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A Pillar of Trade Leadership

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About the CSIS Trade Commission on Affirming American Leadership

U.S. economic leadership faces pressure at home and abroad. The global institutions built on the back of the post-war U.S. alliance structure, and the rules and norms they support, were constructed for the twentieth century, not the twenty-first century. New challengers to the existing system have emerged. Confidence in the international order is eroding within the United States, as many Americans feel that the benefits of the existing system are not as widely shared as they once were. A mishandled health pandemic has raised questions about U.S. competence. As a result of these and other forces, American leadership on the global stage has been seriously eroded. Allies are beginning to question America's commitment to the institutions and rules that it enlisted them to craft and uphold, and adversaries are seeking to take advantage of these doubts. As history moves toward a pivot point, there is an urgent need for revitalization and affirmation of American leadership.

The CSIS Commission on Affirming American Leadership was created in the summer of 2019 to develop a series of recommendations to cement U.S. global leadership in light of these twenty-first century challenges. In a series of reports, the commission lays out recommendations for the U.S. workforce, U.S. innovation policy, and U.S. engagement in the international trading system.

Members of the commission are listed below. Each commissioner participated in an individual capacity, not on behalf of their organizations. Individual members of the commission do not necessarily endorse all of the recommendations in this paper.

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00

Executive Summary

America's greatest asset is its people: innovators and entrepreneurs, builders and farmers, teachers and public servants, frontline workers and first responders, and countless others. However, the capacity of the U.S. workforce—its potential to make life-changing discoveries, build wonders, and improve the lives of people not just in the United States but around the world—cannot be taken for granted. The American workforce faces urgent challenges that, if left unaddressed, will erode U.S. global leadership. Recent history suggests that failing to provide pathways to success for workers—particularly those who have lost their jobs due to factors outside their control—will impede any prospect for an ambitious trade policy agenda. Moreover, investing in the American workforce will allow the United States to turn challenges such as new disruptive technology and foreign competition into opportunities for growth.

America's workforce is not currently equipped to deal with today's challenges nor those on the horizon. In many industries, companies are investing in artificial intelligence (AI) and other technology which threaten to leave the most vulnerable workers exposed to automation and worsen an existing skills gap. The Covid-19 health pandemic will accelerate these trends and has already worsened inequality. Even prior to Covid-19, it was clear that the support system for workers did not align with modern economic realities. The pandemic

has cast a bright light on the inadequacies of the current system while simultaneously acting as an accelerant of change. The scale of disruption that will occur over the next decade has the potential to cause greater fundamental shifts in the labor force than those experienced in the Industrial Revolution or at the beginning of the Information Age. Many executives and policymakers are aware of these challenges and believe workers urgently need to learn new skills to work with new technology. But the necessary investment in the American workforce has not been made to turn challenges into opportunities.

The commission recommends nine elements of a new approach to workforce development in the United States. Together, these recommendations would make the workforce more agile, adaptable, and competitive and put the United States in a position to pursue an ambitious trade agenda.

1. **Establish federal programs for affordable lifelong learning:** The federal government should create new programs for workers to engage in lifetime learning, whether they are employed or not. The rate of technological change and growing strength of foreign competition demands that the American workforce be the most adaptable and agile if it is to remain the most competitive. Declining investment in worker training throughout the economy and recent survey data suggesting that executives are unlikely to increase investment in worker training indicate that the incentive structure for worker training needs to be changed. Given the failure of the private sector to adequately invest in the workforce, government action is necessary. These options should be geared toward low-income, low-skilled workers who are less likely to receive retraining from their employer or be able to afford retraining out of their own pockets.
2. **Replace Trade Adjustment Assistance with reformed Unemployment Insurance:** The loss of a job through no fault of the worker is an insurmountable setback for too many Americans. Neither targeted programs such as Trade Adjustment Assistance (TAA) or broad programs such as Unemployment Insurance (UI) adequately meet the needs of displaced workers, nor do they provide sufficient support to reskill workers and match them with hiring employers. TAA and UI should be combined into a single program that provides assistance and retraining for workers who have lost their job through no fault of their own. This new reformed UI should borrow the most effective components from each program and expand the scope of coverage to ensure the most vulnerable Americans are provided opportunities to remain competitive candidates in the labor pool.
3. **Restore funding to programs that get Americans back to work:** For almost 20 years, federal programs that offer critical retraining and employment services have been underfunded. This has closed avenues for out-of-work Americans to reskill and get matched with employers in order to reenter the workforce. The chronic underfunding of these programs is a self-inflicted wound, a missed down payment on building a nimbler and more competitive workforce. To remedy this, Congress should fund Workforce Innovation and Opportunity Act (WIOA) Career and Technical Education programs and Adult Basic Education programs to at least FY 2001 levels and boost resources for other related services. Closer cooperation between educational institutions, training institutions, and employers on curriculum and credentials: To ensure that Americans enter the workforce with relevant skills, educational institutions—including community colleges and other training institutions—and companies should improve their relationships to ensure a smooth cycle of education, employment, and further skills development. Absent coordination between these actors, training curricula will not match the needs of employers, and Americans will enter the labor force with outdated skills. Closer cooperation among these stakeholders is particularly important given the rapid pace of technological change and shifting needs of employers.

4. **Closer cooperation between educational and training institutions, and employers:** To ensure that Americans enter the workforce with relevant skills, educational institutions—including community colleges and other training institutions—and companies should improve their relationships to ensure a smooth cycle of education, employment, and further skills development. Absent coordination between these actors, training curricula will not match the needs of employers, and Americans will enter the labor force with outdated skills. Closer cooperation among these stakeholders is particularly important given the rapid pace of technological change and shifting needs of employers.
5. **Ensure accountability for outcomes:** Federal and state governments should do a better job of determining which programs are most effective, whether qualified workers are finding and being hired into jobs they are most qualified for, and why this sometimes does not occur. Mandating that data on the effectiveness of workforce development programs be collected and analyzed would create accountability and provide insight into where improvements can be made. More data would provide training providers a better picture of employer needs and a clearer understanding of which tools work and which are less effective, smoothing frictions in the labor market.
6. **Provide free online basic STEM education for adult learners:** Basic education in science, technology, engineering, and mathematics (STEM) will become indispensable as different forms of AI and automation spread throughout the workplace. While a range of online education services offer free STEM education now, a uniform, coherent, and recognized curriculum established through a partnership among government, universities, community colleges, and online education providers would provide an improved framework for workers to attain or brush up on fundamental know-how.
7. **Ease the registered apprenticeship process for small and medium-sized enterprises:** Apprenticeships provide a valuable first step for individuals looking to break into an industry while supplying firms and industries with a pipeline of talent. However, the registered apprenticeship application process can be or appear to be excessively time-consuming for small and medium-sized enterprises (SMEs), which may discourage such enterprises from participating. Financial assistance for SMEs that apply for registered apprenticeship grants could increase the number of smaller firms that apply and improve equitable access to apprenticeship programs. Beyond registered apprenticeships, Pell Grants should be made available for individuals seeking credentials, not just a college education. Funding for Pell Grants should be increased, and the government should improve awareness and funding for registered and industry-recognized apprenticeship programs.
8. **Align U.S. immigration policy with workforce demands:** Policies that discourage foreign talent from coming to study and work in the United States are avoidable "own goals" that undermine the competitiveness of the U.S. workforce while bolstering that of competitors and rivals. Bringing the best and brightest to America's shores drives innovation and growth, in turn providing new opportunities for Americans. Chief among barriers to retaining the world's top talent are certain restrictions on H-1B and EB-5 visas. In addition, foreign students who have obtained an advanced degree in the United States should not be immediately limited in the time they are permitted to work in the United States; to the contrary, they should be offered green cards.
9. **Improve congressional-executive communication when crafting trade policy:** Too often the impact that trade agreements may have on the workforce is an afterthought, addressed only after an agreement is reached. Instead, policymakers should be proactive in assessing potential impacts on workers when preparing for trade negotiations. In addition, the U.S. International Trade Commission (USITC) should improve its analysis of trade agreements, both in terms of measuring net and specific positive and negative impacts on the workforce.

01

Introduction

Until recently, the impact of trade liberalization on workers has not been the primary goal of policymakers. As data has accumulated suggesting a relationship between job loss and trade and as income inequality continues to grow, pressure to reorient trade policy to be more responsive to workers' concerns has intensified. The effect of trade policy on labor was an issue in the 1992 election and led to the inclusion of provisions on labor and environment as side letters to the North America Free Trade Agreement (NAFTA). The issue was joined again at the World Trade Organization Ministerial Conference in Seattle in 1999, stronger provisions were included in three agreements in the mid-2000s in order to facilitate congressional approval, and still stronger provisions were included in the U.S.-Mexico Canada Agreement (USMCA), once again to obtain congressional approval.[1] Even as public support for free trade reaches record highs in the United States, trade agreements that do not involve protections for, or an investment in, American workers are not likely to be approved.[2]

Investing in the American workforce is about more than securing the political buy-in necessary to embark on an ambitious trade policy agenda. It is essential to U.S. economic growth. Irrespective of whether one attributes declining manufacturing employment to technology, automation, or trade, a better-trained workforce would be more able to take advantage of opportunities driven

by new access to foreign markets or new technologies. This would contribute to an increase in the economy's productive capacity, competitiveness, and aggregate output. Moreover, ensuring that more American workers receive more of the benefits of trade would also support growth indirectly by reducing income inequality. There is a growing body of economic research showing that (1) growth driven by trade liberalization is not shared equally among the rich and poor and may contribute to economic inequality, and (2) inequality is not just a matter of fairness but can actually be a drag on growth.[3]

In sum, a competitive domestic workforce is necessary for both economic growth and an ambitious trade agenda, so the impact that trade may have on workers needs to be considered throughout the policymaking process, not just after the fact. As the economy undergoes significant technological change and recovers from an unprecedented pandemic, a shift in worker training and immigration policy will be required to maintain a competitive workforce. A new approach to worker training is necessary to match the pace and scale of change in the economy. Schemes to provide workers lifelong training will provide a foundation for a competitive workforce, while a revamped Unemployment Insurance program will ease transitional pains caused by the uptake of new technology. An immigration program that makes the most of the quality talent that chooses to study and work in the United States, instead of limiting it, will buttress the homegrown American workforce, not undercut it. With those pieces in place, the United States will be better equipped to establish a positive trade agenda and compete globally.

02

Changing Work & Changing Expectations

The nature of work is quickly changing. The private sector is embracing new technology that could create sweeping change in workplaces across the economy. Covid-19 has upended the economy and may lead to fundamental changes for the labor force. While the private sector grapples with these forces, workers are not getting the support needed to navigate a shifting landscape. Emphasis is too often placed on the changing nature of work and not the changing needs of workers. Investment in AI, automation, and other technology that has potential to reshape the labor market has increased and will likely continue in the coming years.[4] Accordingly, 74 percent of C-Suite executives working with AI surveyed by Accenture plan to use AI to automate tasks to a "large or a very large extent" over the next three years.[5] Over half of those executives believe it will be important to learn new skills to work with new technology in the next three to five years; yet only 3 percent of the executives surveyed by Accenture say they intend to significantly increase investment and training in reskilling over the next three years. Concern exists that there is a lack of commitment from private firms and government at all levels to prepare the workforce for the seismic changes already underway, which bodes poorly for the future of America's workforce.

