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Senior Specialist in Economic Policy

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SUMMARY

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Wage Inequality and the Stagnation of Earnings of Low-Wage Workers: Contributing Factors and Policy Options

Over the 1979-2018 period, real wages at the 10th percentile of the hourly wage distribution grew by 1.6%, whereas wages at the 50th percentile grew by 6.1% and wages at the 90th percentile grew by 37.6%. These patterns varied by sex, race, and ethnicity. Most of the increase in wage inequality at the bottom of the distribution occurred by 1990 and leveled off by 2000, whereas inequality continued to grow at the top of the distribution after 2000. Lower wages are associated with less education, and the college wage premium (the ratio of earnings of those with a college degree over those with a high school degree) grew steeply until 2000. The labor income share of compensation has declined beginning around 2000. Both the growth in hourly wage inequality and the decline in the labor share of compensation contributed to greater inequality of before-tax income. From 1979 to 2017, the income share of the bottom quintile fell from 5.3% to 3.5%, whereas the share of the top quintile rose from 41.9% to 50.1%.

Several factors potentially contributed to this change in wage inequality: technological advancement, globalization, wage-setting institutional changes (i.e., the minimum wage, presence of labor unions, and decline in the large firm wage premium), immigration, and declines in job mobility, across jobs in general and geographically.

A review of the economic research suggests that a major force in causing this growing wage inequality and lower wage growth was skill-based technological change (change increasing the demand for skilled over unskilled workers). Although there is mixed evidence, most studies find a smaller, modest effect of globalization (although trade affects locations and sectors differently). The minimum wage appeared to play a relatively small role. The decline in wages has coincided with the decline in unions, but to some extent, the decline in unions was a consequence of the decline in jobs in heavily unionized sectors due to technological advancement. Given the size of the decline and the union wage premium, as well as tracing some of the decline to technology, unionization appears to be of limited importance. The decline in the wage premium for large firms may also be traced to increased competition from technological advancement and globalization. Evidence also indicates that immigration had little effect on the distribution of wages, but resulted in a slight increase in inequality because immigrants are concentrated at the upper and lower ends of the income distribution. A decline in labor force mobility has occurred in recent years and could have contributed in some way to inequality.

Because the causes of the wage stagnation and growth inequality appear to be traceable largely to technological change, which is otherwise valued, other policies might be considered to increase the well-being of workers whose wages have stagnated. One policy option is to either increase transfers, including those provided through the tax structure, such as the earned income tax credit. Childless workers, in particular, have small earned income credits. Another option is to increase the federal minimum wage, although states are gradually undertaking these increases. A more far-reaching policy option is a federally guaranteed job. Proposals have also been made to expand wage insurance, which currently is available to only a narrow group of trade-affected workers. Policies to increase skill acquisition, including a greatly expanded apprenticeship program, could be considered, although they would have delayed effects on inequality. A variety of policies have been advanced to strengthen unions. In addition, a number of policies might be considered to increase labor mobility. Finally, a variety of geographically targeted provisions aimed particularly at increasing employment in chronically high unemployment areas could be considered. Transfers, including the earned income credit, have improved the distribution of after-tax income, but some other policies have a less successful track record, and some (such as a guaranteed job) are untried.

Contents

Tables

Contacts

The stagnation of real hourly wages at the lower end of the income distribution, where workers tend to be less educated, has entered into the policy debate over many issues, including trade, immigration, and institutional factors such as the minimum wage. This lack of wage growth has also contributed to an increase in overall income inequality. The first section reviews changes in the distribution of hourly wages (as well as considering the effects of fringe benefits) and overall income. Following that review, the report reviews the evidence on the main factors that might have contributed to this lack of wage growth, including technological advancement, trade, the minimum wage, unions, the large firm wage premium, immigration, and reduced labor mobility. The final section of the report explores policy options that might be considered by Congress.

A Review of Long-Term Hourly Wage Growth

Over the 1979-2018 period, real wages at the 10th percentile of the wage distribution grew by only 1.6%, whereas wages at the 50th percentile grew by 6.1% and wages at the 90th percentile grew by 37.6%. As shown in **Table 1**, these patterns varied by sex, race, and ethnicity.[1]

Table 1. Real Hourly Wage Growth 1979-2018

Percentile of the Wage Distribution	Total	Men	Women	White (Non-Hispanic)	Black (Non-Hispanic)	Hispanic	Non-Hispanic
10th	1.6%	-13.3%	4.8%	8.2%	-0.3%	-3.7%	6.7%
50th	6.1%	-5.1%	25.7%	13.2%	1.2%	-4.6%	10.1%
90th	37.6%	36.4%	66.7%	45.6%	28.5%	11.4%	42.7%

Source: Estimate in CRS Report R45090, *Real Wage Trends, 1979 to 2018*, by Sarah A. Donovan and David H. Bradley.

[1] The real growth in wages depends on the price index used. For the data in **Table 1**, the consumer price index for urban consumers (CPI-U) was used. Many economists believe the CPI-U overstates the change in the cost of living because it does not account for changes in the mix of goods reflecting the increased spending on goods whose relative prices have decreased. A new chained CPI-U that makes this adjustment has been developed but is only available since 1999. The GDP deflator for personal consumption expenditures also changes the mix of goods and was similar to the growth in the chained CPI-U during the period since 1999. Using the CPI-U, total hourly wages at the 10th percentile grew at an annual rate of 0% [(1.016)^(1/38)] when rounded, while wages at the 90th percentile grew at an annual rate of 0.8%. If the GDP deflator for personal consumption, which increased over the 38 year period by 21% less, were used, wages at the 10th percentile would have grown at 0.7% per year while wages at the 90th percentile would have grown at 1.5%. Thus, the inequality pattern would remain but real wage growth at every level would have been higher. Historical data on the consumer price index (CPI-U) can be found at https://www.bls.gov/cpi/tables/supplemental-files/historical-cpi-u-201912.pdf. Data on the chained CPI-U can be found at https://beta.bls.gov/dataViewer/view/timeseries/SUUR0000SA0. Data on GDP deflators can be found in Table 1.1.4 at https://apps.bea.gov/iTable/iTable.cfm?reqid=19&step=2#reqid=19&step=2&isuri=1&1921=survey/. While most economists believe the chained CPI provides a better measure of overall inflation, it may be less applicable to low income individuals who do not have as much ability to make substitutions in consumer purchases. See Robert Greenstein, Commentary: The Debate over the Chained CPI, Center for Budget and Policy Priorities, April 9, 2013, https://www.cbpp.org/commentary-the-debate-over-the-chained-cpi.

From 1979 to 2016, examined by quintiles of wage earners, wages fell by 1.0% for the bottom 20% but rose by 27.4% for the top quintile. Wages rose for the lower-middle quintile by 0.8%, but rose by 3.4% in the middle quintile and by 11.5% in the upper-middle quintile.[2]

The wage differentials between the 10th and the 50th percentile remained relatively constant after 1990 until the recession in 2009, indicating a stabilization of inequality in the bottom half of the wage distribution; this change was primarily for male workers. For female workers, a more modest growth in the differential in the bottom half occurred, largely in the early 1980s, with little change thereafter. The differential in the upper half (between the 90th and the 50th percentile) increased at a more modest pace during the entire period.[3]

Wages are associated with educational achievement. College graduates are 15% of the bottom quintile and almost 80% of the top quintile.[4] The highest wages on average are earned by those with advanced degrees, and the lowest by those with less than a high school diploma. In 2016, for workers over 25, those with less than a high school diploma had median weekly earnings of $504. Median weekly earnings were $1,156 for those with a bachelor's degree, $1,380 for a master's degree, $1,745 for a professional degree, and $1,664 for a doctoral degree.[5]

The wage premium for a college degree (the ratio of average wages for those with a college degree compared to those with a high school diploma) rose from 134% in 1979 to 168% in 2016; the premium for an advanced degree rose from 154% to 213% over that same period. The wage premium for a college degree rose steeply until about 2000 then continued to rise slightly after 2000. Over the 1979-2016 period, the share of workers with a college degree also increased (from 23% to 40%).[6] This increase in the skill premium suggests that the demand for skilled workers rose relative to the supply over this time frame.[7]

Using the CPI, real wages of men with a high school diploma or less declined significantly between 1979 and 1999, while women with a high school diploma experienced small, but generally positive, growth during that period.[8]

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[2] Jay Shambaugh et al., *Thirteen Facts about Wage Growth*, Brookings Institution, The Hamilton Project, September 25, 2017, https://www.brookings.edu/research/thirteen-facts-about-wage-growth/.

[3] See David H. Autor, Alan Manning, and Christopher Smith, "The Contribution of the Minimum Wage to U.S. Wage Inequality over Three Decades: A Reassessment," *American Economic Journal: Applied Economics*, vol. 8, no.1 (January 2016), pp. 58-99; Thomas Lemieux, "The Changing Nature of Wage Inequality," *Journal of Population Economic*s, vol. 21, no. 1 (January 2008), pp. 21-48.

[4] Jay Shambaugh et al., *Thirteen Facts about Wage Growth*, Brookings Institution, The Hamilton Project, September 25, 2017, https://www.brookings.edu/research/thirteen-facts-about-wage-growth/.

[5] Vernon Brundage, Jr., "Profile of the Labor Force by Educational Attainment," Bureau of Labor Statistics, August 2017, https://www.bls.gov/spotlight/2017/educational-attainment-of-the-labor-force/pdf/educational-attainment-of-the-labor-force.pdf.

[6] Jay Shambaugh et al., *Thirteen Facts about Wage Growth*, Brookings Institution, The Hamilton Project, September 25, 2017, https://www.brookings.edu/research/thirteen-facts-about-wage-growth/.

[7] This issue is considered in more detail for the earlier part of the period in Claudia Goldin and Lawrence F. Katz analyze long term patterns in *The Race Between Education and Technology: The Evolution of U.S. Educational Wage Differentials, 1890 to 2005*, National Bureau of Economic Research (NBER), Working Paper no. 12984, March 2007.

[8] See Table 1a in Daron Acemoglu and David Autor, "Skills, Tasks and Technologies: Implications for Employment and Earnings, in *Handbook of Labor Economics*, vol. 4B, ed. Orly Ashenfelter and David Card (Amsterdam: North Holland, 1999), pp. 1043-1171, https://economics.mit.edu/files/5571. Real wages for men with a high school diploma would have increased using the GDP deflator for personal consumption expenditures, although by a negligible amount from 1979 to 1989.

In addition to the wage differential growth, labor compensation as a share of income has been falling since 2001, from 64.3% in the first quarter of 2001 to 58% in the fourth quarter of 2015.[9] Labor compensation includes fringe benefits and proprietor's labor income as well as wages. During that same period, employee wages fell from 46.8% to 42.8% of gross domestic income (GDI). While the fringe benefits (supplements) share remained constant as a share of GDI, these benefits rose as a share of employee compensation.[10] In contrast with the increased wage inequality and the increased college wage premium, where effects largely occurred by 2000, the fall in the labor share of income occurred primarily after 2000. Because wages account for a smaller share of the income of higher-income individuals, both the increased wage inequality and the decreased labor income share have led to increased income inequality. From 1979 to 2017, the income share of the bottom quintile fell from 5.3% to 3.5%, whereas the share of the top quintile rose from 41.9% to 50.1%. Income shares also fell for the lower-middle quintile (from 11.7% to 9.0%) and the middle quintile (from 17.2% to 14.7%), and (slightly) for the upper-middle quintile (from 23.8% to 22.7%).[11]

Note that labor compensation differs from wages, as it also includes benefits that typically account for about 30% of compensation. This difference also raises the question of whether the wage differentials documented for the period from the end of the 1970s to the mid-1990s were offset or accentuated by changes in nonwage compensation. Available evidence, however, indicates that labor compensation differentials increased more than wage differentials.[12]

Some of the decline in the labor compensation share may be due to the growth of entrepreneurial income at the top of the income distribution, which in turn may partly reflect shifting to pass-through business (where wages are not paid to entrepreneurs) from the standard corporate form, due to tax incentives. Thus, this shift may be, in part, a change in the characterization of income rather than a real shift.[13]

One study has estimated a national distribution of income and how it has changed over time accounting for all national income, including the fringe benefits of workers and those not in the labor force.[14] This study compares the growth in income over two 34-year periods: from 1946 to

[9] "Estimating the U.S. Labor Share," *Monthly Labor Review*, February 2017, at https://www.bls.gov/opub/mlr/2017/article/estimating-the-us-labor-share.htm. This decline is discussed in Claudia Goldin and Lawrence F. Katz, *The Race Between Education and Technology: The Evolution of U.S. Educational Wage Differentials, 1890 to 2005*, NBER, Working Paper no. 12984, March 2007.

[10] National Income and Product Accounts. Gross Domestic Income by Type of Income, Table 1.10, at https://apps.bea.gov/iTable/index_nipa.cfm reports. This table reports the two components of employee compensation, wages and salaries and supplements to income.

[11] Incomes are adjusted for family composition. See Table A-3, Selected Measures of Equivalence-Adjusted Income Dispersion, 1967 to 2017, in Jessica Semega, Kayla Fontenot, and Melissa Kollar, *Income and Poverty in the United States: 2017*, Bureau of the Census, Report Number P-60-263, September 2018, https://www.census.gov/data/tables/2018/demo/income-poverty/p60-263.html.

[12] See Lawrence F. Katz and David H. Author, "Changes in the Wage Structure and Earnings Inequality," in *Handbook of Labor Economics*, vol. 3, ed. Orly Ashenfelter and David Card (Amsterdam: North Holland, 1999), pp. 1463-1555 for an analysis of the earlier period. Evidence also indicated that inequality in total compensation increased faster than inequality in wages during the 2007-2014 period. See Kristen Monaco and Brooks Pierce, "Compensation Inequality: Evidence from the National Compensation, Survey," *Monthly Labor Review*, Bureau of Labor Statistics, July 2015, https://www.bls.gov/opub/mlr/2015/article/compensation-inequality-evidence-from-the-national-compensation-survey.htm.

