# Fail or Flourish: American Workers, Globalization, and Automation

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## ABSTRACT

It is often asserted that, for most American workers, real wages and incomes have been "stagnant" for decades, but evidence shows that the large majority of US workers are better off today than in past decades. Increased trade, globalization, and technological innovation have helped to raise wages and incomes. US economic policy should not aim to regulate or slow a dynamic labor market, but instead to help the minority of American workers who have been displaced or more permanently disconnected from the labor force. Policy initiatives should focus on upgrading the skills of US workers, promoting mobility, eliminating government-created barriers to employment and disincentives to work, reducing addiction and unnecessary incarcerations, and other policy reforms—with the goal of equipping US workers to thrive in a more open and technologically advanced economy.

*JEL* codes: F0, J3, O3

Keywords: labor market, skills, adjustment, displacement, jobs, employment, automation, productivity, real wages, trade, globalization, technological change



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A common view across the political spectrum is that most American workers are falling behind in their perceived standard of living, or at best treading water, and that trade and technology are largely to blame. Proposed policy options range from taxing imports and robots to spending billions more on federal training programs and "universal basic income."

If the widely held view is correct, that real wages and household incomes have "stagnated" for most American workers, then arguments to slow or even reverse trends toward a more open and technology-driven US market become more compelling. But if the reality is more positive for a majority of American workers, then the right policy mix will focus on helping the minority of workers who are not getting ahead to find more opportunities to thrive in a 21st-century labor market.

An important first step must be to evaluate where American workers stand today after decades of technological advancement and, at least until recently, more openness to international trade and globalization. This paper will assess whether technology and economic openness have been a net positive or negative for most US workers, and what effects those and other economic forces have had on the composition of jobs in the US economy since 1990. A key finding of the paper is that the large majority of US workers today are better off than those in previous decades, after more accurately accounting for changes in the cost of living and other factors.

The paper then considers the significant minority of US workers who are temporarily displaced or more permanently disconnected from the labor force, and it briefly identifies for future research a menu of policy changes that could potentially help a broader segment of American workers to prosper in a modern, open, and technologically advanced economy. The primary conclusion of the paper is that US economic policy should not aim to regulate or slow the underlying market forces that have delivered higher living standards for the majority of workers; rather, it should aim to help the minority of workers displaced or left behind to enjoy more of the benefits of a dynamic economy and labor market.

## MOST AMERICAN WORKERS ARE GETTING AHEAD

It has become a widely accepted assertion that real wages and median household incomes for most Americans have been "stagnant" for decades.[1] The implication is that an economy that is still largely market oriented, with expanding trade and technological innovations, has not delivered a sense of prosperity for most Americans. That widespread perception has led to the rise of populism on the right and the left, with each movement seeking interventions in the economy that ostensibly favor the middle and working classes.

The favored metric of those who assert that workers have suffered stagnation is the average real wage earned by American workers. The frequently cited series by the US Bureau of Labor Statistics shows that the real average hourly earnings of US workers previously peaked in 1972–1973, at $9.26 per hour, measured in 1982–1984 dollars. The average hourly wage declined for the two decades after 1973 to a low of $7.78 per hour in 1995. It has trended upward since then, finally regaining its peak of $9.26 per hour only in 2018.[2]

Even if the standard real hourly earnings figure is accepted as the right measure of the welfare of working Americans, it does not support the narrative that US workers are suffering primarily because of recent trade agreements and technological advances. As figure 1 shows, real earnings as deflated by the Consumer Price Index declined by 16 percent from 1973 to 1995, then increased by 19 percent from 1995 to 2018. This pattern does not support the thesis that globalization and the spread of the internet and other new technologies have caused the stagnation of real earnings of US workers.[3]

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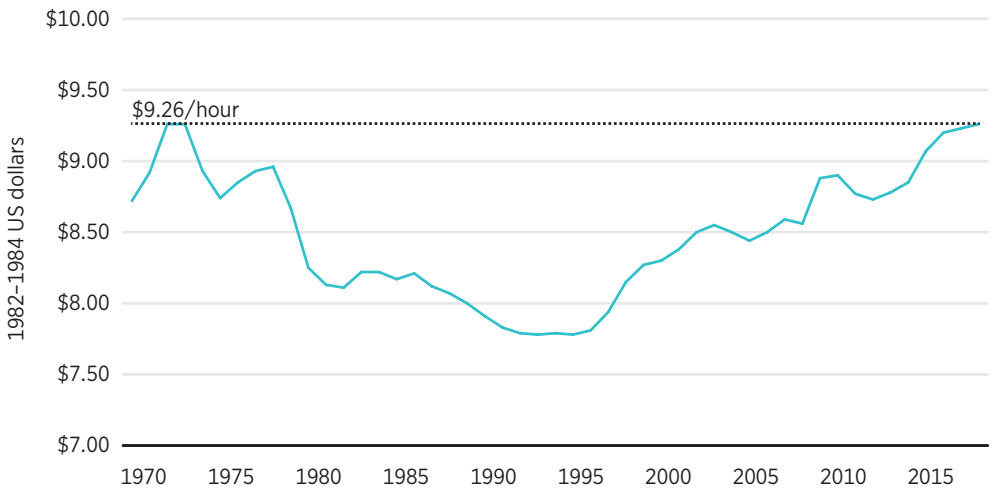
1. For example, see Edward Alden, *Failure to Adjust: How Americans Got Left Behind in the Global Economy* (Lanham, MD: Rowman & Littlefield, 2017), 31; National Academies of Sciences, Engineering, and Medicine, *Information Technology and the U.S. Workforce: Where Are We and Where Do We Go from Here?* (Washington, DC: National Academies Press, 2017), 4; and Oren Cass, *The Once and Future Worker* (New York: Encounter Books, 2018), 23.

2. US Bureau of Labor Statistics, US Department of Labor, as reported in the *Economic Report of the President, Council of Economic Advisers,* 2013, "Table B–47. Hours and Earnings in Private Nonagricultural Industries, 1966–2012," and 2019, "Table B–30. Hours and Earnings in Private Nonagricultural Industries, 1975–2018." Current dollars are deflated by the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W) on a 1982–1984 = 100 base.

3. The trend for real wages in recent decades is the same whether the benchmark is the average wage or the median wage. According to the US Bureau of Labor Statistics, median weekly real earnings for full-time US wage and salary workers 16 years old and older, adjusted for 1982–1984 CPI dollars, rose from $315 in 1990 to $353 in 2018, a 12.1 percent increase. Although the increase is lower than the change in real average hourly earnings during the same period, it is still a significant increase and contradicts the "stagnation" narrative. See US Bureau of Labor Statistics, US Department of Labor, Weekly and Hourly Earnings data from the Current Population Survey, "Table 1. Median Usual Weekly Earnings of Full-Time Wage and Salary Workers," Series ID: LES1252881600, accessed December 12, 2019, https://www.bls.gov/news.release/wkyeng.nr0.htm.

FIGURE 1. REAL US AVERAGE HOURLY EARNINGS



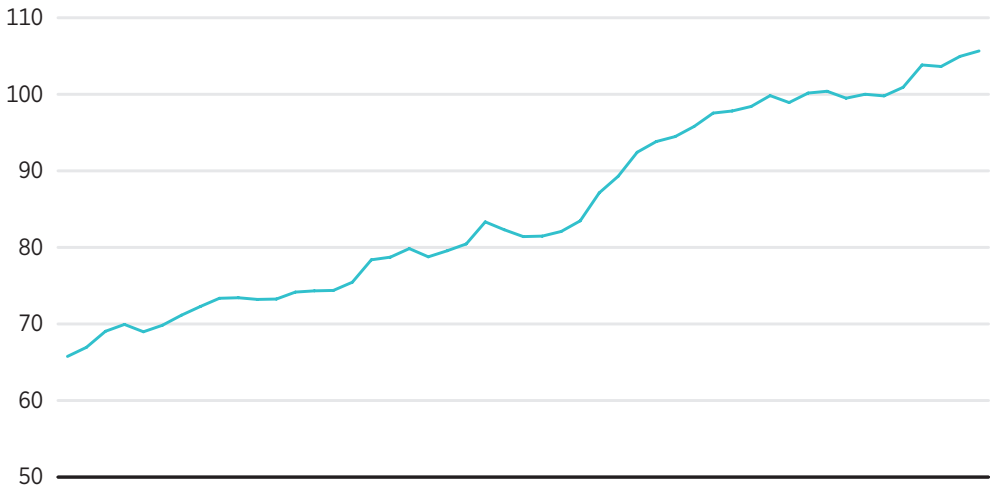

Source: US Bureau of Labor Statistics, *Economic Report of the President*.