Covid-19 has added another level of disruption to workers and the future of work. Although the course

of the pandemic and the long-term impact it may have on society remains uncertain, it has already delivered a gut-punch to the American workforce. Covid-19 has disproportionately impacted the most vulnerable workers, the same workers who are most likely to get passed over for upskilling in the workplace and are least likely to be able to afford the cost of a new degree or credential.[6] For this segment of the workforce, the pandemic has created an immediate employment crisis as more and more layoffs are expected to become permanent. These workers also face long-term uncertainty, as Covid-19 has the potential to reshape entire industries and accelerate investment into automation and other technology to replace human workers. As Congress has lurched from one worker relief package to the next, the pandemic has laid bare the inadequacies of the current unemployment system, as well as the workforce support architecture more broadly. New, bold policies are needed to ensure the most vulnerable workers can recover from the pandemic, not just to contribute to a competitive American economy but to thrive in a changing workplace.

Trade has also played a role in the development of the labor market. While freer trade carries numerous positive impacts, including boosting overall economic growth, it can also incur distributional and adjustment costs for some sectors of the economy. Policies to liberalize trade can result in job losses, particularly for workers in industries most exposed to import competition. In the past, those costs have been borne largely by U.S. manufacturing workers.[7] As services become more tradable and make up a larger share of the economy, and as technology continues to advance, liberalization of services trade could impact U.S. services workers. Some argue that U.S. job losses from trade result in lower-wage, lower-skilled workers being pushed into higher-wage, higher-skilled, and more productive jobs. Recent evidence on that is mixed, even with the existence of TAA for workers who have lost their jobs due to trade liberalization.[8] At a minimum, this suggests that trade policymakers should always keep the potential impact on labor in mind when negotiating agreements. That said, trade is just one of many variables that impact the labor force, and therefore trade policy is just one of the tools policymakers can use to address labor market distortions. Labor market ills, even those that can be linked to trade agreements, are not simply solved by micromanaging trade policy.

The current support system for workers and individuals seeking work is imperfect and geared toward the economy of the past, not the economy of the future. In an era of rapid change, companies that want to compete at a national and global level will require a workforce that is adaptable, flexible, always learning, and experienced in a broad set of skills—including technological prowess. Preparing a competitive workforce to maintain a competitive economy will require a whole-of-society recalibration on worker preparedness policy. At the core of that recalibration must be an understanding that workers require opportunities to learn new skills throughout their careers and that individuals seeking employment need to be supported for the workforce to remain competitive. Lifelong learning must be an expectation, not an exception, and individuals should not be forced to choose between work and learning a new skill. The patchwork of programs meant to assist individuals who have lost their jobs should be replaced with a comprehensive, easy-to-navigate safety net geared toward workforce development and reemployment.

Policies to support this shift should encourage companies to invest in their workers, encourage workers to learn new skills, and ensure individuals seeking work are afforded opportunities to reskill and maintain geographic mobility. Policies should be designed to offer the most support to individuals, companies, and communities that would otherwise be least likely to receive support, such as low-income communities, small businesses, and individuals who do not have post-secondary education.

Embedding lifelong learning into the labor market is only part of the challenge. A separate challenge is ensuring the learning opportunities presented to work-

ers align with labor market demands. Doing so will require open lines of communication between educational and training institutions and firms. In that vein, training curricula should be shaped in part by input from the private sector to ensure graduates enter the workforce with a relevant skill set. Experience from foreign programs and some U.S. programs suggest that government at all levels can play a productive liaison role in this area, connecting stakeholders to foster cooperation and communication, spreading awareness about incentive programs and funding opportunities, and making sure individuals are informed about the opportunities that are available.[9]

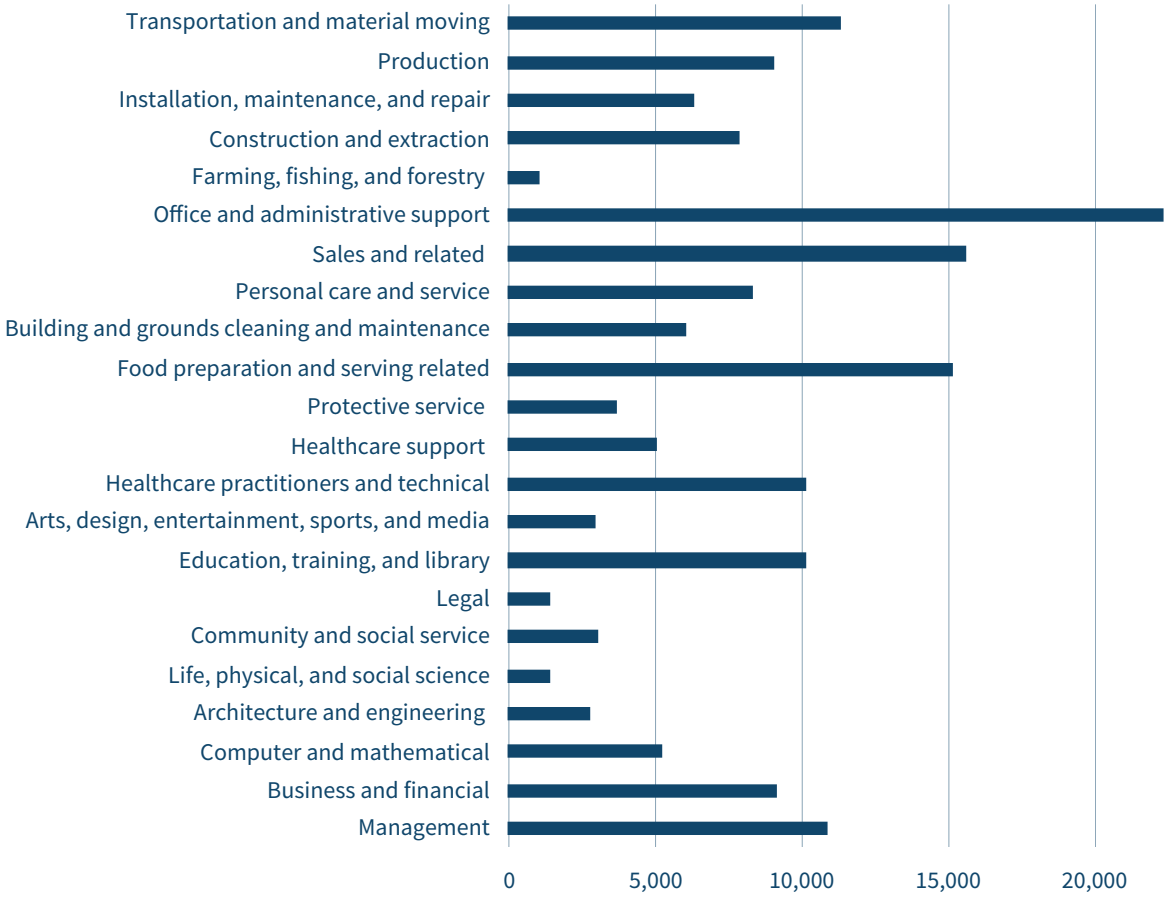
03

Demand & Demographics

Peering into the Future

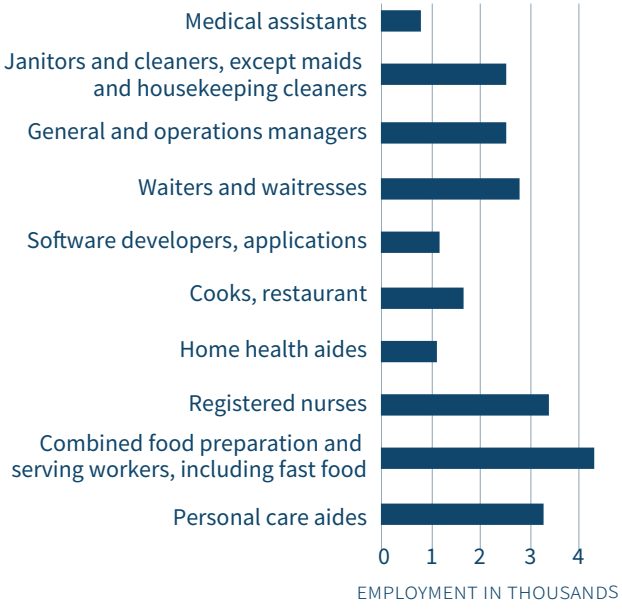
What will be demanded of a competitive workforce in the future? Broadly speaking, the services sector will experience the most growth. According to the U.S. Department of Labor, service-providing sectors will grow at a 0.6 percent clip annually, accounting for 136.8 million jobs in 2028, an additional 7.6 million compared to 2018. The number of jobs in the goods-producing sector is not expected to significantly change. Services-providing sectors will account for over 90 percent of employment growth through 2028. Labor productivity is also expected to improve at a faster clip over the next decade, with annual growth at 1.6 percent through 2028, compared to 1.3 percent over the last decade. That projection, made prior to the Covid-19 pandemic, is based on capital investment, advances in technology, and workforce education.[10]

FIGURE 1 / 2028 Projected Employment by Major Occupational Group



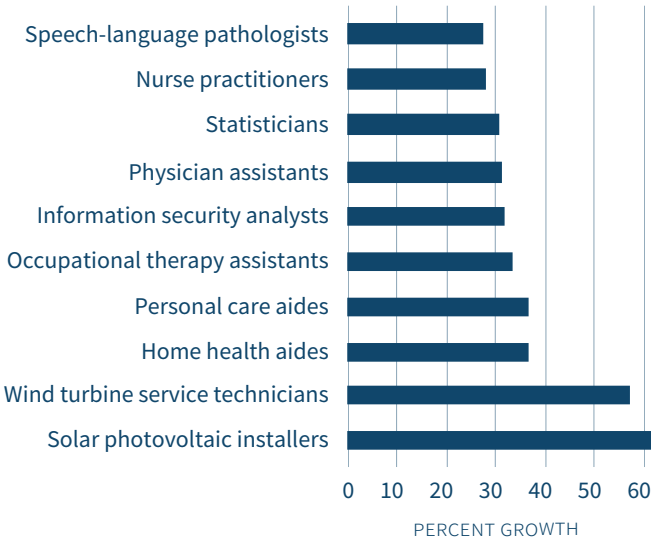
Source: "Projections overview and highlights, 2018–28," Bureau of Labor Statistics, Monthly Labor Review, October 2019, https://www.bls.gov/opub/mlr/2019/article/projections-overview-and-highlights-2018-28.htm.