[13] See Matthew Smith, et al., "Capitalists in the Twenty-First Century," *Quarterly Journal of Economics*, vol. 134, no. 4 (November 2019), pp. 1675-1745.

[14] Thomas Piketty, Emmanuel Saez, and Gabriel Zucman, *Distributional National Income Accounts: Methods and Estimates for the United States*, NBER, Working Paper no. 22945, December 2016, https://www.nber.org/papers/

1980 and from 1980 to 2014. For the postwar period through 1980, the overall income growth rate and the overall pretax income annual growth rate were 2%, with pretax income of the bottom 50% of adults growing at approximately the 2% growth rate, whereas the top 10% grew at 1.7%. For the period from 1980 through 2014, the overall annual growth rate was lower, at 1.4%, but the annual growth rate of the bottom 50% rounded to zero, whereas the top 10% grew at 2.4%. The study's statistics show that the share of income of the bottom 50% declined from about 20% in 1979 to about 12% today. This study differs from other studies of income distribution that focus on family units; rather, it looks at incomes for all adults separately to focus on individuals.[15] Although this study uses a different approach, it shows a similar pattern to other measures.

To sum up these trends, lower-income workers experienced a decline in wages relative to the median that mostly occurred in the 1980s, the median wage earners experienced a decline with respect to the top wage earners throughout the period (with both effects causing a rise in the college wage premium from the 1980s to about 2000), and since 2000, the labor share of income has declined. All of these trends resulted in a stagnation of income among less-skilled workers relative to the overall population.

Factors Potentially Contributing to Wage and Income Inequality

This section discusses the factors potentially contributing to the lack of wage growth at the bottom of the wage distribution: technology, globalization, wage-setting institutions (the minimum wage, the decline in unions, and the decline in the large firm wage premium), immigration, and reduced labor mobility. It also considers the decline in the labor income share that contributed to inequality.

Technological Advancement

Many economists see technology and international trade as the major forces affecting labor markets,[16] and a broad conclusion of the evidence on earnings inequality is that the largest immediate contributors included a rising demand for skills along with a slowdown in the growth of the supply of new college graduates.[17]

w22945.pdf. As with other measures, the growth in real income, although not the differentials, is affected by the choice of inflation index.

[15] Most U.S. studies of income distribution, such those of the Congressional Budget Office, discussed subsequently under the topic of taxes and transfers, consider family units. The Piketty, Saez, and Zucman study divides income of married couples equally, but also reports an allocation for the top 10% with wage income allocated by earnings and other income divided equally. The latter approach increases inequality because of the gender wage gap, although that gap has narrowed recently. Income distributions can also be affected by whether income is considered before taxes and transfers or after, and whether unrealized capital gains are included. For a discussion, see Philip Armour, Richard V. Burkhauser, and Jeff Larrimore, "Deconstructing Income and Income Inequality Measures: A Crosswalk from Market Income to Comprehensive Income," *American Economic Review*, vol. 103, no. 3 (May 2013), pp. 173-177. The effect of taxes and transfers is considered in the review of policy options.

[16] David H. Autor, David Dorn, and Gordon Hanson, "Untangling Trade and Technology: Evidence from Local Labour Markets," *The Economic Journal*, vol. 125 (May 2015), pp. 621-647.

[17] David H. Autor, Alan Manning, and Christopher L. Smith, "The Contribution of the Minimum Wage to US Wage Inequality Over Three Decades: A Reassessment." *American Economic Journal: Applied Economics*, vol. 8, no. 1 (January 2016), pp. 58-99.

Historically, technological advancement has led to a massive increase in the standard of living but has also caused temporary disruptions, although the groups that are adversely affected have varied. With recent technological advances, those who fail to reap the benefits appeared to be less-skilled workers, based on a number of relationships observed in the economy.[18]

First, some effects arose from the displacement of workers in well-paid factory jobs with machinery using advanced technology. One illustration of the potential impact of technology in reducing the demand for manufacturing workers is the development of the mini-mill in steel production. Although the real value of shipments was relatively constant from 1980 through 2002, steel industry employment fell from 400,000 workers to 100,000 workers.[19]

Second, numerous studies found that the surge in wage inequality that appeared in the 1980s (and had its primary effects on inequality in the lower half of the wage distribution) reflected a rise in the demand for skilled workers that had been ongoing for some time and was perhaps accelerated by the computer revolution.[20] There also appeared to be a relationship between positive wage changes and computer use by workers that suggested a technological cause to the changes in wage patterns.[21] A number of studies showed that the utilization of more-skilled workers was correlated with capital intensity and the implementation of new technology based on both statistical and case studies. Studies showed a diffusion of computer-based processes during this period, which could substitute for routine jobs and is likely more important in clerical and production jobs than in managerial and professional jobs.[22]

Third, a finding that points to technology rather than trade as the more important source of increased demand for skilled workers was that wage dispersion occurred within industries rather than between industries.[23] Growing wage differentials within a particular industry suggest a largely technology-driven reason, whereas a differential that arises across workers producing different products may point to a trade-driven effect (e.g., imports being produced with less skilled labor and exports with more). That is, if increased trade led to imported goods with lower

[18] David H. Autor, Lawrence F. Katz, and Melissa S. Kearney, "Trends in U.S. Wage Inequality: Revising the Revisionists," *The Review of Economics and Statistics*, vol. 90, no. 1 (May 2008), pp. 300-323.

[19] Allen Collard-Wexler and Jan De Loecker, "Reallocation and Technology: Evidence from the US Steel Industry," *American Economic Review*, vol. 105, no. 1 (January 2015), pp. 131-171.

[20] As discussed in David H. Autor, Lawrence F. Katz, and Melissa S. Kearney, "Trends in U.S. Wage Inequality: Revising the Revisionists," *The Review of Economics and Statistics*, vol. 90, no. 1 (May, 2008), pp. 300-323.

[21] Bound and Johnson examined alternative explanations for the wage shift, including unions, product demand shifts, intraindustry employment shifts (which showed a shift toward more-educated workers and more-skilled workers), and general technical changes, including the use of computers (examining how changes in computer use were related to wage changes). They concluded that the major cause of this change was the shift in demand for labor toward more-skilled workers brought about by technological change. John Bound and George Johnson, "Changes in the Structure of Wages in the 1980s: An Evaluation of Alternative Explanations," *American Economic Review*, vol. 82, no. 3 (June 1992), pp. 371-392. A similar focus can be found in the extensive review of Frank Levy and Richard J. Murnane, "U.S. Earnings Levels and Earnings Inequality: A Review of Recent Trends and Proposed Explanations," *Journal of Economic Literature*, vol. 30, no. 3 (September 1992), pp. 1333-1381.

[22] These studies are reviewed in Lawrence F. Katz and David H. Autor, in "Changes in the Wage Structure and Earnings Inequality," ed. Orly Ashenfelter and David Card, *Handbook of Labor Economics*, vol. 3 (Amsterdam: North Holland, 1999), pp. 1463-1555.

[23] Lawrence F. Katz and David H. Autor, in "Changes in the Wage Structure and Earnings Inequality," ed. Orly Ashenfelter and David Card, *Handbook of Labor Economics*, vol. 3 (Amsterdam: North Holland, 1999), pp. 1463-1555. See also Eli Berman, et al. "Changes in the Demand for Skilled Labor Within U.S. Manufacturing Industries: Evidence from the Annual Survey of Manufacturers," *Quarterly Journal of Economics*, vol. 109, no. 2 (May 1994), pp. 367-397; Jae Song, et al., "Firming Up Inequality," *The Quarterly Journal of Economics*, vol. 134, no. 1 (February 2019), pp. 1-50, https://academic.oup.com/qje/article/134/1/1/5144785.

prices, wages would decline in that industry relative to other industries, whereas if technology favored more-skilled workers, differentials in wages would occur within all industries.

This outstripping of demand for skilled workers (primarily via technological change) relative to supply also reflected a slowdown in the growth of the share of workers with college degrees, because the increase in the college wage premium was largely attributable to younger men. The slowdown could be in part attributed to the end of the growth in college attendance induced by the Vietnam War and in part to the decline in the college wage premium prior to the 1980s.[24] For example, as the war in Vietnam ended in the mid-1970s, the decline in college attendance prior to that period produced ripple effects in the form of a less-educated workforce into the 1980s.

The pattern of wage changes differed from 1979 to today.[25] In the 1980s, technology and automation changes led to a decline in employment and earnings at the bottom of the skill distribution relative to the top, whereas in the 1990s and later, information technology change did not affect the very lowest-skilled workers performing manual labor but did adversely affect moderately educated workers performing clerical tasks, and benefitted highly educated workers performing abstract tasks. Employment in both the least-skilled and most-skilled occupations grew relative to that in the middle-skilled occupations. Some studies linked this effect to technological advancement in information and communication, which allowed the substitution of machines for many routine tasks carried out by middle-skilled jobs.[26] Technological change shifted from automation affecting manufacturing to the computerization of information affecting nonmanufacturing.[27]

Despite some evidence of a transitory effect from trade due to China's rapid emergence, the evidence presented in this and the following section suggests that technology is the more important driver of changes in wage differences. Some prominent labor economists appear to hold that view. When queried about the importance of automation versus trade, as reported in the *New York Times*,[28] Lawrence Katz said, "Over the long haul, clearly automation's been much more important—it's not even close." David Autor, interviewed in the same article, said automation has had a far bigger effect than globalization and stated "some of it is globalization, but a lot of it is we require many fewer workers to do the same amount or work. Workers are basically supervisors of machines."

[24] See David Card and Thomas Lemieux, "Can Falling Supply Explain the Rising Return to College for Younger Men? A Cohort Based Analysis," *The Quarterly Journal of Economics*, vol. 116, no. 2 (May 2001), pp. 705-746 and Daron Acemoglu and David Autor, in "Skills, Tasks and Technologies: Implications for Employment and Earnings," ed. Orly Ashenfelter and David Card, *Handbook of Labor Economics*, vol. 4B (Amsterdam: North Holland, 2011), pp. 1043-1171.

[25] See David H. Autor, Lawrence F. Katz, and Melissa S. Kearney, "Trends in U.S. Wage Inequality: Revising the Revisionists," *The Review of Economics and Statistics*, vo. 90, no. 1 (May 2008), pp. 300-323.

[26] See discussion in Daron Acemoglu and David Autor, in "Skills, Tasks and Technologies: Implications for Employment and Earnings," ed. Orly Ashenfelter and David Card, *Handbook of Labor Economics*, vol. 4B (Amsterdam: North Holland, 2011), pp. 1043-1171, https://economics.mit.edu/files/5571. See also David H. Autor, Frank Levy, and Richard J. Murnane, "The Skill Content of Recent Technological Change: An Empirical Exploration," *The Quarterly Journal of Economics*, vol. 118, no. 4 (November 2003), pp. 1279-1333 and David H. Autor and David Dorn, "The Growth of Low-Skill Service Jobs and the Polarization of the U. S. Labor Market*," American Economic Review*, vol. 103, no. 5 (August 2013), pp. 1553-1597.

[27] David H. Autor, David Dorn, and Gordon Hanson, "Untangling Trade and Technology: Evidence from Local Labour Markets," *The Economic Journal*, vol. 125 (May, 2015), pp. 621-647.

[28] Clair Cain Miller, "The Long-Term Jobs Killer is not China. It's Automation," *New York Times*, December 21, 2016.

This technological advancement in favor of more-skilled workers is projected to continue in the future with increased use of industrial robots and susceptibility of jobs to computerization.[29] Studies suggest that new technology and algorithms for big data will make computers substitutes for nonroutine cognitive tasks and an expanded range of manual tasks, while having less effect on jobs that require creative or social intelligence.[30]

A technological explanation for the decline in the labor share of income seems less likely. Even if technology led to more capital investment, such increases would not necessarily lead to a declining share of labor income. The reasons for the decline in the labor share of income are unsettled, although, as noted earlier, a recent study found that most top income is nonwage income, a primary source of which is private business profit, largely due to labor input by entrepreneurs, which could be considered labor income.[31]

Globalization, International Trade, and Import Competition

Economists generally agree that the overall economy gains from international trade, even though (as is the case with technological progress) some groups may be harmed. (Trade in this section refers to international trade, consisting of imports from abroad and exports to other countries; the growth in this trade and other transactions with other countries is often referred to as *globalization*.) One study put the estimated increase in output from trade at 2% to 8% of gross domestic product (GDP).[32] (Trade includes trade in final goods and services and trade in intermediate goods and services, sometimes referred to as *offshoring*.) Because trade largely involves a substitution of one type of production for another, there is no a priori expectation of an effect on income distribution. Although some studies have found a role for trade, most have found it a modest force compared to technology.[33]

As discussed in the previous section, one characteristic that points to a technology-based rather than a trade-based cause as the more important force is that increased wage differentials appeared

[29] Daron Acemoglu and Pascual Restrpo, *Robots and Jobs: Evidence from US Labor Markets*, NBER, Working Paper no. 23285, March 2017.

[30] See Carl Benedikt Frey and Michael A Osborne, "The Future of Employment: How Susceptible are Jobs to Computerisation?" September 17, 2013, https://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf. Also published in *Technological Forecasting and Social Change*, January 2017, vol. 114, pp. 254-80.

