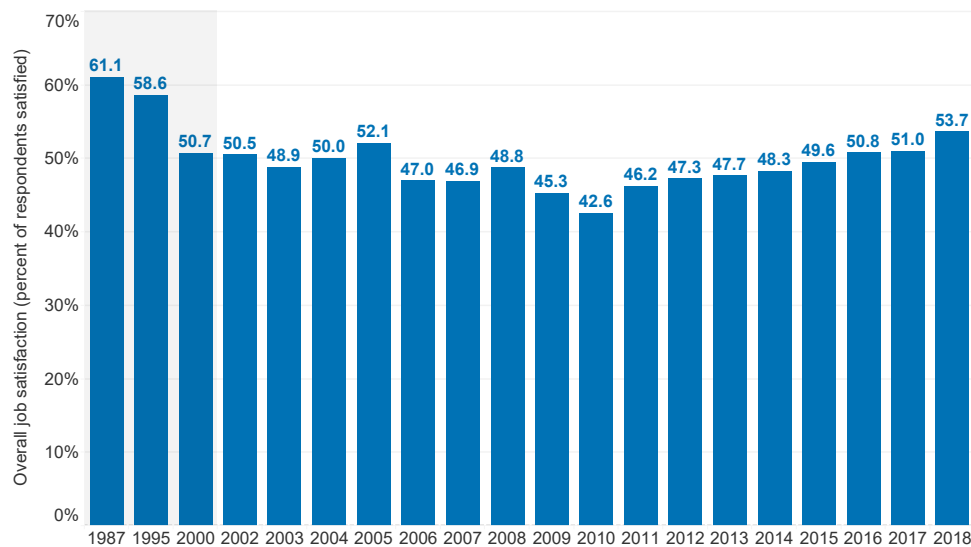
Tight markets improve worker satisfaction and increase diversity

This report focuses on the implications for employers, but tight labor markets have major implications for workers as well. While tight labor markets are a problem for employers, they are a boon for workers. They are less likely to be unemployed, more likely to experience faster wage growth, and are more likely to work in a job they are happy with. Job satisfaction significantly improved in 2018, the eighth straight year of improvement (Chart 50). Satisfaction is rising the fastest with economic components that are especially related to labor market conditions, such as wages, job security, and bonus plan.⁶⁹

Chart 50

Overall job satisfaction has been improving for eight consecutive years

Overall job satisfaction by year, 1987 to 2018



Source: The Conference Board, 2019

The prolonged tight labor market in blue-collar and manual services jobs is having a societal impact as well. As discussed above, populations that typically have a hard time participating in the labor market are now enjoying historically positive labor market conditions, leading to the lowest poverty rates ever for black and Hispanic people (Chart 51). Labor force participation among Hispanic women and black men and women has reached historically high levels.

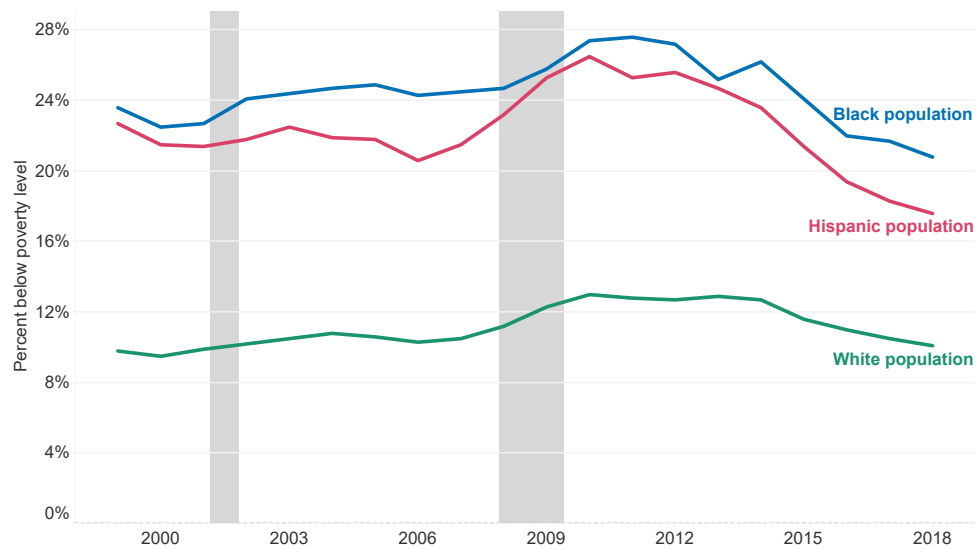
Finally, the recovery in labor market conditions for blue-collar workers is contributing to a potential reversal of the trend of growing wage inequality. Chart 52 shows the ratio of Usual Weekly Earnings of the 75th percentile to the 25th percentile and the 90th to 10th percentile. This ratio has been rising for decades, but in the past several years it has started to move down. We expect that trend to continue. This would mean that while GDP per capita growth—our proxy for the US standard of living—may slow, the distribution of wage income could benefit those at the bottom of the wage income distribution the most.