FIGURE 2 / Occupations with the Most Projected Job Growth, 2018–2028



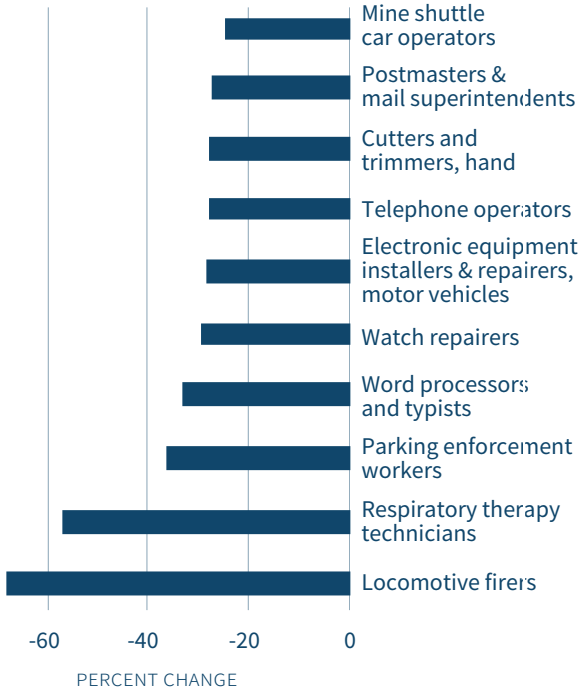
"Projections overview and highlights, 2018–28," Bureau of Labor Statistics, Monthly Labor Review, October 2019, https://www.bls.gov/opub/mlr/2019/article/projections-overview-and-highlights-2018-28.htm.

FIGURE 3 / Fastest Growing Occupations, 2018–2028



Source: "Projections overview and highlights, 2018–28," Bureau of Labor Statistics, Monthly Labor Review, October 2019, https://www.bls.gov/opub/mlr/2019/article/projections-overview-and-highlights-2018-28.htm.

FIGURE 4 / **Fastest Declining Occupations, 2018–2028**



Source: "Projections overview and highlights, 2018–28," Bureau of Labor Statistics, Monthly Labor Review, October 2019, https://www.bls.gov/opub/mlr/2019/article/projections-overview-and-highlights-2018-28.htm.

Health-related services will see a significant increase in demand, with 4.6 million jobs added by 2028, while computer-related fields will experience the fastest growth. Retail trade, wholesale trade, utilities, federal government, and manufacturing are expected to decline. In the manufacturing sector, the extent to which the skills gap is filled will impact the overall manufacturing employment picture. The Manufacturing Institute projects that 2.4 million of 4.6 million manufacturing jobs in 2028 may be unfilled due to shifting skills, a negative perception of manufacturing jobs, and the retirement of baby boomers.[11] According to a 2019 survey from the Manufacturing Institute, 70 percent of manufacturers were addressing the skills gap by

FIGURE 5 / **GDP Projections, 2010 USD Purchasing Power Parity**

Note: Data is pre-Covid-19. Source: Long-Term Forecast," OECD, https://data.oecd.org/gdp/gdp-long-term-forecast.htm.

creating and expanding internal training programs.[12] E-commerce will eat into sales and related jobs, which are expected to decline by 0.5 percent. Office and administrative support and production jobs are expected to decline by 2.6 and 4.5 percent, respectively, driven by productivity gains accrued through advances in technology and automation.

Computer and mathematical jobs are projected to make up 6 of the 30 fastest-growing occupations. Growing connectivity and reliance on networked devices and the cloud will spur demand for software development—a field expected to see employment gains of 25.6 percent. Burgeoning connectivity will also generate demand for cybersecurity, which should result in information security analyst employment growing by 31.6 percent.

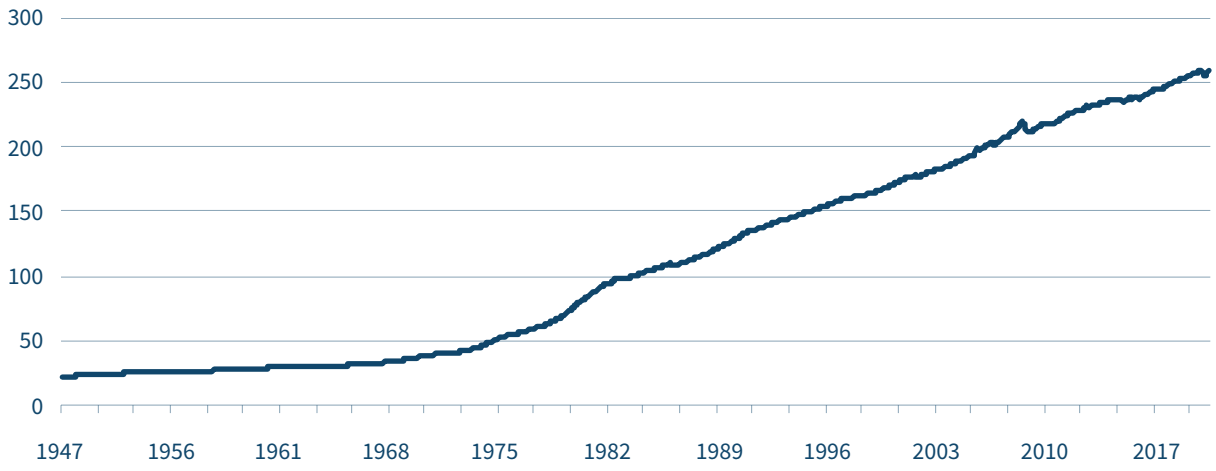
Increasing ubiquity of renewable energy will boost employment by over 50 percent in both solar installers and wind turbine technicians; however, both of those occupations employ a relatively small number of workers.

Demographics within the U.S. workforce are also set to shift over the next decade. Workers over 65 are expected to stay in the workforce longer. Their participation rate is expected to increase to 23 percent in 2028. At the same time, the labor force participation rate for ages 16 to 24 is projected to decline to 51.7 percent, driven by workers in that age range seeking additional education and by otherwise available jobs being occupied by older workers.

Historically high engagement in the workforce by those over 65 is enabled in part by growing opportunities in the services sector, which are less physically demanding than goods-producing jobs. Insufficient retirement savings and access to employer-provided health care may incentivize those older than 65 to remain in the workforce.

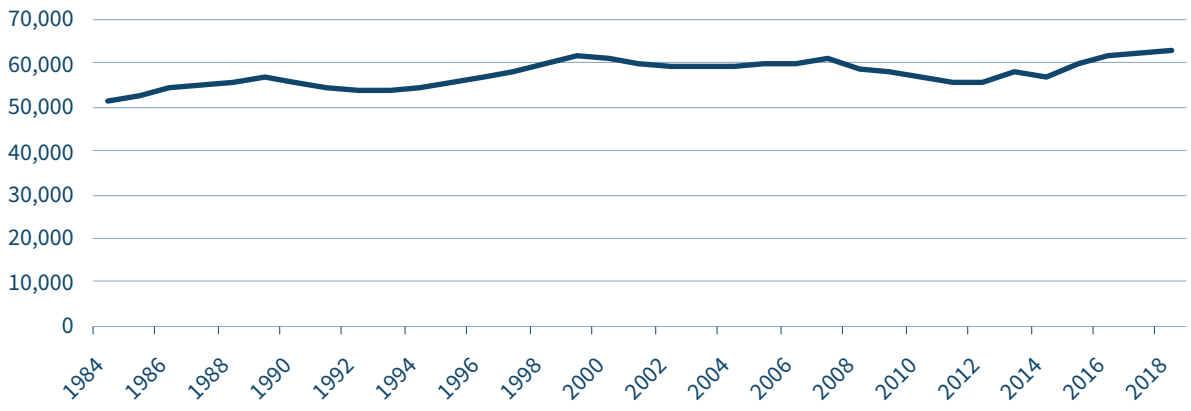
The interests of private firms and the federal government in a competitive workforce with access to high-quality career opportunities are two sides of the same coin. A strong, inclusive workforce is a pillar of national competitiveness, innovation, sustainable growth, and social and political stability—all of which provides a strong foundation for globally competitive firms and a globally competitive economy. Government and the private sector both benefit from investment in human capital. However, failure to recognize the changing nature of work and the connected shifting needs of workers risks defraying the relationship between workers, private firms, and the government, which is already battered by burgeoning inequality.

FIGURE 10 / **Consumer Price Index for All Urban Consumers: All Items in U.S. City Average (Index 1982-1984=100, annual, seasonally adjusted)**



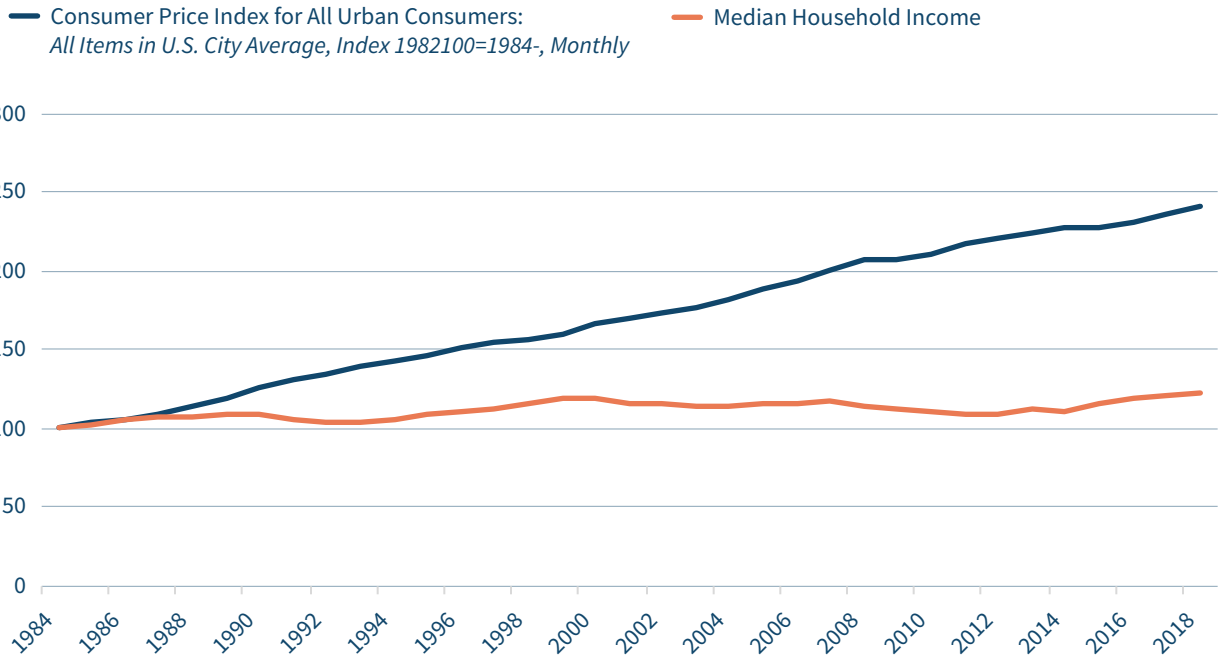
Source: FRED

FIGURE 11 / Real Median Household Income in the United States, 2018 CPI-U-RS Adjusted Dollars (annual, not seasonally adjusted)