[31] Matthew Smith, et al., "Capitalists in the Twenty-First Century," *Quarterly Journal of Economics*, vol. 134, no. 4 (November 2019), pp. 1675-1745. An argument has been made that the decline in the cost of investment goods caused a decline in the labor share of income. See Loukas Karabarbounis and Brent Neiman, "The Global Decline of the Labor Share," *Quarterly Journal of Economics*, vol. 129, no. 1 (February 2014), pp. 61-103. However, a weakness to this argument is that it would only happen if capital is highly substitutable for labor so that more capital would have little effect on increasing wages and little effect on decreasing returns to capital. Evidence indicates that labor and capital are not, overall, that highly substitutable. Some of the decline might reflect measurement issues, in particular the increase in land rents for housing, as discussed in Matthew Rognlie, "Deciphering the Fall and Rise in the Net Capital Share: Accumulation or Scarcity," Brookings Institution, *Brookings Papers on Economic Activity,* spring 2015, pp.1-69, https://www.brookings.edu/bpea-articles/deciphering-the-fall-and-rise-in-the-net-capital-share.

[32] Arnaud Costinot and Adres Rodriguez-Clare, *The US Gains from Trade: Valuation Using the Demand for Foreign Factor Services*, NBER, Working Paper no. 24407, March 2018.

[33] See Lu (Lucy) Zhiayao and Gary Clyde Hufbauer, "Has Global Trade Fueled Wage Inequality? A Survey of Experts," The Peterson Institute for International Economics, August 30, 2017, https://www.piie.com/blogs/trade-investment-policy-watch/has-global-trade-fueled-us-wage-inequality-survey-experts. Studies of the early 1980s and 1990s, when most of the wage inequality at the bottom of the wage distribution appeared, assigned a role of 10% to 40% to trade, but with few studies supporting the higher end of this range.

within sectors rather than across sectors. If the cause were trade, such differentials would be expected to have appeared between import and export sectors.

A second characteristic pointing against a trade-based cause as more important than technology is that inequality has increased in both advanced and developing countries. If the cause were trade (receiving imports from countries using low-skilled labor in exchange for exports using high-skilled labor), developing countries would likely be more, not less, equal. That both types of economies are becoming more unequal points to a technology-based explanation.[34]

Some studies also tried to directly estimate the effect of trade on the economy by examining how the lack of trade would affect prices and wages. These studies generally found a small effect on prices and income distribution, especially compared with technological change.[35]

Instances in which certain workers in local markets are adversely affected by imports may have led to the perception of an important role for trade. Studies have found an effect from China's rapid emergence in the world market, especially after 2000, when China entered the World Trade Organization (WTO); these studies found a decline in manufacturing jobs in areas producing products most competitive with imports, as well as persistent increased unemployment and a small decline in wages.[36] These studies illustrate the adjustment costs of a large trade change on trade-impacted sectors, and especially on lower-wage workers who may find adaptation and mobility more difficult. They characterized the growth in China's imports as a shock and noted that this growth may soon be over, if it is not already, as wages in China have increased substantially. One study cited a loss of 2 million jobs in the United States over the period 1999 to 2011, which indicates an average of 166,000 jobs a year.[37] To put the China effect in perspective, this amount is one-tenth of 1% of the U.S. workforce, and its cumulative effect over a dozen years was 1.4%.[38] Thus, while the China shock as measured by displaced jobs may have been significant relative to other trade shocks, it did not likely have a major effect on the stagnation of wages at the lower end of the wage distribution, which has occurred over the past 40 years and was most pronounced before the increase in China trade began.

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[34] See Elhanan Helpman, *Globalization and Wage Inequality*, NBER, Working Paper no. 22944, December 2016 for a review of studies that reached this conclusion. Also see Kermal Dervis and Zia Qureshi, "Income Distribution Within Countries: Rising Inequality," *Brookings Institution*, August 2016, https://www.brookings.edu/wp-content/uploads/2017/12/income-inequality-within-countries_august-2016.pdf for a discussion of rising inequality. See also Jonathan Harkel, Robert Z. Lawrence, Edward E. Leamer, and Matthew J. Slaughter, "Globalization and U.S. Wages: Modifying Classic Theory to Explain Recent Facts," *Journal of Economic Perspectives*, vol. 26, no. 2 (spring 2012), pp. 119-140 and Florence Jaumotte, Subir Lall, and Chris Papageorgiou, "Rising Inequality: Technology or Trade and Financial Globalization?" *IMF Economic Review*, vol. 61, no. 2 (2013), pp. 272-309, https://link.springer.com/content/pdf/10.1057/imfer.2013.7.pdf, who considered not only trade but also financial openness, but concluded that these effects were small compared to technological progress.

[35] They estimated the gap between factor endowments with and without trade and found that changes in trade increased demand for skilled workers but the effect was small. See Lawrence F. Katz and Kevin M. Murphy, "Changes in Relative Wages, 1963-1987: Supply and Demand Factors," *The Quarterly Journal of Economics*, vol. 107, no. 1 (February 1992), pp. 35-78. See also studies reviewed by Lawrence F. Katz and David H. Autor, in "Changes in the Wage Structure and Earnings Inequality," ed. Orly Ashenfelter and David Card, *Handbook of Labor Economics*, vol. 3 (Amsterdam: North Holland, 1999), pp. 1463-155; Helpman, op cit.

[36] David H. Autor, David Dorn, and Gordon H. Hanson wrote several studies relating to this topic; the latest one and the one whose estimates are quoted was "The China Shock: Learning from Labor-Market Adjustment to Large Changes in Trade," *Annual Review of Economics*, vol. 8 (2016), pp. 205-240.

[37] Ibid.

[38] Bureau of Labor Statistics, Table A-1, Employment Status of the Civilian Noninstitutional Population 16 Years and Over, 1984 to Date, at https://www.bls.gov/web/empsit/cpseea01.pdf. Those data indicate a civilian labor force of 140 million on average.

The China study analysis focused only on effects in areas of high import penetration, but it did not consider overall effects in the economy. It is well known that bilateral trade balances or their effects in local markets cannot be used to infer results about the economy as a whole.[39] An increase in imports leads to increases in output in other sectors of the economy that should be considered. A subsequent study that did so found these local effects were offset by growth in other areas and exports.[40] Thus, trade can alter the compositional mix and location of jobs without necessarily having an effect on long-term inequality.[41]

Some research has indicated that globalization might have contributed to the increase in incomes of high-income individuals and their firms, such as high-tech multinational firms ("superstars" in their terminology), in part by expanding markets.[42] This phenomenon could contribute to income inequality, but it did not do so by harming the wages of unskilled workers, but rather by increasing wages and profits (income) at the top of the income distribution.

As for the decline in the labor share of income, that decline is unlikely to be linked to a traditional argument that the country has moved toward labor-intensive imports because the labor share has also fallen in the nontradeable sector (such as construction, sectors that involve the distribution of goods, and some services).[43] However, the growth of highly successful multinational "superstar" firms may have made a contribution because the increased income would be capital income rather than labor income.

In general, although estimating the effects of trade is complex, the current empirical evidence does not appear to support trade rather than technology as the more important cause of relative wage stagnation at the lower end of the wage distribution.

Wage-Setting Institutions

Technology, education, and trade explanations of the change in income and wage inequality are based on normal forces of supply and demand. However, economists studying the rise in inequality have also considered the decline of labor institutions that may have protected higher wages at the lower end of the wage distribution. This section considers three aspects of these wage-setting institutions: the minimum wage, union membership (and right-to-work laws), and the change in wage-setting norms (such as the large firm wage premium).

[39] See Greg Mankiw, "The Bilateral Trade Deficit," *Greg Mankiw's Blog*, July 5, 2017, https://gregmankiw.blogspot.com/2007/07/bilateral-trade-deficit.html.

[40] Robert C. Feenstra and Akira Sasahara, "The 'China Shock,' Exports and U.S. Employment: a Global Input-Output Analysis," August 18, 2017, http://cid.econ.ucdavis.edu/Papers/Feenstra_Sasahara.pdf.

[41] Similar results were found for analysis of the North American Free Trade Agreement (NAFTA), where research suggested localized effects but an overall benefit for both low-wage and high-wage workers. See Justino De la Cruz, David Riker, and Bennet Voorhees, *Econometric Estimates of the Effects of NAFTA: A Review of the Literature*, U.S. International Trade Commission, Working Paper no. 2013-12A, December 2013, https://www.usitc.gov/publications/332/ec201312a.pdf, and Justino De la Cruz and David Riker, *The Impact of NAFTA on U.S. Labor Markets*, https://www.dallasfed.org/-/media/Documents/research/pubs/nafta20/nafta20c9.pdf.

[42] Jonathan Harkel, Robert Z. Lawrence, Edward E. Leamer, and Matthew J. Slaughter, "Globalization and U.S. Wages: Modifying Classic Theory to Explain Recent Facts," *Journal of Economic Perspectives*, vol. 26, no. 2 (spring 2012), pp. 119-140.

[43] See discussion in David Autor et al., "Concentrating on the Fall of the Labor Share," *American Economic Review: Papers and Proceedings*, vol. 107, no. 3 (May 2017), pp. 180-185.

The Minimum Wage

The federal minimum wage, currently $7.25 per hour, is not indexed to inflation, and thus the real value has risen and fallen in an irregular pattern over time. For example, the minimum wage in 2015 dollars fell from $9.44 in 1979 to $6.34 in 1989.[44] It has fluctuated since then, and declined from 1997 to 2006 to a lesser degree (from $7.58 to $6.23), and then increased.

Some early studies found that the decline in the value of the minimum wage in the 1980s was responsible for the steep decline in relative wages at the bottom of the wage distribution during that time period.[45] Some economists argued that the increase in inequality was an episodic event due to the minimum wage and was not traceable to skill-based technological change.[46] A number of years have passed since these early studies and, while inequality at the bottom has stabilized (although with little real wage growth), the inequality increases have continued. This growth in inequality was primarily in the upper half of the wage distribution at levels where it could not have been due to the minimum wage; the study noting that point found a skill-based rather than minimum wage cause for changes through 2005.[47] A study that extended data through 2012 and accounted for state minimum wages found negligible effects for male inequality between the 10th and 50th percentiles, finding a meaningful effect only for women.[48]

These findings suggest that the minimum wage may have played a relatively small role in increased inequality.

The Decline in Unions

Union membership in the private sector, which has been historically associated with a positive union wage premium (higher wage for union members) for blue-collar workers, declined significantly during the period of rising wage inequality. From 1973 to 1993, union membership in the private sector declined from 31% to 13%, and by 2018, it had declined to 6.4%.[49] (Union

[44] The nominal minimum wage and consumer price index for urban consumers (CPI-U) needed to adjust to real values are reported by the Department of Labor. See https://www.dol.gov/whd/minwage/chart.pdf and https://www.bls.gov/cpi/tables/supplemental-files/historical-cpi-u-201812.pdf. For a chart that graphs both real and nominal minimum wages, see CRS Report R44667, *The Federal Minimum Wage: Indexation*, by David H. Bradley. A chart is also provided by Annalyn Kurtz and Tal Yellin, "Minimum Wage Since 1938," *CNN Business*, https://money.cnn.com/interactive/economy/minimum-wage-since-1938/.

[45] John DiNardo, Nicole M. Fortin, and Thomas Lemieux, "Labor Market Institutions and the Distribution of Wages," *Econometrica*, vol. 64, no. 5 (September 1996), pp. 1001-1044, and David S. Lee, "Wage Inequality in the United States During the 1980s: Rising Dispersion or Falling Minimum Wage," *Quarterly Journal of Economics*, vol. 114, no. 3 (August 1999), pp. 977-1023.

[46] David Card and John E. DiNardo, "Skill-Based Technological Change and Rising Wage Inequality: Some Problems and Puzzles," *Journal of Labor Economics*, vol. 20, no. 4 (October 2002), pp. 733-783.

[47] David H. Autor, Lawrence F. Katz, and Melissa S. Kearney, "Trends in U.S. Wage Inequality: Revising the Revisionists," *The Review of Economics and Statistics*, vol. 90, no. 1 (May, 2008), pp. 300-323

[48] David H. Autor, Alan Manning, and Christopher Smith, "The Contribution of the Minimum Wage to U.S. Wage Inequality over Three Decades: A Reassessment," *American Economic Journal: Applied Economics*, vol. 8, no.1 (January 2016), pp. 58-59. This study extended through 2012 and found the declining minimum wage to have a meaningful effect on female inequality, a modest effect on overall gender inequality, and a negligible effect on male inequality measured by the difference between the 50th and 10th percentiles.

[49] See David Card, "The Effect of Unions on Wage Inequality in the U.S. Labor Market," *Industrial and Labor Relations Review*, vol. 54, no. 2 (2001) for the period from 1973 to 1993. For union membership statistics from 1983 to present, see Bureau of Labor Statistics, Access to Historical Data for the Tables of the Union Membership News Release, https://www.bls.gov/cps/cpslutabs.htm. Note that these numbers are taken from different series; the BLS data start in 1983 and indicate a private-sector rate of 16.8% in that year. Other data show union membership overall peaked in the mid-1950s; see Henry S. Farber et al., *Unions and Inequality Over the Twentieth Century: New Evidence from*

membership in the public sector has increased slightly over that period, from 28.9% in 1973 to 33.9% in 2018.)

