



# SUSTAINING CAPITALISM

A series focused on nonpartisan reasoned solutions in the nation's interest to the central challenges we face in order to provide prosperity for all Americans.

## The Future of Work How America Can Meet the Upskilling Challenge

While the nation is enjoying its longest economic expansion on record and its lowest unemployment rate in 50 years, anxiety persists about how American businesses and workers will be affected by future changes in the labor market.<sup>1</sup> Speculation about the “future of work” is typically centered on how new or emerging technologies could potentially change which skills are in demand, what jobs exist, which sectors will thrive or shrink, and how employee-employer relationships may shift. But changes in demographics and globalization, as well as in politics, culture, and society, will also be critical in determining where the world of work is headed.

Public policy commentary on how to prepare for the uncertain future of work is neither new nor limited to the US.<sup>2</sup> But given both potential opportunities and downside risks, as well as the long-term consequences of a failure to prepare, business leaders and policy makers must better position US workers to contribute to and share in growing prosperity in the years ahead. Today, efforts to better position US workers are being approached and funded in disparate ways. What is urgently needed is for public and private sector leaders to devise a comprehensive, collaborative strategy centered around forecasting skill needs, partnerships between business and academia, better matching supply and demand, job training, retraining, and upskilling.<sup>3</sup> This report helps to lay out reasoned analysis and approaches for delivering a US job training system that more effectively helps workers achieve their goals and helps the nation field a more modern, highly skilled workforce.

## Recommendations

To prepare the current workforce to thrive in an environment of rapidly changing skill demand and more frequent disruption, the US must pursue a comprehensive job training, retraining, and upskilling strategy centered around public and private sector collaboration, including:

- Encouraging and incentivizing employers to take responsibility for training their employees
- Encouraging private-public collaboration to align new job skills with training programs to improve outcomes for workers and their would-be employers
- Helping individuals pursue opportunities to upgrade or learn new skills
- Developing an information ecosystem to help adults navigate available training options
- Expanding eligibility for and access to publicly supported training
- Evaluating and supporting the most effective training models to meet the needs of a wide range of workers
- Creating special economic incentive zones for areas hit by displacement and dispersing government investment programs geographically
- Reforming tax policy to facilitate investments that maintain or modernize capital
- Lifting regulatory burdens in areas that need help

For more details on this strategy, see the descriptions starting on page 7.

## SOME FUTURE OF WORK SCENARIOS, IF UNADDRESSED, COULD POSE CHALLENGES FOR SUSTAINING CAPITALISM

Just as in the past, if US businesses are to thrive in the years ahead, they will need consistent access to a deep pool of talent whose skills adapt and grow as the demand for those skills constantly evolves. The responsibility for developing and refreshing the skills of workers to meet those shifting demands will require collaboration between private and public actors, including academia.

Constant change is nothing new. However, some predictions call for a historically elevated pace and magnitude of change, which animates common concerns about what the US may face in transitioning its workforce to meet the needs of the future economy and drive its development. While these are not the only concerns raised, they help to demonstrate why some future changes, if left unaddressed, will affect US workers and could give rise to further complaints about the shortcomings of capitalism.

Even if the US is able to harness technological developments and other future changes to increase overall economic growth and prosperity, urgent challenges for policy makers and business leaders remain.

**Concern #1. Technology-facilitated disruption will increasingly take the form of displacement** Some analysts worry that future automation of human tasks could happen so rapidly that job displacement, rather than adjustment, could become the prevailing outcome of technological disruption in the future, leading to greater unemployment as workers struggle to adjust to changes in demand.<sup>4</sup> In the past, technological change has typically been associated with a net increase in employment, as some jobs are eliminated, some new jobs are created, and many old jobs change to absorb or incorporate new technologies.<sup>5</sup> But past outcomes do not guarantee a similar pattern in the future, especially over a relatively short period of a time of frenetic change.<sup>6</sup>

Even in an environment of net job growth—where most workers benefit either directly from new jobs or higher wages, or indirectly from stronger growth or increased purchasing power—the elimination of some existing jobs means that many workers may be negatively affected. The impacts will likely occur unevenly, with some regions or towns deeply affected.<sup>7</sup> Once displaced from a job, workers often struggle to recover. From 2000 to 2014, for example, only slightly more than half of displaced workers returned to employment within one year.<sup>8</sup> Studies show that adults returning to work for a different employer after an involuntary job loss typically suffer large earning losses.<sup>9</sup> Additionally, particularly during periods of weak overall employment, a worker who loses his or her job is more likely to suffer poor health outcomes, and this may make it more difficult to find high-paying work in the future.<sup>10</sup> For those reasons, the possibility of an increasing incidence of job displacement is concerning.

**Concern #2. Workers will need to adjust to an increasing pace of change** Even for workers whose jobs do not disappear entirely, related changes in technology and business practices can greatly alter the types of tasks a worker performs on a daily basis and require the development of new or different skills. Over the course of a career, if technological developments lead to a more rapid pace of change in what skills are needed or valued, it could significantly alter a worker's career path, requiring more

frequent or more substantial adjustments than if skill demands remained more static.<sup>11</sup> While some analysts project an accelerating shift in in-demand skills over the next decade, there are signs that we may already be in a period of rapid skill change.<sup>12</sup> For instance, half of employment growth between 1980 and 2015 took place in occupations with new job titles or tasks.<sup>13</sup> One study found that the share of jobs requiring a high level of digital skills more than tripled—to encompass nearly a quarter of all jobs—between 2002 and 2016.<sup>14</sup>

Surveys show that workers and employers also perceive an increasing pace of change in demand for new skills. When questioned in 2016, roughly two-thirds of workers said the need to improve skills was greater than in the past 20 to 30 years, and more than 70 percent said that need would grow over the next 20 to 30 years.<sup>15</sup> In 2018, American employers estimated that more than a quarter of their workforce would need at least three months of training just to keep pace with the necessary skill requirements of their current roles by 2022.<sup>16</sup> While the skill requirements of in-demand jobs have always shifted over time, a quickening pace of change would force more workers and employers to spend additional time and effort in frequently updating and developing new skills to keep up with that shifting demand.