Source: FRED

FIGURE 12 / Median Household Income vs CPI (1984=100)



Source: FRED

Prior to the Covid-19 outbreak, poverty and unemployment rates in the U.S. recently hit all-time lows. However, income inequality is at its highest level recorded in the United States, the Gini Coefficient is at an all-time high, median household income has hardly risen in the past 20 years when adjusted for inflation, and income and wealth remains stratified by race and gender.[13] Over the past 40 years, real wage growth has remained heavily tilted toward the top 10 percent of earners, while earnings for the bottom 50 and 10 percent of earners have grown slowly, stagnated, or declined. Women median wage earners have seen wages increase over the last 40 years, with wage growth for white women outpacing Black and Hispanic women. White male median wage earners have seen about a dollar increase in wages, while Black and

Hispanic median wage earners saw wages drop by over a dollar. For the bottom 10 percent of wage earners, gains for white men and women have outpaced that for Black and Hispanic men and women. . While the debate over how best to measure changes in wages is fierce and unsettled, there are some workers without college degrees who have experienced a decline in real wages. Wage growth has been concentrated at the top, and at a rate never seen before. Further, workers in low-skilled jobs are more likely to move to another low-skilled job than achieve upward economic mobility.[14] Covid-19 has had a disproportionate impact on lower-income workers and threatens to amplify economic inequality.[15]

Despite a larger paycheck for some and low unemployment across the country, most Americans do not have more purchasing power than they did 40 years ago.[16] On top of that, the price increases for most daily necessities have exceeded the growth in wages. In other words, the cost of living has been rising faster than workers' wages. Since the end of the Great Recession, housing prices, the costs of medical care, tuition and other school fees, and childcare have risen over 30 percent, outpacing wage growth.[17]

04

Into the Great Unknown

Covid-19 Impacts

How Covid-19 will impact labor market demand depends on factors that are difficult to predict, including how long the pandemic persists at levels that require social distancing and other public health measures that impact businesses; the timing of a potential vaccine; and whether the pandemic creates long-term social adjustments that influence consumer behavior. The pandemic has had an unprecedented impact on industrial production. Across major categories, production and capacity utilization plummeted between February and March 2020. It is too soon to say whether the rebound in May is a false start or a return to the norm. The shock decline in industrial production and capacity utilization corresponded with a roughly 9 percent increase in the manufacturing unemployment rate. If layoffs from Covid-19 are permanent or factories are unable to fully reopen due to public health requirements, firms will be even further incentivized to invest in automation to replace workers.

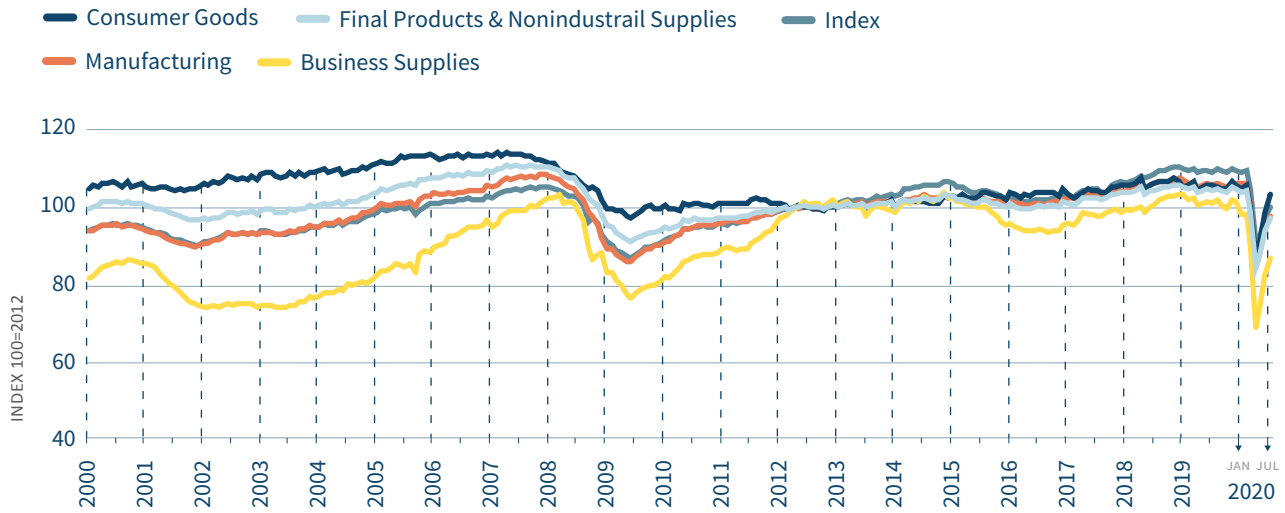
The pandemic has also generated unprecedented unemployment throughout the economy. A study from the Becker Friedman Institute for Economics at the University of Chicago found that up to 42 percent of layoffs will result in permanent job losses.[18] The study also predicts that economic recovery from the pandemic will be slow even if the virus is contained in the short term. If the pandemic persists, the employment

picture will worsen as companies close and layoffs meant to be temporary become permanent. The Baker Friedman Institute study describes three triggers for Covid-19-related job losses: shifts in demand, failure of firms, and reallocation of resources.

If Covid-19 is not brought under control, it could have implications for the top five occupations projected to have the most growth over the next decade: personal care aides, combined food preparation and serving workers, registered nurses, home health aides, and restaurant cooks. Covid-19 has decimated the restaurant industry. Seated dining has plummeted in the United States, down over 80 percent year-over-year on June 1, 2020, even as many parts of the United States had begun to reopen by that date.[19] By May, nearly 6 million restaurant industry workers had lost their jobs, accounting for roughly a sixth of job losses at that point in 2020.

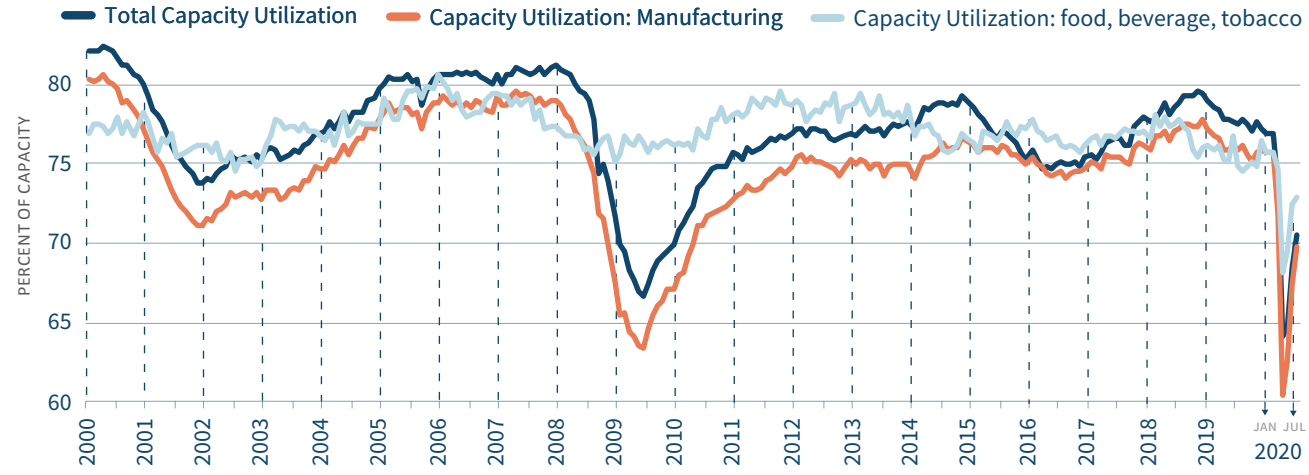
The projected expansion of personal care and home health aide employment may also be at risk, depending on how the pandemic develops. These workers treat the populations most vulnerable to Covid-19 and are the most exposed to the virus.[20] Over half of home care

FIGURE 6 / **Industrial Production**



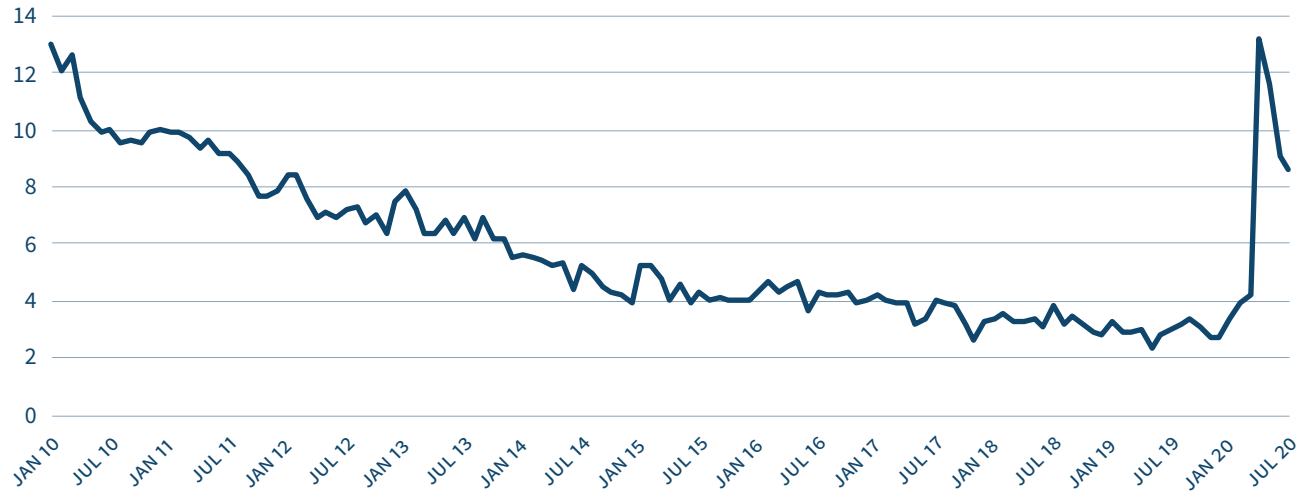
Source: Federal Reserve Bank of St. Louis, FRED Economic Data, https://fred.stlouisfed.org/graph/?g=uOXv.