There are two major reservations about assigning an important role to union membership in explaining increasing inequality in wages. The first is that during the period of the greatest decline in relative wages in the lower half of the distribution, the effect of unions, as determined by multiplying the differentials in the union wage premiums (increased wages due to union membership)[50] across incomes by the change in union membership, accounted for only a small share of the difference (about 8%); the study reporting this effect also found that most of the change was due to technological change.[51] Other studies indicate that the effect would be largely for men, perhaps up to 20% in that early period (the 1980s); over a longer time period, effects were confined to men and associated with increased inequality in the upper half of the wage distribution but reduced inequality in the bottom half.[52] Another study, however, suggested that the union wage premium might understate the effect of unions to the extent that it establishes norms for nonunion jobs in the area or provides a threat to employers who could potentially lose workers to union jobs, finding that the decline in unions was responsible for one-third to one-fifth of the decline in wage inequality for men from 1979 to 2007, and up to one-fifth for women.[53] This study suggests union effects could be larger than otherwise projected.

Although some studies find significant effects from union membership in reducing wage differences, as acknowledged by the authors of studies finding a larger union effect, it is difficult to disentangle these effects from the effects of other factors—particularly technological change—that might have independently contributed to both wage inequality and the decline in union coverage. If technological change caused a decline in employment in industries that were

Survey Data, NBER, Working Paper no. 24587, May 2018.

[50] There is an extensive literature on estimating the union wage premium. See the review and estimates in David G. Blanchflower and Alex Bryson, "What Effect Do Unions Have on Wages Now and Would Freeman and Medoff Be Surprised?" *Journal of Labor Research*, vol. XXV, no. 3 (summer, 2004), pp. 383-4123, https://perma.cc/9CJ2-PX8E; also Christopher Douglas, "Problems With Estimating the Union Wage Premium," Policy Brief, Mackinan Center for Public Policy, December 14, 2016, pp. 1-12, https://www.mackinac.org/archives/2016/s2016-08.pdf. This latter study shows estimated premiums by industry and across time. David Card, "The Effect of Unions on the Structure of Wages: A Longitudinal Analysis," *Econometrica*, vol. 34, no. 4 (July 1996), pp. 957-979, presents evidence that the union wage premium is largely for lower-wage earners.

[51] John Bound and George Johnson, "Changes in the Structure of Wages in the 1980's: An Evaluation of Alternative Explanations," *American Economic Review*, vol. 82, no. 3 (June 1992), pp. 371-392.

[52] See Thomas Lemieux, "The Changing Nature of Wage Inequality," *Journal of Population Economics*, vol. 21, no. 1 (January, 2008), pp. 21-48 for a review of studies along with some additional estimates. Henry S. Farber et al., *Unions and Inequality Over the Twentieth Century: New Evidence from Survey Data*, NBER, Working Paper no. 24587, May 2018 extended the data on union density back to the 1940s using polling data and estimated the effects of union density on both the decrease in inequality from 1940 to 1950 and the increase in inequality from 1970 to 2014. For the latter, they found union density explained part of the change in the male 90/10 ratio that ranged from 3% to 39%, depending on the particular statistical technique used. Their results indicate an effect of declining union density on inequality.

[53] Bruce Western and Jake Rosenfield, "Unions, Norms, and the Rise in U.S. Wage Inequality" *American Sociological Review*, vol. 76, no. 4 (August 2011), pp. 513-537. Jake Rosenfeld, Patric Denice and Jennifer Laird have an analysis of the effect of unions on nonunion wages through 2013, using a similar methodology and found effects but did not translate them into effects on inequality. See "Union Decline Lowers Wages of Nonunion Workers," Economic Policy Institute, August 30, 2016, at https://www.epi.org/publication/union-decline-lowers-wages-of-nonunion-workers-the-overlooked-reason-why-wages-are-stuck-and-inequality-is-growing/. See also Efraim Benmelech, Nittai Bergman, and Hyenseob Kim, "Strong Employers and Weak Employees: How Does Employer concentration Affect Wages?" March 21, 2018, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3146679, which studied the effect of local market power of employers in lowering wages and found that the effects were reduced or even eliminated with a union wage presence, depending on its strength. Their estimates suggested a change of less than one-half of 1% from the market power change, so a partial offset from a decline in unions would have been even smaller.

typically heavily unionized, then the cause is primarily technological change, not deunionization. In addition, there is some evidence that the union wage premium (i.e., the excess of earnings of unionized versus nonunionized workers) has fallen in the private sector, which could have arisen from reduced firm profits (shared with workers) due to foreign competition or from technological advances.

One policy tool that potentially affects union density as well the bargaining strength of unions is right-to-work (RTW) laws, which have been adopted in 27 states, predominantly in the southern, western, and midwestern states. Under RTW laws, workers receive the benefits of the union contract, but are not required to pay union dues. Many RTW laws have been in place for a long time, although recently, between 2012 and 2017, five states—Indiana, Michigan, Wisconsin, West Virginia, and Kentucky—adopted these laws.[54]

There is an extensive economics literature on RTW laws, although these studies are limited by an inability to control for preexisting antiunion sentiment or other unobserved variables (for example, southern states have historically had lower wages for other reasons and are more likely to have adopted RTW laws). Even so, most studies find relatively small effects on wages.[55] A study that controlled for these potentially unrelated differences across states by examining the change in wages in states that recently adopted RTW laws found results suggesting a negligible effect.[56] Overall, these studies suggest that RTW laws may reduce union membership and bargaining strength, with little effect on wages, particularly nationally. This reduction in wages was presumably spread over the income spectrum so that the effect on rising inequality is limited. Because most RTW laws (20 out of 27) were adopted prior to the increase in wage inequality, these laws would likely have played only a small role, if any, in the increase in inequality that began in the 1980s.

The Large Firm Wage Premium and Pay for Performance

Another wage-setting feature that appears to be fading is the large firm wage premium.[57] Large firms tend to pay a premium, particularly to their lower-paid workers, compared with smaller

[54] See National Conference of State Legislators, Right-To-Work Resources, http://www.ncsl.org/research/labor-and-employment/right-to-work-laws-and-bills.aspx. For a list and map of right-to-work states, see The National Right to Work Legal Defense Foundation (a group that lobbies in support of right-to-work laws), "Right to Work States," https://www.nrtw.org/right-to-work-states.

[55] See William J. Moore, "The Determinants and Effects of Right-To-Work Laws: A Review of the Recent Literature," *Journal of Labor Research*, vol. XIX, no. 3 (summer 1998), pp. 445-459; Lonnie K. Stevens, "The Effect of Endogenous Right-To-Work Laws on Business and Economic Conditions," *Review of Law and Economics*, vol. 15, no. 1 (January 2009), pp. 595-611; and Elise Gould and Will Kimball, "'Right-to-Work' States Still have Lower Wages," Economic Policy Institute, April 22, 2015, https://www.epi.org/publication/right-to-work-states-have-lower-wages/.

[56] Sudheer Chava, Andras Davis, and Alex Hsu, *The Impact of Right-to-Work Laws on Workers Wages*, Georgia Tech Scheller College of Business research paper no. 18-1, October 1, 2018, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3088612, found a 0.6% to a 1.1% decrease in wages as a result of adoption of RTW. They also found a reduction in the number of collective bargaining agreements of about half. The wage differential only affects unionized workers, who are about 15% of workers. Using that number, the effect on all wages would be, for the 0.6% estimate, 0.09%. They suggest it could be higher if union wages affect nonunion wages. The states examined in the study account for about 8.6% of the labor force (see United States Department of Labor, Bureau of Labor Statistics, Civilian Labor Force and Unemployment by State and Selected Area, Seasonally adjusted, data for December 2018, https://www.bls.gov/news.release/laus.t01.htm). A different study by Ozkan Eren and Serkan Ozbeklik, "What Do Right-To-Work Laws Do? Evidence from a Synthetic Control Method Analysis," *Journal of Policy Analysis and Management*, vol. 3, no. 1 (winter 2016), pp. 173-194, studied the recent adoption of RTW laws in Oklahoma, finding a significant drop in unionization rates but no effect on wages.

[57] The discussion in this section is based on Nicholas Bloom et al., "The Disappearing Large Firm Wage Premium?" *American Economic Association Papers and Proceedings*, vol. 108 (May, 2018), pp. 317-322; William E. Even and

firms.[58] Wages paid by a firm with 10,000 employees were estimated to be 47% higher than those of smaller firms in 1980-1984 and 20% higher in 2010-2013, although researchers estimated that about a fourth of the decline was offset by increased fringe benefits. One estimate indicates that the decline in this premium accounted for 20% of the wage inequality from 1989 to 2014 (note, however, that this period postdated the major increase in inequality in the 1980s).[59]

One cause for the decreased premium is the decline of internal labor markets (ILMs) in large firms, in which wages are assigned to jobs rather than workers (that is, pay is set for doing a particular job and not for how well that job is done).[60] ILMs were developed to curtail managerial discretion in order to reduce discrimination, favoritism, and nepotism, and were aimed at creating a sense of internal pay equity. ILMs compressed wages horizontally (across workers at similar levels) and vertically between more- and less-skilled workers, largely through raising the wage floor. The objective of ILMs was to ensure worker loyalty, reduce shirking, and discourage unionization. The decline in ILMs responded to a less certain environment where technological advancement, globalization, and deregulation increased competition. Signs of the decline in ILMs include reducing returns to tenure, more external hiring, lower tenure rates, a reduction in firm-sponsored training, and more pay-for-performance. Pay-for-performance has tended to reduce wages at the lower end and increase them at the higher end.[61]

Large firms also increased contracting with other firms and individuals to perform tasks (outsourcing), where wages can be dispersed without triggering a perception of wage inequity (this phenomenon is also referred to as the *fissured workplace*).[62] Some evidence indicates that outsourced janitors and security guards earn less than internal employees.[63] Highly skilled employees may gain, however, from outsourcing.[64]

Other factors include the decline in unionization and a change in the view of the firm as a social institution that has occurred with global competition, technological advancement, and pressures from shareholders. Ultimately, the large firm wage premium, as with the decline in union wage effects, appears to be traced back, in part, to fundamental economic changes, which increased competition through technology and globalization.

David Macpherson, "Is Bigger Still Better? The Decline of the Wage Premium at Large Firms," *Southern Economic Journal*, vol. 78, no. 4 (2012), pp. 1181-1201; and J. Adam Cobb and Ken Hou Lin, *Growing Apart: The Changing Firm-Size Wage Premium and Its Inequality Consequences*, Working Paper, https://faculty.wharton.upenn.edu/wp-content/uploads/2017/02/fswe_orgsci-v3.3.pdf.

[58] These higher wages may compensate workers if large firms are less pleasant places to work. Larger firms are more likely to have economic rents (rates of return in excess of the amount needed to attract capital) that they share with employees. Also, larger firms may have greater difficulties in monitoring workers, which leads to paying higher wages to attract and keep better workers.

[59] Nicholas Bloom et al., "The Disappearing Large Firm Wage Premium?" *American Economic Association Papers and Proceedings*, vol. 108 (May, 2018), pp. 317-322

[60] J. Adam Cobb and Ken Hou Lin, *Growing Apart: The Changing Firm-Size Wage Premium and Its Inequality Consequences*, working paper, https://faculty.wharton.upenn.edu/wp-content/uploads/2017/02/fswe_orgsci-v3.3.pdf.

[61] Ibid.

[62] Outsourcing may be through contracting another firm or acting as a self-employed independent contractor, including those who are part of the so-called gig economy, where, for example, app-based platforms provide work in bits and pieces. With modern communication, some jobs, such as those in call centers, can be outsourced abroad, and then become part of the overall trade in exports and imports (they are imported services).

[63] See Arindrajit Dube and Ethan Kaplan, "Does Outsourcing Reduce Wages in the Low-Wage Service Occupations? Evidence from Janitors and Guards," *Industrial and labor Relations Review*, vol. 63, no. 2 (January 2010), pp. 287-306.

[64] Ibid.

Immigration

Another factor sometimes suggested as contributing to slow growth in the wages of less-skilled individuals is immigration. As with trade, the effect of immigration on wages and their dispersion cannot be determined a priori. Although immigrants increase the labor supply, they also increase the demand for goods and services. Immigrants in many cases are not close substitutes for native workers (for example, for jobs that require English language skills). Also, they may provide cost savings to firms that are passed along to consumers in the form of lower prices.[65]

There is an extensive literature estimating the effect of immigration on the wage structure by comparing wage changes in geographical locations with more immigrants to those with less or comparing occupations with more entry by immigrants to those with less. After a review of the evidence derived from two dozen studies, the National Academy of Sciences concluded in 2017 that the impact of immigration on the wages of native-born workers is small, and the effects are most likely on those who have not completed high school, for whom immigrants with low skills are the closest substitutes.[66] Even in those cases, studies typically found effects on wages of less than 1% due to immigration. That study also indicates that there is little evidence of an effect on employment levels for the native born, although there might be effects for prior immigrants. Some evidence suggests that skilled immigrants have a positive wage effect on some groups of native-born workers, and immigration overall has a positive effect on long-term economic growth.

One challenge with studies of immigration is controlling for the immigrants' choice of location or occupation (although a variety of methods have been used to do so). The findings cited above are bolstered by the results of the study of a rare natural experiment, the Mariel boatlift in 1980, where immigration occurred due to an external event when Cuban leader Fidel Castro allowed Cubans a temporary freedom to emigrate. A large share of the Cubans came to Miami, increasing the labor force there by about 7%. These immigrants were largely unskilled, with a high school or less education. No statistically significant effect was found on wages and employment of non-Hispanic workers with a high school or less education.[67] The Mariel boatlift, although occurring

[65] For an accessible review of these theoretical issues as well as a brief review of the literature up to 2011, see Harry J. Holzer, *Immigration Policy and Less-Skilled Workers in the United States: Reflections on Future Directions for Reform*, Georgetown University and the Urban Institute, Migration Policy Institute, January 2011, https://www.urban.org/sites/default/files/publication/26861/1001488-Immigration-Policy-and-Less-Skilled-Workers-in-the-United-States.PDF.