**Concern #3. Elevated uncertainty will make charting a productive career path more difficult** When surveyed, more than half of labor force participants ages 30 to 49 felt that ongoing training would be essential throughout their working lives.<sup>17</sup> But even with that recognition, workers face a difficult challenge in assessing the individual risks and opportunities they face and taking concrete steps in anticipation of future changes. A 2017 study suggested that under one scenario, as much as a third of the workforce would need to change occupations by 2030. However, in the underlying analysis, the share of current work hours that could be automated by 2030 ranged from close to zero in a slow technology adoption scenario to more than two-fifths under a rapid adoption scenario.<sup>18</sup> Even at a national level, the task of determining what skills will be needed in the future is challenging—a 2016 National Academies of Sciences report on technology and the workforce noted that “the United States has a poor track record of predicting future workforce skills.”<sup>19</sup> Businesses and schools will need to work together more closely to predict skills needed in the future. Under these conditions, few workers are likely to feel secure in their current positions or confident about the best career paths forward.

**Concern #4. Economically vulnerable workers are the most likely to be negatively affected** While there is widespread disagreement about how much future changes will affect workers on average, there is general agreement that workers who are more vulnerable economically will be disproportionately at risk for negative outcomes.<sup>20</sup> Workers living in rural areas that have already experienced slow economic growth in recent years may also be more vulnerable to technology-driven disruption.<sup>21</sup>

A 2016 Council of Economic Advisers analysis found that more than 80 percent of occupations with a median hourly wage of less than \$20 in 2010 faced at least average risk of automation, compared to less than 5 percent of occupations where the median hourly wage exceeded \$40.<sup>22</sup> Not only will low-wage workers potentially be at higher risk for more frequent or more significant disruption, but such workers, typically already at elevated risk of facing economic insecurity, may be the least well positioned to afford the time and resources necessary to acquire new skills or credentials.<sup>23</sup>

## PAST LABOR MARKET TRENDS INFORM FUTURE CONCERNS

Like much of the developed world, the US has experienced very slow productivity growth in recent decades and will rely more heavily on achieving faster rates of productivity growth to drive positive economic outcomes in the future.<sup>24</sup> Therefore, many of the most disruptive “future-of-work” scenarios reflect optimism that rapid, productivity-enhancing breakthroughs will be achieved and require significant action to adapt to new technologies and help workers reskill.<sup>25</sup>

However, taking private and public action to prepare for uncertain, but potentially historic, changes in the pace and scope of disruption is both wise and necessary. This is, in part, because of the potential magnitude of risk and opportunity these scenarios present but also because concerns about whether workers will share widely in growing future prosperity is partially based on existing concerns about the current labor market.

Even with steady improvements in the economy since the Great Recession, which include wage growth in blue-collar and manual services jobs above prerecession rates, many Americans are working full time in relatively low-income jobs.<sup>26</sup> Nearly a quarter of full-time workers, aged 25 to 64 years old, earned less than \$15 per hour in 2018.<sup>27</sup> Ideally, job transitions would more often reflect an increase in economic opportunity rather than a setback. However, one study found that most workers in the bottom three-fifths of the earning distribution either remained in the same or fell to a lower quintile of earnings after a job change.<sup>28</sup>

Labor force participation rates also remain disappointing. Despite significant improvements in the past four and a half years, the share of 25- to 54-year-olds who were working or looking for work in January 2020 remained 1.3 percentage points lower than 20 years earlier, with the US performance lagging behind other countries like Germany, France, the United Kingdom, and Canada.<sup>29</sup> American workers may also face higher levels of insecurity when it comes to predictable work schedules, benefit coverage, or risk of job loss.<sup>30</sup>

Concerns that future changes may exacerbate inequality build on the recognition that, by many measures, economic outcomes have become increasingly polarized over recent decades, despite signs of recent progress.<sup>31</sup> One such improvement is that wage gains for those at the bottom of the wage income distribution have outpaced wage gains for higher-income workers in recent years and contributed to record-low poverty rates for black and Hispanic workers.<sup>32</sup> However, educational attainment increasingly predicts who participates in the labor force. In the 1980s, men between the ages of 25 and 54 years old with at least a bachelor’s degree were, on average, roughly 3 percentage points more likely to be working or looking for work than men of the same ages without a four-year degree. In the 2010s, the annual gap between those two groups was more than 8 percentage points on average.<sup>33</sup> One study found that only a third of workers without a bachelor’s degree were either currently in jobs that paid at least the median local salary or were in entry-level positions that, based on the authors’ analysis of historical job-switching patterns and projections, were expected to lead to such a job within 10 years.<sup>34</sup> Job training will be increasingly important if we enter a period of rapid change

Reorienting the secondary and postsecondary education system to better prepare students to meet employers' evolving demands is of the utmost importance for the strength of the American workforce. But if employers' demands for skills evolve more rapidly in the future—whether due to changes in technology or some other set of forces—the need for effective solutions that help current workers add new skills, transition to new roles, or pursue different careers will grow. The share of the workforce undertaking substantial training at any given time will increase, as will the frequency with which an average worker shifts occupations.

