



# SKILL FORMATION AND THE MINIMUM WAGE

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## INTRODUCTION

For most, the American Dream is the ability to succeed through hard work and determination, regardless of family background or socio-economic status. This concept is rather unique and has served as an inspirational call and unspoken promise throughout the history of the United States.

One of the primary metrics by which researchers assess the “health” of the American Dream is economic mobility. There are several ways to measure economic mobility, but one of the most commonly discussed measures is that of absolute intergenerational economic mobility—how do children’s (inflation adjusted) earnings compare with their parents’ income at the same age. The recent economic literature on this topic is less than encouraging.

In a landmark study on economic mobility, a team of researchers working at the Equality of Opportunity Project led by Raj Chetty found that 90 percent of chil-

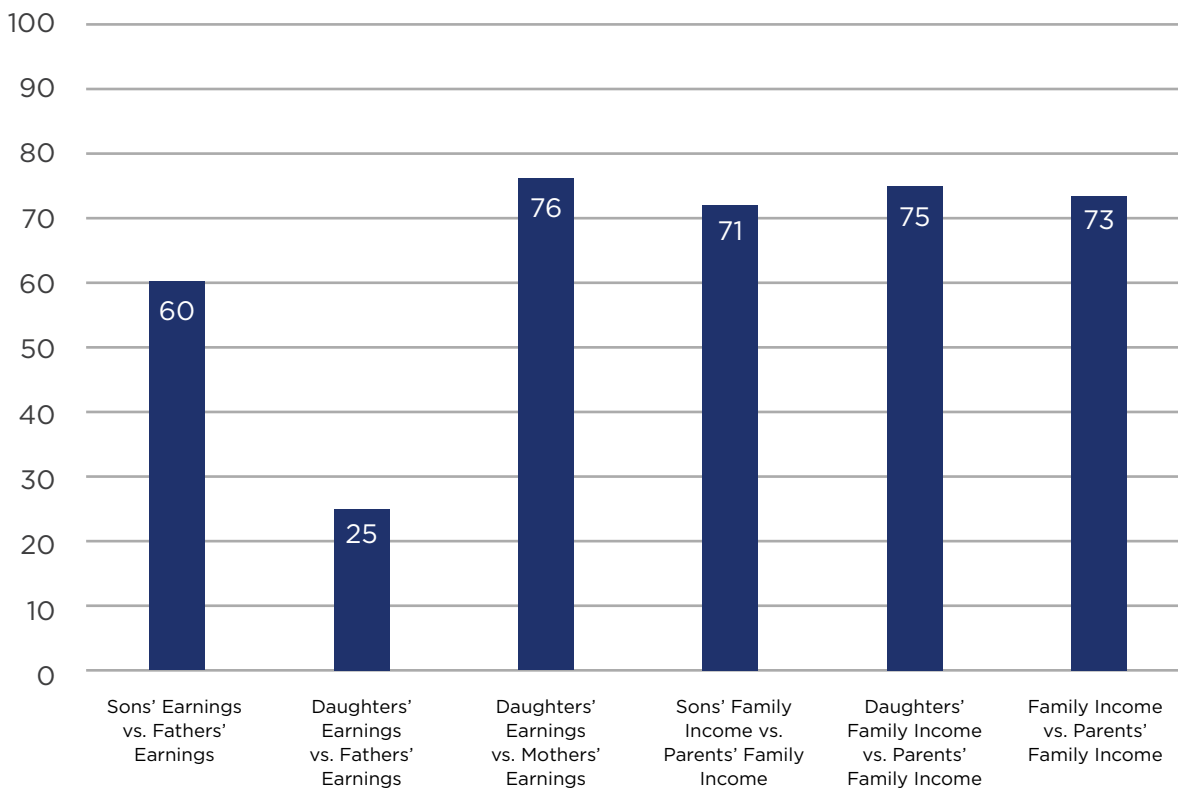
dren born in 1940 earned more than their parents at the same age while only 50 percent of children born in the 1980s were able to do the same.<sup>1</sup> While these bleak statistics are discouraging, they are not the full story.

Additional research into rates of absolute economic mobility in America provides helpful context that can substantially change the picture. In the first installment of an economic mobility series published by the Archbridge Institute, Dr. Scott Winship examines contemporary rates of economic mobility in America using data from the Panel Study of Income Dynamics (PSID).<sup>2</sup> While much of his research complements the Chetty et. al. study, Winship finds that after adjusting for changes in family size, accounting for government transfer payments, and using a different formula to measure inflation, about 73 percent of children born in the 1980s are earning more than their parents were at the same age.

Despite some disagreements on the precise measurement of absolute intergenerational economic mobility, today (after taking the rising cost of living into account) nearly three in four adults live better off than their parents did (as seen in Figure 1).<sup>3</sup> Still, when it comes to preserving the American Dream, there is certainly room for improvement.

While many factors are relevant to increase the rate of upward economic mobility, creating good paying job opportunities and boosting wages are top priorities if the American Dream is to be preserved. This is one reason that increasing the minimum wage has become such a popular prescription for policymakers focused on both fighting income inequality and increasing economic opportunity. The debate about the immediate employment and wage effects of increasing the minimum wage has not been

**FIGURE 1.**  
**Percent of Grown Children Surpassing the Income of Parents**



Source: Analysis by Dr. Scott Winship of the Panel Study of Income Dynamics (PSID). See Appendix 1 in *Economic Mobility, A State-of-the-Art-Primer: Contemporary Levels of Economic Mobility* for methodological details.

definitively settled, with new studies (asserting a wide variety of different employment and wage effects ranging from mild to severe) being released often.<sup>4</sup>

Despite the uncertainty about the specific effects, it is increasingly clear that the most lasting and consequential impact on economic mobility from increased minimum wages won't be found by examining these immediate effects. Policymakers should consider how increasing the minimum wage will affect the availability and opportunity for individuals to gain experience and skills. Acquiring the experience and skills needed to build the human capital necessary to climb the income ladder over a lifetime should be a primary concern for policymakers and has been quietly overlooked in the minimum wage discussion for far too long.