An even more serious problem with the commonly cited real wage series is that it fails to accurately measure the well-being of American workers, for several reasons. The most serious problem is that it deflates nominal wages using a deflator—the Consumer Price Index for All Urban Consumers (CPI-U)—that overstates inflation, which in turn understates real gains in purchasing power, a fact documented by the Boskin Commission in 1996.[4] The commission identified a number of reasons why the CPI-U overstates the increase in the cost of living. Specifically, the CPI-U systematically underaccounts for the introduction of new products, the improved quality of products, lower prices offered by less expensive retail outlets, and the ability of consumers to adjust their consumption baskets by shifting spending away from goods that become relatively more expensive. Changes have been made in the CPI-U since then, but the measure still consistently overstates inflation.[5]

If nominal wages are adjusted using the more accurate personal consumption expenditures (PCE) deflator, which is better at accounting for those factors, the average real wage is no longer stagnant but in fact has grown significantly in recent decades. Using the PCE deflator, Bruce Sacerdote finds that the average real wage for American workers actually grew by 24 percent from 1975 to 2015,

4. See Brent R. Moulton, "The Measurement of Output, Prices, and Productivity: What's Changed Since the Boskin Commission?," Brookings Institution, July 25, 2018.
5. Scott Winship, "Debunking Disagreement over Cost-of-Living Adjustment," *Forbes*, June 15, 2015.

FIGURE 2. REAL COMPENSATION PER HOUR, INDEX (2012=100)




Source: Federal Reserve Economic Data, Federal Reserve Bank of St. Louis, "Nonfarm Business Sector: Real Compensation Per Hour," accessed January 6, 2020.

or 0.54 percent per year. Other methods that seek to further adjust for changing consumption patterns show the average hourly wage growing by an average of 1 percent per year during that same period.[6]

Another weakness of relying on the standard real wage as the primary measure of worker welfare is that it excludes nonwage benefits, which have tended to increase as a share of total compensation for most workers in recent decades. A September 2018 report by President Trump's Council of Economic Advisers (CEA) noted that "the share of compensation coming from benefits has risen over time" and that such benefits now account for more than 30 percent of total employee compensation. Nonwage benefits include bonus pay, health insurance, paid leave, and contributions to retirement savings.[7] According to the Federal Reserve Bank of St. Louis, real worker compensation per hour, which combines wages and benefits, climbed by 51 percent between 1973 and 2018.[8] (See figure 2.)

The CEA report also identifies a "composition bias" in the real wage numbers, which means that individual workers may experience more robust real

6. Bruce Sacerdote, "Fifty Years of Growth in American Consumption, Income, and Wages" (NBER Working Paper No. 23292, National Bureau of Economic Research, Cambridge, MA, March 2017), 5.
7. Council of Economic Advisers (CEA), *How Much Are Workers Getting Paid? A Primer on Wage Measurement*, September 5, 2018.
8. Federal Reserve Economic Data, Federal Reserve Bank of St. Louis, "Nonfarm Business Sector: Real Compensation per Hour," accessed January 6, 2020.

wage gains than the average wage growth would indicate. Like riders on an escalator, individuals can experience growth in their real earnings even if the "average" position of all people on the escalator does not change. Each year, a cohort of older, more experienced, and better-paid workers exits the top of the escalator for retirement, while a cohort of younger, less experienced, and less-well-paid workers enters at the lower levels. This phenomenon can exert a downward bias on the average wage figure, even if no single worker experiences a pay decrease. The bias can be especially strong during periods of economic expansion, when the proportion of younger, lower-paid workers is growing and a relatively large number of older workers is exiting the labor force, as is happening today with retiring baby boomers.[9]

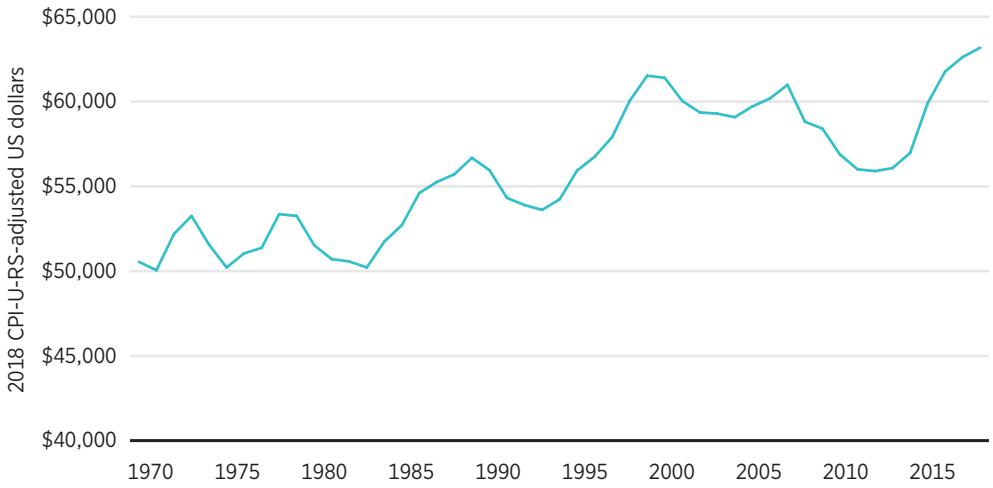
In reality, the average US worker, as he or she accumulates experience and skills in the course of a career, will experience a rise in real wages. According to the CEA's analysis, the average worker's real earnings will increase about 2 percent a year in addition to the increase in average wages throughout the workforce. "Simply put, the change in the national average wage understates the actual change that individuals experience because of the life cycle of wages and returns to experience," the CEA concluded.[10]

Real median household income is another frequently cited metric of worker well-being that is believed to have been stagnant for decades. But here too the data do not fit the narrative that trade agreements and technological advancements of the past three decades have been bad for most US workers. As figure 3 shows, real median household income in 2018 ($63,179) was significantly higher than it was in 1973 ($53,251). The increase has been unsteady, with sharp drops during recessions followed by recoveries, but the overall trend has been upward—both in the most recent decades and earlier.

Like data on real earnings per hour, the real median household income data suffer from adjustment issues that tend to understate the gains made in the past two-plus decades. When adjusted both for the more accurate PCE deflator and for smaller household size, median household income also shows a sustained increase in recent decades. William R. Cline notes that the average household size has declined from 3.28 persons in 1967 to 2.62 in 2000 and 2.54 in 2017. As Cline explains, smaller households would be expected to have less income earning potential because they have fewer potential workers. "Otherwise," he writes, "the larger households at the beginning of the period would tend to

9. CEA, *How Much Are Workers Getting Paid?*, 16.
10. CEA, *How Much Are Workers Getting Paid?*, 14.

FIGURE 3. MEDIAN HOUSEHOLD INCOME




Source: US Census Bureau, *Income and Poverty in the United States: 2018*, Report Number P60-266, "Table A-2. Households by Total Money Income, Race, and Hispanic Origin of Householder: 1967 to 2018," September 10, 2019, https://www.census.gov/content/dam/Census/library/publications/2019/demo/p60-266.pdf.

exaggerate the income levels relative to the household income toward the end of the period."[11]

After adjusting for the more accurate deflator and after normalizing household size across time periods, Cline calculates that real median household income has risen by 50 percent during the past 50 years rather than by 21 percent as reported in the US Census data. Household income growth has slowed since 2000, but it has still grown, not stagnated. As Cline concludes, "The overall implication is that it is a mistake to judge that American capitalism is broken because the middle and lower-middle classes have seen no gains for decades."[12]

Even without adjustment, census data on the real median household income show that the US middle class has not been shrinking because of stagnant incomes but instead because households are moving up to higher real income brackets. The share of US households earning between $35,000 and $99,999 a year (measured in real 2018 US dollars) has indeed declined, from 53.8 percent

11. William R. Cline, "U.S. Median Household Income Has Risen More Than You Think," *Cato Journal* (Winter 2019): 216–17.

12. Cline, "U.S. Median Household Income," 227. A significant contributor to the increase in household income during the past five decades may have been the increase in labor-force participation by women in the United States, as shown in figure 4 (page 12). This increase is not necessarily an unmitigated benefit for all households, because it could cause a decline in leisure hours available that may offset gains in income over time.

in 1967 to 47.4 percent in 1990 and to 41.7 percent in 2018. But the share of households earning less than $35,000 has also declined over the same period, from 36.4 percent in 1967 to 31.1 percent in 1990 and to 27.9 percent in 2018. The share of households earning $100,000 or more has increased from 9.7 percent in 1967 to 21.3 percent in 1990 and to 30.4 percent in 2018.[13] The fact that a growing share of US households has moved up from lower income to middle income and to higher income brackets provides further evidence that real household incomes have not stagnated.