There are currently over 70 million Americans between the ages of 25 and 45 in the labor force, most of whom will remain working in some fashion for much of the next 20 to 40 years, and few of them are likely to return to a degree-granting education setting.<sup>35</sup> Beyond the responsibility borne by the individuals themselves, private and public actors, often working in concert, will share the task of helping workers navigate change and disruption. This task will include reskilling and incentivizing workers to continue lifelong learning so they share in growing prosperity. While the public school system will bear the initial burden of preparing workers for careers marked by continual learning, adaptation, and change, employers will typically be the frontline providers, or conduits, to further training and education. Where workers fall through the gaps of the training and education system, or are otherwise disconnected from employment, public-supported efforts, informed by or in partnership with would-be employers, will be needed.

Some important considerations for the role of public policy in improving job training include the following:

First, job training will be an important element of helping workers achieve growing prosperity but is not sufficient on its own. The prospect of sharper and more frequent disruption will necessitate other policy responses, including rethinking how the US structures and provides labor market supports and safety net benefits more generally. Approaches that were successful in the late 20th century may not be optimized for a 21st-century economy. [CED's Solutions Brief series](#)—addressing urgent issues such as health care, early learning, and confronting demographic change—helps point to the range of issues where policy makers must pursue commonsense solutions in the nation's interest to ensure Americans share widely in the benefits of economic growth and make capitalism sustainable for generations.<sup>36</sup>

Second, since connecting workers, or keeping them connected, to employment is critical to achieving more broadly shared prosperity, job training programs will need to address or ameliorate existing barriers to training to be effective. The jobs forecast as having the most near-term exposure to automation risk are often populated by workers with low educational attainment and relatively little savings.<sup>37</sup> Many low-income workers, as well as would-be workers who are currently unemployed or out of the labor force altogether, face economic or family situations that leave them vulnerable to financial shocks or difficulties. This makes pursuing or completing job training challenging.<sup>38</sup> For example, just as reliable access to affordable, quality childcare is often key for parents seeking to maintain employment, it is likely also necessary for pursuing and completing training opportunities.<sup>39</sup> Such barriers to job training are unlikely to improve in a period of more rapid change and disruption.<sup>40</sup>

Third, identifying and supporting effective models for skill building and job training that do not rely on an employer-centered model of work and training will be critical for assisting workers who do not have traditional employee-employer relationships, particularly if such arrangements become more prevalent in the future.<sup>41</sup> The Bureau of Labor Statistics estimates that roughly 1 in 10 workers had an “alternative employment arrangement,” such as independent contracting, on-call employment, or work for a contract firm or temporary help agency, as their primary source of work hours in 2017, roughly consistent with the share of workers with similar arrangements two decades earlier.<sup>42</sup> Many workers in alternative employment arrangements also count among the roughly 1 in 10 workers who are self-employed.<sup>43</sup> Workers who are not employees have likely been underserved by the US’ heavy reliance on employer-provided training in the past.

## ACHIEVING A MODERN, HIGHLY SKILLED WORKFORCE

To prepare the current workforce to thrive in an environment of rapidly changing skill demand and more frequent disruption, the US must pursue a comprehensive job training, retraining, and upskilling strategy centered around public and private sector collaboration, including:

**Encouraging and incentivizing employers to take responsibility for training their employees** While the public school system will bear the initial burden of preparing workers for careers that may be marked by continual learning, adaptation, and change, employers will be the most important provider of *training*—helping new hires and long-standing employees to develop evolving skills. Employers recognize the benefit when workers are trained to meet their particular job demands or future skill outlook and should bear those costs.<sup>44</sup> Employers who demonstrate that they can help employees achieve new, more highly skilled roles within the company—or even outside of it—will better attract, retain, and develop the talent they need.<sup>45</sup> The high cost of turnover is also an incentive for employers to develop the skills of their workforce.

Employers’ commitment to investing in their workers will become even more important if rapid skill change and job displacement become more common. The nation also benefits when employers invest in modernizing and upgrading their workers’ skills, making the US workforce more skilled and globally competitive overall. While employers should take the primary responsibility for training their workforce, conditions in the future could spur the US to reconsider how it incentivizes employers, or consortiums of employers, to train their existing and potentially highly mobile workforces.<sup>46</sup>

**Encouraging private-public collaboration to align new job skills with training programs to improve outcomes for workers and their would-be employers** When designing job training programs, the incentives of businesses and trainees are often aligned. Much as employers desire a steady supply of trainees to emerge with relevant, in-demand skills to fill critical open roles at the entry level or further up the experience chain, adults enter training midcareer with the hope of improving their earnings trajectory. Employers can and should play a critical role in shaping available training options—partnering with broad-access educational institutions, workforce training boards, and other training providers—to ensure offerings are continually updated to

reflect current and future market needs and convey relevant skills and experience. The heavy involvement of employers—whether through assessing and projecting job training needs; providing input into curricula; or supplying labor market data, training equipment, instructors, or on-the-job learning opportunities—is critical to helping workers who successfully complete training achieve their goals.<sup>47</sup> Similarly, training providers—particularly those with public funding and limited resources—have an obligation to ensure that their offerings evolve to match changing labor market demands in as close to real time as possible, providing the highest value and greatest chance of success to adults relying on them to advance in their careers.<sup>48</sup> Publicly supported training providers, and especially broad-access educational institutions, must seek out and develop partnerships with employers, employer associations, unions, and other entities to leverage data, expertise, and resources. Given the scope of the potential growth in demand from current workers seeking to update or upgrade their skills, the US will require energetic and creative innovation in the postsecondary sector, including less expensive, competency-based alternatives to traditional “seat-time” approaches to awarding credentials.<sup>49</sup>