## THE UNCLEAR MINIMUM WAGE DISCUSSION

On the afternoon of June 20, 2014, celebrations rang out around City Hall in Seattle, Washington. Advocates of an increased minimum wage had secured their biggest victory yet; the Seattle City Council unanimously voted to increase the minimum wage from \$9.47 per hour (already the highest in the nation) to \$15 per hour.<sup>5</sup> The increase would be phased-in over several years, and Mayor Ed Murray triumphantly announced, “Today we have taken action that will serve as a model for the rest of the nation to follow.” The progressive Seattle City Council and Mayor Murray would see a dramatic increase in their public profiles and even become leading figures in the push to increase minimum wages across the country. Often touted by researchers as an effective mechanism to raise wages and encourage economic mobility, increasing the minimum wage has become a go-to policy reform for some policymakers looking to help low-income Americans.

But just over three years later, two conflicting studies examining the effects of the minimum wage would be released. Seattle Weekly obtained emails (through a public disclosure request) showing a coordinated public relations campaign between the Seattle Mayor's office, a researcher at the University of California, Berkeley, a think tank advocating for a \$15 minimum wage nationwide, and a New York-based public relations firm.<sup>6</sup> The intent of the communications was to hype a study produced by Michael Reich and his team at Berkeley that showed an increase in the pay of Seattle restaurant workers with an effect on restaurant jobs that was “not statistically distinguishable from zero.” The results from that

study countered more negative findings from a team of researchers at the University of Washington (specifically commissioned by Mayor Murray years earlier to study the effects of the Seattle minimum wage increase). The University of Washington research team found that any income gains from the higher minimum wage were offset by a larger reduction in hours worked—resulting in a net reduction in payment of \$125 per month for low wage workers in 2016.<sup>7</sup>

Although researchers at the University of Washington had access to a more robust data set than the team at Berkeley, the debate is still considered by many to be unsettled. Skirmishes like these date back at least several decades and show little indication of being definitively resolved any time in the near future.

Despite the ongoing discussions, it is not controversial to note that there are at least some negative employment effects associated with increasing the minimum wage too much, although what amount is “too much” is hotly debated. As the price for labor increases (mandated by an increase in the minimum wage), the demand for that labor decreases.

Of course, the exact decisions employers make to offset mandated increases in labor costs will vary. Employers may forgo expansion or hire fewer employees—many opting for automation as a cheaper substitute. In addition to making up costs by reducing employees, or holding back the hiring of additional employees, prices for consumers may also rise and some current employees could see a reduction in hours, hourly pay, or other benefits. These adjustments are particularly difficult to absorb for employers with thin profit margins, such as most restaurants.<sup>8</sup>

*When facing higher minimum wages, employers may forgo expansion or hire fewer employees—many opting for automation as a substitute.*

In his 2014 State of the Union Address, President Obama urged Congress to increase the minimum wage from \$7.25 per hour to \$10.10 per hour. The Congressional Budget Office “scored” the proposal and estimated that if such a change were implemented, about 500,000 people would lose their jobs as a result.<sup>9</sup> Driving this point home in a somewhat tongue-in-cheek blog post, American Enterprise Institute scholar Mark Perry points out the incon-

sistency of Seattle’s \$15 minimum wage supporters who claim that the increased labor cost will have no effect on employment while also supporting the city’s sugary beverage tax on the belief that the increased cost will deter its purchase.<sup>10</sup>

Still, some have persuasively argued that increasing the minimum wage would have a negligible impact on jobs as long as the wage does not get too high. In 1992, Princeton Economist Alan Krueger (who would later serve as chairman of President Obama’s Council of Economic Advisors) conducted an analysis of fast food employment in New Jersey and Pennsylvania when New Jersey increased its minimum wage from \$4.25 per hour to \$5.05 per hour. Though Pennsylvania did not increase their minimum wage, there was virtually no difference in fast food restaurant employment between the two states following New Jersey’s increase.<sup>11</sup> Of course, critics will note that this discrepancy occurred at a time before automation became as cheap or widely available as it is today.<sup>12</sup>

Writing in the *New York Times* in 2015, Alan Krueger warns readers of the dangers in pushing for the now-popular \$15 minimum wage saying, “Research suggests that a minimum wage set as high as \$12 an hour will do more good than harm for low-wage workers, but a \$15-an-hour national minimum wage would put us in uncharted waters, and risk undesirable and unintended consequences.”<sup>13</sup> Even economists who consider modest increases in the minimum wage as having more positive than negative effects overall emphasize that the amount of increase is critically important. Within this group, very few have publicly endorsed the \$15 per hour wage popular among current minimum wage increase supporters.

Despite this scant support among economists, the fight for \$15 continues with California, New York, and the District of Columbia poised to reach that threshold in the next few years. The Heritage Foundation conducted an economic analysis of the employment impact of a \$15 minimum wage for each state and estimated that by 2021 California would lose 981,000 jobs, New York would lose 434,000 jobs, and DC would lose 11,000 jobs.<sup>14</sup>

In some ways, the \$15 minimum wage debate seems to focus less on economic arguments and more on moral or political justifications. When signing California’s

\$15 minimum wage increase into law, Governor Jerry Brown famously said, “Economically, minimum wages may not make sense. But morally, socially, and politically they make every sense ...”<sup>15</sup>

Stopping short of the \$15-per-hour threshold, some researchers, academics, and policymakers are interested in the economic effects of raising the minimum wage more modestly. Many poverty alleviation efforts include increasing the minimum wage as an anti-poverty measure or as a way to help the working poor. On this front however, there is good reason to be suspicious that such increases would be helpful to the targeted population. A 2010 study by Joseph J. Sabia and Richard V. Burkhauser examined minimum wage increases between 2003 and 2007. The authors concluded:

Our results show that recent minimum wage increases between 2003 and 2007 had no effect on state poverty rates. Moreover, the proposal to raise the federal minimum wage to \$9.50 per hour is unlikely to be any better at reducing poverty because (i) most workers (89.0%) who are affected are not poor, (ii) many poor workers (48.9%) already earn hourly wages greater than \$9.50 per hour, and (iii) the minimum wage increase is likely to cause adverse employment effects for the working poor.<sup>16</sup>

These results should cause proponents of increasing the minimum wage to pause and consider how such a policy would affect the least well-off population. But while the employment and wages effects of minimum wage increases continue to garner the majority of research, there remain unanswered questions on how the minimum wage might affect individuals’ earnings throughout their lives and even between generations—key questions for those focused on increasing economic mobility. Here, there is much less economic literature to explore, but some lessons can be learned from the multitude of studies examining different aspects of minimum wage increases.