[66] *The Economic and Fiscal Consequences of Immigration, Panel on the Economic and Fiscal Consequences of Immigration*, ed. Francine D. Blau and Christopher Mackie, Committee on National Statistics, Division of Behavioral and Social Sciences and Education, A Report of The National Academies of Sciences, Engineering, and Medicine (The National Academies Press, Washington, DC, 2017), https://www.nap.edu/catalog/23550/the-economic-and-fiscal-consequences-of-immigration.

[67] David Card, "The Impact of the Mariel Boatlift on the Miami Labor Market," *Industrial and Labor Relations Review*, vol. 43, no. 2 (January 1990), pp. 245-257. A current revisit of this evidence found an effect for a small subset of the group studied by Card (excluding younger and older individuals, women, and those with a high school education): George J. Borjas "The Wage Impact of the Marielitos: A Reappraisal," *ILR Review*, vol. 70, no. 5 (October 2017). Other researchers disagreed with the methodology and reconfirmed Card's findings. See Giovanni Peri and Vasil Yasenov, *The Labor Market Effects of a Refugee Wave: Applying the Synthetic Control Method to the Mariel Boatlift*, NBER, Working Paper no. 21801, June 2017, https://www.nber.org/papers/w21801 and Michael Clemens and Jennifer Hunt, *The Labor Market Effects of Refugee Waves: Reconciling Conflicting Results*, Center for Global Development, Working Paper no. 455, July 2017, also NBER, Working Paper no. 23433, July 2017, https://www.cgdev.org/publication/labor-market-effects-of-refugee-waves-reconciling-conflicting-results. See the author's response, George J. Borjas, *The Wage Impact of the Marielitos: Additional Evidence*, NBER, Working Paper no. 21850, January 2016, https://www.nber.org/papers/w21850.pdf and further discussion in Michael Clemens, "What Economists Can Learn from the Mariel Boatlift, Part Two: Answering Questions about Our Research," Center for

many years ago, remains relevant because of the large surge of immigrants relative to the size of the labor force and the rare opportunity to examine a natural experiment that automatically controls for immigrants' choices.[68]

For income distributions, the foreign born would be included in the overall statistics and could increase inequality if they tended to have lower wages. The share of the workforce that is foreign born has been increasing, from 6.7% in 1980 to 9.2% in 1990, 12.4% in 2000, 16.5% in 2010, and 17.0% in 2016. However, little of the growth appeared in the 10 years between 1980 and 1990, when the increase in the college skill premium occurred.[69] The foreign-born share, after a decline that began around 1910, began to increase about 10 years earlier than the increase in inequality observed from 1980 to the present.[70] However, because immigrants are concentrated in both the upper and lower ends of the skill distribution, including them results in a small contribution to inequality.[71]

Declining Labor Force Mobility

Another factor that may contribute to lower wages is the recently observed decrease in labor force mobility, in which data have shown declining interstate mobility and declining worker job changes.[72] Although there have always been barriers to labor mobility (both social and economic), some decline might be due to an aging workforce or industry diversification (that is, more options for employment with a number of firms as compared to those with a dominant large employer) within a locality, although evidence indicates reduced mobility has also occurred among young workers and across educational types.[73]

Some effects of reduced mobility on wages may be associated with increasing employer concentration, which increases the ability of employers to set wages if there are few competing employers, such as in a one-factory town.[74] There is some evidence of increasing employer

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Global Development, May 30, 2017, https://www.cgdev.org/blog/what-economists-can-learn-from-mariel-boatlift-part-two?callout=1-1; George J. Borjas, *Still More on Mariel: The Role of Race*, NBER, Working Paper no. 23504, June 2017, https://www.nber.org/papers/w23504; and Michael Clemens, "There's No Evidence That Immigrants Hurt Any American Workers," *Vox*, August 3, 2017, https://www.vox.com/the-big-idea/2017/6/23/15855342/immigrants-wages-trump-economics-mariel-boatlift-hispanic-cuban. If there was an effect for men without a high school education, these findings were a transitory effect that in some cases disappears by the mid-1980s and in others by 1990.

[68] The National Academy Study also discussed briefly four natural experiments in other countries, the last being German reunification, and indicated that while the results were not unanimous, they at most showed only weak evidence of an effect on the level or distribution of native wages. See *The Economic and Fiscal Consequences of Immigration, Panel on the Economic and Fiscal Consequences of Immigration*, ed. Francine D. Blau and Christopher Mackie, Committee on National Statistics, Division of Behavioral and Social Sciences and Education, A Report of The National Academies of Sciences, Engineering, and Medicine (The National Academies Press, Washington, DC, 2017), https://www.nap.edu/catalog/23550/the-economic-and-fiscal-consequences-of-immigration.

[69] See U.S. Immigration Trends, Immigration Policy Institute, https://www.migrationpolicy.org/programs/data-hub/us-immigration-trends#labor.

[70] Ibid, at https://www.migrationpolicy.org/programs/data-hub/charts/immigrant-population-over-time?width=1000&height=850&iframe=true.

[71] See David Card, "Immigration and Inequality," *American Economic Review: Papers and Proceedings*, vol. 99, May 2009, pp. 1-21, http://davidcard.berkeley.edu/papers/immigration-and-inequality.pdf.

[72] Jay Shambaugh et al., *Thirteen Facts about Wage Growth*, Brookings Institution, The Hamilton Project, September 25, 2017, https://www.brookings.edu/research/thirteen-facts-about-wage-growth/.

[73] Steven J. Davis and John Haltiwanger, *Labor Market Fluidity and Economic Performance*, NBER, Working Paper no. 20479, December 2014.

[74] The technical term for this phenomenon is *monopsony power*; issues and some options for addressing it are discussed in Alan B. Krueger and Eric A. Posner, *A Proposal for Protecting Low-Income Workers from Monopsony and*

concentration reducing the share of wages in manufacturing, but the estimated effect appears to be small.[75] Labor mobility is an important guard against the power of employers, and some recent attention has focused on certain practices of firms and governments that limit changing jobs. Effects can arise from noncompete covenants (where employees agree not to join or start a competing firm). Employers justify noncompete contracts to recover the cost of training or protect trade secrets. Noncompete contracts are more likely to be found in high-paying jobs, but some evidence suggests they are also common in low-paying jobs.[76] A related phenomenon is no-poaching contracts that ban other firms from hiring each other's employees; recent publicity and actions of state attorneys general about such practices in a number of large fast-food chain franchises has led to an agreement to end these practices.[77]

Other factors that might have contributed to reduced labor mobility are an increase in occupational licensing (although it is more likely to apply to more-educated workers) that increased barriers to entry[78] and increased constraints imposed over time by high housing prices arising from land-use regulation, especially among lower-income workers.[79] Geographic mobility may also be limited by the lack of portability of public benefits across state lines. The growth of health insurance tied to the employer may have also reduced job mobility,[80] although this effect may be reduced due to the availability of subsidized insurance under the Affordable Care Act. Barriers to moving in the state and local public sector may occur due to defined benefit pensions. Subsidies to homeowners (such as itemized tax deductions for mortgage interest and property taxes) may benefit higher and middle incomes, but homeowners are the driving force behind zoning restrictions that make housing more expensive for relocating workers.[81] The 2017 tax

Collusion, Brookings Institution, The Hamilton Project, Policy Proposal 2018-05, February 2018, http://www.hamiltonproject.org/assets/files/protecting_low_income_workers_from_monopsony_collusion_krueger_posner_pp.pdf.

[75] Efraim Benmelech, Nittai Bergman, and Hyenseob Kim, "Strong Employers and Weak Employees: How Does Employer Concentration Affect Wages?" March 21, 2018, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3146679. They studied manufacturing, and their estimates suggested an effect on wages of less than one-half of 1%. Monopsony power can increase through a decline in unionization, which the Benmelech, Bergman, and Kim study also found to be small. Yue Qiu and Aaron Sojourner "Labor Market Concentration and Labor Compensation," January 7, 2019, SSRN, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3312197, also found small effects, primarily because changes in market concentration have been small.

[76] Evan Starr, J.J Prescott, and Norman Bishara, *Noncompetes in the U.S. Labor Force*, University of Michigan Law and Economic Research Paper 18-013, September 12, 2018, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2625714.

[77] See "Chains Agree to End No-Poaching Pacts," *The Washington Post*, September 14, 2018, p. A15; Jeff Stein, "7 Fast Food Chains Agree to Drop 'No-Poaching' Clauses," *The Washington Post*, July 12, 2018, https://www.washingtonpost.com/business/2018/07/12/fast-food-chains-agree-drop-no-poaching-clauses/?utm_term=.2689835f1b6d.

[78] Morris M. Kleiner and Alan B. Krueger, "Analyzing the Extent and Influence of Occupational Licensing on the Labor Market," *Journal of Labor Economics*, vol. 31, no 2 (April 2013), pp. S173-S202. Occupational licensing can be compared to unionization in that both restrict competition. Unionization, however, tends to favor higher wages for less-educated workers, whereas occupational licensing can prevent those workers from entering as providers.

[79] Peter Ganong and Daniel W. Shoag, *Why Has Regional Income Convergence in the U.S. Declined?*, NBER, Working Paper no. 23609, July 2017. Jason Furman, "Barriers to Shared Growth: The Case of Land Use and Regulation," remarks before the Urban Institute, November 20, 2015, https://obamawhitehouse.archives.gov/sites/default/files/page/files/20151120_barriers_shared_growth_land_use_regulation_and_economic_rents.pdf.

[80] See Jane G. Gravelle and Sean Lowry, "The Affordable Care Act, Labor Supply, and Social Welfare," *National Tax Journal*, vol. 69, no. 4, December 2016, pp. 863-882, for a review of the literature on the effect of employer health insurance on job mobility.

[81] For a discussion, see David Schleicher, "Getting People Where the Jobs Are," *Democracy: A Journal of Ideas*, no. 42 (fall 2016), https://democracyjournal.org/magazine/42/getting-people-where-the-jobs-are/.

revision (P.L. 115-97) has, however, significantly reduced the scope of these tax subsidies by limiting itemized deductions and increasing the standard deduction. These changes are scheduled to expire after 2025.[82]

Policy Options

While some specific changes in policy may be suggested by the review of the causes of wage stagnation, it is not clear that simply reversing the causes would outweigh the benefits society accrues more broadly through technological advance and trade. This section discusses some policy options for those left behind by economic growth that might be considered if there is a desire to increase lower- and middle-income individuals' incomes or reduce inequality.

Numerous targeted tools exist that the federal government could use to intervene to affect the income distribution. These policies include direct taxes and transfers that increase after-tax earnings; other policies that might increase pretax wages, such as wage subsidies and the minimum wage; and a variety of policies that might potentially provide more equality, such as education and training programs and relocation assistance.[83] This discussion is intended to provide a review of a broad sweep of proposals. An in-depth analysis of each proposal is beyond the scope of this report. Many of these proposals would involve a cost in lost revenues from transfers, tax subsidies, and incentives, or from additional spending, which should be weighed against alternative uses of resources. Many of the regulatory changes discussed—relating, for example, to unions or to practices affecting labor mobility—are controversial and involve a trade-off between benefits to labor income and efficiency costs of intervening in a market economy.

Taxes and Transfers

The discussion in this report is based on pretax income, but government tax and transfer programs have affected the shape of posttax and post-transfer income. **Table 2** reports estimates that show that the after-tax distribution is more equal than the pretax distribution and that tax and means-tested transfers played a bigger role in 2016 than in 1979.

Table 2. Shares of Income Before and After Taxes and Means-Tested Transfers

	1979 Pretax and Transfers (%)	1979 Posttax and Transfers (%)	2016 Pretax and Transfers (%)	2016 Posttax and Transfers (%)
Bottom 20%	5.0	6.9	3.8	7.7
Middle 60%	49.6	53.3	43.0	46.1
Top Quintile Minus Top 1%	36.6	33.3	38.6	35.1
Top 1%	9.0	6.5	15.8	12.5

Source: CRS calculations based on data from Congressional Budget Office, at https://www.cbo.gov/publication/54646 and https://www.cbo.gov/publication/55941.

[82] See Kamila Sommer and Paul Sullivan, *The Effect of the Tax Cuts and Jobs Act on the Housing Market*, Working Paper, October 2019, http://www-personal.umich.edu/~paulsull/TCJA_Housing_Market.pdf.

[83] Many of the policy options discussed in this section are addressed in a report on meeting the automation challenge: Robert E. Litan, *Meeting the Automation Challenge to the Middle Class and the American Project*, Brookings Institution, June 21, 2018, https://www.brookings.edu/research/meeting-the-automation-challenge-to-the-middle-class-and-the-american-project/.

Note: Pretax and transfer income includes wages, fringe benefits, capital income, and non-means-tested transfers such as Social Security and Medicare. Transfer programs include cash assistance such as Temporary Assistance to Needy Families (TANF), Social Security Disability Insurance (SSDI), and Supplemental Security Income (SSI). They also include food assistance, such as the Supplemental Nutritional Assistance Program (SNAP); health programs, such as Medicaid and the Children's Health Insurance Program (CHIP); and subsidies under the Affordable Care Act. Posttax income also accounts for federal individual income, payroll, corporate income, and excise taxes.

In 2016, taxes and transfers increased the income of the bottom quintile by 70% and increased the income of the second quintile by 6%. The third, fourth, and fifth quintiles had their income decreased via net tax payments by 9%, 16%, and 27%, respectively. These transfers provided the bottom 20% with a larger share of the income total, although some of those benefits were to those on public assistance.

An increase in the income share of low-wage workers could be accomplished by a combination of reducing the taxation of lower-income workers, increasing direct transfers, and expanding refundable tax credits (which differ from ordinary transfers by being delivered through the tax system). Lower-income workers may benefit from programs providing general transfers or specific benefits, such as subsidies for food, housing, health insurance, and health care.