**Helping individuals pursue opportunities to upgrade or learn new skills** Even under the most disruptive scenarios for the future of work, many workers will retain the primary responsibility for seeking out and pursuing training opportunities that will keep their skills in demand and allow them to continue to advance in their careers. But if the pace of change among in-demand skills greatly accelerates, and the need for periodic training becomes more frequent, these workers will need tools that help them to educate themselves and train on their own. Old forms of support, like student loans for extended periods of study out of the workforce, may not be the most appropriate vehicle for a future that requires near-continuous skill building. Instead, policy makers will need to consider alternatives that help workers who cannot rely solely on employer-provided training. These alternatives would help workers save for training and manage their own career development.<sup>50</sup>

**Developing an information ecosystem to help adults navigate available training options** In the words of Professor Paul Osterman, existing job training options for midcareer workers, outside of the most expensive and time-intensive university programs, can typically be characterized as “complicated, hard to navigate, and underfunded.”<sup>51</sup> Even at a “big-picture” level, it can be very challenging to plot a successful career path when existing labor market opportunities and the “return on investment” job seekers can expect to see remain unclear. While different models for training and accreditation have proliferated and enabled experimentation, customization, competition, and choice in the field, participants often receive little information to validate the quality of training, understand how it may impact career paths, or improve short- or long-term earnings. Finding a way to better provide this information is necessary for a well-functioning training system so that workers can act as informed customers as they shop between training paths and providers. For example, more large companies could explore creating online portals that allow workers to see what jobs are available and what skills are required within companies.<sup>52</sup>

**Expanding eligibility for and access to publicly supported training** If more workers are going to be at higher risk of job displacement more frequently throughout their careers, earlier, more effective intervention for a larger share of the at-risk workforce would be in



the public interest. The US needs to rethink its current approach to publicly supported job training. Outside of its institutions of higher education, federal support has largely focused on narrow populations of workers affected by trade-related disruption and some adults without current employment.<sup>53</sup> Increasing access to job training, and the range and generosity of supports provided, will come at a cost.<sup>54</sup> If the US is going to reach more at-risk workers with public support, it will need to experiment widely to find the most cost-effective approaches.

**Evaluating and supporting the most effective training models to meet the needs of a wide range of workers** Policy makers and business leaders should pursue the training approaches that prove to be the most effective over the long run. In practice, different workers will face different constraints and different needs.<sup>55</sup> In each instance, policy makers should be agnostic to the form of training and its provider. Whether training is provided by a union or association within a sector, by an employer-community college partnership, or by a private provider, the most effective models should receive US support and be shared across industries and locations.<sup>56</sup> Funding the assessment of existing models and the evaluation of promising approaches, while supporting wider experimentation, will be a critical federal role.

**Creating special economic incentive zones for areas hit by displacement and dispersing government investment programs geographically** If the negative shocks of job displacement and the risks to workers from rapidly changing skill requirements vary strongly by geography, and workers and businesses in affected regions struggle to adjust and thrive, policies that are uniformly targeted may not be the most effective response.<sup>57</sup> Instead, policy makers should evaluate options for incentives and other forms of aid to spur economic growth and job creation in the areas that need them the most, while also applying the lessons from past place-based policies that failed to demonstrate desired outcomes.<sup>58</sup>

**Reforming tax policy to facilitate investments that maintain or modernize capital** Tax policy should not discourage businesses from investing in the maintenance or modernization of their physical plants. Particularly in a period of rapidly changing technology and demand, where failure to make appropriate capital investments could have long-run economic consequences for businesses and workers, the US will need a corporate tax regime that reduces disincentives to investment while raising revenue as efficiently and effectively as possible.<sup>59</sup>

**Lifting regulatory burdens in areas that need help** CED champions “smart regulation,” a careful outcome- and market-based measurement of the value of regulations and a need to continually update regulations to match changing data and evolving circumstances.<sup>60</sup> As regions cope with rapid changes in technology, skills in demand, job displacement, and the potential economic challenges that follow, regulations should be updated to match facts “on the ground.” Policy makers at all levels of government and business leaders should reevaluate and reweigh the benefits and costs of regulations in their specific labor market environment, allowing their communities to better position themselves to seize opportunities for broadly shared economic growth.