In a thorough literature review on the topic, Seth Zimmerman of the Urban Institute looked at how minimum wages relate to economic mobility in particular. After reviewing multiple studies about the employment, wage, and incentive effects of the minimum wage, Zimmerman turns to absolute intergenerational mobility specifically. Perhaps unsurprisingly, there are few con-

crete conclusions that can be drawn. In discussing his key findings, he notes:

Historically, the impact of minimum wage laws on economic growth has been negligible. The suggestion that modest changes in the minimum wage will greatly depress absolute mobility rates therefore seems implausible. But, as is discussed in the Minimum Wage and Economic Inequality section, it is unclear that minimum wage laws have succeeded in lessening earnings and income inequality, even in the short term. This fact places arguments over the intergenerational impacts of the minimum wage squarely in the realm of speculation.<sup>17</sup>

In short, the effect of minimum wage increases on economic mobility remain unclear and probably will for some time. At the January 2018 American Economic Association meeting, researchers presented a variety of new papers analyzing the wage and employment effects of recent minimum wage increases across jurisdictions. There were at least two papers presented that found dramatic negative effects from increased minimum wages and at least three papers that found far fewer negative effects. While these papers featured a variety of different research methods, data sets, and assumptions, the result is an overall hazy picture of the exact immediate wage and employment effects of increased minimum wages for low-wage workers.<sup>18</sup>

Despite a lack of clarity on this point, there is increasing evidence that the entire discussion is misguided. In fact, this back and forth on direct employment and wage levels distracts from the much more important question surrounding the effects of increasing the minimum wage in a 21st century economy: How does increasing the minimum wage impact workers' ability to compete in a complex global economy? Furthermore, how might this dynamic affect the prospects for an individuals' ability to climb the income ladder?

Any effort to boost wages and increase job opportunities must begin with an acknowledgement of the radically different labor market new job seekers face compared with the one their grandparents or even parents encountered as they first sought employment. The opportunities available to those born in 1940 differ greatly from the opportunities for those born in 2010. While increasing the minimum wage would boost wages for workers who keep their jobs, hours, and benefits, the effects on workers who are somehow displaced may go beyond these immediate consequences. Understand-

ing this shift in the nature of the labor market is an essential starting point in understanding exactly what skills are necessary to compete in the modern economy.

## THE MODERN LABOR MARKET

The modern global economy is highly complex, fast paced, and dynamic. Workers in the new economy can be expected to change jobs at much higher rates than past generations. One study found millennials will likely hold four different jobs by the time they reach age 32.<sup>19</sup> Furthermore, the same study noted that current workers were more likely than previous generations not just to switch jobs more often, but also to switch entire industries more often. These trends coincide with the increasing pressures of globalization and technological disruption that have dramatically changed the nature of work in a short period of time.

Despite recent rhetoric from prominent politicians about the negative effects of immigration, outsourcing, and globalization on employment, the biggest labor market disruptor appears to be automation.<sup>20</sup> A 2015 report from Ball State University examined job losses in the U.S. manufacturing sector and found that only about 13 percent of the job losses could be attributed to trade with the rest resulting from productivity enhancing technological advancements.<sup>21</sup> According to a 2015 paper published in the *American Economic Review*, between 1962 and 2005 the U.S. Steel industry experienced a 75 percent decline in its workforce (more than 400,000 workers) without any corresponding loss in output.<sup>22</sup>

*How does increasing the minimum wage impact workers' ability to compete in a complex global economy?*

The move toward greater automation is also reflected in the change of the American workforce from agricultural workers and tangible goods producers to primarily service providers. According to data from the St. Louis Federal Reserve Bank, 38 percent of jobs in the U.S. in 1945 were goods-producing compared with just 14 percent in 2017.<sup>23</sup> Among other things, this shift has been accompanied by a rising wage premium for highly skilled workers able to capture the productivity gains provided by capital investment in automation. However, this shift also produced a decline in job opportunities (particularly well-paying job opportunities) for unskilled or low-skill workers.<sup>24</sup>

It is worth pointing out that over time, technological innovations are far more beneficial than not. In addition to raising living standards and creating new employment opportunities, the e-commerce industry has added 400,000 jobs since 2007—far outweighing any job losses in traditional retail industries.<sup>25</sup> Technological innovation promotes productivity growth which is typically associated with wage growth as well.<sup>26</sup> So, while these changes are incredibly beneficial in the aggregate and over the long term, the result from the recent technological advancements is a labor market that seems to be much more volatile than in past generations.

## THE GROWING IMPORTANCE OF SOFT SKILLS

It is in the context of this rapidly shifting landscape that economists have begun to identify specific traits and skills that are likely to lead to an individual's success in the labor market. One key indicator for success is developing soft skills.<sup>27</sup> Usually referring to interpersonal skills, communications skills, and social intelligence, soft skills are loosely defined as a broad set of competencies, behaviors, attitudes, and personal qualities that enable people to effectively navigate their environment, work well with others, perform well, and achieve their goals. Economists James Heckman and Tim Kautz of the University of Chicago documented the importance of soft skills in a landmark 2012 paper, "Hard Evidence on Soft Skills." That paper included a far-reaching survey of the literature around soft skills and found strong evidence that they are critically important predictors of future economic success.

Recent evidence suggests that these soft skills may have become an even more important factor for success in the modern labor market than traditional hard skills (or cognitive skills). A 2014 National Bureau of Economic Research paper from Kautz, Heckman, and others found that "[Soft skills'] predictive power rivals that of cognitive skills."<sup>28</sup> Furthermore, a 2017 research paper examining the labor market in Sweden (often cited as one of the best performing nations in terms of economic mobility) from 1992 to 2013 found that "the labor market appears to increasingly value individuals possessing high non-cognitive relative to cognitive skills over time."<sup>29</sup> It is becoming evident that equipping workers with soft skills is the most effective pathway to their future success. Additionally, the lack of soft skills is a significant detriment to workers' ability to gain employment in the first place.