FIGURES 7 / **Capacity Utilization**



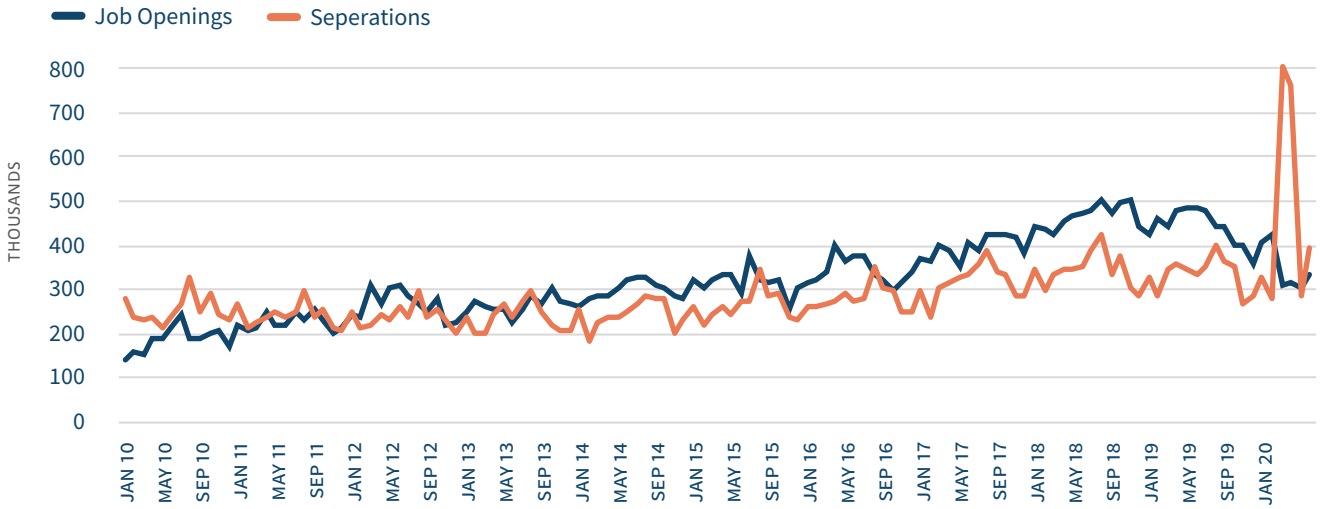
Source: Federal Reserve Bank of St. Louis, FRED Economic Data, https://fred.stlouisfed.org/graph/?g=uOYB. Federal Reserve Bank of St. Louis, FRED Economic Data, https://fred.stlouisfed.org/graph/?g=uOYB.

FIGURE 8 / **Manufacturing Unemployment Rate**



Source: "Unemployment Rate - Manufacturing Industry, Private Wage and Salary Workers," Bureau of Labor Statistics, https://data.bls.gov/timeseries/LNU04032232?amp%253bdata_tool=XGtable&output_view=data&include_graphs=true.

FIGURE 9 / **Manufacturing Job Openings vs. Separations**



Source: "Job Openings and Labor Turnover Survey, Manufacturing, Job Openings," Bureau of Labor Statistics, https://data.bls.gov/timeseries/JTU30000000JOL?amp%253bdata_tool=XGtable&output_view=data&include_graphs=true; and "Total Separations," Bureau of Labor Statistics, https://data.bls.gov/timeseries/JTU30000000TSL?amp%253bdata_tool=XGtable&output_view=data&include_graphs=true.

workers are part of minority groups that have higher rates of infection than the general population due to structural inequalities. Many home care workers travel to multiple patients a day, which increases the potential for Covid-19 to spread to the elderly and others in need of care.

Workers in the food service industry, home health aides, and personal care aides are among the lowest-paid workers, the most exposed to Covid-19, and have the most uncertain industry prospects. If the disease continues to spread at current levels, public health measures may make it impossible for former food service and home and personal care workers to return to their old jobs. As in the manufacturing sector, many of these layoffs could become permanent, and firms in these industries may double down on automation.

A GI Bill for Jobs

The Covid-19 pandemic has caused the greatest dislocation to the U.S. economy since the Great Depression. Initial government policy responses focused on income support for workers who have lost their jobs and incentives for employers to maintain payrolls. These programs are of little benefit to frontline workers—in health care, grocery, delivery, sanitation, and other essential jobs—who may still be employed but are most exposed to the virus. Moreover, many of these jobs are low-paying, have minimal benefits, and are held by already disadvantaged groups: women, people of color, immigrants, and less-educated workers. These workers have taken on unique risks on behalf of others at a time of national crisis and deserve to be recognized for their contributions to society.

Just as the Servicemen's Readjustment Act of 1944—popularly known as the "GI Bill"—recognized those who had served their country in World War II by giving them higher-education tuition and other financial assistance, Congress should establish a substantial program to support educational and training opportunities for frontline workers in the Covid-19 pandemic, as well as for those wanting to enter the caring economy.

This program—notionally called the "Front-Line and Indispensable Employees Readjustment Security (FLIERS) Act"—should contain two main elements:

1. **Upskilling:** This would contain benefits to existing frontline workers comparable to those in the original GI Bill, including tuition to start or continue college, payments for job training/reskilling (including on-the-job training), unemployment benefits throughout the period of education or retraining (unless they are simultaneously working part time, in which case the payments would be reduced), job counseling, health care insurance coverage for the worker and their family, wage insurance, and a relocation allowance.
2. **Training for the "caring economy":** This would offer tuition and expenses to those wishing to receive education or training in a care-related profession (e.g., personal home care for the elderly or children, virtual education, nursing, emergency medical services, physical therapy).

The FLIERS Act would not only honor essential workers who kept the economy running despite extreme health risks but also serve as an investment in a segment of the workforce that has relatively less opportunity for career advancement and skills-building at a time when they face pressure from not only Covid-19 but automation as well. This investment would create the conditions for workers to upskill, make a livable wage, and contribute to a more competitive American economy when they would otherwise risk being left behind. The second plank of the FLIERS Act would offer the tens of millions of Americans who have lost their jobs through no fault of their own a path back to work in the segment of the economy—caregiving—that is projected to grow the fastest over the next decade. Together with other programs to support short-term employment and incomes, the act would inject momentum into the post-Covid-19 economic recovery and establish a down payment to ensure that America's essential workers are recognized for their service and have opportunities for upward mobility.

05

Technology

A Double-edged Sword

Predicting how the labor market will be divvied up and who will be engaged in it in the next decade is only part of the puzzle of crafting policy to ensure the U.S. workforce will remain competitive over coming decades. Another crucial piece of the puzzle is understanding how the nature of work will continue to change amid technological disruption, a force that will be amplified by Covid-19. It is impossible to predict the timing, depth, and scope of disruption. However, there is a general expectation that a significant portion of the U.S. workforce will be exposed to technological change in the coming decades.[21] The worst mistake policymakers can make is to blindly protect old jobs no longer suited to a rapidly changing economy.

The embrace of such technologies is already a reality, with the private sector expected to continue investing into AI, automation, and other emerging technologies. Leveraging disruptive technologies is necessary to ensure the United States remains a global leader in innovation and competitiveness. While jobs will be eliminated or modified as new technology augments the workplace, adoption of disruptive technology will also generate jobs that require a more advanced skill set and offer higher pay than the jobs replaced. Already, the workplace is becoming increasingly digitized, and with this change, demand for workers with a high level of digital skills is growing.[22]

Automation, AI, and other emerging technologies are expected to eliminate or transform jobs. Just as com-

puters reshaped low-skilled services industries decades ago, machine learning and eventually AI will transform industry as well. And just as the industrial revolution changed the manufacturing landscape, advances in automation paired with computing power and smart devices will transform the manufacturing sector.

Automation's disruptive impact is well documented throughout history. However, compared to previous technological revolutions, the scale of disruption driven by increasingly widespread technology in coming decades has the potential to cause more fundamental shifts within the workforce. The prospect of machines surpassing humans, or even the development of human-machine interfaces, in fundamental tasks such as complex analytics, pattern recognition, speech recognition, natural language processing, reasoning, and learning would impact not only low-skilled workers but high-skilled workers as well.[23]

The projected distributional breakdown of automation's potential future impact on the American workforce is worrisome. By and large, lower-wage, less-skilled workers are most at risk of losing their jobs due to automation. Over 80 percent of jobs that pay under $20 an hour are likely to be exposed to automation, and less-educated workers are more at risk of losing their job to automation than workers with at least a bachelor's degree.[24] This segment of the population is particularly vulnerable to technological change, given that low-wage, low-skilled workers will on balance require more retraining and upskilling at higher cost than higher-skilled workers. This dynamic threatens to expand already record-level inequality. Automation and AI have the potential to further geographic disparities as well. Counties in the Midwest where manufacturing and low-skilled services are concentrated face a tougher road ahead than the technology and science corridors on the East and West Coasts, for example.[25]

Not all jobs are vulnerable to automation and AI.[26] Computers cannot easily replace occupations that rely on critical thinking and problem solving, people management and development, decisionmaking, creativity, leadership, and personal interface. Automation will be adopted more slowly in occupations that require a high level of dexterity, manipulation, and adaptability. Automation and advances in machine learning and AI may also generate demand for new kinds of workers, such as additional software developers and blue-collar technicians to troubleshoot and repair robots and other devices.

Many of the fastest-growing occupations and occupations that are projected to employ the most individuals by the end of the decade are in the services industry and will likely not be entirely replaced by automation and other technology. These jobs include personal care aides, home nurses, food preparers, cooks, waiters, janitors, and nurses. However, as discussed above, these occupations are most vulnerable to disruption from Covid-19. Together, the forces of automation and Covid-19 present a disturbing dual crisis for Americans who can cope least with unemployment.

Support available to workers can make an unmanageable disruption—whether driven by trade, technological change, or natural disaster—more manageable. Covid-19 has put a spotlight on the inadequacy of the safety net for workers who are suddenly displaced from their jobs. Covid-19 also has the potential to accelerate adoption of automation. Robots cannot get sick, they do not need to socially distance or sign legal waivers to return to work, and they do not have to worry about tending to a child whose school is closed. In other words, they offer firms a chance to return to some semblance of normalcy.

Policies geared toward adapting to new technology also offer workers the chance to earn a higher wage and achieve greater economic mobility in occupations that may otherwise appear to be a dead end. A personal care worker who earns on average around $25,000 annually could make use of new lifelong learning opportunities to enhance their understanding of behavioral science and therapy, which could result in a higher paycheck. A janitor who earns roughly the same salary could acquire a broader set of skills that would allow them to undertake maintenance projects or pest control. Preparing for new technology is just one challenge to confront. Another challenge is ensuring that workers across the economy earn a livable wage and have the potential for upward economic mobility.

06

In Need of Adjustment

TAA & UI

Covid-19 has exposed the need for a broader and more complete approach to unemployment insurance (UI). A reformed UI program would go beyond minor tweaks to UI and other unemployment programs. The objective of a new UI should be to create a program where unemployed workers of all types are able to stay afloat and are given tools to rejoin the workforce, all while making a livable wage. Under this approach, workers would receive the benefits and services if they lost their job through no fault of their own—due to a pandemic, import competition, automation, and so on.