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## Endnotes

1. Gad Levanon, Elizabeth Crofoot, Frank Steemers, and Robin Erickson, *US Labor Shortages: Challenges and Solutions*, The Conference Board, January 27, 2020. The seasonally adjusted unemployment rate has averaged just under 3.6 percent over the past six months, the lowest rate over a comparable period since 1969.
2. David Autor, “Why Are There Still So Many Jobs? The History and Future of Workplace Automation,” *Journal of Economic Perspectives* 29, no. 3 (Summer 2015): 3-30. Concerns about technological advances leading to widespread job loss date back at least to the industrial revolution. An example of public policy attention from more recent US history can be found in President Johnson convening a “Blue-Ribbon National Commission on Technology, Automation, and Economic Progress” in 1964. But the policy implications of the changing nature of work have been the focus of much recent work, including both the World Bank’s 2019 World Development Report and the Organization for Economic Cooperation and Development’s (OECD) Employment Outlook 2019. See: “World Development Report 2019: The Changing Nature of Work,” World Bank, October 12, 2018 and “OECD Employment Outlook 2019: The Future of Work,” OECD, April 25, 2019.
3. Business leaders are clearly focused on what future developments may mean for their own companies’ ability to adapt to a shifting landscape, procure the talent and skills they need, and take advantage of the opportunities presented by rapidly changing technologies and business models. In The Conference Board C-Suite Challenge 2020, a survey of hot-button issues, US CEO’s cited the attraction and retention of top talent and the creation of new business models because of disruptive technologies as the two most common internal-facing issues requiring their greatest attention. Data analytics and collaboration and creating a more innovative culture were also among their top concerns. See: Charles Mitchell, Ilaria Maselli, Rebecca Ray, and Bart van Ark, *C-Suite Challenge™ 2020: Risks, Opportunities, and Hot-Button Issues*, The Conference Board, January 2, 2020.
4. “Job Creation and Local Economic Development 2018: Preparing for the Future of Work,” OECD, September 18, 2018. Some analysts have suggested that the shift in incomes shares from labor to capital in recent decades could be, at least in part, a manifestation of that developing dynamic (i.e. the pace of automation is increasing faster than the creation of new labor-intensive tasks and new automation-facilitated jobs, making capital relatively more valuable than labor). However, the extent to which automation should be expected to drive a trend of lower labor shares of national income and the extent to which it is driving the current trend are both contested and uncertain. See: Daron Acemoglu and Pascual Restrepo, “The Race between Man and Machine: Implications of Technology for Growth, Factor Shares, and Employment,” *American Economic Review* 108, no. 6 (2018): 1488–1542; James Manyika, Jan Mischke, Jacques Bughin, Jonathan Woetzel, Mekala Krishnan, and Samuel Cudre, “A New Look at the Declining Labor Share of Income in the United States,” McKinsey Global Institute, May 2019.
5. Mark Muro, Robert Maxim, and Jacob Whiton, “Automation and Artificial Intelligence: How Machines Are Affecting People and Places,” Brookings Institution, January 2020. For example, an analysis of the impact of automation on US jobs between 1980 and 2016—an era notable for the widespread adoption of personal computers and advancement of processing power and software—concluded that, while automation had replaced many jobs, it also “complemented much work and so supported growth.” Looking over an even longer period, a study of British occupational census records going back nearly 150 years concluded that technological change led to “faster growth and, in time, rising employment,” with job creation and enhancement outpacing job destruction. See: Ian Stewart, Debapratim De, and Alex Cole, “Technology and People: The Great Job-Creating Machine,” Deloitte, August 2015.
6. Daron Acemoglu and Pascual Restrepo, “Automation and New Tasks: How Technology Displaces and Reinstates Labor,” *Journal of Economic Perspectives* 33, no. 2 (Spring 2019): 3-30. For example, some analysts point to the industrial revolution as a period where difficult changes may have preceded by decades the adjustments—political and economic—that led to widely shared increases in living standards. See: Robert Allen, “Pessimism Preserved: Real Wages in the British Industrial Revolution,” Oxford University Department of Economics Working Paper No. 314, 2007; and Ryan Avent, *The Wealth of Humans*, St. Martin’s Press, 2016.
7. Mark Muro, “Countering the Geographical Impacts of Automation: Computers, AI, and Place Disparities,” Brookings Institution, February 14, 2019.
8. “Back to Work: United States: Improving the Re-employment Prospects of Displaced Workers,” OECD, December 6, 2016. Even excluding the post-Great Recession period, only roughly 6 in 10 displaced American workers were re-employed within 12 months in the 2000 to 2006 period.
9. Kevin Hallock, Michael Strain, and Douglas Webber, “Job Loss and Effects on Firms and Workers,” Cornell University, June 9, 2011. The earnings losses are due to a combination of reduced pay and a higher likelihood of subsequent job losses for an extended period after a worker returns to employment.
10. Jessica Pearlman, “The Consequences of Job Displacement for Health: Moderating Influences of Economic Conditions and Educational Attainment,” *Social Science Research* 52 (July 2015): 570-587..
11. Martin Fleming, Wyatt Clarke, Subhro Das, Phai Phongthientham, and Prabhat Reddy, “The Future of Work: How New Technologies Are Transforming Tasks,” MIT-IBM Watson AI Lab, October 31, 2019.
12. Jacques Bughin, Eric Hazan, Susan Lund, Peter Dahlström, Anna Wiesinger, and Amresh Subramaniam, “Skill Shift: Automation and the Future of the Workforce,” McKinsey Global Institute, May 2018. Looking across five categories of skill sets, McKinsey Global Institute researchers projected that four of those categories would experience larger changes in the share of hours dedicated to those skill categories between 2016 and 2030 than during the previous 14-year period.
13. Acemoglu and Restrepo, 2019.
14. Mark Muro, Sifan Liu, Jacob Whiton, and Siddharth Kulkarni, “Digitalization and the American Workforce,” Brookings Institution, November 2017.