A growing chorus of employers, researchers, and politicians routinely decry the so-called "skills gap" or "skills mismatch" where workers do not have the requisite skill sets that employers are seeking. A wide variety of solutions have been proposed to rectify this gap, but most tend to focus on teaching students more hard skills before they enter the labor market. A common approach advocates for increasing STEM (Science, Technology, Engineering, and Math) curriculum in schools. Unfortunately, the role of soft skills in ensuring employment is too often left out of such conversations, even though the evidence suggests that employees with soft skills are what employers want. In a detailed 2014 paper for the National Bureau of Economic Research, University of Pennsylvania professor Peter Cappelli cites one such survey:

The Computer and Technology Industry Association (2012) produced an unusually detailed report, again based on a survey of employers, where 93 percent of employers responding said that they had a skills gap. Yet 90 percent also responded that they are at least "moderately close" to "where they want to be" with respect to skills, only 15 percent said that a factor in their skill problem was insufficient focus on STEM education, and only 20 percent reported that the problem was a limited pool of skilled IT workers, the essence of the STEM skill shortage argument. A large part of their perceived skill gaps had to do with "soft skills"- work ethic and motivation (almost 20 percent said that their concern was only soft skills, and about half reported that it was equally divided between "hard" and "soft skills").<sup>30</sup>

The Computer and Technology Industry Association survey is hardly an outlier when it comes to measures of what employers report are their challenges in finding qualified applicants to fill job openings. According to a more recent article in the *Wall Street Journal*:

A recent LinkedIn survey of 291 hiring managers found 58% say the lack of soft skills among job candidates is limiting their company's productivity.

In a *Wall Street Journal* survey of nearly 900 executives [in 2015], 92% said soft skills were equally important or more important than technical skills. But 89% said they have a very or somewhat difficult

time finding people with the requisite attributes. Many say it's a problem spanning age groups and experience levels.<sup>31</sup>

If the myriad of academic research papers and employer surveys leave any doubts regarding the importance of soft skills, the real-world experience of employment agencies should put them to rest. Bob Funk, Chairman, CEO, and founder of Express Employment Professionals, one of the nation's largest job agencies, sat down with William McGurn of the *Wall Street Journal* in September 2017 to discuss the modern labor market and his experience spending more than 20 years finding people employment:

This experience gives Mr. Funk some definite—and timely—notions about getting ahead in today's America. Like everyone else, he talks about education and skills. But what he means by these words may be a little different from how they are used in the Harvard Business Review.

Start with skills. Hard skills and experience, he says, are only half the equation, and not the important half. He shares a small brochure his company puts out summarizing a recent survey of employers. "So many people do not realize how important the soft skills are to unlocking job opportunity," he says.

In order, the survey found the top five traits employers look for are as follows: attitude, work ethic/integrity, communication, culture fit, critical thinking.<sup>32</sup>

Perhaps a response to the criticism from McGurn, the November 2017 edition of the *Quarterly Journal of Economics* featured a study documenting the growing importance of soft skills in the labor market from David Deming, a professor at Harvard's Kennedy School. Deming's research showed that over the past several decades, the labor market has been increasingly favoring social skills, particularly the ability to work well in teams. Specifically, Deming finds:

Between 1980 and 2012, jobs requiring high levels of social interaction grew by nearly 12 percentage points as a share of the U.S. labor force. Math-intensive but less social jobs—including many STEM occupations—shrank by 3.3 percentage points over

the same period. Employment and wage growth were particularly strong for jobs requiring high levels of both math skill and social skills.<sup>33</sup>

One particularly interesting finding was the evolution of jobs that were not math-intensive but were more social. This group ranked just behind the high-math, high-social jobs in both wage growth and job opportunities. As Figure 2 shows, from 1980 to 2012, jobs requiring high social skills (regardless of math requirements) grew as a share of employment opportunities while jobs that did not require social skills shrank as a share of employment opportunities.

The study, Deming noted in an interview with the *Harvard Gazette*, "grew out of Deming's sense that employers' desire for strong social skills in new hires was being ignored." Part of this could be due to the fact that economists lack effective ways to measure traits like "teamwork" or "leadership," as Deming suggests.<sup>34</sup> However, his study was one such attempt at this kind of measurement, particularly related to an individual's ability to work well in a team. Although Deming doesn't believe that STEM jobs and other occupations requiring hard skills will go away, there is evidence to suggest that social skills will become increasingly important.<sup>35</sup>

In addition to the growing evidence that soft skills are incredibly valuable in the modern labor market, there is also evidence that soft skills themselves are an important factor in increasing upward intergenerational economic mobility. In a late 2014 *Chicago Fed Letter*, economist Bhashkar Mazumder compared country-level differences in rates of intergenerational economic mobility and differences in a variety of skills. Soft skills, or non-cognitive skills as he calls them, were found to be uniquely significant. Mazumder writes:

In particular, I find that inequality in an index of "noncognitive skills" explains as much or more of the variation in intergenerational mobility than inequality in traditional measures of cognitive skills such as numeracy, literacy, and problem solving. An emerging line of research has argued that personality traits such as perseverance and grit play an important role in socioeconomic success.<sup>36</sup>

While Mazumder is careful not to assert causation from this correlation, there is a clear connection between

these soft skills and economic mobility. For policymakers interested in ensuring a positive trend of upward mobility, creating an environment in which workers can develop and sustain soft skills should be a top priority.