If using transfers to address increased inequality, one consideration is whether to tie a transfer to wages or to make it a general transfer. For example, proposals for some forms of a universal basic income would provide a grant to everyone to provide a minimum income floor that could support individuals in all circumstances. Unless the plan is phased out with income, it could become quite costly, although it could substitute for targeted transfer programs.[84] It could also be a work disincentive, particularly if phased out. Such a concern was raised in the past about a form of phased-out grant called a negative income tax where experimental studies showed work disincentives.[85]

An alternative approach is to expand the current earned income tax credit (EITC), a refundable credit based on wages that empirical studies have indicated encourages work.[86] The EITC provides a credit for a percentage of wages up to a maximum where the credit is fixed over an income rate and then phased out. There has been particular interest in the tax treatment of childless workers who are eligible for a very small EITC.[87] For 2018, families without children received an earned income credit of 7.65%, for a maximum credit of $519, which began phasing out below the poverty level. Families with one, two, or three or more children received credits of 34%, 40%, and 45%, respectively, and maximum credits of $3,461, $5,716, and $6,431, respectively.[88] Childless workers can receive the credit only between the ages of 25 and 64, although some of these workers without children are noncustodial parents.

Proposals have been made in the past to increase the credit and phaseout for childless workers, along with a variety of proposals to lower the minimum age to 21 or to increase credits in general,

[84] Kimberly Amadeom, "Universal Basic Income, Its Pros and Cons with Examples," *The Balance*, April 12, 2019, https://www.thebalance.com/universal-basic-income-4160668.

[85] Jodie T. Allen, "Negative Income Tax," *The Concise Encyclopedia of Economics*, 2002, http://www.econlib.org/library/Enc1/NegativeIncomeTax.html.

[86] The credit encourages entry into the labor force but may discourage hours of work as it phases out. Empirical evidence has suggested an effect on entry, but not any evidence that it discourages work by reducing hours. See CRS Report R44057, *The Earned Income Tax Credit (EITC): An Economic Analysis*, by Margot L. Crandall-Hollick and Joseph S. Hughes for a review of the evidence.

[87] See CRS Insight IN11134, *The Earned Income Tax Credit (EITC) for Childless Workers*, by Gene Falk et al.

[88] See CRS Report R43805, *The Earned Income Tax Credit (EITC): An Overview*, by Gene Falk and Margot L. Crandall-Hollick.

including for workers with children. The Economic Mobility Act of 2019 (Representative Richard Neal, H.R. 3300), ordered to be reported by the House Ways and Means Committee, would expand the EITC for childless workers for two years. It would double the credit rate to 15.3%, increase the maximum credit to $1,464, and increase the income level at which the credit phases out. It also would reduce the eligible age to 19 for those other than full-time students. Several other proposals have been advanced in the 116th Congress to expand the earned income credit, including the LIFT the Middle Class Act (Senator Kamala Harris, S. 4); the Rise Credit unveiled by Senator Cory Booker; the Cost-of-Living Refund Act of 2019 (Senator Sherrod Brown and Representative Ro Khanna, S. 527 and H.R. 1431); and bills to expand the earned income credit and the child credit (Senator Sherrod Brown, with numerous cosponsors, S. 1138, and Representative Daniel T. Kildee, H.R. 3157, the latter titled the Working Families Tax Relief Act).[89]

Expanding the earned income credit would cost varying amounts depending on the proposal. The current EITC costs about $70 billion a year. The expanded EITC in H.R. 3300 for childless workers (proposed for 2019 and 2020) would cost an average of $9.7 billion a year.[90] (This bill proposes some other minor changes in the EITC that are not included in this estimate.) In 2017, the Tax Policy Center estimated the cost of a variety of EITC proposals, with costs ranging from $0.5 billion per year (to double the credit for childless workers and reduce the age of eligibility to 21) to $21.6 billion for a general increase in credit rates.[91] These changes would involve a modest increase in the credit. Larger increases or expanding overall benefits could cost considerably more. The LIFT the Middle Class Act, which has been proposed previously, has been estimated to cost close to $300 billion a year. The act would allow cash transfers of up to $6,000 for married couples (phased out at $100,000) and half that amount for singles.

Earned income credits have the advantage of increasing income while encouraging work, but they reduce revenue and must be paid for by additional taxes or spending cuts, either now or in the future. If the object is to help low-income workers, these other changes should generally fall on higher-income individuals. One proposal that also contains a way to pay for the revision would replace the current EITC with a credit for 100% of the first $10,000 of earnings, paid for with an 11% value-added tax (VAT).[92]

[89] For a comparison of these proposals, see "Understanding Five Major Federal Tax Credit Proposals," Institute on Taxation and Economic Policy, May 22, 2019, https://itep.org/taxcreditproposals/.

[90] Joint Committee on Taxation, *Estimated Revenue Effects of H.R. 3300, the "Economic Mobility Act of 2019," Scheduled for Markup by the Committee on Ways and Means on June 20, 2019*, JCX-29R-19, June 18, 2019, https://www.jct.gov/publications.html?func=startdown&id=5198. The bill made some permanent changes in the EITC, most importantly eliminating the denial of credit for having investment income over $2,200.

[91] The Tax Policy Center has produced numerous estimates of specific proposals; see https://www.taxpolicycenter.org/model-estimates. For the estimates mentioned in the text, see, "Earned Income Tax Credit (EITC) Expansion Provisions, Table T17-0024," June 28, 2017, https://www.taxpolicycenter.org/model-estimates/earned-income-tax-credit-eitc-expansion-options-march-2017/options-expand-earned. A more limited number of options was estimated in 2018; see Table T18-0011, "Options to Expand the Earned Income Tax Credit," January 26, 2018, https://www.taxpolicycenter.org/model-estimates/options-expand-earned-income-tax-credit-jan-2018/t18-0011-options-expand-earned. Tax Policy Center, "Senator Harris' Lift the Middle Class Act, Table T18-0227," November 14, 2018, https://www.taxpolicycenter.org/model-estimates/senator-harris-lift-middle-class-act-november-2018/t18-0227-revenue-impact-senator.

[92] Leonard E. Burman, *A Universal EITC: Sharing the Gains from Economic Growth, Encouraging Work, and Supporting Families*, Urban Institute, May 20, 2019, https://www.urban.org/research/publication/universal-eitc-sharing-gains-economic-growth-encouraging-work-and-supporting-families.

Employer Wage Subsidies

An alternative to credits to workers is providing employer wage credits. As with the EITC, the credit would be phased out to be targeted to lower-wage workers. Employer wage subsidies as a broad alternative to the EITC have not been adopted in the past and are not among active proposals except for narrowly targeted subsidies. The current general subsidy in place is the work opportunity tax credit (WOTC) for hiring individuals from certain targeted groups who have consistently faced significant employment barriers; it is a small program costing about $1 billion a year.[93] Studies of this program have found a relatively low participation rate, although there is evidence that the credit results in higher wages for eligible employees and has expanded employment opportunities for long-term welfare recipients and disabled veterans.[94] Some reasons for the low participation rate (firms may lack information or interest in a government program, or encounter high transaction costs or difficulties in identifying qualified workers) might not apply to a general wage subsidy, which could be more effective.[95] Also, geographically targeted credits (discussed subsequently) and incremental tax credits (for increased hiring) have been used as a stimulus in past recessions, with mixed evidence on their effectiveness.[96]

An employer credit differs from an employee credit because the former cannot be based on family characteristics (including total family income). Also, in cases where the employer is paying the minimum wage and would continue to do so with the employer credit, there is no effect on wages, although the employer may be willing to hire employees who would not be hired without the subsidy.

Employer subsidies have been confined to narrowly focused programs that are unlikely to have much effect on the broad issue of wage inequality. There do not appear to be any proposals for a general employer wage credit that would phase out with income. Both existing policies and proposed ones have indicated a preference for the employee-side credit (i.e., the EITC) rather than the employer credit as a generally available benefit for low-income workers, perhaps due to the desire to means test based on family income.

Increasing the Minimum Wage

An increase in the minimum wage would increase after-tax earnings, as a tax credit for working like the EITC does, but with some important differences. There is no explicit cost to the government (other than slightly higher wages for a small number of government employees); rather, the higher minimum wage benefits lower-wage workers and the cost is spread to other consumers through higher prices and reduced business income. Using a higher minimum wage to provide income to less-skilled workers can also cause unemployment. The trade-off depends on

[93] See CRS Report R43729, *The Work Opportunity Tax Credit*, by Benjamin Collins and Sarah A. Donovan.

[94] The WOTC is described and evidence on its effectiveness reviewed in United States Senate Committee on the Budget, *Tax Expenditures: Compendium of Background Material on Individual Provisions*, S. Prt. 115-281, 115th Cong., 2nd sess., December 2018, pp. 777-786. The compendium is at https://www.govinfo.gov/content/pkg/CPRT-115SPRT34119/pdf/CPRT-115SPRT34119.pdf. For data on usage, see CRS Report R43729, *The Work Opportunity Tax Credit*, by Benjamin Collins and Sarah A. Donovan.

[95] See Katherine English, "Conflicting Approaches to Addressing Ex-Offender Unemployment: The Work Opportunity Tax Credit and Ban the Box," *Indiana Law Journal*, vol. 93, no. 2 (spring 2018), pp. 512-532, for a review of the evidence.

[96] This evidence is reviewed in archived CRS Report R41034, *Business Investment and Employment Tax Incentives to Stimulate the Economy*, by Thomas L. Hungerford and Jane G. Gravelle, available to congressional clients upon request.

how responsive employer hiring is to increases in the required wage. Unlike the minimum wage, the EITC can also be based on family income and need (although this flexibility in the EITC has resulted in minimal benefits for childless workers). A generally higher minimum wage would provide benefits to teenagers and other younger individuals (such as college students) who may still be receiving support from parents or other family members and may come from higher-income families.

A 2019 CBO study estimated the effects of raising the minimum wage to $15, $12, and $10.[97] For the $15 option, the minimum wage would be indexed and exemptions for tipped, teenage, and disabled employees eliminated. While indicating that effects on employment are highly uncertain, CBO's median estimates for 2025 are reduced employment of 1.3 million for the $15 level, 0.3 million for the $12 level, and a negligible effect for the $10 level. Families below the poverty level would have incomes increased (in 2018 dollars) by $7.7 billion (a 5.3% increase in income), $2.3 billion (a 1.6% increase in income), and $0.4 billion (a 0.3% increase in income) respectively. Families with incomes between one and three times the poverty level would have incomes increased by $14.2 billion (a 3.5% increase in income), $2.3 billion (a 0.6% increase in income, and $0.3 billion (a negligible percentage increase in income), respectively. Higher-income families would have income reduced because of increased price levels. CBO's findings that a relatively small number of workers would be unemployed, especially for the smaller increases in the minimum wage, are based on its reading of the literature, although arguments have been made that the employment effects should be lower.[98] Conflicting evidence exists on the minimum wage's effect on employment, with some studies finding no effect and others finding reductions in jobs or hours.[99] If the minimum wage causes enough unemployment or lower hours, raising it has the potential to reduce earnings at the bottom of the income distribution, even though it increases earnings at the bottom of the wage distribution for those who remain employed.

Effects found in prior research may be smaller than they were in the past. A number of states and localities have minimum wages higher than the federal minimum wage, and some have been raising them recently. In 2019, 13 states and the District of Columbia raised their minimum wages, with some of these increases stemming from ballot initiatives rather than state legislative actions. In addition, 18 states increased their minimum wages based on the cost of living. In 2020,

[97] U.S. Congressional Budget Office, *The Effects on Employment and Family Income of Increasing the Federal Minimum Wage*, July 2019, https://www.cbo.gov/system/files/2019-07/CBO-55410-MinimumWage2019.pdf.

[98] A prior study in 2014 that estimated the effects of a $10.10 minim wage suggested the effects would be half as large. See Jared Bernstein, "The Minimum Wage Increase and the CBO's Job Loss Estimate," *On the Economy* (blog), February 24, 2014, http://jaredbernsteinblog.com/the-minimum-wage-increase-and-the-cbos-job-loss-estimate/?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+JaredBernstein+%28Jared+Bernstein%29. See also Michael Reich, "A Minimum-Wage Boost Won't Kill Jobs," *Politico*, February 21, 2014, https://www.politico.com/magazine/story/2014/02/minimum-wage-boost-wont-kill-jobs-103769#.UwpT89GPLrc. The 2014 CBO study is CBO, *The Effects of a Minimum-Wage Increase on Employment and Family Income*, February 2014, https://www.cbo.gov/publication/44995.

[99] Some of this literature is reviewed briefly in a recent study by Kevin Rinz and John Voorheis, who note some of the data challenges but use a new linked data set to study the issue. They find that raising the minimum wage increases earnings growth at the bottom of the distribution and that those effects persist and grow over time. See Kevin Rinz and John Voorheis, *The Distributional Effects of Minimum Wages: Evidence from Linked Survey and Administrative Data*, U.S. Census Bureau, Center for Administrative Research Records and Applications, Working Paper no. 2018-02, March 2018, https://www.census.gov/content/dam/Census/library/working-papers/2018/adrm/carra-wp-2018-02.pdf. Doruk Cengiz, et al., *The Effect of Minimum Wages on Low-Wage Jobs*, NBER, Working Paper no. 25434, January 2019 (accepted for publication in the *Quarterly Journal of Economics*, May 2019), suggests that a limited increase in the minimum wage would have no detectible effects on employment.