15. [“The State of American Jobs,”](#) Pew Research Center, October 6, 2016. A survey conducted 10 years earlier found a similar share of working Americans who felt that the need for training had grown, potentially indicating a continuing trend or a persistent perception.
16. [“The Future of Jobs Report 2018,”](#) World Economic Forum, September 17, 2018.
17. Pew Research Center (2016).
18. James Manyika, Susan Lund, Michael Chui, Jacques Bughin, Jonathan Woetzel, Parul Batra, Ryan Ko, and Saurabh Sanghvi, [“Jobs Lost, Jobs Gained: Workforce Transitions in a Time of Automation,”](#) McKinsey Global Institute, December 2017.
19. [Information Technology and the US Workforce: Where Are We and Where Do We Go from Here?](#) National Academies of Sciences, Engineering, and Medicine, 2017. For example, despite a common emphasis on science, technology, engineering, and math (STEM) skills’ importance to future workers in the recent past, research by David Deming suggests that social-skill intensive occupations, including the subset of such occupations that were STEM focused, saw the fastest growth and fastest wage growth in recent decades. By comparison, even jobs that required high levels of math skill but low levels of social skill saw slower growth. See: David Deming, [“The Growing Importance of Social Skills in the Labor Market,”](#) NBER Working Paper No. 21473, June 2017.
20. Jason Furman, [“Should We Be Reassured If Automation in the Future Looks Like Automation in the Past?”](#) *The Economics of Artificial Intelligence: An Agenda*, May 2019. For example, an OECD analysis found that, while only 9 percent of US jobs overall were highly automatable—comprised of at least 70 percent feasibly automatable tasks—workers with only a high school diploma were more than twice as likely to hold a highly automatable job; workers without a high school diploma were nearly five times as likely. A 2019 report by the McKinsey Global Institute came to a similar conclusion, finding that workers with a high school diploma or less were four times more likely to be in a highly automatable role than workers with at least a bachelor’s degree. See: Melanie Arntz, Terry Gregory, and Ulrich Zierahn, [“The Risk of Automation for Jobs in OECD Countries: A Comparative Analysis,”](#) OECD Social, Employment, and Migration Working Papers No. 189, May 14, 2016; and Susan Lund, James Manyika, Liz Hilton Segel, André Dua, Bryan Hancock, Scott Rutherford, and Brent Macon, [“The Future of Work in America: People and Places, Today and Tomorrow,”](#) McKinsey Global Institute, July 2019.
21. Lund et al. (2019). Workers living in economically slow-growing or declining rural areas are also less likely to benefit from the creation of new technology-facilitated jobs than workers who already live in or near large, diverse urban areas, exacerbating an already growing divide.
22. [“Artificial Intelligence, Automation, and the Economy,”](#) Executive Office of the President, December 20, 2016.
23. Molly Kinder and Amanda Lenhart, [“Worker Voices: Technology and the Future for Workers,”](#) *New America*, November 21, 2019.
24. [“Total Economy Database: Output, Labor and Labor Productivity, 1950-2019,”](#) The Conference Board.
25. [“Growing the American Workforce: Bolstering Participation Is Critical for US Competitiveness and Economic Strength,”](#) Committee for Economic Development of The Conference Board (CED), October 2019.
26. Levanon et al. (2020). For example, the weekly earnings of a worker in the 25th percentile of earnings have improved over the past six years but still remain below prerecession levels when adjusted for inflation. See: Jed Kolko, [“Better News on Job Quality,”](#) jedkolko.com, January 7, 2020.
27. Paul Osterman, [“Employment and Training for Mature Adults: The Current System and Moving Forward,”](#) Brookings Institution, November 2019. Roughly 6 percent of full-time workers, aged 25 to 64 years, earned less than \$10 per hour. Using a relatively expansive definition, one study, which attempted to adjust for cost of living, identified 53 million Americans as belonging to the low-wage workforce. This number includes both part- and full-time workers but excludes students pursuing postbaccalaureate studies, students working an average of less than 14 hours per week, and the self-employed. Workers are considered low-income if they earn less than two-thirds of the median national wage for men working full-time, adjusted for locality. By this treatment, roughly 43 percent of non-self-employed workers ages 18 to 64 are considered low-income. See: Martha Ross and Nicole Bateman, [“Meet the Low-Wage Workforce,”](#) Brookings Institution, November 2019.
28. Marcela Escobari, Ian Seyal, and Michael Meaney, [“Realism about Reskilling,”](#) Brookings Institution, November 7, 2019.
29. [“Growing the American Workforce,”](#) CED; [“The Aging Workforce: Tackling the Challenge,”](#) CED, February 6, 2020; authors calculations based on “Labor Force Statistics from the Current Population Survey: series LNS11300060,” Bureau of Labor Statistics. The seasonally adjusted labor force participation rate for adults between the ages of 25 and 54 was 84.4 percent in January 2000 and 83.1 percent in January 2020.
30. [“OECD Employment Outlook 2019,”](#) OECD, (April 2019); Daniel Schneider and Kristen Harknett, [“Consequences of Routine Work-Schedule Instability for Worker Health and Well-Being,”](#) *American Sociological Review* 84, no. 1 (2019): 82–114. For example, while conclusive longitudinal data is absent, Schneider and Harknett conclude that “predictable work schedules had become increasingly rare.” When measured in the 2010s, nearly 40 percent of early career workers received work schedules less than seven days before the start of their work week. The US also ranked 21st among member countries on the OECD’s measure of labor market insecurity, based on the expected earnings loss associated with becoming unemployed. See: Susan Lambert, Peter Fugiel, and Julia Henly, [“Precarious Work Schedules among Early-Career Employees in the US: A National Snapshot,”](#) University of Chicago, August 27, 2014; [“Job Quality,”](#) OECD Job Quality Database.
31. For example, economic mobility appears to have declined for more recent cohorts of Americans, likely driven by comparatively greater inequality in the distribution of economic growth experienced by younger workers. Professor Raj Chetty and coauthors find that absolute income mobility has fallen across the entire income distribution, and especially for middle class families. Looking at age 30 incomes, roughly 90 percent of children born in 1940 out-earned what their own parents had made at age 30; compared to roughly half of children born in 1980. They find that roughly 70 percent of the decline in