⁶⁹ Gad Levanon et al., *Job Satisfaction 2019*, The Conference Board, August 2019.

Chart 51

Better labor market conditions have pushed down poverty levels

The share of people below the poverty level, by race/ethnicity, 1998 to 2018



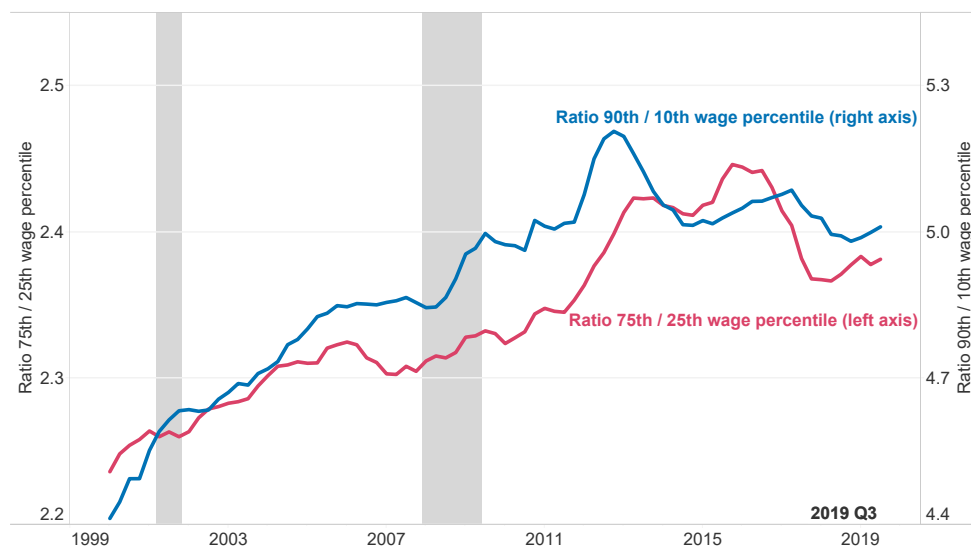
Note: Shaded areas represent recessions.

Source: US Census Bureau

Chart 52

Wage inequality may have started to reverse

Ratio of the 10th by 90th and 25th by 75th percentile in the average hourly earnings wage distribution, 2000Q1 to 2019Q2



Note: Shaded areas represent recessions.

Sources: US Bureau of Labor Statistics and The Conference Board

Concluding Thoughts

Common knowledge often lags reality. Weak labor markets and the fear of technological unemployment from earlier this decade still dominate the perceptions of many and strongly influence political debates. But the reality is that blue-collar and manual services labor markets in the US are perhaps the tightest in half a century and markets for other occupations in the US are very tight. These developments are very favorable for workers, especially noncollege graduates and typically underrepresented groups, such as black and Hispanic workers. But future demographic trends pose a threat that labor shortages may even become more extreme in the coming decade, in a way that will force the US economy to achieve much more modest growth in the average standard of living.