One program that falls short of dealing with economic disruption but includes some promise is Trade Adjustment Assistance (TAA). Lessons from TAA's performance and the response to Covid-19 should be applied to a new take on UI. Studies have found that TAA may be improving, but the program still functions poorly.[27] Since 1962, TAA has provided federal assistance to those adversely impacted by trade by offering skills training, wage subsidies, job search and relocation allowances, and credentialization.[28] In FY 2018, Congress allocated $790 million toward TAA programs.[29] Despite a broad suite of program offerings, TAA is "effectively inconsequential in local adjustment to trade shocks," according to a 2016 Department of Labor analysis. While localities with higher trade exposure are more likely to receive TAA benefits, they also receive far greater Medicaid, re-

tirement, and disability payouts. This suggests that even after taking TAA into account, trade-affected workers are involuntarily exiting the labor force earlier in their careers and collecting entitlement benefits.[30] Several other studies find that TAA has had neutral to slightly positive effects on reemployment and wage growth.[31] A U.S. International Trade Commission (USITC) roundtable of 30 experts from academia, industry, and government also broadly agreed on the relative failure of TAA to positively affect labor market outcomes.[32] According to a frequently cited 2012 Mathematica Policy Research report, TAA represents a net liability for society, costing $53,802 per participant.[33]

Non-trade-related worker adjustment programs, such as UI, also face criticism for a variety of reasons. The UI recipiency rate cratered to a record low of 23.1 percent of jobless workers in 2014.[34] Prior to the pandemic, it had steadied at 27 percent since 2016, still lower than any rate prior to the Great Recession.[35] This was partially due to state policies reducing the timeline of available benefits and tightening eligibility criteria. In 2013, Great Recession-era federal emergency unemployment benefits expired, leaving individuals dependent on state benefits that have been chipped away in recent years. Between 2011 and 2015, eight of nine states that reduced the maximum duration of unemployment benefits experienced declines in recipiency rates far faster than the national average. Recent developments are indicative of a larger trend: between 1994 and 2014, working families saw declining income support at a national level, with some states seeing more marked decreases.[36] The current UI program is underfunded, and doubts about its ability to adequately perform during an economic crisis have been proven true. By the week of July 4, an unprecedented 31.8 million people claimed unemployment benefits.[37]

Legislation taken up by Congress to expand UI benefits and coverage amid the pandemic, even as states risk running out of UI funds, may set the stage for a fundamental rethink of UI. In addition to issues with scope and benefits, the standard UI program does not compensate workers for long-term earnings loss after reemployment, and its ability to get workers back into the workforce needs improvement. A reformed UI program needs to reach more workers and provide better paths back to the workforce. The length of some retraining programs made available via UI may discourage individuals, particularly economically vulnerable ones, from participating. It is clear that TAA is not the only labor adjustment program in need of reform.

There are, however, several parts of TAA that deserve incorporation into a larger unified program. One is wage insurance, which compensates workers who take a new job for less pay than their previous job. By doing so, wage insurance may encourage workers to more quickly take new jobs. Properly crafted, wage insurance could reduce overall unemployment compensation spending by incentivizing workers to return to work faster than they otherwise might.[38] The program should be structured to incentivize upskilling. TAA does include compensation-capped wage insurance, but it is available only to workers over 50.

Continuing health coverage is another aspect of TAA that should be expanded. For many workers, loss of employment means loss of health insurance, which can place unsustainable financial and physical stress on households. Workers that qualify for TAA and receive retraining and a wage supplement under TAA are eligible for the Health Coverage Tax Credit (HCTC), which covers roughly three-quarters of the premiums for certain health insurance plans. In other words, if a worker loses their job to trade, they can maintain health insurance.

Certain aspects of the HCTC are worth modeling. For example, the HCTC is refundable, allowing participants to claim their full amount even with little or no income. The HCTC is also advanceable, which allows beneficiaries to receive credit on a monthly basis to coincide with premiums. However, there has been some criticism of the HCTC since its inception in 2002. Initially, the HCTC covered only 65 percent of health insurance premium costs, which was too little for workers who had lost their jobs. There was also a dearth of

coverage options, particularly for those who could not access COBRA.[39] Lack of enrollment has also plagued the program, driven in part by the complexity of the application process. Finally, the mirroring requirement that individuals must be engaged in retraining to receive HCTC under TAA could limit the reach of a broader health coverage tax credit deployed as part of UI. In circumstances in which an individual is laid off but demand exists for their skill set, the HCTC should be made available for a limited period of time regardless of their enrollment in a retraining program.

Aldonas, Lawrence, and Slaughter outline a proposal that includes wage insurance for post-mature workers, continued health insurance coverage for the unemployed, and unpenalized withdrawals from retirement savings accounts, among other elements.[40] The funding structure for UI would need to be revamped for an expanded program. Currently, federal funding for UI comes from the Federal Unemployment Tax Act (FUTA) and State Unemployment Tax Act (SUTA). FUTA is regressive; it levies a 0.6 percent tax on the first $7,000 paid to each employee annually. SUTA is a payroll tax with a rate and taxable wage base set by each state. Expanding the FUTA taxable wage base would require expansion of the SUTA taxable wage base. Federal law prohibits states from assigning SUTA taxable wage bases below the FUTA taxable wage base.[41] Aldonas, Lawrence, and Slaughter recommend uncapping the FUTA taxable wage base and setting flat lower tax rates for FUTA and SUTA. Similarly, the Congressional Budget Office projects that expanding the FUTA taxable wage base from $7,000 to $40,000, indexing growth in taxable wage base to wage growth, and lowering the FUTA rate would raise revenues by $18 billion over 10 years, although those projections are dependent on the strength of the economy, labor force participation, and how states may change their tax rates in response to the change in taxable wage base.[42] While flat taxes are regressive, a reformed UI program would offer progressive benefits: a significant rate cut plus an expanded taxable wage base and lower wage workers recouping a larger fraction of their salary and other benefits via reformed UI compared to high-wage earners. While labor adjustment will remain a difficult issue, a streamlined system would help all displaced workers, regardless of circumstance, get back on their feet.

07

Preparing for the Future

Worker Training

The federal government and private companies have a responsibility not only to assist workers dislocated by trade, technology, and other forces but also to prepare workers for the new economy they will face in coming decades. Existing training and placement programs have fallen well short of addressing this second goal.

In particular, one critical aspect of UI that has fallen short is worker training and placement programs established through the Workforce Innovation and Opportunity Act (WIOA). Since 2001, funding for those initiatives has been slashed, which has prevented workers from receiving services that would help them learn new skills to make them more attractive candidates or connect them with potential employers. According to a study from the National Skills Coalition, had Congress funded WIOA at FY 2001 levels in FY 2018, 540,000 additional workers could have received training in 2018.[43] The drop-off in funding may also result in public services tilting away from training toward lower-cost services in order to serve more individuals.[44]

Funding for American Jobs Centers has also fallen short.[45] Those centers are instrumental in connecting local workers and employers. Research suggests that additional funding for services aimed at getting UI recipients back to work helps to reduce overall unemployment compensation payments.[46] Finally, addition-

al funding for American Job Centers would benefit individuals who do not qualify for UI, such as recent graduates with little job experience.

Reemployment Services and Eligibility Assessment (RESEA) services are another aspect of the workforce safety net in need of improvement. Through RESEA, states profile workers to determine how likely they are to exhaust unemployment benefits and whether to recommend they enter training programs. Evidence suggests that some states are relatively poor at profiling and that the Department of Labor can do more to assist states in improving RESEA.[47] Rapid technological change, record-level unemployment due to Covid-19, and shifting trade flows make more accurate profiling more necessary than ever. Failure to get profiling right may lead to an inefficient and wasteful labor market where workers do not receive the training they need to rejoin the workforce and others are pushed to stay in sectors that are unlikely to continue to offer productive employment.

The opportunities provided to employed workers for skills development are also lacking. Over the past quarter century, companies have invested less in worker training. In 1996, 19.4 percent of workers participated in training paid for by their employer, and 13.1 percent received on-the-job training. By 2008, just 11.2 percent of workers received training paid for by their employer, and only 8.4 percent received on-the-job training.[48] A recent survey of C-suite executives suggests that trend will continue despite companies investing money in automation and new technology that will change the nature of work.[49] The opportunity for workers to gain new skills while employed is essential for the creation of an agile, adaptable, and globally competitive workforce. Unfortunately, companies are investing less in their workforce, even though adaptability is necessary now more than ever. Regardless of the changing nature of work, investment in worker training generates returns through a more productive, innovative, and well-paid workforce. Despite the upside, businesses may be wary of investing in their employees only to see them jump ship for a different company before the cost of training has been recouped. This dynamic suggests that private companies need further incentives to invest in their workforce and that workers need opportunities to invest in their own development.

08

The World's Best & Brightest Immigration

The United States should also take advantage of talent from beyond its borders. An overwhelming body of economic research shows that efforts to restrict foreign students and entrepreneurs from studying and working in the United States are misguided, particularly immigrants seeking training or already trained in a STEM field.[50] The United States thrives when it invites the best and brightest from around the world to set up shop and contribute to the U.S. economy.

Yet, the United States has awarded a declining number of immigrant visas every year since 2016, when 617,752 visas were issued, the highpoint for the decade. In 2018, just 533,557 visa holders were admitted.[51] Employment-based visas rose to a 14-year high in 2018, with 27,345, admits, but they remain a small percentage of the total.[52] More worrisome, the United States has seen a decline in international graduate students in recent years, driven in part by restrictive education visa requirements and difficulty getting work visas after graduation.[53] Deterring international graduate students from studying in the United States chokes off a crucial source of potential talent. While overall international student enrollment hit an all-time high in 2019, new enrollments are in decline, particularly in the wake of restrictions imposed as a result of the Covid-19 pandemic.

Moreover, roughly 70 percent of employers do not consider hiring international students after they graduate.[54]

Of the minority of private firms that plan on hiring foreign students, most were not in typical high-skill, high-wage sectors, which suggests that the immigration system is failing to retain talent. Firms may be discouraged from hiring international students because Optional Practical Training (OPT) work visas that students can attain immediately after graduation last only one to three years. When it comes to hiring foreign workers, longer-term H-1B visas are limited and increasingly difficult to obtain.[55] Further, fewer foreign students are enrolling in U.S. undergraduate and graduate programs, sapping the United States of potential talent.[56] This is particularly discouraging considering over half of international students pursue STEM fields.

This comes at a loss to U.S. competitiveness and a potential gain for U.S. economic competitors and rivals. Empirical research shows that high-skilled immigrants that are given the opportunity to work in the United States boost innovation, labor productivity, and patents that are ultimately commercialized.[57] Past evidence shows that hiring foreign STEM workers does not displace American workers. Foreign STEM workers are paid roughly the same as American STEM workers, and prior to the pandemic, STEM fields that employ a relatively high proportion of immigrants had a relatively low unemployment rate. In addition, because foreign-born STEM graduates boost productivity and innovation, retaining them has been proven to add jobs in the United States at a rate of 1 to 2.5.[58]

A common employer-sponsored short-term work visa for specialized workers, the H-1B visa, is capped at 85,000 visas annually, despite consistently hitting the limit months before the deadline for companies to apply. H-1B visas are distributed via lottery and require company sponsorship. Both factors discourage companies from hiring international students and foreign workers.

Green cards are also subject to outdated restrictions. Currently, no single country can receive more than 7 percent of green cards authorized annually. The cap has created a significant backup of applicants for employment-based visas, which has impacted countries with higher numbers of applicants. Qualified immigrants should not be prevented from entering the U.S. workforce based on country of origin or the fact that many of their qualified foreign colleagues are also seeking employment in the United States. As research and development become increasingly global, the United States should ensure that international researchers residing in the United States are encouraged to come and stay, not pressured to leave.