In fact, living standards tend to improve with increases in productivity. Productivity, in turn, tends to grow with investment in capital equipment, innovation, worker skills, and expansion of trade that allows for the specialization of production in sectors where the United States has a comparative advantage. Instead of depressing real earnings, the expanded openness and technological innovations in recent decades have added to US productivity, placing upward pressure on wages and living standards for most American workers.[14]

Real dollar income is not the sole measure of worker well-being. Workplace safety has steadily improved in recent decades, with the rate of workplace deaths down 30 percent from 1992 to 2017 and the rate of workplace injury and illness down 69 percent.[15] Other social indicators are mixed, but several important measures of well-being have been heading in a positive direction in recent decades. Between 1990 and 2017, average life expectancy in the United States increased from 75.2 to 78.5 years.[16] Crime rates since the early 1990s have fallen sharply nationwide, by 40 to 60 percent for such violent crimes as murder, robbery, and aggravated assault.[17] Other social indicators have moved in a negative

13. US Census Bureau, *Income and Poverty in the United States: 2018,* Report Number P60-266, "Table A-2. Households by Total Money Income, Race, and Hispanic Origin of Householder: 1967 to 2018," September 10, 2019, https://www.census.gov/content/dam/Census/library/publications/2019/demo/p60-266.pdf.
14. See James Sherk, "Workers' Compensation: Growing Along with Productivity," Heritage Foundation, May 31, 2016; Anna Stansbury and Lawrence H. Summers, "Productivity and Pay: Is the Link Broken?" (Working Paper No. 18-5, Peterson Institute for International Economics, Washington, DC, June 2018); and Donald Schneider, "Elites and the Economy," *National Affairs,* no. 41 (Fall 2019).
15. US Bureau of Labor Statistics, "Workplace Injuries and Illnesses," compiled on October 7, 2019, from annual summary reports found at https://www.bls.gov/iif/oshsum.htm; and US Bureau of Labor Statistics, "Fatal Occupational Injuries Census," compiled on October 8, 2019, from annual reports found at www.bls.gov/iif/oshcfoiarchive.htm.
16. World Bank World Development Indicators, table compiled on October 7, 2019, using data from https://data.worldbank.org/indicator/SP.DYN.LE00.IN?locations=US.
17. Federal Bureau of Investigation, Uniform Crime Reporting Statistics, table compiled on October 7, 2019, using data from https://www.ucrdatatool.gov/Search/Crime/Crime.cfm.

direction in recent years, such as drug overdoses, especially those involving opioids,[18] and the attendant "deaths of despair."[19]

The evidence reviewed so far does not suggest that all American workers have enjoyed a general rise in their standard of living in recent decades. A significant minority of working-age Americans have been displaced, have seen their wages fall, or have failed to find employment at all. Their situation and the policy options available will be discussed further in the following sections. Although the picture is not uniformly positive, any discussion about the past, current, and future state of American workers must acknowledge that the past three decades have been marked by a general improvement in the material well-being of most American workers and their households.

## ASSESSING CHANGES IN EMPLOYMENT SINCE 1990

Most American workers today are better off in terms of income, wages, and total compensation than they were three decades ago. That progress has been accompanied by major changes, even disruptions, in the kinds of jobs available in the US labor market. Those changes have required the displacement of millions of American workers from their jobs as older sectors of the economy have contracted and newer sectors have emerged and expanded. Ultimately, progress has come not despite but because of a dynamic and changing US labor market driven by technological change and deeper integration with global markets.

A common perception of the US labor market in the past three decades is that millions of manufacturing jobs have been lost, only to be replaced by lower-paying service-sector jobs such as employment in fast-food restaurants. A closer look at the actual changes in the labor market since 1990, however, reveals a more complex and positive picture of changing patterns of employment. The dominant fact of the American labor market during the past three decades has been the creation of tens of millions of net new jobs in the private service sector. For every net job lost in manufacturing since 1990, the private service sector has created almost eight net new jobs. While service-sector jobs have been added at the lower end of the pay scale, the US economy has also added almost 20 million net new jobs in higher-paying service sectors such as business and professional services, financial

18. National Center for Health Statistics, "Table 27. Drug Overdose Death Rates, by Drug Type, Sex, Age, Race, and Hispanic Origin: United States, Selected Years 1999–2016," accessed October 9, 2019, https://www.cdc.gov/nchs/hus/contents2017.htm.
19. Anne Case and Angus Deaton, "Mortality and Morbidity in the 21st Century," *Brookings Papers on Economic Activity* (Spring 2017).

activities, management, healthcare, and education. The changes reflect America's steady and normal progress toward a more service-oriented economy that provides higher-skilled as well as lower-skilled services.

The year 1990 provides an appropriate benchmark for assessing changes in the US labor market for three major reasons: First, 1990 marked the peak of a long business cycle, making it comparable to the current labor market, which has also followed a long employment expansion. Second, that year predates wide use of the internet in society and business, as well as artificial intelligence and robotics that have since had a disruptive impact on employment. Richard Baldwin credits the internet with the expansion of global supply chains, a further dynamic development for the US labor market.[20] Third, 1990 predates major trade agreements—such as the North American Free Trade Agreement (with Canada and Mexico) and the Uruguay Round of the General Agreement on Tariffs and Trade, which included the phasing out of global textile and apparel quotas and other liberalization—and China's emergence as a major industrial and trading nation, including its entry into the World Trade Organization in 2001.

Fears that the total number of jobs would decline because of automation or foreign competition have proved to be unfounded. Between 1990 and 2018, the total number of nonfarm jobs in the US economy increased by 39.5 million, or 36 percent. More than 90 percent of the net new jobs were created in the private sector.[21] The number of jobs managed to more than keep pace with the number of individuals seeking work, with the unemployment rate in 2018 being below 4.0 percent.[22] Although the number of manufacturing jobs declined, there was no large-scale exodus of service-sector jobs from internet-enabled outsourcing, as was feared a decade ago.[23] There is no evidence that expanding trade and technology have had a negative effect on net job creation; in fact, those factors are compatible with full employment.

Much concern over the past three decades has focused on the declining labor force participation rate (LPR) of males in their prime working years, ages 25 to 54. From 1990 to 2018, the share of working-age males who were employed or actively looking for work fell from 93.4 percent to 89.0 percent. Blame for the fall has been placed on recent trends in automation and globalization, but as figure 4 shows,

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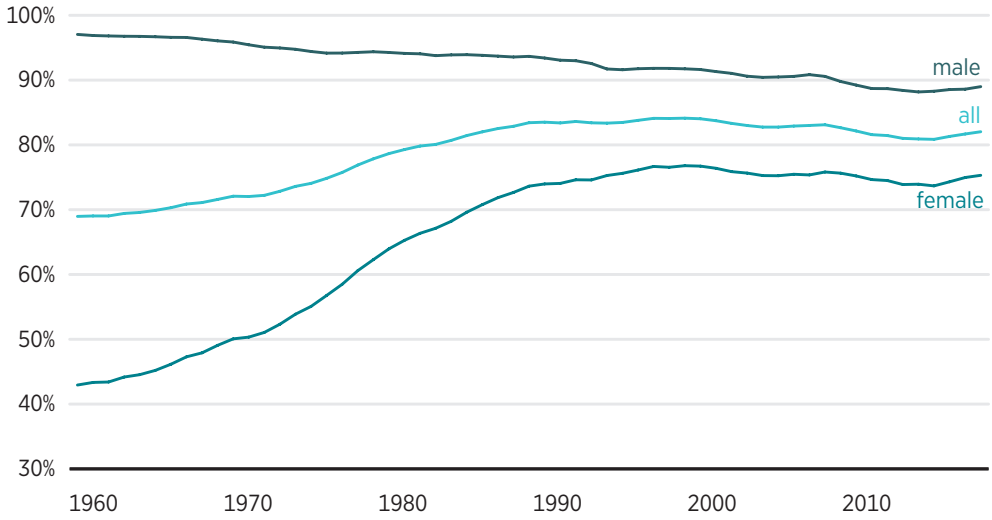
20. Richard Baldwin, *The Great Convergence: Information Technology and the New Globalization* (Cambridge, MA: Harvard University Press, 2016).
21. US Bureau of Labor Statistics, Current Employment Statistics—CES (National) Establishment Data, "Table B-1a. Employees on Nonfarm Payrolls by Industry Sector and Selected Industry Detail, Seasonally Adjusted," October 4, 2019, https://www.bls.gov/web/empsit/ceseeb1a.htm.
22. US Bureau of Labor Statistics, CES (National) Establishment Data, "Table B-1a."
23. Ben Casselman, "The White-Collar Job Apocalypse That Didn't Happen," *New York Times,* September 27, 2019.

FIGURE 4. CIVILIAN LABOR FORCE PARTICIPATION RATE (AGES 25 TO 54)




Source: US Bureau of Labor Statistics, "Labor Force Participation Rate: Current Population Survey," "Labor Force Participation Rate—25–54 Yrs" (series LNS11300060, LNS11300061, and LNS11300062), accessed December 18, 2019, retrieved from https://data.bls.gov/pdq/SurveyOutputServlet.

the decline in the LPR of prime-age males began decades before 1990. What has changed most significantly since 1990 is the slowdown in the rise of the LPR of working-age females. This slowdown may be a normal leveling off after dramatic increases through the 1980s. The overall LPR rose steadily to a peak of 84.1 percent in 1999, fell in the wake of the Great Recession of 2008, and has begun climbing again, reaching 82.0 percent in 2018.[24]

The aggregate employment numbers are explained by a major shift in the type of jobs in the US economy. Comparing data from the US Bureau of Labor Statistics covering more than 800 specific job categories from 1990 to 2018 reveals that the total number of goods-producing jobs fell by 3.0 million, while the total number of private service-sector jobs grew by 38.5 million and the total number of government jobs at the federal, state, and local levels grew by 4.0 million.[25] (See table 1.)