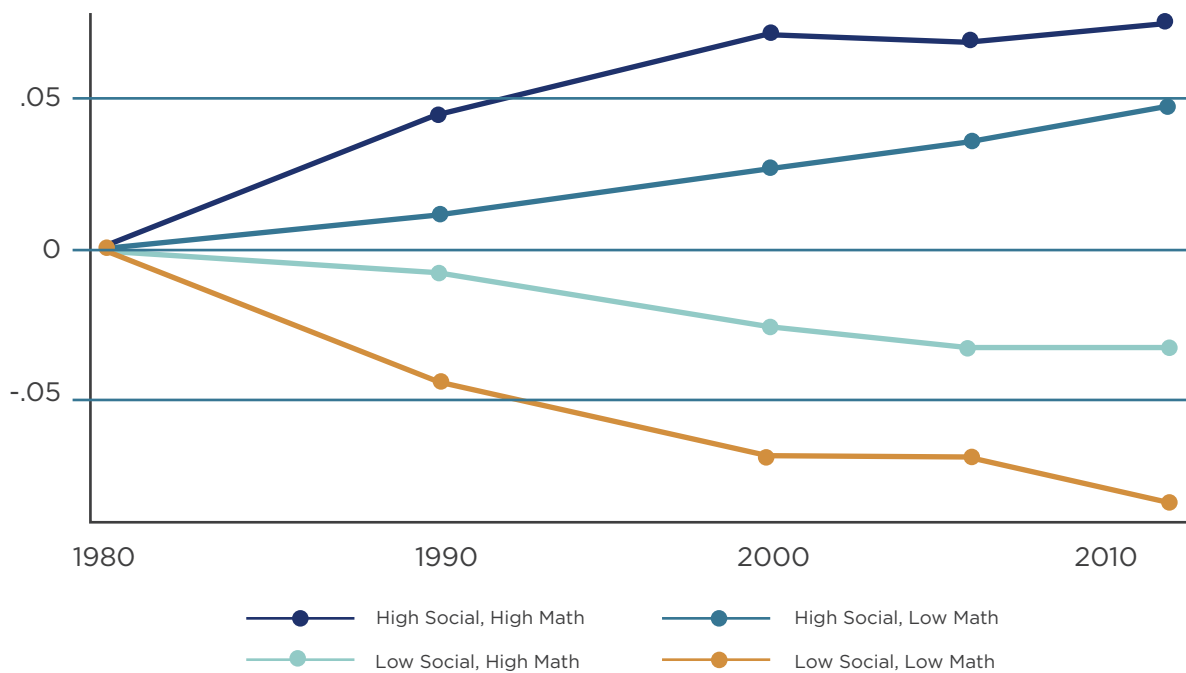
## SOFT SKILLS AND ENTRY-LEVEL EMPLOYMENT

So how do workers gain the soft skills necessary for success in the modern economy? While there are many ways for individuals to gain these soft skills, there is a strong consensus that starting early matters. In a 2014 paper, Kautz et. al. note, “Skill development is a dynamic process, in which the early years lay the foundation for successful investment in later years. ... workplace-based programs that teach character skills are promising.”<sup>37</sup> Although much of the research emphasizes early childhood education or other kinds of early childhood development, learning soft skills remains an important part of development through adolescence and early adulthood. For example, a 2015 report from

USAID concludes, “Theoretical literature suggests that adolescence and young adulthood are optimal times to develop and reinforce these skills.”<sup>38</sup> Additionally, a growing body of evidence suggests that actually working, or at least being in a workplace environment, is a key indicator of successful soft skill development. In a 2005 book based on a far reaching longitudinal study of 1,000 students, *Working and Growing Up in America*, University of Minnesota Sociologist Jeylan Mortimer concludes the following:

... high school students who work even as much as half-time are in fact better off in many ways than students who don’t have jobs at all. Having part-time jobs can increase confidence and time management skills, promote vocational exploration, and enhance subsequent academic success. The wider social circle of adults they meet through their jobs can also buffer strains at home, and some of what young people learn on the job—not least, responsibility and confidence—gives them an advantage in later work life.<sup>39</sup>

**FIGURE 2.**  
**Cumulative Changes in Employment Share by Occupation Task Intensity**



Source: Analysis by Dr. David Deming. Occupational Task Intensities based on 1998 O\*NET. See “The Growing Importance of Social Skills in the Labor Market” for methodological details.



Dr. Mortimer’s conclusions are consistent with more recent research as well. In a 2014 report for the Employment Policies Institute titled “The Lasting Benefits of Early Work Experience,” economists Charles Baum and Christopher Ruhm “find clear evidence that part-time work by young adults—both during senior year of high school, and during the summer months— translates to future career benefits that include higher hourly wages, increased annual earnings and less time spent out of work.” But the benefit doesn’t stop in high school, the report’s executive summary states:

Most importantly, the economists find that this career benefit of entry-level work persists in the long term: Young adults who graduated high school in the late 1970s and early 1980s and worked part-time during their senior year saw a career benefit 5-10 years after graduation—and the earnings differential still existed nearly 30 years later. ... Drs. Ruhm and Baum demonstrate that these future career benefits are occurring specifically as a result of the career experience that’s gained in early work experience.<sup>40</sup>

Bob Funk summarizes these findings rather succinctly, stating in no uncertain terms, “Those low-paying, entry-level jobs are good training for the soft skills you need for upward mobility.”<sup>41</sup> This view has had many champions, ranging from *Dirty Jobs* host Mike Rowe to former CEO of CKE restaurants, which includes Carl’s Jr. and Hardees, Andy Puzder.<sup>42,43</sup> There is a broad academic consensus around what kinds of skills are likely to lead to success in the modern economy and also a growing consensus about how and when people are most likely to obtain those skills.

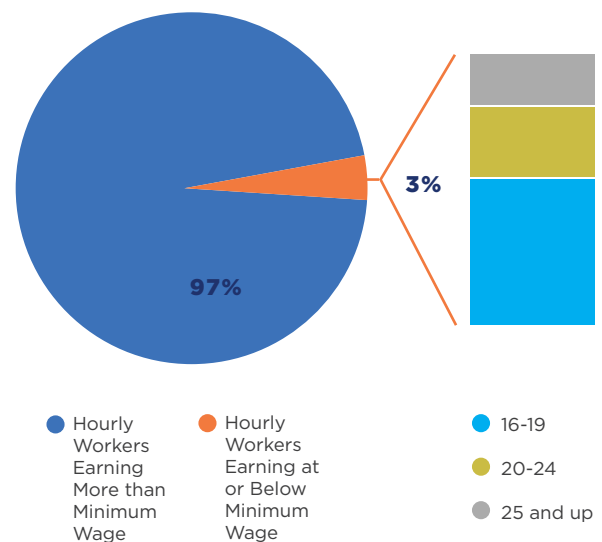
**Increased minimum wages represent the largest threat to the continued availability of entry-level work.**