These restrictions can turn away entrepreneurs who fuel growth and competitiveness. International students and high-skilled immigrants working in the United States should not be dissuaded from starting a business in the United States out of fear that they will be unable to run it after their current visa expires. Businesses founded by immigrants would provide new ideas and products to invest in, new competition and innovation in the marketplace, and new employment for American workers. Indeed, 45 percent of Fortune 500 companies were founded by immigrants or their children.[59] By some projections, a new "startup visa" or extension of H-1B visas or F-1 student visas for immigrants that start a business and meet certain funding and employment benchmarks could add between 500,000 to 889,000 jobs over 10 years.[60] Distinct from the EB-5 visa, which allows immigrants to become green card holders by investing at least $900,000 to finance a business in the United States that employs at least 10 U.S. workers, a startup visa would have lower employment and investment thresholds and require that the business employ addition workers over a period of time. Similar to the EB-5 visa, the startup visa would provide a path to a green card. The EB-5 program is a valuable one in its own right but is in need of improvement. Only 9,940 EB-5 visas are made available each year, and each country is limited to receiving 7 percent of that pool, roughly 696 visas in total. This has led to a visa application backlog—an artificial limit on foreign investment in the United States—and risks deterring would-be investors who are wary of committing capital to a project that requires securing a visa for which there may be a 10-year backlog.[61]

Recent reforms to temporary and permanent residency systems for skilled workers in Canada and the United Kingdom—many of which do not require prospective residents to identify an employer sponsor prior to application—offer lessons about how best to structure these immigration programs in the United States. Of its foreign-born population, 65 percent of immigrants to Canada and 49 percent of immigrants to the United Kingdom have post-secondary degrees, compared to only 36 percent in the United States. While the United States does boast far more foreign-born degree holders than any other country, Canada has more than double the U.S. proportion as a share of its population.[62] Retaining world-class human capital is essential for economic competitiveness, and the immigration system should reflect that reality. Outdated restrictions are self-inflicted wounds that limit the pool of talent available to U.S. companies and expand it for other countries, including strategic competitors.

09

Recommendations

So far, policy responses to cope with the economic fallout of the pandemic could be characterized as temporary stop-gap measures designed to get workers and firms through the crisis. Yet Covid-19 and the policy response to it have further exposed an unemployment and workforce system that needs reform. Programs geared toward building an agile and adaptable workforce will be necessary to respond to both the pandemic's impact on work and the ongoing changes in the nature of work.

Given technology and trade's potential to increase inequality and the growth-dragging effect inequality can have on the economy, policies should address both a changing economy and the current need to provide workers with better pay and economic mobility.[63] Policies that encourage workforce development will not only allow workers to transition from a lost job into a new job but also to transition from a current job to a better-paying job.

Just as the nature of work is undergoing tectonic shifts, the private and public sectors must recalibrate their views toward the workforce. Absent support for worker training and education and a revamped safety net, the average worker will have fewer opportunities to take advantage of new technology and will instead run the risk of being replaced by technology.

Part of that recalibration will involve investing in the U.S. workforce through support for lifelong learning

and portable benefits that workers, including contract and part-time workers, can carry across jobs. Barriers to gainful employment related to credentialing and occupational licenses must be addressed or they will otherwise proliferate as the rate of technological change accelerates. Fundamentally, the support system for individuals seeking employment requires major renovation.

1. Establish federal programs for affordable lifetime learning

The federal government should create new programs for workers to engage in lifetime learning, whether employed or not. The goal of such programs should be to ensure workers have the skills necessary to succeed in a rapidly changing economy throughout their lifetimes. Declining investment in worker training throughout the economy and recent survey data suggesting executives are unlikely to increase investment in worker training indicate that the incentive structure for worker training needs to be changed. Companies may be wary of investing in training for their workers when new skills learned may not benefit the firm, for example, when workers with new skills are poached by competitors.

Given the failure of the private sector to adequately invest in the workforce, government action is necessary. These options should be geared toward low-income, low-skilled workers who are less likely to receive retraining from their employer or be able to afford retraining out of their own pockets. Programs to incentivize skills development should not require that workers only receive training directly related to their current occupation. Such a requirement would limit the adaptability of the workforce and make skills mismatches between employers and workers more likely. Federal-level programs are also necessary to mitigate major distortions in the labor market driven by states offering worker training incentives and programs with vastly different incentive levels and structures. That said, states should still be afforded room to operate as policy laboratories.

There are two successfully utilized federal approaches: tax credits for investment in worker training and lifetime learning accounts for workers, similar to health savings accounts. **Tax incentives for worker training** have been adopted in over 10 EU member states and over 20 states in the United States. Tax incentives hold some advantages over other subsidy programs such as grants and vouchers. They are less burdensome for firms to take advantage of and are more likely to address systemic underinvestment in worker training. Tax incentives can also generate distortions. While there are a variety of ways to fashion a worker training tax credit, adherence to some fundamental principles should maximize the impact of the tax credit and prevent distributional distortions:

- Companies should receive larger tax deductions for investing in training for lower-wage, lower-skilled workers. Evidence suggests that investments in that segment of the workforce generate higher returns than investment in higher-skilled, higher-wage workers. Incentives to invest in women and older workers may also mitigate distortions stemming from private firms' tendencies to underinvest in those segments of the workforce as well.[64] However, some evidence suggests that a larger deduction for training older workers can lead companies to hold off training workers below a certain age, which can generate distributional distortions.[65] Companies should be incentivized to invest in the workers most in need of and least likely to otherwise receive training, not workers already set up to succeed.
- Companies should not be limited in these tax programs to investing in training for their employees that is directly related to the employee's current job. Such a requirement would ignore two trends: that workers are increasingly likely to switch careers or work multiple jobs, and that the labor market increasingly values broad skill sets. That requirement would also risk generating oversupply of workers with skills that may quickly become obsolete.

- Spending on on-the-job training should not qualify for a tax credit. That type of training is difficult to define or measure and is poorly tracked, making the establishment of a baseline difficult, and its effectiveness is harder to determine than structured programs.[66]
- Tax credits should be available to companies that invest in worker training by placing employees in registered apprenticeship programs or other programs that result in an industry-recognized credential upon completion. Higher wages and greater employability are associated with credentials. Further, credentials remain with workers regardless of changes to their employment. One option is for the federal government to offer criteria that training providers must meet for companies to utilize their services and receive tax benefits.

Establishing **individual lifetime learning accounts** as an option for workers and employers would also partially relieve the financial burden on employees of supplemental education during their careers. The structure of the accounts can vary but should require employers to match their employees' investment into the fund to a specified level. Investment in the account would be tax deductible for workers and employers. Alternatively, firms could be subject to a payroll tax, a tax on profits, or other taxes to finance individual lifetime learning accounts. Another option would be for the government to divert existing tax revenue into lifetime learning accounts. Several factors could influence the rate of government and firm matching, including the wage and skill level of individuals, firm size and revenue, and location of the individual. Balance limits and withdrawal restrictions can ensure workers regularly utilize their funds and that money is spent only on approved training providers.

Accounts utilized for worker training featuring a levy on firms in a variety of forms have been employed in South America, Europe, Asia, and Africa. The distinct nature of national and subnational programs that establish a pool of funds for worker training strongly suggests that a one-size-fits-all program is not the best answer.

Regardless, individual lifetime learning accounts carry advantages compared to a worker training tax credit scheme. Tax benefits can result in unequal access to training; lifetime learning accounts should reduce variance in training opportunities for workers in small firms and those less likely to be selected for upskilling because workers would be in control of funding and selecting their own training. Individual accounts also ensure that workers have a way to fund and receive training even if firms continue to systemically underappreciate the value of worker training in general.

Specific Implementation Steps

a. The federal government should establish a Worker Training Tax Credit to provide a federal tax credit for investment in worker training. The program should incentivize investment in low-skilled, low-wage workers who otherwise would be passed over for additional investment.

b. The federal government should establish criteria that training providers must meet for companies to utilize their services and receive tax benefits.

c. The federal government should establish a framework for optional lifetime learning accounts for workers, which would operate like a health savings account but be geared toward saving and spending on upskilling and retraining. Starting points for legislation include the Lifelong Learning and Training Account Act of 2019 and state-level proposals from Hawaii, Illinois, Indiana, Iowa, Minnesota, and Oklahoma. Funds for federal matching for contributions to these accounts should not come from existing funding for other training programs.

d. Congress should amend Section 127 of the Internal Revenue Code to increase the amount of tax-free education assistance employees can receive from employers in line with inflation and expand the tax exclusion to cover education-related costs for tools and technology. The Upskilling and Retraining Assistance Act introduced by Senators Maggie Hassan (D-NH) and Todd Young (R-IN), S. 4408, may serve as a starting point.

e. Employers should allow—and encourage—employees to take a prescribed amount of time off annually to participate in courses that raise or broaden their skill set.

2. Replace Trade Adjustment Assistance with reformed Unemployment Insurance

Congress should establish a major new unemployment system—ReEmployment Help and Insurance for the Recently Employed (REHIRE)—that merges, expands, and improves upon existing Trade Adjustment Assistance (TAA) and Unemployment Insurance (UI) programs. TAA's ineffectiveness and cost burden raises a fundamental question: should workers displaced by international trade be supported differently than workers who have lost their jobs through no fault of their own? Many experts agree that combining labor market support programs into a comprehensive platform is a common-sense alternative to the current piecemeal system. This option would cut administrative costs but more importantly integrate efforts to bring workers back into employment, regardless of whether job losses occurred due to automation, other technology, trade, or other factors. UI was envisioned for a workforce that would reenter the same industry after job losses; however, technology and trade have made that less of a guarantee. Further, there is some overlap between TAA and UI. Combined, both programs offer allowances and provide retraining services and other services to connect workers with employers. There are some aspects of TAA that a reformed UI could borrow, such as an allowance to cover expenses accrued during a job search and relocation, continuation of health care benefits, and wage insurance.

Covid-19 has created a window to fundamentally rethink UI, and Congress took some temporary steps in the right direction in the onset of the outbreak. The CARES Act gives states the option to provide independent contractors, part-time workers, and self-employed individuals Pandemic Unemployment Assistance (PUA) if they do not otherwise qualify for UI.[67] The CARES Act also provides incentives for states to keep workers on through work share offered by employers. However, more must be done to make UI effective for all American workers who lose their job through no fault of their own, which the pandemic has made clear.