24. US Bureau of Labor Statistics, Household Data, "Table A-1. Employment Status of the Civilian Population by Sex and Age," July 8, 2015, www.bls.gov/webapps/legacy/cpsatab1.htm.
25. US Bureau of Labor Statistics, CES (National) Establishment Data, "Table B-1a." The average wage-per-hour figure for "Educational services" is not included in table 1 because the school-year work schedule of educational workers is not strictly comparable to the year-round work schedule common in the other employment categories. In a separate series, "Employer Costs for Employee Compensation," the US Bureau of Labor Statistics calculates that the equivalent hourly cost for wages and salaries for workers in educational services in 2018 was $34.98, exceeding the $25.59 hourly cost for wages and salaries for workers in manufacturing. See US Bureau of Labor Statistics, "Employer Costs for Employee Compensation News Release," table 2 and table 6, March 19, 2019, https://www.bls.gov/news.release/archives/ecec_03192019.htm.

TABLE 1. NUMBER OF PEOPLE EMPLOYED IN VARIOUS JOB CATEGORIES (THOUSANDS)

| Industry Description | 1990 Employment | 2018 Employment | Change | % Change | Average wage per hour (2018) |
|---|---|---|---|---|---|
| Total nonfarm, including government | 109,530.7 | 149,064.3 | 39,533.7 | 36.1 | $27.10 |
| Total private | 91,116.6 | 126,615.8 | 35,499.2 | 39.0 | $27.11 |
| Goods-producing | 23,725.3 | 20,708.1 | (3,017.2) | –12.7 | $28.24 |
| Service-providing | 67,391.3 | 105,907.7 | 38,516.3 | 57.2 | $26.84 |
| Professional and technical services | 4,565.0 | 9,298.8 | 4,733.8 | 103.7 | $41.53 |
| Utilities | 740.0 | 554.7 | (185.3) | –25.0 | $40.81 |
| Management of companies and enterprises | 1,670.6 | 2,371.9 | 701.3 | 42.0 | $40.77 |
| Information | 2,688.3 | 2,825.6 | 137.3 | 5.1 | $39.75 |
| Financial activities | 6,614.0 | 8,568.6 | 1,954.6 | 29.6 | $34.81 |
| Mining and logging | 764.6 | 731.4 | (33.2) | –4.3 | $32.49 |
| Wholesale trade | 5,229.9 | 5,852.2 | 622.3 | 11.9 | $30.47 |
| Construction | 5,265.8 | 7,288.7 | 2,022.8 | 38.4 | $29.92 |
| Electrical contractors | 617.4 | 924.5 | 307.2 | 49.8 | $29.51 |
| Plumbing and HVAC contractors | 580.8 | 1,109.6 | 528.7 | 91.0 | $30.89 |
| Ambulatory healthcare services | 2,841.7 | 7,499.1 | 4,657.4 | 163.9 | $32.36 |
| Hospitals | 3,512.5 | 5,145.7 | 1,633.2 | 46.5 | $32.67 |
| Membership associations and organizations | 2,132.1 | 3,005.7 | 873.5 | 41.0 | $28.29 |
| Educational services | 1,688.0 | 3,729.2 | 2,041.2 | 120.9 | |
| Subtotal | 37,712.5 | 56,871.5 | 19,159.0 | 50.8 | |
| Manufacturing | 17,694.8 | 12,688.0 | (5,006.8) | –28.3 | $27.03 |
| Durable goods | 10,737.7 | 7,944.8 | (2,792.8) | –26.0 | $28.41 |
| Nondurable goods | 6,957.2 | 4,743.2 | (2,214.0) | –31.8 | $24.66 |
| Apparel | 902.7 | 112.7 | (790.1) | –87.5 | $21.60 |
| Other services | 2,128.9 | 2,838.7 | 709.9 | 33.3 | $24.55 |
| Transportation and warehousing | 3,479.1 | 5,419.1 | 1,940.0 | 55.8 | $24.31 |
| Administrative and waste management services | 4,646.8 | 9,327.8 | 4,681.0 | 100.7 | $20.72 |
| Retail trade | 13,185.7 | 15,824.5 | 2,638.9 | 20.0 | $18.76 |
| Nursing and residential care facilities | 1,856.2 | 3,361.0 | 1,504.9 | 81.1 | $18.29 |
| Social assistance | 1,125.6 | 3,932.6 | 2,807.0 | 249.4 | $16.78 |
| Leisure and hospitality | 9,287.2 | 16,352.3 | 7,065.1 | 76.1 | $16.00 |
| Arts, entertainment, and recreation | 1,133.1 | 2,395.6 | 1,262.4 | 111.4 | $21.95 |
| Accommodation | 1,615.4 | 2,028.0 | 412.6 | 25.5 | $17.49 |
| Food services and drinking establishments | 6,538.5 | 11,928.7 | 5,390.2 | 82.4 | $14.61 |
| Subtotal | 35,709.4 | 57,056.1 | 21,346.7 | 59.8 | |
| Government | 18,414.1 | 22,448.6 | 4,034.5 | 21.9 | |

Notes: Column 3 ("Change") represents the difference between the 2018 employment data and the 1990 employment data. This difference does not always equal the difference between column 2 and column 1 of the table, owing to rounding. HVAC = heating, ventilation, and air conditioning.

Source: US Bureau of Labor Statistics, Current Employment Statistics—CES (National) Establishment Data, "Table B-1a. Employees on Nonfarm Payrolls by Industry Sector and Selected Industry Detail, Seasonally Adjusted," October 4, 2019, https://www.bls.gov/web/empsit/ceseeb1a.htm.

In the goods-producing sector, a net 5.01 million jobs have been lost in manufacturing between 1990 and 2018—a fact that has taken center stage in all public discussions about the changing labor market. Those losses have been roughly divided between industries making durable goods and those making nondurable goods. In sectors producing durable goods (manufactured products intended to last at least three years), employment fell by 2.79 million, or 26 percent. In sectors producing nondurable goods (those intended to last fewer than three years), the number of jobs fell by 2.21 million, or 32 percent, with the largest reduction in the number of jobs in the apparel sector.

Partially offsetting the loss of manufacturing jobs in the goods-producing sector was the growth in construction jobs by a net 2.02 million. More than three-quarters of the job gains were in the category of "specialty trade contractors," primarily for electrical; plumbing; and heating, ventilation, and air conditioning work. Mining and logging lost a net 33,200 jobs.

In the service sector, substantial growth in net jobs occurred both in sectors in which average hourly wages were higher than in manufacturing and in sectors in which average wages were lower. Within the relatively higher-paying service sectors, professional and technical services added a net 4.73 million jobs. The strongest growth rate and highest growth in the number of jobs were in computer systems design and related services (a net gain of 1.71 million jobs, a fivefold increase from 1990) and in management and technical consulting services (a 1.16 million job gain, or 358 percent). The financial activities sector, including finance, insurance, and real estate, added a net 1.95 million jobs.

In healthcare, 4.66 million net new jobs were added in the relatively well-paying sector of ambulatory services, which includes doctors' offices and outpatient care. Hospitals added another 1.63 million net new jobs. Among other relatively well-paying service-sector categories, net employment grew by 701,300 in management of companies and enterprises, 137,300 in information, 622,300 in wholesale trade, and 873,500 in membership associations.

Education represents another major growth area for employment in the United States since 1990. Educational employment in the private sector grew by a net 2.04 million. In government-provided education, state-level employment grew by 756,000 and local-level employment by 2.06 million. Taken together, the employment in both the public and the private education sectors grew from 9.32 million to 14.2 million, or by 4.86 million—a 52 percent increase.

In sectors in which the average pay was lower than in manufacturing, a net 709,900 jobs were added in "other services," including repair and maintenance and personal and laundry services, 1.94 million in transportation and

warehousing, 4.68 million in administrative and waste management services, 2.64 million in retail trade, 1.50 million in nursing and residential care facilities, and 2.81 million in social assistance. The largest gains in relatively low-paying jobs since 1990 occurred in the leisure and hospitality sector, with 5.39 million jobs added at food services and drinking establishments.

Government employment, excluding education, at all levels—federal, state, and local—grew by a net 1.22 million, or 11.3 percent. The biggest decline occurred in the US Postal Service, where the number of jobs fell by 218,000, or 26.5 percent.

In broad strokes, the US economy in the past three decades of rising automation and globalization has produced not only more jobs, but a large number of jobs in the service sector that pay more in wages per hour than many of the manufacturing jobs that have been lost. Although millions of manufacturing and other "middle-skill" jobs have been eliminated, that decline has been more than offset by the increase in higher-skilled jobs. Meanwhile, lower-skilled jobs, while growing in absolute numbers, have declined slightly as a share of total employment. David Autor concludes that "employment is increasingly concentrated in high-education, high-wage occupations and low-education, low-wage occupations, at the expense of traditionally middle-skill career jobs,"[26] but that the concentration is much more pronounced at the higher end of the skill and wage scale. In fact, Autor finds that "there is essentially no aggregate change in the share of workers employed in traditionally low-skilled jobs over the course of 45 years," which leads him to conclude, "Thus, in aggregate, occupational polarization appears to be a case of the middle-class joining the upper-class, which is not something that economists should worry about."[27]

## THE ECONOMIC FORCES DRIVING THE LABOR MARKET CHANGES

Changes in the kinds of jobs American workers perform are driven by three fundamental trends in the US economy that are changing the nature of demand for US labor. The three major drivers of that change are trade and globalization, long-term consumption patterns, and technological innovation.