These findings are consistent with new research that examines the returns to work and education across different birth cohorts. In an NBER working paper released in December 2017 titled “Changes Across Cohorts in Wage Returns to Schooling and Early Work Experiences,” researchers found that previous studies in this area have likely overstated the wage returns to education. This was particularly true for more recent cohorts. In their concluding remarks, researchers outlined some of their key findings as follows:

First, the failure of previous estimates to account for the influences of accumulated actual work experience and its endogenous determination results in sizable overstatements of the wage returns to schooling or degree attainment. Second, we find that the returns to various types of school and work experiences significantly differ both within and between cohorts. For example, we find evidence that the returns to an extra year of in-school or full-time work are larger than the returns to an extra year of schooling and have increased for more recent cohorts.<sup>44</sup>

As it turns out, entry-level employment is likely the best way to prepare for a successful career—or it is at least a major component. Gaining skills required to improve productive capacity, either soft skills or hard skills, is the key to achieving a higher earnings potential and improving economic mobility. At the same time, increased minimum wages represent the largest threat to the continued availability of entry-level work. This threat is both direct and indirect in nature—first, those most sensitive to the direct negative employment effects of minimum wage increases are those already earning the minimum wage, and second (and more importantly), there is an increasing body of research demonstrating that higher minimum wages indirectly destroy entry-level jobs themselves.

**FIGURE 3.**  
**Minimum Wage Demographics by Age, 2016**



Source: Bureau of Labor Statistics.

## DECLINING YOUTH EMPLOYMENT

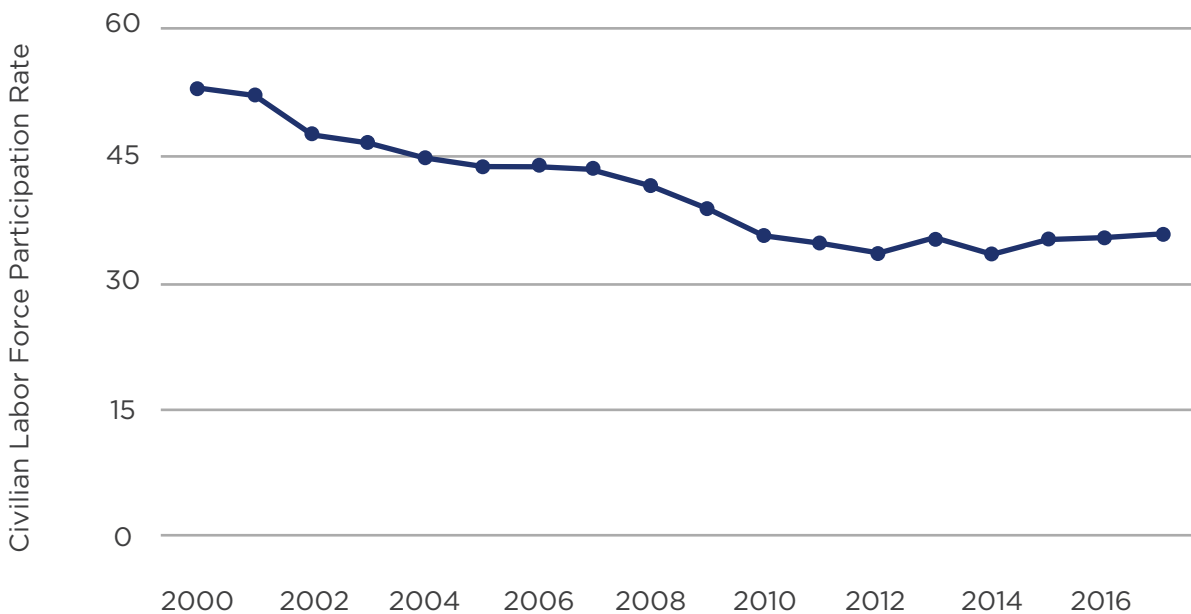
According to the Bureau of Labor Statistics (BLS), workers earning the minimum wage or less represented about 1.4 percent of the total labor force and 2.7 percent of all hourly workers in 2016.<sup>45</sup> Importantly, this is generally a young population. According to the BLS report, “Although workers under age 25 represented only about one-fifth of hourly paid workers, they made up about half of those paid the federal minimum wage or less.” This means that when the minimum wage is increased, those who lose their jobs are disproportionately likely to be younger workers—particularly teenagers—building the most essential skill set for future success: soft skills.

Over the past 20 to 30 years, teenage employment has plummeted. During the 1980s and 1990s, teenage employment was about 44 percent on average. By 2012, that average had fallen to 26.4 percent. Even when accounting for summer jobs, rates of teenage employment have been in significant decline at least

since 2000.<sup>46</sup> According to the Bureau of Labor Statistics, the (seasonally adjusted) labor force participation rate for teenagers aged 16 to 19 in January 2000 was 52.2 percent. By January, 2017 that figure had dropped to just 35.4 percent.<sup>47</sup> In 2010, the Bureau of Labor Statistics released a report titled “The early 2000s: a period of declining summer employment rates,” citing increases in the minimum wage as a contributing factor in the decline.<sup>48</sup> While many factors are partially responsible for this decline, there is a robust body of research concluding that increases in the minimum wage have a particularly negative effect on youth employment.