Specific Implementation Steps

a. Administer assistance for unemployed workers who lose their job through no fault of their own under one program, regardless of the cause of job loss.

b. Make UI permanently more accessible, particularly to the most vulnerable workers who face the least predictable employment situations: low-wage workers, part-time workers, temporary workers and contractors, and the long-term unemployed. The federal government should mandate that states make UI available to those groups.

c. Require that states allow paid interns, apprentices, and other similar temporary paid-work training roles to receive a percentage of UI benefits.

d. Provide unemployment compensation to individuals participating in a retraining program that lasts over 26 weeks—the period of eligibility for unemployment compensation—so long as they are enrolled in the program, for up to two years.

e. Offer childcare, transportation, and housing solutions to low-income individuals to ensure they can receive adequate training.

f. American Job Centers should be open to steering individuals with relatively scant work experience toward registered apprenticeships.

g. Allow workers who are not eligible for UI to buy into the program through tax withholdings if they choose.

h. Borrow and expand on TAA's wage insurance program in a reformed UI program by eliminating the

age requirement and establishing a progressive compensation cap. Workers who make over $63,000 annually, the median income in 2018, should receive progressively less wage insurance. Wage insurance benefits should remain tied to median income.

i. Include a limited refundable health care tax credit for individuals whose jobs have been displaced by trade or technology.

3. Restore funding to programs that get Americans back to work

Critical parts of getting unemployed Americans back to work are retraining and employment services offered through the Work Innovation and Opportunity Act (WIOA), including Career and Technical Education programs, Adult Basic Education programs, and RESEA services.[68] While other aspects of UI are meant to ensure unemployment does not result in financial disaster for individuals and families, equally if not more important are programs that help Americans get back to work. For nearly two decades, these programs have been chronically underfunded despite presenting an opportunity to generate return on investment through a more nimble, productive, and competitive workforce.

Specific Implementation Steps

a. Congress should fund WIOA programs and Adult Basic Education programs to at least FY 2001 levels.

b. Congress should substantially increase funding for American Job Centers.

c. Congress and state governments should increase resources available to state RESEA services, including by improving data gathering and collection to better connect workers to training programs and employers.

4. Closer cooperation between educational and training institutions, and employers

Failing to shape curriculum and training courses to the needs of employers in an era of rapid technological change risks creating a workforce pipeline with antiquated skills. State-level community college associations are useful tools for organizing schools to forge partnerships with employers that seek to recruit from different parts of a state. Stackable credentials are a simple way for employers to organize and conceive of an applicant's skill sets by their depth and their breadth. "Stackable" is defined by the Department of Labor as "part of a sequence of credentials that can be accumulated over time to build up an individual's qualifications and help him/her to move along a career pathway or up a career ladder to different and potentially higher-paying jobs."

Specific Implementation Steps

a. Universities and community colleges, other training institutions, and firms should improve their relationships to ensure a smooth cycle of education, employment, and further skills development.

b. The 26 U.S. states that lack state community college associations should create them to strengthen capacity building in skills education and allow for better coordination among stakeholders.[69]

c. Universities and community colleges should offer industry-recognized credentials either as part of degree programs or independent from degree programs, with an eye toward "stackability" when possible.

d. The definition of certified eligible training providers should be expanded to include coding bootcamps, online learning providers, and other nontraditional suppliers of vocational training that meet federal standards.

e. Small and medium-sized enterprises should receive financial support to participate in career education and curriculum design to ensure workers are equipped with skills and credentials to meet the needs of firms of all sizes.

5. Ensure accountability for outcomes

By mandating that information regarding the success and scope of workforce development programs be collected and analyzed, accountability for such programs can be improved. Measures aimed at increasing accountability in government programs have been successful in the past, such as Government Accountability Office audits or the Digital Accountability and Transparency Act, which requires federal government spending data to be open.[70] Data reporting would allow the government to track which programs are successful and which require changes.

A better understanding of whether qualified workers are finding and being hired into jobs they are most qualified for, and perhaps why they are not, could better unlock potential in the labor market. Another area worthy of study is the actual value and necessity of credentials in certain industries and occupations. The collection of this sort of data would better allow training and education providers to offer courses relevant to the needs of the labor market, which in turn would funnel workers back into occupations more quickly.

Specific Implementation Steps

a. A federal program should be established to allow job sites, educational and credentialing institutions, and employers to voluntarily pool a range of workforce data to better understand labor market dynamics and frictions.[71]

b. The Department of Labor should study the value and necessity of credentials in particular industries and occupations.

6. Provide free online basic STEM education for adult learners

Basic STEM education will grow in importance as automation and AI become increasingly ubiquitous in the workplace. Free online courses would allow students and those already in the labor force to attain a basic STEM education regardless of their location, income, or daily schedule. While a bevy of online offerings already exist, they lack a clearly structured curriculum with official backing from industry associations, educational bodies, and federal and state governments. Online platforms allow educators to reach more students than is possible in a physical space, relieving two major barriers educational providers face: costs associated with hiring teachers and classroom space, and being able to reach only a fixed, nearby set of individuals within a set period of time. Research shows that, generally speaking, online courses produce worse outcomes than their face-to-face counterparts, but that is not to say that they lack any potential.[72] The promise of online courses is greatest when applied to specific segments of the population, especially non-traditional students. Although further research is required, preliminary research suggests that adult learners over the age of 24 are more likely to complete STEM coursework online than in person.[73] Further, the benefits of online educational platforms are best used by those motivated to learn and confident with basic computer operations, such as sending e-mails.[74] As "digital natives" age into the labor market, this segment of the workforce will only grow, expanding the demand for online resources. For these reasons, the Department of Education should develop a free public option for online learning, designed not to replace in-person schooling but to offer supplemental courses and level the playing field for disadvantaged students who are already part of the workforce.

Specific Implementation Steps

a. The federal government and state governments should enter into public-private partnerships with universities, community colleges, and online education providers to establish a curriculum for free online STEM courses approved by industry, universities, and federal and state governments.

7. Ease the registered apprenticeship process for small and medium-sized enterprises

Registered and industry-recognized apprenticeship programs are increasingly popular in the United States. In its current form, the federal apprenticeship system is administered by the Department of Labor or recognized state apprenticeship agencies. Those agencies are responsible for evaluating apprenticeship programs to determine if they are compliant with federal regulations on program design, worker protection, and other aspects. Registration does not confer any financial assistance to the program operators; it only serves as a mechanism for oversight. Upon completion of a registered apprenticeship program, an individual receives a nationally recognized credential. To register an apprenticeship program, the sponsor (typically an employer, union, or industry group) submits an application that describes the program and includes a schedule of wage increases and safety measures. If approved, the program must be checked for compliance at least every five years. Yet, while participation in apprenticeship programs has seen strong growth over recent years, the apprenticeship application process can be or appear to be excessively time-consuming for some small and mid-size enterprises (SMEs), which may discourage them from applying. Providing small businesses, an engine of American growth, a less onerous path both financially and bureaucratically to hire registered apprentices and develop talent is needed now more than ever, given Covid-19's impacts on SMEs.

Specific Implementation Steps

- The federal government should increase the amount of money available to support the establishment of registered and industry-recognized apprenticeship programs.
- The federal government should establish grants for SMEs that establish registered and industry-recognized apprenticeship programs.
- State governments should adopt tax credits and expand existing ones for firms that hire into registered and industry-recognized apprenticeships.
- Federal and state governments should improve awareness and funding for apprenticeship programs.

8. Align U.S. immigration policy with workforce demands

Visa restrictions too often reject job creators from other countries and foreign graduates of U.S. universities, encouraging them to divert their contributions to a competing economy, to the United States' loss. Because of the thriving business environment and quality of life, 48 percent of U.S.-educated international STEM PhD students want to stay in the United States after graduating, versus only 12 percent that intend to leave.[75] While the majority of STEM degree holders do stay in the United States, most remain immediately after graduation through Operational Practice Training (OPT) authorization that expires after one to three years.[76] Extension of OPT authorization and the opportunity for all foreign students who earn a master's degree in the United States to apply for a work visa would increase retention of foreign talent. Restrictions on two visa programs should be loosened: H-1B visas for immigrants able to work in a specialty occupa-

tion, and EB-5 visas, which offer a path to permanent residency for immigrant investors who have invested at least $900,000 to finance a business in the United States that will employ at least 10 people. Further, the United States should augment visa caps to respond to labor market demand. The inability to acquire a visa should not be the reason a crucial job goes unfilled.

Specific Implementation Steps

- Provide more H-1B visas for qualifying employees and EB-5 visas for foreign job creators.
- Review the H-1B program on a regular basis to ensure it covers immigrants with skills relevant and in demand in the modern economy.
- Remove the current requirement that a country not receive more than 7 percent of the green cards authorized in a year.
- Establish a new visa category for immigrants that start a business in the United States and meet certain funding and employment benchmarks.
- Extend OPT authorization for STEM graduates to five years, and a path for further extensions should be established.
- Make available green cards for immigrants that receive an advanced degree in a STEM field.

9. Improve congressional-executive communication when crafting trade policy

Consideration of the impact that negotiated trade arrangements may have on employment should not be done after an agreement is reached but should be considered throughout the entire negotiating process. Constant communication between the Office of the U.S. Trade Representative and relevant congressional committees would allow complementary policies to be crafted alongside trade negotiations to support workers made vulnerable by trade concessions. Economic analysis done by the U.S. International Trade Commission (USITC) is in need of improvement, in terms of measuring both net and specific gains and downsides from trade agreements across the economy and in particular sectors and occupations. That the USITC's analysis is often imperfect is not a reason to abandon it and cede that ground to political and special interests. Rather, it is a reason to continuously attempt to improve the independent analysis done by the USITC.

Specific Implementation Steps

- Congress should require the Office of the U.S. Trade Representative and the Department of Labor to consult on the labor effects of launched negotiations as well as set report requirements on potential benefits and costs to employment in advance of congressional consideration of signed agreements.
- Congress should direct the USITC to develop methodology to analyze more aspects of the impact of trade agreements, existing and future, on employment and include stakeholder input to develop methodology.
- Once a methodology is established, Congress should require the USITC to analyze existing FTAs' historical effects as well as provide an assessment based on that methodology as part of its analysis of new FTAs.
- Congress should develop specific areas and outcomes the USITC should incorporate into their analysis, including the impact trade agreements have had or will have on employment in specific sectors and wage-bands and on median wages, and should put greater emphasis on the economic impact of rules compared to tariffs.[77] This analysis should cover job gains, job losses, and job churn throughout the economy.

10

Conclusion

The United States most fundamental asset is its workforce. Throughout history, American farmers and manufacturers have fed the world and supplied the arsenal of democracy, American scientists developed lifesaving drugs and its engineers opened up a new frontier in the stars, and American corporate giants and young newcomers alike have led the world in the computer revolution, ushering in a new era. Those achievements—made possible only by America's workers—laid the foundation for U.S. global leadership. They should not be taken for granted. The competitiveness of America's workforce, a pillar of U.S. leadership, is under pressure from technology that threatens to reshape entire economies and international competitors that are quickly becoming strategic rivals. Several measures are key to the success of American workers in the new global competition of the twenty-first century: a system that incentivizes and makes affordable lifelong learning for all workers; a safety net that makes a layoff a bump in the road instead of a life-altering disaster; an immigration system that continues to brings the best and the brightest to America's shores and keeps them here; and a tighter relationship between government, education and training instructors, and employers. If the United States does not double down on its workforce, a critical pillar of U.S. leadership threatens to crack and crumble.

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