26. David Autor, "Work of the Past, Work of the Future" (NBER Working Paper No. 25588, National Bureau of Economic Research, Cambridge, MA, February 2019), 5.
27. Autor, "Work of the Past," 8.

## Trade and Globalization

Trade is frequently blamed for a net loss of jobs, especially in manufacturing. Trade economists have long recognized that expanding trade will cause a shift in production from sectors that are less competitive in global markets to sectors that are more competitive. The fact that some industries and their workers lose out from expanding global competition is not a novel insight or a secret guarded by economists, but a necessary and obvious fact of trade. By shifting resources to relatively more productive sectors, trade acts to increase productivity, income, and wealth creation.

In a widely discussed paper, "The China Shock," authors Autor, David Dorn, and Gordon H. Hanson seek to measure the impact of increased trade with China on areas of the United States where producers most directly compete with goods imported from China. The authors conclude that regions, or commuting zones, "that were more exposed to increased import competition from China experienced substantially larger reductions in manufacturing employment."[28] Nationwide, they calculate that "the net impact of aggregate demand and real-location effects imply that import growth from China between 1999 and 2011 led to an employment reduction of 2.4 million workers," with the total including almost 1 million jobs in manufacturing.[29]

The job losses in manufacturing that Autor, Dorn, and Hanson identify are real, but the number does not necessarily or even likely mean a net reduction in total employment. The period covered by their study, 1999 to 2011, included two recessions: one relatively mild (2001–2002) and the other severe (2008–2009). Also, the model does not seek to account for offsetting job creation elsewhere in the US economy. Trade with China, like trade generally, both creates and eliminates employment opportunities. Other studies that consider the overall impact of trade—exports as well as imports, trade in services as well as trade in goods—find that job losses are wholly offset by job gains.[30]

The number of jobs eliminated by trade also needs to be seen in the context of an overall economy that both creates and eliminates jobs through a continual and healthy "churn" in the labor market. During that same 1999–2011 period

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28. David H. Autor, David Dorn, and Gordon H. Hanson, "The China Shock: Learning from Labor Market Adjustment to Large Changes in Trade" (NBER Working Paper No. 21906, National Bureau of Economic Research, Cambridge, MA, January 2016), 25.
29. Autor, Dorn, and Hanson, "The China Shock," 29.
30. Robert C. Feenstra and Akira Sasahara, "The 'China Shock,' Exports and U.S. Employment: A Global Input-Output Analysis" (NBER Working Paper No. 24022, National Bureau of Economic Research, Cambridge, MA, November 2017), 35. The authors estimate that the expansion of trade with China in 1995–2011, including both merchandise exports and imports, "led to the net demand for about 1.7 million jobs."

in which Autor, Dorn, and Hanson calculate that 2.4 million jobs disappeared because of rising imports from China, an average of 388,351 American workers applied for unemployment insurance each week. By contrast, the 2.4 million jobs lost to Chinese import competition, spread over a 12-year period, works out to an average of 3,833 jobs lost per week—or about 1 percent of the number of claims for unemployment insurance during that period.[31]

Focusing on imports from China as a driver of lost manufacturing jobs can obscure the deeper long-term trends that are reducing manufacturing jobs as a share of the overall workforce. Indeed, as Autor, Dorn, and Hanson and others have noted,[32] the number of manufacturing jobs as a share of total US employment has been steadily declining for more than seven decades. According to the US Bureau of Labor Statistics, manufacturing accounted for more than 30 percent of all nonfarm jobs in 1950 but had dropped to 8.5 percent by the first half of 2019. As seen in figure 5, the descent has been remarkably linear, with small upticks often connected with war and sharper falls associated with recessions, which tend to disproportionately affect cyclical industries such as manufacturing.[33]

It is difficult to discern from the figure any effect of changes in trade policy on manufacturing as a share of total employment. There is no acceleration in the decline of manufacturing jobs as a share of total employment after the enactment of the North American Free Trade Agreement in 1994 or after China's accession to the World Trade Organization in 2001. In fact, the rate of decline in manufacturing's share of employment from 1995 to 2018 (an average of 0.27 percentage points per year) has been slower than the rate of decline from 1950 to 1995 (0.36 percentage points per year).

Evidence suggests that automation has done more to eliminate manufacturing jobs than has import competition. Even though manufacturing has been in relative decline, actual output is at or near record highs. Manufacturing value added in the United States reached $2.33 trillion in 2018, an almost 50 percent increase in real terms since 1997.[34] Real manufacturing output, as reported monthly by the Federal Reserve Board, is up 66 percent in the same period.[35]

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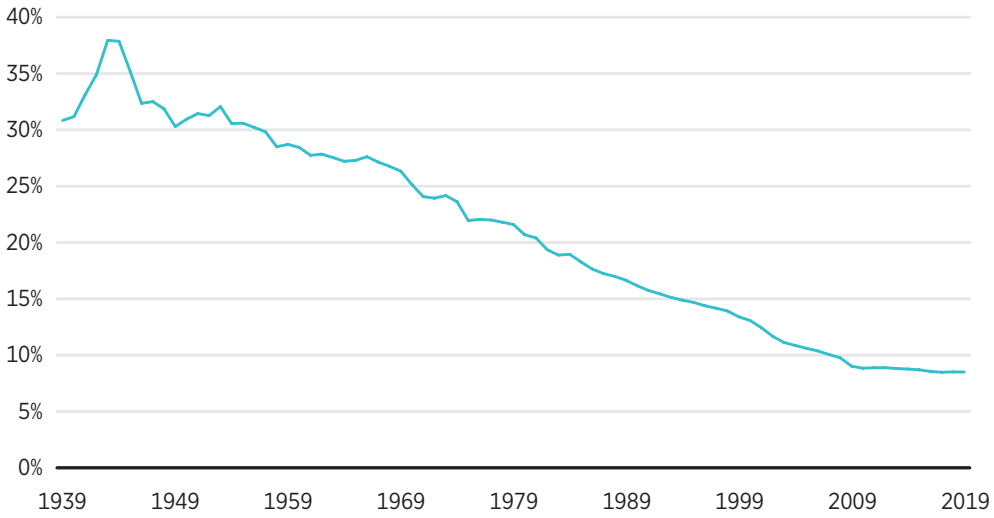
31. US Department of Labor, Employment and Training Administration, "Unemployment Insurance Weekly Claims Data," accessed August 2019, https://oui.doleta.gov/unemploy/DataDashboard.asp. Unemployment insurance claims were calculated from January 2000 through December 2011.
32. See Autor, Dorn, and Hanson, "The China Shock," 3.
33. US Bureau of Labor Statistics, CES (National) Establishment Data, "Table B-1a."
34. US Bureau of Economic Analysis, "Interactive Data: GDP-by-industry," last updated October 29, 2019, https://apps.bea.gov/iTable/index_industry_gdpIndy.cfm.
35. Board of Governors of the Federal Reserve System, "Industrial Production: Manufacturing (SIC) (IPB00004NQ)," retrieved from FRED, Federal Reserve Bank of St. Louis, September 11, 2019, https://fred.stlouisfed.org/series/IPB00004NQ.

FIGURE 5. MANUFACTURING AS A PERCENTAGE OF NONFARM EMPLOYMENT




Source: US Bureau of Labor Statistics, Current Employment Statistics—CES (National) Establishment Data, "Table B-1a. Employees on Nonfarm Payrolls by Industry Sector and Selected Industry Detail, Seasonally Adjusted," October 4, 2019, https://www.bls.gov/web/empsit/ceseeb1a.htm.

Real output has declined in certain labor-intensive sectors such as apparel and furniture, but those declines have been offset by increases in output for motor vehicles; aerospace products; and computers, communications equipment, and semiconductors.[36] Yet primarily because of productivity gains, total employment in manufacturing has declined.