Time and again, economists conducting research since the 1990s on the impact of increased minimum wages on youth (and/or teenage) employment have reached similar findings. Increased minimum wages lead to significant declines in rates of youth and/or teenage employment. In a 1995 study, Dr. David Neumark used state-level data from 1979 to 1992 to estimate the effects of then-President Clinton’s push to raise the

**FIGURE 4.**  
**January Employment for Teenagers, 16–19 Years Old**



Source: Bureau of Labor Statistics.

federal minimum wage to \$5.15 per hour. Neumark estimated that such a change would increase by about two percentage points the number of youths aged 16 to 19 that were idle (neither in school nor working).<sup>49</sup>

In a 2006 study focused on retail and small business employment, University of Georgia economist Joseph Sabia summarized his findings on the effect of increased minimum wages on teenage employment in the retail sector:

A 10 percent increase in the minimum wage is associated with a 2.7 to 4.3 percent decline in teen employment in the retail sector, a 5 percent decline in average retail hours worked by all teenagers, and a 2.8 percent decline in retail hours worked by teenagers who remain employed in retail jobs. These results increase in magnitude when focusing on the effect on small businesses. A 10 percent increase in the minimum wage is associated with a 4.6 to 9.0 percent decline in teenage employment in small businesses and a 4.8 to 8.8 percent reduction in hours worked by teens in the retail sector.<sup>50</sup>

In a 2007 study on the impact of increased minimum wages on teen employment throughout the economy more generally, Ohio University economists Charlene Kalenkoski and Donald Lacombe found that “... a 10% increase in the effective minimum wage is associated with a 3.2% decrease in youth employment ...”<sup>51</sup> More recent research from Dr. Kalenkoski builds on these findings and suggests that fewer employment opportunities for teenagers is likely to lead to a decrease in lifetime earnings. In a 2016 report for the IZA World of Labor Journal, Dr. Kalenkoski writes:

Minimum wages reduce employment opportunities for youths and create unemployment. Workers miss out on on-the-job training opportunities that would have been paid for by reduced wages upfront but would have resulted in higher wages later. Youths who cannot find jobs must be supported by their families or by the social welfare system. Delayed entry into the labor market reduces the lifetime income stream of young unskilled workers.<sup>52</sup>

While these effects alone should give policymakers pause when considering an increase to the minimum wage, new research shows that the indirect effects of the minimum wage are likely of much larger consequence.

## INDIRECT EFFECTS OF MINIMUM WAGE INCREASES

As noted earlier, automation is an increasingly disruptive force on the modern economy. As advancing technology more frequently allows, jobs become automated when the cost of traditional labor exceeds the cost of the capital investment required to purchase the labor-saving technology. In other words, jobs will automate when buying the machine becomes less expensive than paying someone to do the work. This usually occurs in periods of innovation that make technology cheaper, but it also occurs when traditional labor becomes more expensive, often a result of minimum wage increases. The restaurant industry in particular is full of anecdotes to illustrate the point. McDonald’s accelerated deployment of automated kiosks after facing pressure from union activists to increase its wages.<sup>53</sup> Panera and Wendy’s have also increasingly turned to automation to decrease their labor costs.<sup>54</sup>

Some restaurants that cannot afford to automate will try to find other ways of absorbing increased labor costs, but many simply close. In a 2017 study published by the Harvard Business School, Dara Lee Luca and Michael Luca examine the impact of increased minimum wages on firm exit in the restaurant industry. By using data from recent city-level increases in the minimum wage, the authors find that higher minimum wages increase overall exit rates for restaurants, although the quality of the restaurant is important.<sup>55</sup> For instance, the likelihood of firm exit by a restaurant with a 3.5 star rating on Yelp (the median restaurant rating in the area of study) increased by 14 percent for each \$1 increase in the minimum wage while the increases had no effect on firm exit for restaurants with a 5 star Yelp rating.<sup>56</sup> There are several possible reasons for this discrepancy, but one likely answer is that higher rated restaurants tend to be higher end or even fine dining and, according to the job site Indeed.com, the average salary for a server in a fine dining restaurant is about \$60,000 per year—far above even a \$15 minimum wage.<sup>57</sup>

However, when businesses have the capital to invest in substitutes for labor, they typically will as the price of labor increases. Furthermore, these effects are not isolated to the restaurant industry alone. New research from Grace Lordan of the London School of Economics and David Neumark of the University of California, Irvine concludes that increasing the minimum wage hastens the adoption of automation across a wide range

of industries, not just restaurants. The authors describe their findings:

Based on CPS [Census Population Survey] data from 1980-2015, we find that increasing the minimum wage decreases significantly the share of automatable employment held by low-skilled workers, and increases the likelihood that low-skilled workers in automatable jobs become unemployed. The average effects mask significant heterogeneity by industry and demographic group, including substantive adverse effects for older, low-skilled workers in manufacturing. The findings imply that groups often ignored in the minimum wage literature are in fact quite vulnerable to employment changes and job loss because of automation following a minimum wage increase. ... Our estimates suggest that an increase of the minimum wage by \$1 (based on 2015 dollars) decreases the share of low-skilled automatable jobs by 0.43 percentage points.<sup>58</sup>

These findings complement those of a previous study from Jonathan Meer and Jeremy West which concluded that the true cost of increasing the minimum wage was not necessarily in jobs lost but in those that were never created. In their late 2013 paper, Meer and West note, “we find that the minimum wage reduces net job growth, primarily through its effect on job creation by expanding establishments. These effects are most pronounced for younger workers and in industries with a higher proportion of low-wage workers.”<sup>59</sup> Speaking at a research seminar in 2015, Jonathan Meer put the issue more bluntly:

... essentially, the minimum wage reduces the rate of job growth rather than leading to substantial job losses that are readily seen in the data. It’s not that people get fired, it’s that they’re never hired in the first place. That’s particularly problematic because of the importance of early-career labor market experience.<sup>60</sup>

These effects are not likely to soften anytime soon. Researchers at Oxford University have estimated that 47 percent of U.S. occupations are “at risk” to be computerized in the coming years.<sup>61</sup> Taken together, these findings reveal serious consequences of higher minimum wages that are almost never discussed in the typical debates surrounding the direct and immediate employment and wage effects of the policy. In short, the current discus-

sions about the minimum wage ignore its most important effects.