In this unprecedented era, the US simply doesn't have enough working-age people who are available and willing to work in blue-collar and manual services jobs. As we have made clear in this report, the US is facing a future of chronic labor shortages due to multiple structural trends that have converged in this moment in time. Unfortunately, many of them, such as a large cohort of baby boomers retiring, large shares of noncollege disabled, lower-than-expected labor force participation rates, and fewer noncollege grads to fill blue-collar jobs, are trends that are difficult to overcome.

Raising labor force participation of noncollege graduates benefits workers, employers, and the economy. We are already seeing the fruits of a few years of strong labor markets, including the achievement of social goals that evaded this country for decades. For example, for both black and Hispanic populations, unemployment rates and poverty rates are the lowest on record.

Both governments and employers can remove many of the remaining barriers that stand in the way of further increases in labor force participation, such as adjusting tax policy to make work more attractive, further expansion of recruiting to underrepresented populations, improving access to childcare and offering more flexibility for parents to bring more women into the workforce, assisting in job search programs, reducing occupational licensing, subsidizing costs of moving to encourage geographical mobility, and supporting work conditions of contingent and part-time workers.

Appendix

Companies implement a combination of solutions to the labor shortage problem

Percentage of respondents using each action to address recruitment and/or retention difficulties, by company type

Solutions	All	Companies least affected by labor shortages	Companies most affected by labor shortages	Companies with mostly blue-collar workers	Companies with mostly white-collar workers
Increased wages or salaries	75.4%	68.4%	81.7%	78.8%	70.4%
Increased efforts to develop better managers	62.0%	56.5%	69.5%	67.5%	60.4%
Implemented or improved employee engagement efforts (e.g., pulse surveys, action plans)	58.3%	65.2%	55.9%	65.0%	47.9%
Increased efforts to improve overall employee experience	56.5%	50.0%	64.4%	57.5%	52.1%
Offered or increased signing bonus	55.1%	55.1%	59.4%	64.7%	40.8%
Increased social media efforts	55.0%	48.4%	67.6%	69.2%	42.0%
Increased efforts to foster a thriving company culture	55.0%	55.8%	56.3%	50.0%	56.8%
Implemented or improved performance management process	52.8%	50.0%	57.6%	60.0%	52.1%
Increased work schedule flexibility	52.0%	45.3%	63.4%	51.9%	53.1%
Offered teleworking and/or remote flexibility	50.3%	48.4%	56.3%	36.5%	56.8%
Improved and communicated employment brand	49.1%	51.6%	49.3%	57.7%	39.5%
Increased recruitment at colleges and job fairs	46.2%	49.4%	45.3%	58.8%	33.8%
Contracted with staffing firm to fill positions	46.2%	32.6%	67.6%	51.9%	38.3%
Provided or expanded internal training programs (e.g., in person and organizational online learning)	45.0%	41.1%	52.1%	51.9%	39.5%
Implemented new/advanced technologies to streamline recruitment and better target candidates	44.3%	34.8%	60.9%	56.9%	35.2%
Created more robust onboarding program (e.g., dedicated portal, longer duration)	43.9%	40.0%	52.1%	59.6%	40.7%
Expanded target recruitment demographic (e.g., minorities, veterans, or previously incarcerated)	43.7%	34.8%	59.4%	54.9%	29.6%
Implemented or improved reward and recognition programs	43.5%	39.1%	49.2%	55.0%	35.4%
Offered moving cost compensation	41.8%	38.2%	50.0%	56.9%	32.4%
Offered stretch assignments, job rotations, and/or job shadowing	41.5%	36.8%	47.9%	40.4%	40.7%
Increased advertising to improve candidate attraction	40.5%	36.0%	50.0%	52.9%	32.4%
Offered retention bonus (paid out over time)	38.9%	39.1%	40.7%	42.5%	29.2%
Developed or expanded internships	38.6%	33.7%	48.4%	43.1%	39.4%
Restructured work, redesigned operations, or realigned organizational structure based on available people	36.3%	30.5%	45.1%	36.5%	38.3%
Added or modified employee referral program	36.1%	21.3%	59.4%	51.0%	21.1%
Provided or expanded online learning opportunities (e.g., LinkedIn, Skillssoft)	35.7%	26.3%	49.3%	40.4%	34.6%
Increased promotions	35.2%	37.0%	35.6%	37.5%	31.3%
Invested in corporate social responsibility	34.5%	33.7%	38.0%	32.7%	34.6%
Shortened recruitment process with fewer interviews (e.g., same day hiring)	34.2%	24.7%	50.0%	41.2%	26.8%
Increased bonus (excluding signing or retention bonus)	33.3%	24.2%	46.5%	40.4%	25.9%