Studies have confirmed the dominant role of automation in the reduction of manufacturing jobs. A 2017 study by the Center for Business and Economic Research at Ball State University determined that almost 88 percent of job losses in manufacturing from 2000 to 2010 were attributable to productivity growth, not import competition. The study concluded that "the long-term changes to manufacturing employment are mostly linked to the productivity of American factories."[37] Robert Z. Lawrence and Lawrence Edwards conclude that the long postwar decline in manufacturing as a share of employment, including the period covered by the Autor, Dorn, and Hanson study, has occurred "irrespective

36. Board of Governors of the Federal Reserve System, "Industrial Output for Apparel and Leather Goods (IPG315A6S)"; "Furniture and Related Product (IPG337S)"; "Motor Vehicles and Parts (IPG3361T3SQ)"; "Aerospace Product and Parts (IPG3364S)"; and "Computers, Communications Equipment, and Semiconductors (IPHITEK2S)," retrieved from FRED, Federal Reserve Bank of St. Louis, October 28, 2019.
37. Michael J. Hicks and Srikant Devaraj, "The Myth and the Reality of Manufacturing in America" (Center for Business and Economic Research, Ball State University, Muncie, IN, April 2017), 6.

of the changing developments in international trade flows, the size of the trade deficit, or other factors."[38]

## Changing Patterns of Consumption from Goods to Services

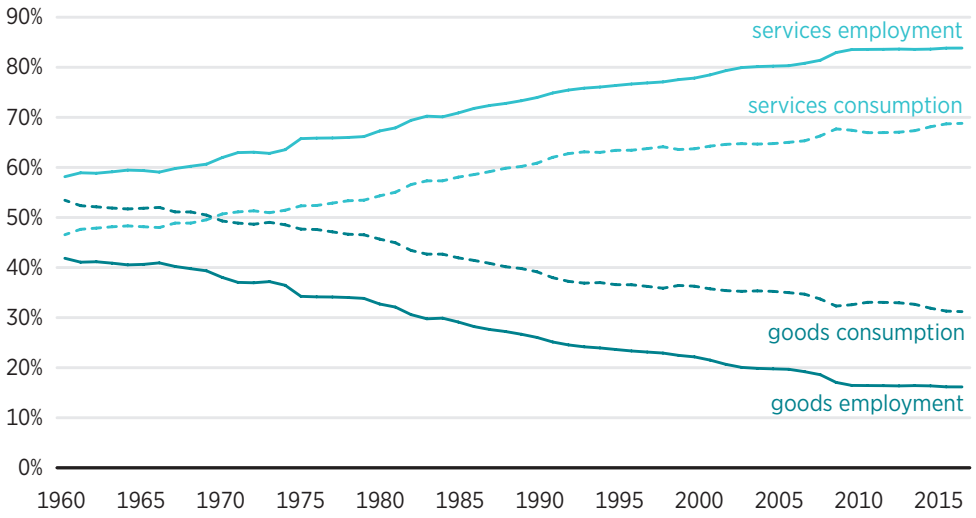
Another major reason that a declining share of American workers is employed in goods-producing sectors, including manufacturing, is that goods are a declining share of what Americans consume. Between 1960 and 2018, the share of Americans employed in the goods-producing sector fell from 42 percent to 16 percent, while the share employed in the service sector grew in that same period from 58 percent to 84 percent. This shift was not because imported goods replaced domestically produced goods but because patterns of consumption changed.

It is a basic fact of economic development that as real incomes rise, people spend relatively more on services and less on goods such as food and manufactured items. This has certainly been true for Americans in recent decades. Between 1960 and 2018, the share of total consumption spending that Americans devoted to services grew from 47 percent to 69 percent, while the share devoted to goods dropped from 53 percent to 31 percent. As shown in figure 6, both relative spending on services and employment in the service sector have risen steadily and in parallel fashion since 1960, mirrored by the relative decline in spending on goods and employment in the goods sector.

The fact that goods comprise a declining share of the consumption basket for Americans is driven by dramatic gains in productivity in manufacturing those goods. Thus Americans can satisfy their appetite for goods while spending a smaller share of their budget to buy them. As a result, demand for goods is "inelastic" relative to income, meaning that the amount that households spend on goods tends to grow more slowly than does the change in their incomes. Households can acquire the goods they need and want for less cost, so spending on goods declines compared to spending on services, where productivity gains tend to be slower. As James Bessen concludes, "As nations develop and their incomes grow, the relative demand for agricultural and manufactured goods falls and, with labor productivity growth, relative employment in these sectors falls even faster."[39] Those who

38. Robert Z. Lawrence and Lawrence Edwards, "US Employment Deindustrialization: Insights from History and the International Experience" (Policy Brief No. PB13-27, Peterson Institute for International Economics, Washington, DC, October 2013), 3. Another factor in the decline in manufacturing jobs could be the reclassification of jobs because of domestic outsourcing.
39. James Bessen, "Automation and Jobs: When Technology Boosts Employment" (Law & Economics Paper No. 17-09, Boston University School of Law, Boston, MA, April 12, 2017), 7.

FIGURE 6. US EMPLOYMENT AND CONSUMPTION SPENDING (AS SHARE OF TOTAL)




Source: US Bureau of Economic Analysis, National Income and Product Accounts, "Table 2.3.5. Personal Consumption Expenditures by Major Type of Product," last modified December 20, 2019, https://apps.bea.gov/iTable/index_nipa.cfm.

desire a return to a time when a higher share of Americans was employed making goods rather than delivering services would need to reverse what appears to be a normal, beneficial, and long-term trend.

## Technological Change

Technology has raised the living standards of most Americans and also arguably disrupted the labor market more than any other force in operation today. Technological advancements have created new employment opportunities and raised productivity while eliminating the need for certain kinds of labor, in particular those that are the most routine.

In terms of employment, technology and automation can cut in different directions depending on the nature of the industry. If demand for the product is elastic relative to its price, meaning that a change in its price will stimulate an even greater change in the quantity of the product demanded, then output and employment will tend to grow as prices fall. When innovative goods first reach the market, demand tends to be more sensitive to price changes as the product becomes more affordable to a larger number of consumers. Bessen notes that this was true in the textile, steel, and motor vehicles industries in their earlier years. Even though productivity gains were substantial, overall employment in those industries grew significantly. But as the market reaches saturation, consumers

are less responsive to price changes, and thus productivity gains tend to reduce the total number of jobs in the industry. Thus manufacturing sectors tend to follow an inverted "U" curve in employment, with rising employment in a sector followed by declining employment, even when overall output continues to rise.[40]

The main effect of automation has not been to reduce the net number of jobs in the economy, but rather to allow output to increase to meet new consumer demands. Technology has caused a shift from one kind of work to another, with the past three decades marked by a relative decline in "middle-skilled" and "routine" occupations. Robotics and the exponential growth of computing power have tended to eliminate jobs that are "focused on a relatively narrow set of job tasks that can be performed by following a well-defined set of instructions and procedures."[41] Such tasks include not only certain factory work but also types of back-office clerical work that involve repeated tasks requiring minimal discretion—which could be one of the factors contributing to the worker dislocation discussed in the next section.

Within manufacturing, the types of jobs that have remained are increasingly capital intensive and demand higher skills. The result, according to Kerwin Kofi Charles, Erik Hurst, and Mariel Schwartz, is as follows:

> Manufacturing has become a more highly-skilled sector, as measured by workers' education. As of 2017, the manufacturing sector is no longer the disproportionately important source of employment for the less-educated that it was in the late 1970s and early 1980s. At the same time, the share of manufacturing workers who are college educated and the fraction of college-educated workers employed in manufacturing have grown sharply.[42]

The shift of manufacturing to more capital-intensive production and the rising skill level and productivity of its remaining workers mean that even if overall manufacturing output were boosted by such policy levers as import tariffs,

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40. Bessen, "Automation and Jobs," 33: "Productivity-enhancing technology will increase industry employment if product demand is sufficiently elastic. Technological change reduces the labor required to produce a unit of output, but it also reduces prices in competitive markets. If the price elasticity of demand is greater than one, the increase in demand will more than offset the labor-saving effect of the technology."

41. Guido Matias Cortes, Nir Jaimovich, and Henry E. Siu, "Disappearing Routine Jobs: Who, How, and Why?" (NBER Working Paper No. 22918, National Bureau of Economic Research, Cambridge, MA, December 2016), 1.

42. Kerwin Kofi Charles, Erik Hurst, and Mariel Schwartz, "The Transformation of Manufacturing and the Decline in U.S. Employment" (NBER Working Paper No. 24468, National Bureau of Economic Research, Cambridge, MA, March 2018), 22.

employment opportunities for lower-skilled workers in the sector would be limited. The type of lower-skilled workers who filled manufacturing jobs 40 years ago would not be qualified for the jobs being created in the manufacturing workplace of today. Efforts to recreate past opportunities for low-skilled workers through import tariffs or renegotiated trade agreements will likely prove disappointing.

Technology also disrupts the labor market by creating alternative products that render older products and technologies obsolete. The benefits for society are profound, with millions of households able to enjoy new products and services at lower costs. This frees up resources to be spent on satisfying other wants. But it also means disruption in the labor market, with companies facing declining sales and their workers facing layoffs.

Cameras and newspapers provide two prominent examples. In the 1970s, Eastman Kodak Company dominated camera and film sales in the United States and employed more than 100,000 people worldwide, half of them at its hometown headquarters of Rochester, New York. But beginning in the late 1990s, the company's dominance was wiped out as consumers turned first to digital cameras and then to smartphones.[43] In 2012, the company filed for Chapter 11 bankruptcy. Today, it employs 1,600 people in the Rochester area, and most of the buildings it once occupied are empty or used by other organizations.[44]

A similar storm has swept through the newspaper industry. In 1990, US newspaper publishers employed 455,700 workers, but by 2018, that number had fallen by more than two-thirds to 146,700.[45] Since 2004, 1,800 local newspapers have gone out of business.[46] As the internet became more popular in the 1990s, online platforms provided an alternative source of news; but more decisively, they created an alternative advertising outlet, which caused the migration of classified advertisements to Craigslist and other platforms. The driving force behind job losses in both the photography and the newspaper sectors was not foreign competition but the popularization of new technologies that transformed the consumer market.