14 states increased their minimum wages due to previously approved legislative actions or ballot initiatives and 7 states increased levels based on the cost of living.[100]

A Federal Job Guarantee

Another proposal, which has its roots further back in history, is a guaranteed job at a specified wage. Senator Kirsten Gillibrand has expressed some interest in such a plan.[101] Senator Cory Booker has proposed a pilot program in high-need communities (S. 2457).[102] Senator Bernie Sanders has also proposed a federal job guarantee.[103]

A plan called the National Investment Employment Corps, administered by state and local governments with federal grants, would provide universal job coverage for all adult Americans with a minimum annual wage of $24,600 for full-time work and a minimum hourly wage of $11.83, indexed for inflation.[104] The jobs would also include fringe benefits. The proponents contend that this program would set a floor in the labor market similar to a minimum wage and would provide jobs that address community needs, such as infrastructure, education, child and elder care, and other needs. They argue that the proposal would both end involuntary unemployment and eliminate working poverty. Another plan, the Marshall Plan for America, would target those without college degrees and pay $15 an hour, possibly including attendance at training programs.[105] These types of plans are estimated to be costly, with two estimates of the more general plan at $450 billion to $670 billion per year, although some behavioral responses and declines in other transfers might reduce the cost.[106]

Aside from how to pay for a potentially large-scale program, many challenges may arise. Because there is cyclical fluctuation in unemployment, the size of the guaranteed job workforce would

[100] "State Minimum Wages, 2020," National Conference of State Legislatures, January 6, 2020. For a discussion of ballot initiatives, see Heather Long, "As 19 States Raise Minimum Wage, Progressives Eye More," *The Washington Post*, January 1, 2019, p. A15. State minimum wages for 2019 can be found at the Department of Labor Wage and Hour Division, https://www.dol.gov/whd/minwage/mw-consolidated.htm. Some historical measures of state minimum wage rates and information on local rates can be found at the Labor Law Center, https://www.laborlawcenter.com/state-minimum-wage-rates/.

[101] See Sean McElwee, Colin McAuliffe, and Jon Green, "A Federal Jobs Guarantee," *The Nation*, March 20, 2018, https://www.thenation.com/article/why-democrats-should-embrace-a-federal-jobs-guarantee/.

[102] "New Booker Bill Seeks to Establish Model for Federal Jobs Guarantee Program in High-Unemployment Communities," press release, April 20, 2018, https://www.booker.senate.gov/?p=press_release&id=778.

[103] See Bernie Sanders presidential campaign website, page "Jobs and an Economy for All," https://berniesanders.com/issues/jobs-for-all/.

[104] Mark Paul, William Darity, and Darrick Hamilton, *The Federal Job Guarantee—A Policy to Achieve Permanent Full Employment*, Center on Budget and Policy Priorities, March 9, 2018, https://www.cbpp.org/research/full-employment/the-federal-job-guarantee-a-policy-to-achieve-permanent-full-employment. This study was commissioned by the Center on Budget and Policy Priorities (CBPP), but the views in the report do not necessarily reflect the view of the CBPP. The plan would also have some wage variation to reflect time in the program, previous experience, education, and region. The authors note that a permanent federal employment plan was proposed in the past (beginning with the Franklin Roosevelt Administration) and has been adopted by other countries (e.g., India and Argentina).

[105] See Neera Tanden et al., *Toward a Marshall Plan for America*, Center for American Progress, May 16, 2017; https://www.americanprogress.org/issues/economy/reports/2017/05/16/432499/toward-marshall-plan-america/. The plan is discussed in David Dayen, "It's Time for the Government to Give Everyone a Job," *The Nation*, May 19, 2017, https://www.thenation.com/article/its-time-for-the-government-to-give-everyone-a-job/.

[106] Greg Ip, "The Problem with a Federal Jobs Guarantee (Hint: It's Not the Price Tag)," *The Wall Street Journal*, May 2, 2018, https://www.wsj.com/articles/the-problem-with-a-federal-jobs-guarantee-hint-its-not-the-price-tag-1525267192; Jeff Spross, "You're Hired," *Democracy: A Journal of Ideas*, no. 44 (spring 2017), https://democracyjournal.org/magazine/44/youre-hired/.

fluctuate, making a match between workers and needed tasks difficult. Unlike the market economy that determines jobs and products based on consumer demand, the assignment of work and output would have to be determined by fiat. When goods provided by the government are not based on the needs for collective goods or goods with public spillovers (such as a military force or highways), misallocation of resources may be more likely to occur. Some resources would be diverted from the private sector with a higher effective minimum wage through the government job alternative. There are also issues as to whether jobs would be established to match needs in local communities, and there could be considerable challenges with programs in sparsely populated rural areas. There might be a need for background checks and proper job placement because some applicants may not be suitable for certain jobs (such as home health care or child care). There are issues about how to treat workers who violate the terms of employment (such as persistent tardiness). Finally, jobs may need capital inputs (e.g., construction equipment) and supplies, and workers in rural areas may have problems finding transportation.

Wage Insurance

Wage insurance policies were proposed during the slowing of the economy in 2001 to relieve worker anxiety, counter the drop in earnings (estimated at an average of 16% for manufacturing workers), and encourage rapid reemployment.[107] Wage insurance provides a payment for a period of time for part of lost wages when workers become involuntarily unemployed. Wage insurance was subsequently added to the Trade Adjustment Assistance program that currently applies to workers who are certified as having lost their jobs because of trade.[108]

This policy idea was mostly dormant until President Obama proposed wage insurance in his final State of the Union message in 2016.[109] The proposal would apply to those making less than $50,000 and employed for three years: it would replace half of lost wages up to $10,000 for up to two years. CBO estimated a $3 billion annual cost.[110]

Canada had a temporary wage insurance pilot program, which was more generous than the Obama proposal, and some states have had wage bonuses for becoming reemployed. Some evidence suggested that subsidized workers reentered the workforce about 4% faster than those not subsidized.[111] Concerns have been raised about eligibility and targeting in order to avoid

[107] Lori G. Kletzer and Robert E. Litan, "A Prescription to Relieve Worker Anxiety," Peterson Institute for International Economics, Policy Brief 01-2, March 2001, https://piie.com/publications/policy-briefs/prescription-relieve-worker-anxiety. Their wage insurance would apply to workers who had been on a job for two years and were involuntarily unemployed and would pay half the loss in wages for two years, with a $10,000 cap. Part of the authors' objective was also to reduce worker opposition to trade liberalization by addressing the dislocation that can occur from trade.

[108] See CRS Report R44153, *Trade Adjustment Assistance for Workers and the TAA Reauthorization Act of 2015*, by Benjamin Collins for a discussion of the trade adjustment assistance program. This program is funded at $0.8 billion and provides other benefits.

[109] Ketzler and Litan discussed the proposal again. See Lori Ketzler, "Why the U.S. Needs Wage Insurance," *Harvard Business Review*, January 25, 2016, https://hbr.org/2016/01/why-the-u-s-needs-wage-insurance, and Robert Litan, *Wage Insurance: A Potentially Bipartisan Way to Help the Middle Class*, Brookings Institution, June 24, 2016, https://www.brookings.edu/wp-content/uploads/2016/06/24_wage_insurance_litan.pdf.

[110] U.S. Congressional Budget Office, *An Analysis of the President's 2017 Budget*, March 29, 2016, https://www.cbo.gov/publication/51383.

[111] This discussion reflects Christopher T. King and Kristie Tingle, *Wage Insurance and Wage Supplements: Review of the Literature and Supporting Data, A Report to the United States Department of Labor*, Ray Marshall Center for the Study of Human Resources, September 2015, http://sites.utexas.edu/raymarshallcenter/files/2016/01/Wage-Insurance-and-Wage-Supplements_Review-of-the-Literature-and-Supporting-Data.pdf.

providing incentives for workers to conduct poorer job searches and attracting workers with less stable work histories and employers that provide less stable unemployment. There is a potential benefit of the employer not being aware of the supplement (which is also the case for the EITC), thus reducing the potential stigma that some evidence suggests makes employers less likely to hire those with hiring vouchers. This lack of knowledge would also make it more difficult for the employer to offer reduced wages to those eligible for the supplement.

Wage insurance would not help those permanently at the bottom of the income distribution but would help workers who lost their jobs to technological change or other factors adjust to new employment.

Enhancing Skill Acquirement

The government (at all levels) has a major role in providing for formal education through public schooling and subsidized state colleges and universities. The federal government provides grants (including means-tested Pell grants for students), student loans, and tax credits (which are of limited benefit to lower-income individuals because they are not fully refundable).[112] Pell grants are available for certificates and occupational degrees, although they may not be available for short-term training because they are prorated for full versus part time and duration. Pell Grants are authorized at $22.5 billion, and tax credits cost $19.1 billion. Career technical and education services at the secondary and postsecondary levels are supported by the Carl D. Perkins Career and Technical Education Act of 2006 (P.L. 109-270), which is funded at slightly over $1 billion.[113]

The Workforce Innovation and Opportunity Act (WIOA) provides employment and training for low-income and skills-deficient job seekers and workers laid off from their jobs.[114] The workforce development programs include state formula grant programs of $3.3 billion, the Jobs Corps at $2.0 billion, and some national programs at $0.3 billion. For adult education and literacy, the amount is $0.7 billion. For rehabilitation for individuals with disabilities, $3.7 billion is available, primarily through $3.3 billion in rehabilitation grants to the states.

Proposals to increase skill acquisition when young and support lifetime training to respond to changes in labor demands include expanding current higher education grant programs and making the tax credits refundable, or providing free education at community colleges or public universities. Some plans are aimed at improving the effectiveness of community colleges, where too little guidance may cause students to waste time and money, increasing the dropout rate and making the transfer of credits to four-year colleges more difficult.[115]

Another option is to expand WIOA programs. The evidence on the predecessor of WIOA, the Workforce Investment Act, indicated that the adult programs (whether they included training or

[112] See CRS Report R43351, *The Higher Education Act (HEA): A Primer*, by Alexandra Hegji; CRS Report R41967, *Higher Education Tax Benefits: Brief Overview and Budgetary Effects*, by Margot L. Crandall-Hollick; and CRS Report R42561, *The American Opportunity Tax Credit: Overview, Analysis, and Policy Options*, by Margot L. Crandall-Hollick.

[113] See CRS Report R44542, *Carl D. Perkins Career and Technical Education Act of 2006: An Overview*, by Boris Granovskiy.

[114] See CRS Report R44252, *The Workforce Innovation and Opportunity Act and the One-Stop Delivery System*, by David H. Bradley.

[115] Edward Rodrigue and Richard V. Reeves, "Memo to Hillary Clinton: More choice can thwart community college students," Brookings Institution, *Social Mobility Memos*, August 12, 2015, https://www.brookings.edu/blog/social-mobility-memos/2015/08/12/memo-to-hillary-clinton-more-choice-can-thwart-community-college-students/.

not) were relatively successful in improving labor outcomes (higher wages and jobs), but not for dislocated workers. The Jobs Corp (a residential program for youths) also appeared to be relatively successful, although the Trade Adjustment Assistance program was relatively ineffective. Note that the size of spending in the United States on these programs is small (0.04% of GDP) compared to many other countries, and evidence is limited both due to data challenges and lack of interest by researchers given the program's small size.[116] WIOA spending might be more effective if training were based on sectors and aimed at acquiring skills that could be used by multiple local employers rather than one company; if it were planned with both labor and management input; and if funding for labor management workforce intermediaries were provided.[117]

Apprenticeships are a proposal for those who do not wish to go to college or do not think they would succeed, largely for young entrants to the labor force. Employers may be reluctant to provide these programs because, once trained, apprentices may leave for other jobs. Apprenticeships could be funded through grants or tax credits for employers, or through funding training institutions, such as community colleges. S. 393 (Senator Tim Scott and Senator Cory Booker), introduced in the 115th Congress and known as the LEAP Act, would have provided a credit for employers participating in qualified apprenticeship programs. The LEAP Act was introduced in the 116th Congress by Representative Frederica Wilson (H.R. 1660), Representative Rodney Davis (H.R. 1774), and Representative Tom Reed (H.R. 4238). Although grants are more cumbersome to administer, tax credits provide an incentive to classify all new hires as apprenticeships.[118] Grants could be used to target apprenticeships to high-growth industries.[119] Proposals have also been made for a general worker training tax credit for employers that would be allowed for training that led to an industry-recognized certification or training programs authorized under WIOA.[120] President Trump has also proposed an expanded apprenticeship program that would include more industry involvement, although some have argued this proposal would weaken apprenticeships.[121]

Other options include tax subsidies and matching funds for lifetime training accounts or penalty-free withdrawals from retirement accounts,[122] although most lower- and middle-income

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[116] For a review, see Burt S. Barnow and Jeffrey Smith, "Employment and Training Programs," in *Economics of Means-Tested Transfer Programs in the United States*, Volume 2, ed. Robert Moffitt, (Chicago: University of Chicago Press, 2016). This chapter is also published as NBER Working Paper no. 21659, October 2015.

[117] Angela Hanks and David Madland, *Better Training and Better Jobs*, Center for American Progress, February 22, 2018, https://www.americanprogress.org/issues/economy/reports/2018/02/22/447115/better-training-better-jobs/.

[118] There is a small existing apprenticeship program; see CRS Report R45171, *Registered Apprenticeship: Federal Role and Recent Federal Efforts*, by Benjamin Collins. For a discussion of the need for expansion see Robert Lerman, *Expanding Apprenticeship Opportunities in the United States*, June 19, 2014, Brookings Institution, https://www.brookings.edu/research/expanding-apprenticeship-opportunities-in-the-united-states/.