Solutions	All	Companies least affected by labor shortages	Companies most affected by labor shortages	Companies with mostly blue-collar workers	Companies with mostly white-collar workers
Reevaluated jobs to better assess credential requirements	32.2%	25.3%	40.8%	36.5%	25.9%
Offered new perks or benefits	32.2%	28.4%	39.4%	40.4%	21.0%
Improved existing benefits	30.4%	26.3%	36.6%	36.5%	27.2%
Expanded recruiting area (e.g., nationally or internationally)	30.4%	28.1%	35.9%	41.2%	25.4%
Developed or improved talent mobility program internally (same location)	29.2%	25.3%	35.2%	34.6%	27.2%
Developed integrated work programs with colleges, high schools and trade schools	29.1%	22.5%	40.6%	47.1%	16.9%
Increased efforts to streamline boring or burdensome tasks	28.7%	23.2%	38.0%	28.8%	30.9%
Improved working conditions (e.g., work environment, job hours, responsibilities)	26.9%	20.0%	36.6%	30.8%	19.8%
Lowered requirements for prior experience	25.3%	15.7%	40.6%	37.3%	18.3%
Created apprentice programs	25.3%	18.0%	37.5%	35.3%	16.9%
Developed a formalized career path	25.1%	22.1%	29.6%	28.8%	22.2%
Increased efforts to monitor, and if necessary reduce, employee workload	23.1%	15.2%	30.5%	17.5%	20.8%
Conducted one-on-one stay interviews to determine potential incentives	23.1%	17.4%	28.8%	25.0%	18.8%
Made leaders and managers accountable for retention	22.2%	10.9%	32.2%	27.5%	10.4%
Contracted with outsourcing company	21.6%	15.8%	31.0%	28.8%	13.6%
Lowered requirements for skills/competencies	19.6%	10.1%	34.4%	21.6%	21.1%
Provided or increased reimbursement for external training or for an additional credential	18.7%	14.7%	23.9%	17.3%	21.0%
Lowered degree requirements	18.4%	12.4%	28.1%	19.6%	16.9%
Implemented new efforts to hire independent contractors	18.1%	12.6%	26.8%	21.2%	21.0%
Accepted alternate credentials, such as a certification	17.7%	11.2%	28.1%	21.6%	12.7%
Moved operations to other countries for lower costs or labor availability (e.g., offshoring)	16.4%	14.7%	18.3%	13.5%	19.8%
Developed or improved talent mobility program externally (e.g., other locations, overseas assignments)	15.8%	13.7%	19.7%	19.2%	13.6%
Moved operations to other parts of the US for lower costs or labor availability	14.6%	10.5%	19.7%	9.6%	17.3%
Offered or increased optional employee overtime	13.5%	8.4%	21.1%	15.4%	6.2%
Provided new incentives to retain older workers in full or partial capacity	11.1%	0.0%	20.3%	10.0%	10.4%
Lowered or eliminated drug/background check requirements	10.5%	7.4%	14.1%	13.5%	7.4%
Improved or increased transparency of health and safety (e.g., making safety records publicly available)	10.5%	6.3%	15.5%	11.5%	7.4%
Decreased required employee overtime	10.5%	3.2%	21.1%	25.0%	1.2%
Hired using an online labor platform (i.e., "cloud-" or "crowd" sourcing through platforms such as Upwork)	6.4%	4.2%	9.9%	1.9%	7.4%

Note: Companies most (least) affected by labor shortages refer to those that indicated that they were affected by five or more (less than five) adverse business outcomes (see Chart 13, p. 28) as a result of recruitment or retention difficulties. Solutions are ranked by the overall results for all respondents.

Source: The Conference Board Labor Shortages Solutions Survey, 2019

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