Although technology has been the chief driver of employment change in those and other sectors of the economy, its overall effect on the labor market and living standards has been positive. New technology changes the mix of tasks and

43. Giovanni Gavetti, Rebecca M. Henderson, and Simona Giorgi, "Kodak and the Digital Revolution" (Harvard Business School Case 705-448, Harvard University, Cambridge, MA, November 15, 2004).
44. Steve Brachmann, "The Rise and Fall of the Company That Invented Digital Cameras," *IP Watchdog*, November 1, 2014; and Will Cleveland, "Kodak Plans to Lay Off 100 in Rochester, 425 Overall," *Rochester Democrat & Chronicle,* November 8, 2017.
45. US Bureau of Labor Statistics, CES (National) Establishment Data, "Table B-1a."
46. Penelope Muse Abernathy, "The Expanding News Desert" (Hussman School of Journalism and Media, University of North Carolina at Chapel Hill, 2018).

jobs, but it does not decrease the overall demand for labor in the economy. While technology enables capital to be substituted for labor for a range of tasks, it also creates new products and services, raising demand for labor elsewhere in the economy. Through what Daron Acemoglu and Pascual Restrepo call the "reinstatement effect," technology creates new tasks for which human labor retains a comparative advantage over machines and computers.[47]

This dynamic also applies to the emergence of artificial intelligence and robotics. Artificial intelligence today typically means applying machine learning to big data in an effort to make predictions more accurate. This effort will eliminate some jobs but enhance others by improving the prediction process and by reducing errors in such areas as transcribing languages and reading medical charts. As Ajay Agrawal, Joshua S. Gans, and Avi Goldfarb conclude, "In addition to increasing demand for existing tasks, artificial intelligence is likely to create innovations that lead to new industries and new types of jobs with new tasks in those industries."[48]

Similarly, robots can replace existing labor, especially in jobs that involve routine manual labor. At the same time, robots have been found to boost total factor productivity, leading to higher demand and wages for complementary workers and gains for consumers. In a cross-country study of the impact of increasing use of robots, Georg Graetz and Guy Michaels conclude, "We find no significant relationship between the increased use of industrial robots and overall employment, although we find robots may be reducing the employment of low-skilled workers."[49] This too may be contributing to the reduced employment prospects of a certain subcategory of American workers, as discussed later.

Ultimately, the most important and consistent effect of technology is its indirect, second-order creation of wealth. The efficiency savings and productivity gains from the adoption of new technology spur spending and demand in other areas of the economy, bringing lower prices and higher wages. Robert D. Atkinson and John Wu conclude that it is not technology itself that creates net employment gains, but the "productivity-driven increases in purchasing power for consumers and businesses."[50]

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47. Daron Acemoglu and Pascual Restrepo, "Automation and New Tasks: How Technology Displaces and Reinstates Labor," *Journal of Economic Perspectives* 33, no. 2 (Spring 2019): 4.
48. Ajay Agrawal, Joshua S. Gans, and Avi Goldfarb, "Artificial Intelligence: The Ambiguous Labor Market Impact of Automating Prediction," *Journal of Economic Perspectives* 33, no. 2 (Spring 2019): 46.
49. Georg Graetz and Guy Michaels, "Robots at Work," *Review of Economics and Statistics* C, no. 5 (December 2018): 766–67.
50. Robert D. Atkinson and John Wu, *False Alarmism: Technological Disruption and the U.S. Labor Market, 1850–2015* (Washington, DC: Information Technology and Innovation Foundation, May 2017), 2.

As a result of these underlying forces in the US economy—increased openness to global competition, changing consumer preferences, and technological progress—most American workers have seen their wages and incomes rise in recent decades. It would be a policy mistake of major proportions to impose taxes, tariffs, or regulatory restrictions on the very market mechanisms that have delivered new products, lower prices, higher productivity, and higher standards of living for the large majority of American workers.

The general progress delivered by the market system has not been universally or uniformly enjoyed by all working-age members of society. That is not a bug in the market system, but a necessary feature of a competitive economy in which industries and specific companies expand or contract, depending ultimately on the preferences and choices of millions of consumers. The main public policy challenge should not be to regulate or slow the underlying economic forces that drive the economy forward, but to help those workers displaced or left behind by market competition to realize the best use of their talents in the US labor market.

## WHO IS BEING LEFT BEHIND IN TODAY'S LABOR MARKET?

While real wages and living standards have been rising for the large majority of American workers, a small but significant segment of working-age Americans has not shared in that progress. The US labor market today poses two main challenges for public policy; one is a normal feature of any functioning labor market, and the other is more abnormal and difficult to address. The first, more "normal" challenge is determining how to best help workers who have been temporarily displaced from their jobs to find new employment opportunities. The second, more difficult challenge is determining how to help the significant minority of workers who have dropped out of the labor force entirely. This minority is disproportionately made up of working-age men.

### Helping Temporarily Displaced Workers

One challenge in a dynamic labor market is helping displaced workers find rewarding employment elsewhere. It is an underappreciated fact that the net change in total US employment that is widely reported each month disguises a much larger churning of the gross hiring and separation numbers. In 2018, according to the Job Openings and Labor Turnover Survey, an average of 5.51 million separations occurred in the US labor market each month. That total includes

3.34 million quits, in which the separation was initiated by the employee; 1.82 million layoffs and discharges, which are involuntary separations initiated by the employer; and 345,000 other separations, including retirement, death, disability, and transfers to other locations within the same company. Monthly separations were more than offset by an average of 5.75 million hires each month, which is consistent with net employment growth.[51]

Of those 1.82 million who involuntarily lose their jobs each month, some will decide to drop out of the labor force, others will find a new job, and still others will file for unemployment insurance. In 2018, an average of just under 1 million American workers applied for unemployment insurance each month.[52] Although this number has declined steadily in the past decade as the labor market has recovered from the deep recession of 2008–2009, it confirms that involuntary job separation remains significant even in an economy widely considered to be at "full employment."

Public policy should be designed not to slow the churn in the labor market but to facilitate matching available American workers with available job opportunities. In a well-functioning labor market, as few barriers as possible should be in the way of those who seek to employ themselves or to be hired by employers who can put their labor to productive use. Potential reforms could include expanded options for continuing health insurance coverage while people are unemployed; expanded eligibility for education and retraining programs, including while people receive unemployment benefits; and regulatory reforms such as streamlining or eliminating occupational licensing that would facilitate the creation of new jobs and opportunities for unemployed workers. Other proposals include income support such as wage-loss insurance or wage subsidies for lower-skilled workers.[53]

## Helping Disconnected Workers Reenter the Labor Force

Another challenge for labor market policy is the existence of a significant share of the working-age population that has dropped out of the labor market entirely.

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51. US Bureau of Labor Statistics, "Job Openings and Labor Turnover Survey," Series ID: JTS00000000LDL, Layoffs and discharges, accessed October 7, 2019, https://data.bls.gov/PDQWeb/jt.
52. US Department of Labor, Employment & Training Administration, "Unemployment Insurance Weekly Claims Data," accessed August 2019, https://oui.doleta.gov/unemploy/DataDashboard.asp.
53. For an overview of the unemployment insurance program and potential reforms, see Grant D. Aldonas, Robert Z. Lawrence, and Matthew J. Slaughter, "Succeeding in the Global Economy: An Adjustment Assistance Program for American Workers" (white paper, Financial Services Forum, Washington, DC, July 2008).