- absolute mobility between the 1940 and 1980 birth cohorts is driven by a comparatively more unequal distribution of economic growth. Additionally, black-white income disparities have also persisted, tied to substantially lower rates of upward mobility and higher rates of downward mobility for black Americans. The driving factor appears to be large differences in wages and employment rates between black and white men. See: Raj Chetty, David Grusky, Maximilian Hell, Nathaniel Hendren, Robert Manduca, and Jimmy Narang, “[The Fading American Dream: Trends in Absolute Income Mobility Since 1940](#),” National Bureau of Economic Research Working Paper No. 22910, December 2016; and Raj Chetty, Nathaniel Hendren, Maggie Jones, and Sonya Porter, “[Race and Economic Opportunity in the United States: An Intergenerational Perspective](#),” *Quarterly Journal of Economics* (forthcoming), December 2019.
32. Levanon et al. (2020).
  33. Authors’ calculations based on Sarah Flood, Miriam King, Renae Rodgers, Steven Ruggles, and J. Robert Warren, “[Integrated Public Use Microdata Series, Current Population Survey: Version 6.0](#),” (Minneapolis, MN: IPUMS, 2018).
  34. Growing the American Workforce,” CED; Chad Shearer and Isha Shah, “[Opportunity Industries: Exploring The Industries That Concentrate Good And Promising Jobs In Metropolitan America](#),” Brookings Institution, December 2018.
  35. “[The Employment Situation – January 2020](#),” Bureau of Labor Statistics, February 6, 2020.
  36. A collection of CED 2020 Solution Briefs can be found upon release at <https://www.ced.org/2020-solutions-briefs>
  37. Ross and Bateman (2019).
  38. Kinder and Lenhart; Cynthia Hess, Yana Mayayeva, Lindsey Reichlin, and Mala Thakur, “[Supportive Services in Job Training and Education: A Research Review](#),” *Institute for Women’s Policy Research*, November 25, 2016.
  39. “[Childcare in State Economies: 2019 Update](#),” CED, January 21, 2019; Gina Adams and Shayne Spaulding, “[Child care support is critical for advancing job training and workforce development](#),” *Urban Wire*, August 16, 2018.
  40. This may be one reason why, when surveyed in 2017, more than half of workers with at least some college education felt that technology increased their opportunities for advancement while less than one-third of respondents without college education agreed. See: Lee Raine, “[10 Facts about Jobs in the Future](#),” Pew Research Center, October 10, 2017.
  41. Some analysts have pointed to the “fissuring” of the workplace—where companies outsource activities not deemed core competencies to better specialize on their primary area of business focus—as a source of change in typical employer-employee relations. If more workers are in employment relationships where they provide services through subcontractors or third-party companies rather than in direct employment to the business receiving those services, who is responsible for offering training and advancement opportunities may be more ambiguous, and the employer’s interest in providing such opportunities may be circumscribed. See: David Weil, *The Fissured Workplace: Why Work Became So Bad for So Many and What Can Be Done to Improve It*, Harvard University Press, 2014; Neil Irwin, “[To Understand Rising Inequality, Consider the Janitors at Two Top Companies, Then and Now](#),” *New York Times*, September 3, 2017.
  42. Karen Kosanovich, “[Workers in Alternative Employment Arrangements](#),” Bureau of Labor Statistics, November 2018. The majority of workers identified as in an alternative employment arrangement were classified as independent contractors. The estimated share of Americans in alternative employment arrangements has been similar each of the six times BLS has surveyed the issue, beginning in 1995. Even among workers whose income primarily comes from one employer, many participate in other work arrangements as well. An Upwork-sponsored survey found that 35 percent of workers engaged in some form of freelancing—supplemental, temporary, or contract- or project-based work—in the year prior to June 2019. Similarly, a 2018 Federal Reserve survey found that roughly 30 percent of adults engaged in some form of informal or infrequent work for pay in the previous month, reporting a median of five hours spent on such activities. See: Adam Ozimek, “[Report: Freelancing and the Economy in 2019](#),” Upwork, October 3, 2019; and “[Report on the Economic Well-being of U.S. Households in 2018 - May 2019](#),” Board of Governors of the Federal Reserve System, May 2019.
  43. “The Employment Situation – January 2020,” Bureau of Labor Statistics, February 6, 2020.
  44. Daron Acemoglu and Jörn-Steffen Pischke, “[Beyond Becker: Training in Imperfect Labour Markets](#),” *The Economic Journal* 109, no. 453 (February 1999): F112-F142. Already, US CEOs cite the attraction and retention of top talent as a critical internal-facing issue requiring their greatest attention, and even under current economic conditions, an analysis by The Conference Board found that the firms most affected by recruitment and retention challenges turn to increased training and talent pipeline development as a critical strategy—more intensively providing or expanding online learning activities and internal training programs. See: Mitchell et al. (2020); Levanon et al. (2020).
  45. Sandra Sucher and Shalene Gupta, “[Layoffs That Don’t Break Your Company](#),” *Harvard Business Review*, May-June 2018.
  46. Alastair Fitzpayne and Ethan Pollack, “[Worker Training Tax Credit: Promoting Employer Investments in the Workforce](#),” The Aspen Institute Future of Work Initiative Working Paper, August 2018.
  47. “[The Power of Career- and Employer-Focused Training and Education](#),” MDRC, March 2017.
  48. Michael Grosz, “[Do Postsecondary Training Programs Respond to Changes in the Labor Market?](#)” Abt Associates, February 20, 2019.
  49. “[Tackling Economic Inequality, Boosting Opportunity: A Blueprint for Business](#),” CED, April 6, 2016.
  50. Alastair Fitzpayne and Ethan Pollack, “[Lifelong Learning and Training Accounts: Helping Workers Adapt and Succeed in a Changing Economy](#),” Aspen Institute Future of Work Initiative Issue Brief, May 2018.
  51. Osterman (2019).