[119] Ben Gitis, Chan Miller, and Rahee Jung, *Earn and Learn: A Review of a Proposal to Expand Apprenticeships in High-Growth Industries*, American Action Forum, February 5, 2018, https://www.americanactionforum.org/research/earn-learn-review-proposal-expand-apprenticeships-high-growth-industries/.

[120] Alastair Fitzpayne and Ethan Pollack, *Promoting Employer Investments in the Workforce*, The Aspen Institute, August 2018, https://www.aspeninstitute.org/publications/worker-training-tax-credit-update-august-2018/.

[121] See Presidential Executive Order Expanding Apprenticeships in America, June 15, 2017, at https://www.whitehouse.gov/presidential-actions/3245/. See also Paul Fain, "New Approach to Apprenticeship," Inside Higher Ed, May 11, 2018, https://www.insidehighered.com/news/2018/05/11/federal-panels-take-industry-recognized-apprenticeships, and Angela Hanks, "Trump Administration Advancing Proposal to Weaken Apprenticeships," Center for Law And Social Policy, November 15, 2018, https://www.clasp.org/blog/trump-administration-advancing-proposal-weaken-apprenticeships.

[122] These proposals are discussed by Robert E. Litan, *Meeting the Automation Challenge to the Middle Class and the*

individuals usually do not have much in savings, retirement accounts, or, in many cases, pensions. S. 379 and S. 275 (Senator Amy Klobuchar, 116th Congress) would allow tax-free distributions from tax-advantaged education savings plans to be used for expenses for various training and technical education. Uncertainty about work schedules is a barrier to training, especially for workers in lower-paying service-sector jobs. Senator Warren previously sponsored legislation that, among other things, would have required employers to give two weeks' notice of work schedules.[123]

Strengthening Unions

It is not clear whether the decline in union membership was a reason for growing income inequality or whether the decline was itself the consequence of other factors, such as technological advancement and greater international competition. In addition, while unions act as a counterweight to the market power of employers and aid in workers sharing firms' extra profits, they can also create economic distortions by setting wages in a way that differs from how they are normally set in markets.[124]

There is, however, some evidence that unions increase blue-collar workers' wages, and increasing the size and effectiveness of unions is among proposals that could be considered. A package of these proposals has been advanced, including increasing penalties for employers who violate labor laws, prohibiting the hiring of replacement workers in a strike, establishing a mandatory arbitration process, eliminating right-to-work laws, and giving all public-sector employees the rights to organize and belong to unions.[125]

American Project, Brookings Institution, June 21, 2018, https://www.brookings.edu/research/meeting-the-automation-challenge-to-the-middle-class-and-the-american-project/, and Edward Alden and Robert E. Litan, "A Bipartisan Twenty-First Century New Deal," *Renewing America* (blog), Council on Foreign Relations, May 31, 2017, https://www.cfr.org/blog/bipartisan-twenty-first-century-new-deal.

[123] Robert E. Litan, *Meeting the Automation Challenge to the Middle Class and the American Project*, Brookings Institution, June 21, 2018, https://www.brookings.edu/research/meeting-the-automation-challenge-to-the-middle-class-and-the-american-project/. Senator Warren's proposal is the Schedules That Work Act, S. 1386, 115th Congress.

[124] This possibility has long been discussed in the economics literature. See, for example, Robert H. DeFina, "Unions, Relative Wages, and Economic Efficiency," *Journal of Labor Economics*, vol. 1, no. 4 (October 1993), pp. 408-429. Peter Kuhn, surveying evidence on unions in North America in 1998, found that they raised wages and reduced wage dispersion for their members, and reduced profits, but had little effect on employment or nonunion wages. Efficiency losses were small and effects on productivity unclear. See Peter Kuhn, "Unions and the Economy: What We Know; What We Should Know," *Canadian Journal of Economics*, vol. 31, no. 5 (November 1998), pp. 1033-1056. For a review of effects on productivity, growth, and profits, see Barry T. Hirsch, "What Do Unions Do for Economic Performance?" *Journal of Labor Research*, vol. 25, no. 3 (spring 2004), pp. 415-453. http://www2.gsu.edu/~ecobth/Hirsch_JrLabRes2004_Union%20Performance.pdf. Unions also affect employee-management relations outside of setting compensation, although the development of laws protecting working conditions may make this role less important. See John Godard and Carola Frege, "Labor Unions, Alternative Forms of Representation, and the Exercise of Authority Relations in U.S. Workplaces," *IRL Review*, vol. 66, no. 1 (January 2013), pp. 142-168.

[125] These provisions are in the "Better Deal" proposal. For an overview of all proposals in the Better Deal, see https://abetterdeal.democraticleader.gov/ and https://www.democrats.senate.gov/abetterdeal/higher-wages-and-better-jobs. See also Tara Golshan, "Democrats' new 'Better Deal for Our Democracy,' explained," Vox, May 21, 2018, and David Weigel, "Democrats Add to 'Better Deal' Platform with a Slew of Pro-Labor-Union Ideas," *The Washington Post*, November 1, 2017. See also the discussion of The Worker's Freedom to Negotiate Act, Fact Sheet at https://www.democrats.senate.gov/imo/media/doc/Workers%20Freedom%20to%20Negotiate%20-%20Fact%20Sheet.pdf.

There is not much evidence about how successful these changes would be in increasing union membership. As noted in the discussion of right-to-work laws, there is some evidence that such laws reduce the bargaining strength of unions and lead to reduced wages.

Another proposal does not involve government policy but would need to be undertaken by unions and union organizers: to organize multiemployer regional or local unions rather than company-wide unions. Company-wide unions face greater difficulties, as large employers are increasingly dispersed over a broad geographic area.[126]

Encouraging Labor Mobility

Proposals to address the decline in labor mobility include increasing scrutiny of mergers for harmful labor market effects, banning noncompete agreements for low-wage workers, and banning no-poaching agreements.[127] Some actions have already been taken on no-poaching by the Federal Trade Commission and the Department of Justice, in issuing regulations and pursuing cases under antitrust laws. Senators Cory Booker and Elizabeth Warren have proposed to outlaw no-poaching clauses in franchise agreements (S. 2215).[128]

Other actions to encourage mobility include reducing tax subsidies for home ownership, as homeownership is a barrier to mobility itself as well as a driver of zoning restrictions (note that reductions were enacted on a temporary basis in the 2017 tax revision); providing greater enforcement against restrictive zoning that harms minorities; revising antitrust law to address state-sanctioned occupational licensing organizations; harmonizing eligibility rules for federal transfers; providing a tax subsidy for moving (a deduction for moving expenses was temporarily eliminated by the 2017 tax revision); providing cash subsidies to cities or states that relax zoning or make occupational licenses transferable across state lines; and providing penalties (e.g., disallowing the mortgage-interest deduction) in localities that do not permit enough housing construction.[129]

There are arguments for policies that discourage labor mobility, and land-use restrictions may benefit local residents even if they ultimately harm overall growth. Homeownership has benefits that may offset its negative impact on mobility. Employers also would argue that noncompete and no-poaching clauses are needed to allow a return on the cost of training and to protect trade secrets (although some question how important these concerns are for low-wage employees).

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[126] Noah Smith, "Stronger Labor Unions Could Do a Lot of Good," Bloomberg Opinion, December 6, 2017, https://www.bloomberg.com/opinion/articles/2017-12-06/stronger-labor-unions-could-do-a-lot-of-good.

[127] Alan B. Krueger and Eric A. Posner, *A Proposal for Protecting Low-Income Workers from Monopsony and Collusion*, Brookings Institution, The Hamilton Project, Policy Proposal 2018-05, February 2018, http://www.hamiltonproject.org/assets/files/protecting_low_income_workers_from_monopsony_collusion_krueger_posner_pp.pdf.

[128] For discussions of these and other actions relating to no-poaching legislative and regulatory proposals and cases, see Jeff Stein, "Booker, Warren Take Aim at Chains That Use 'Non-poaching' Deals to Keep Workers Stuck at One Store," *The Washington Post*, March 1, 2018, https://www.washingtonpost.com/news/wonk/wp/2018/03/01/booker-warren-take-aim-at-businesses-that-promise-not-to-poach-each-others-workers/?utm_term=.d1bb2c758517; Benjamin Dryden, Elizabeth Haas, and Jesse Beringer, "Antitrust Scrutiny of No-Poaching Agreements Continues to Pick Up Steam," Foley and Lardner LLP, September 2018, https://www.laboremploymentperspectives.com/2018/09/24/antitrust-scrutiny-of-no-poaching-agreements-continues-to-pick-up-steam/; and Jeff Stein, "7 Fast Food Chains Agree to Drop No=Poaching Clauses," *The Washington Post*, July 12, 2018, https://www.washingtonpost.com/business/2018/07/12/fast-food-chains-agree-drop-no-poaching-clauses/?utm_term=.23c2207a637f.

[129] David Schleicher, "Getting People Where the Jobs Are," *Democracy: A Journal of Ideas*, no. 42 (fall 2016), https://democracyjournal.org/magazine/42/getting-people-where-the-jobs-are/.

Geographic Targeting

An alternative to encouraging geographic labor mobility would be policies to increase economic activities in areas (often smaller cities and rural areas, but also larger cities) that face chronic unemployment. Geographically targeted subsidies have existed for many years in the income tax code, beginning with enterprise zones and currently including empowerment zones, the new markets tax credit, and the recently enacted opportunity zones. These programs are aimed at helping workers in distressed areas. These geographically targeted subsidies have generally not been found to be effective in encouraging jobs because they are of small size, they are sometimes limited to local employers, and most have encouraged investment rather than employment (investment in physical capital can take place with little additional employment or even displace labor).[130]

Three types of policies directed to high-unemployment areas might be considered: wage subsidies, training funds, and government infrastructure or facilities investment.[131] Of these, location of public activity (e.g., military bases and veteran's facilities) and infrastructure facilities are perhaps most problematic. Infrastructure needs are determined by the population, and federal workers are a small part of the labor force. Imposing geographical restrictions could undermine other objectives as well. Another option is to adopt a guaranteed jobs programs in high-unemployment areas, such as in the pilot proposal advanced by Senator Cory Booker (S. 2457).

A Note on General Economic Growth

Some propose to benefit low-income individuals by taking actions to generate overall economic growth, which often involves tax subsidies to investment. There are issues with this approach that suggest a consideration of the more targeted proposals. The first is that the past 40 years have shown that some groups can be left behind with economic growth that arises from technological advancement. The second is that it is difficult to formulate policies to stimulate economic growth using common approaches such as lowering marginal tax rates. Evidence suggests that tax cuts may not be particularly successful because supply responses are relatively inelastic.[132] Additionally, a tax cut that is not financed by spending cuts adds to the deficit, which eventually crowds out private investment.

Conclusion

Wages at the bottom and, to a lesser extent, the middle of the wage distribution have grown slowly relative to those at the high end over the past 40 years, and this slow wage growth, along with a decline in the labor share of income, has contributed to a growing inequality of income.

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[130] For a discussion, including a review of studies, see entries for the empowerment zone incentives (p. 585) and new markets tax credit (p. 595) in the Tax Expenditures Compendium, in United States Senate Committee on the Budget, *Tax Expenditures: Compendium of Background Material on Individual Provisions*, S. Prt. 115-281, 115th Cong., 2nd sess., December 2018, pp. 777-786. The compendium is at https://www.govinfo.gov/content/pkg/CPRT-115SPRT34119/pdf/CPRT-115SPRT34119.pdf. For a discussion of opportunity zones see CRS Report R45152, *Tax Incentives for Opportunity Zones: In Brief*, by Sean Lowry and Donald J. Marples.

[131] These ideas are discussed in Benjamin Austin, Edward Glaeser, and Lawrence Summers, "Saving the Heartland: Place-Based Policies in 21st Century America," Brookings Institution, *Brookings Papers on Economic Activity*, Conference Draft from March 8-9, 2018, at https://www.brookings.edu/wp-content/uploads/2018/03/3_austinetal.pdf.

[132] CRS Report R42111, *Tax Rates and Economic Growth*, by Jane G. Gravelle and Donald J. Marples. Also see CRS Report R43381, *Dynamic Scoring for Tax Legislation: A Review of Models*, by Jane G. Gravelle, for a survey of the empirical evidence on savings and labor supply responses.

The evidence on the causes of wage stagnation for lower-wage workers points to technological advancement as the most direct primary cause. Globalization appeared to have smaller effects than technological advancement, although it increased overall income inequality by increasing incomes at the top. The decline in wage-setting institutions had relatively small effects and some of these effects can be traced to an indirect effect of technological change that affected unions and the large firm wage premium. Immigration changes appeared to have little or no effect. A decline in labor mobility appeared to make a small contribution.

A variety of policy options have different promises and drawbacks. Perhaps the most successful policies, at least based on experience, are transfer programs, including the earned income credit, which is targeted to low-income wage earners. These programs involve potentially large costs and may require raising taxes on higher-income individuals. There is only limited evidence of the effects of a universal basic income and it would be costly if not phased out. Past evidence on a phased-out program found some negative effects on work effort. Experience with the minimum wage, at least at prior levels, has indicated an ability to transfer income with relatively small effects on unemployment, although the effectiveness of increases in the federal minimum wage is limited by widespread state adoption of higher minimum wage rates. Some policies, such as employer wage subsidies, worker training and employment programs, and geographic incentives, have had a mixed or relatively poor track record. Other proposals have been largely untried (such as a federal job guarantee and wage insurance); a job guarantee could cost several hundred billion dollars a year, according to estimates, and present some potentially problematic effects on the private economy, as well as difficulties in administering the program. Some of the more limited proposals may be successful but have small effects. Policies to benefit lower-income individuals through tax cuts to stimulate economic growth have not appeared to be particularly successful at addressing slow wage growth for low-wage workers.

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