Present concerns focus on declining earnings and labor force participation rates for working-age men with relatively low levels of education and job skills. Ariel J. Binder and John Bound cite evidence that the average real wage earned by "prime-age" men age 25–54 with only a high school diploma declined by 18.2 percent from 1973 to 2015. The group's labor force participation rate during that same period fell from almost 100 percent to 85.3 percent.[54]

The decline in labor force participation by working-age men has created what Nicholas Eberstadt describes as "an immense army of jobless men no longer even looking for work," an army whose number approaches 7 million.[55] Despite the current low unemployment rate and an economy that is widely considered to have achieved full employment, nearly one in six prime-age men with only a high school diploma is not even looking for employment.[56] This disconnected cohort is not a new phenomenon: Work rates for prime-age men have been falling since 1948. Though the same trend has occurred in other advanced economies, it is more pronounced in the United States.[57]

This phenomenon deserves attention from policymakers for several reasons. Large-scale nonparticipation of working-age males in the labor force deprives the economy of needed labor, which slows economic growth. Such a large nonworking population reduces tax revenues and imposes additional costs on government for income support, while also burdening family and civil society organizations. A life without work can also feed other social problems, such as crime, addiction, and mental illness.[58]

The reasons behind the phenomenon of a growing group of working-age Americans detached from the labor market are complex and not open to simple or easy policy responses. The following are the most commonly cited explanations for the declining labor force prospects and participation of less-educated males in the labor force, along with potential policy responses:

1. "Skills-biased technological change" has reduced the relative demand for lower-skilled labor and the incentives for those workers to enter the labor force. Although beneficial for most workers and the economy as a whole, labor-saving technologies such as robotics have replaced a number

54. Ariel J. Binder and John Bound, "The Declining Labor Market Prospects of Less-Educated Men," *Journal of Economic Perspectives* 33, no. 2 (Spring 2019): 163.
55. Nicholas Eberstadt, *Men without Work: America's Invisible Crisis* (West Conshohocken, PA: Templeton Press, 2016), 3.
56. Eberstadt, *Men without Work,* 22.
57. Eberstadt, *Men without Work*, 51 (figure 4.1), 101 (figure 7.1).
58. Carol Graham and Sergio Pinto, "Men without Work: A Global Well-Being and Ill-Being Comparison," *IZA World of Labor*, October 2019.

of routine manual tasks in the labor market. This has been especially true for labor-intensive manufacturing sectors.[59] One potential response would be to improve K–12 education to better prepare graduates for the needs of the current labor market. Another reform would be an increased emphasis on alternatives to four-year colleges, such as vocational training and associate's degrees. This effort could include expanding educational and training programs for unemployed workers, although the record of programs such as Trade Adjustment Assistance is mixed.[60]

2. Increased rates of incarceration have made it more difficult for an expanding minority of the population to find employment. Beginning in the early 1990s, the number of Americans in prison increased sharply, from 500,000 in 1980 to nearly 2 million by 2000. Higher incarceration rates during the past three decades mean that a much larger population of convicted felons is out of prison; members of this population are three times more likely to be out of the workforce. Almost one-third of adult high school dropouts have previously been incarcerated, posing a special burden for lower-skilled workers seeking employment.[61] Among the policy responses that could be considered are further sentencing reform and a reexamination of the war on drugs.

3. Rising levels of addiction to opioids may be making it impossible for certain workers to join or rejoin the workforce.[62] Studies suggest that the opioid epidemic is one of the main reasons for the recent decline in the labor force participation rate.[63] Alan B. Krueger estimates that as many as half of the prime-age men who are out of the labor force are taking opioids daily.[64] Policy responses could range from tighter restrictions on the market for opioids to the reform of existing regulations that may be contributing to

59. Binder and Bound, "Declining Labor Market Prospects," 167–68.
60. See Paul T. Decker and Walter Corson, "International Trade and Worker Displacement: Evaluation of the Trade Adjustment Assistance Program," *Industrial and Labor Relations Review* 48, no. 4 (1995): 758–74; Leah H. Marcal, "Does Trade Adjustment Assistance Help Trade-Displaced Workers?," *Contemporary Economic Policy* 19, no. 1 (2001): 59–72; and Sarah Dolfin and Peter Z. Schochet, *The Benefits and Costs of the Trade Adjustment Assistance (TAA) Program under the 2002 Amendments* (Princeton, NJ: Mathematica Policy Research, December 2012), 57.
61. Eberstadt, *Men without Work*, 205
62. Janet Currie and Molly Schnell, "A Closer Look at How the Opioid Epidemic Affects Employment," *Harvard Business Review*, August 20, 2018.
63. Organisation for Economic Co-operation and Development, "Economic Survey of United States," June 2018, 11–12, www.oecd.org/eco/surveys/Overview-United-States-2018-OECD.pdf.
64. Alan B. Krueger, "Where Have All the Workers Gone? An Inquiry into the Decline of the U.S. Labor Force Participation Rate," *Brookings Papers on Economic Activity*, September 7, 2017.

their misuse. Reforms could also include expanded options for treatment and the expunging of criminal records for those who successfully complete treatment for addiction.

4. The government itself has also created greater disincentives to work through well-intentioned income support programs and barriers to employment. One study suggests that the Social Security disability program accounts for a quarter of the rise in nonparticipation among high school graduates ages 45–54 who have not attended college.[65] Other income support programs may be raising the attraction of leisure over work for lower-skilled workers. Proposals for a universal basic income should be examined in light of not only the realities of the current employment market but also the potential disincentives for work. Meanwhile, state and federal occupational licensing laws may also be hindering the creation of alternative employment opportunities for displaced workers.
5. Americans are simply less mobile than in the past. Studies show that instead of moving to areas where jobs are more readily available, Americans are less likely to move to other regions of the country to find work.[66] As a consequence, workers who have lost their jobs or who are discouraged about finding work tend to stay put, thereby intensifying regional differences in unemployment. There is no single clear explanation for this phenomenon, but government land use and housing regulations may play a role in raising the cost of mobility. Policy reforms could include less regulation of local housing markets and potential aid for worker relocation.
6. Video games, streaming services, and other newer forms of entertainment have enhanced the value of leisure time, especially for younger men, increasing its value relative to work and thus creating an additional potential disincentive to employment.[67] Any policy response, if necessary, should focus on increasing the rewards for work compared to leisure rather than curbing potential leisure activities.
7. Social trends may also play a role in the declining labor force participation of certain segments of society. As more women have joined the workforce,

65. Binder and Bound, "Declining Labor Market Prospects," 178. See also Scott Winship, "What's behind Declining Male Labor Force Participation: Fewer Good Jobs or Fewer Men Seeking Them?" (Mercatus Working Paper, Mercatus Center at George Mason University, Arlington, VA, 2017).
66. See Charles, Hurst, and Schwartz, "Transformation of Manufacturing," 57–58; and Jeffrey Sparshott, "Americans Are Moving at the Lowest Rate on Record," *Wall Street Journal,* November 21, 2019.
67. See Binder and Bound, "Declining Labor Market Prospects," 184; and Peter Suderman, "Young Men Are Playing Video Games Instead of Getting Jobs. That's OK. (For Now.)," *Reason*, July 2017.

more men may be staying home to care for children.[68] At the same time, fewer Americans are getting married, and those who do are marrying at a later age, reducing one of the traditional incentives for labor force participation by men. In 1980, half of 25-year-old men were married, compared with fewer than 20 percent in 2017.[69] This trend away from marriage is concentrated among less-educated workers. Traditionally, the prospects of marriage and family formation have meant that "single men are incentivized to invest in their future productivity by working today. As marriage rates and attendant marital expectations decrease, so do these labor supply incentives."[70] One alternative to marriage and family formation for younger males is living with parents or other relatives, which provides another form of income support and less incentive to work. Policy responses to such social trends are especially challenging.

## CONCLUSION AND FURTHER RESEARCH

A more open, free, and technologically advanced US economy has been a blessing to the large majority of workers and households in the United States. Expanding competition from trade has delivered lower prices and more product variety to consumers while shifting productive resources to those sectors that can compete more effectively in global export markets. Technological advances, from smartphones and the internet to artificial intelligence and robotics, have delivered new services and products to consumers while creating new industries and employment opportunities, raising productivity and wages for US workers. The welcome result in the past three decades has been a rising standard of living for the large majority of Americans, as measured by median wages, total compensation, household income, and other measures.

Future research should focus on potential policy reforms that would enable the minority of workers who have been dislocated from their jobs to retrain and rejoin the workforce as quickly as possible. More importantly, research should seek to address the deeper problem of millions of able-bodied workers who have become detached from the labor market. Reforms that should be studied more systematically include changes in unemployment insurance, job training, and

68. See Winship, "What's behind Declining Male Labor?"
69. Courtney C. Coile and Mark G. Duggan, "When Labor's Lost: Health, Family Life, Incarceration, and Education in a Time of Declining Economic Opportunity for Low-Skilled Men," *Journal of Economic Perspectives* 33, no. 2 (Spring 2019): 202.
70. Binder and Bound, "Declining Labor Market Prospects," 183.

income support programs to incentivize and enable American workers to fill the jobs that are being created; sentencing reform; deregulation of occupational licensing; and relaxing of land use regulations that may be hindering the ability of displaced workers to relocate to areas with more opportunity.

The challenge for policymakers is to enhance the ability of the labor market to create well-paying jobs in sufficient numbers to meet the needs of domestic consumers and to provide employment opportunities for all Americans who seek employment. Instead of hindering economic freedom or technological change, proper policies will create the right conditions for American workers to thrive in a modern, open, and technologically dynamic labor market.

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Daniel Griswold is a senior research fellow at the Mercatus Center at George Mason University and codirector of its Trade and Immigration Project. Griswold is a nationally recognized expert on trade and immigration policy. He is the author of the 2009 book *Mad about Trade: Why Main Street America Should Embrace Globalization* (Cato Institute, 2009). He has authored numerous studies; testified before congressional committees; commented for CNBC, C-SPAN, Fox News, and other TV and radio outlets; and written articles for the *Wall Street Journal*, the *Los Angeles Times*, and other publications. Griswold holds a bachelor's degree in journalism from the University of Wisconsin at Madison and a master's in the politics of the world economy from the London School of Economics and Political Science.

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