52. Susan Caminiti, [“AT&T’s \\$1 Billion Gambit: Retraining Nearly Half Its Workforce for Jobs of the Future,”](#) March 13, 2018.
53. [“Back to Work: United States,”](#) OECD. For instance, one element of that rethink will need to focus on those workers who do not fit within a traditional employee-employer relationship. Additionally, the US may also need to change how it supports workers during periods of job transitions. Among those who have separated from employment, relatively few unemployed workers receive unemployment insurance benefits—in 2018, only 26 percent of unemployed people who had worked in the previous 12 months applied for unemployment insurance benefits since their last job ended—and many recipients, roughly 35 percent in 2019, exhaust their benefits prior to returning to work. See: [“Most Unemployed People in 2018 Did Not Apply for Unemployment Insurance Benefits,”](#) Bureau of Labor Statistics, October 1, 2019; [“Monthly Program and Financial Data: State UI Program Data - US Totals,”](#) US Department of Labor, Employment and Training Administration.
54. One reason for the high potential cost is that the US currently spends comparatively less than most advanced economies on its training efforts and support for unemployed workers, ranking 29th out of 30 OECD countries measured in 2017 in terms of its public expenditures on labor markets as a share of GDP. See: [“Public Spending on Labour Markets,”](#) OECD Employment and Labour Market Statistics.
55. Some workers may be able to step out of the workforce for a period of extended training while other workers will need to pursue skills that can be acquired in short, stackable bursts or while continuing to work. The needs of a late-career worker hoping to remain in the workforce for a few more years may differ from the needs of an early-career worker looking to transition out of a shrinking industry or occupation, which may differ from the needs of an adult who has already fallen out of the labor force completely.
56. Osterman (2019).
57. Benjamin Austin, Edward Glaeser, and Lawrence Summers, [“Jobs for the Heartland: Place-Based Policies in 21st-Century America,”](#) Brookings Papers on Economic Activity, March 8, 2018.
58. David Neumark, [“Rebuilding Communities Job Subsidies,”](#) Hamilton Project Policy Proposal 2018-13, September 2018; Scott Eastman and Nicole Kaeding, [“Opportunity Zones: What We Know and What We Don’t,”](#) Tax Foundation, January 8, 2019. For example, Eastman and Kaeding characterize the existing research on the impact of past place-based tax incentive programs as suggesting that such programs “fail to generate new employment often because subsidized firms replace nonsubsidized firms, or because firms simply shift their current business activities for tax purposes. Research also suggests the benefits of place-based incentives accrue primarily to landowners and higher-skilled mobile workers who can travel for employment, effectively displacing the low-income residents the programs are meant to help.”
59. [“Corporate Income Tax Reform in 2017?”](#) CED, March 9, 2017; [“A New Tax Framework: A Blueprint for Averting a Fiscal Crisis,”](#) CED, September 23, 2005.
60. Michael Archbold, Hollis Hart, and Joseph Minarik, [“Smart Regulation: Changing Speed Bumps into Guardrails,”](#) CED, June 18, 2019.

## SUSTAINING CAPITALISM

Achieving prosperity for all Americans could not be more urgent. Although the United States remains the most prosperous nation on earth, millions of our citizens are losing faith in the American dream of upward mobility, and in American-style capitalism itself. This crisis of confidence has widened the divide afflicting American politics and cries out for reasoned solutions in the nation's interest to provide prosperity for all Americans and make capitalism sustainable for generations to come. In 1942, the founders of the Committee for Economic Development (CED), our nation's leading CEOs, took on the immense challenge of creating a rules-based post-war economic order. Their leadership and selfless efforts helped give the United States and the world the Marshall Plan, the Bretton Woods Agreement, and the Employment Act of 1946. The challenges to our economic principles and democratic institutions now are equally important. So, in the spirit of its founding, CED, the public policy center of The Conference Board, will release a series of 2020 Solutions Briefs. These briefs will address today's critical issues, including health care, the future of work, education, technology and innovation, regulation, China and trade, infrastructure, inequality, and taxation.



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