*“It’s not that people get fired, it’s that they’re never hired in the first place.”  
– Jonathan Meer*

But that is changing, and commentators are beginning to discuss this phenomenon more openly. In a recent article for *Bloomberg View*, Noah Smith discusses the Neumark and Lordan study and concludes that increased automation might be a good thing because automation increases productivity and raises living standards by spurring innovation. Smith writes:

[Growth Economist Paul] Romer hypothesized that low labor costs are actually bad for development, because they reduce the incentive to innovate and invent. Seen in this light, automation resulting from high minimum wages could be a long-term blessing. As long as humans find new useful things to do, installation of automated kiosks, self-check-out machines and industrial robots will be a boon to the workers’ wealth. There will be a period of adjustment, in which some low-wage workers are hurt. ... But ultimately, as long as human labor doesn’t become superfluous, faster automation is a good thing.<sup>62</sup>

While it is certainly true that increased capital investment in labor-saving technology is a net benefit for society over time (increasing productivity, wages, and living standards), abrupt government interventions (such as artificially raising the cost of traditional labor by increasing the minimum wage) that distort the pace of its adoption can have serious consequences. Faster automation may increase innovation and spur spending on computerized kiosks and the like, but employers are paying for that new technology at a rate above the (pre-minimum wage increase) cost of traditional labor. The gap between the market rate for that labor and the cost of the technology represents a dead-weight loss to the economy. Technological advancement (and trade liberalization) often displace some workers while creating opportunities for others with the aggregate result being an overall wealthier society. However, these “adjustments” have usually been the result of natural market forces rather than government interventions.

One key insight Smith hits on, though, is the importance of human labor not becoming superfluous. As

automation continues to occur, it seems that the competitive advantage that humans hold is in being human. As Harvard education economist David Deming proposes, perhaps because machines are taking over the routine work, skilled jobs are becoming less routine. Work that emphasizes social interaction and relies heavily on soft skills is only going to become more common as automation continues.<sup>63</sup> Ensuring that our public policies do not inhibit the best opportunities for the next generation of American workers to gain and grow these skills is critically important.

## CONCLUSION

The American Dream is still well within reach for the next generation, but the skills required to secure it have changed dramatically. The modern labor market has shifted and, rather than disappearing, the path to a middle-class life has changed as well. Employees are far less likely to stay with one employer for an extended period of time. The economy is now much more service oriented rather than goods oriented. Soft skills are of increasing importance for wage growth and economic success.

Our understanding of the shifting nature of the economy, what is necessary for success in the new labor market, and the effects of increasing the minimum wage on the availability of entry-level jobs has greatly improved in the past several years. These are all import-

ant factors to be considered when making policy recommendations. Unfortunately, their implications have not made their way into most discussions around increasing the minimum wage—which instead focus almost exclusively on immediate employment and wage effects.

These debates will and should continue, but are likely to remain inconclusive for the foreseeable future. The discussion about the effect of these policies should not be so narrow. The development of soft skills and the importance of gaining them at an early age should not be overlooked as policymakers strategize how to best equip the next generation of American workers. Just as we know entry-level work is essential to soft-skill development, it is equally clear that increasing the minimum wage jeopardizes those jobs—cutting off the most effective means of gaining the necessary skills for success. The evidence discussed here is far from a final word on the matter, but it is a necessary first step to a broader discussion about the roots of economic mobility.

## ENDNOTES

- <sup>1</sup> Chetty, Raj, David Grusky, Maximilian Hell, Nathaniel Hendren, Robert Manduca, and Jimmy Narang. “The fading American dream: Trends in absolute income mobility since 1940.” *Science* 356, no. 6336 (2017): 398-406. doi:10.1126/science.aal4617.
- <sup>2</sup> Winship, Scott. *Economic Mobility in America: Contemporary Levels of Economic Mobility*. Washington, DC: Archbridge Institute, 2017.
- <sup>3</sup> Ibid.
- <sup>4</sup> Smith, Noah. “Be Careful When Raising Minimum Wages.” *Bloomberg View*, 11 January 2018, <https://www.bloomberg.com/view/articles/2018-01-11/be-careful-when-raising-minimum-wages>.
- <sup>5</sup> Thompson, Lynn, and Amy Martinez. “Seattle City Council approves historic \$15 minimum wage.” *Seattle Times*, 2 June 2014, [www.seattletimes.com/seattle-news/seattle-city-council-approves-historic-15-minimum-wage/](http://www.seattletimes.com/seattle-news/seattle-city-council-approves-historic-15-minimum-wage/).
- <sup>6</sup> Person, Daniel. “Emails Show Mayor’s Office and Berkeley Economist Coordinated Release of Favorable Minimum Wage Study.” *Seattle Weekly*, 26 July 2017, [www.seattleweekly.com/news/emails-show-mayors-office-berkeley-economist-coordinated-release-of-favorable-minimum-wage-study/](http://www.seattleweekly.com/news/emails-show-mayors-office-berkeley-economist-coordinated-release-of-favorable-minimum-wage-study/).
- <sup>7</sup> Jardim, Ekaterina, Mark C. Long, Robert Plotnick, Emma van Inwegan, Jacob Vigdor, and Hilary Wething. “Minimum Wage Increases, Wages, and Low-Wage Employment: Evidence from Seattle,” NBER Working Paper #23532, (June 2017).
- <sup>8</sup> Massow, Michael von. “Higher prices, reduced hours: Restaurants & minimum wage hikes.” *The Conversation*, 7 January 2018, <https://theconversation.com/higher-prices-reduced-hours-restaurants-and-minimum-wage-hikes-89487>.
- <sup>9</sup> “The Effects of a Minimum-Wage Increase on Employment and Family Income,” Congressional Budget Office, 18 February 2014, <https://www.cbo.gov/publication/44995>.
- <sup>10</sup> Perry, Mark J. “Venn diagram of the day: Does the Law of demand apply to sugary drinks but not unskilled labor?” American Enterprise Institute, 7 June 2017, <http://www.aei.org/publication/venn-diagram-of-the-day-does-the-law-of-demand-apply-to-sugary-drinks-but-not-unskilled-labor/>.
- <sup>11</sup> Krueger, Alan B. “The Minimum Wage: How Much is too Much?” *The New York Times*, 9 October 2015, <https://www.nytimes.com/2015/10/11/opinion/sunday/the-minimum-wage-how-much-is-too-much.html?mcubz=2>.
- <sup>12</sup> Tilley, Jonathan. “Automation, robotics, and the factory of the future.” *McKinsey & Company*, September 2017, <https://www.mckinsey.com/business-functions/operations/our-insights/automation-robotics-and-the-factory-of-the-future>.
- <sup>13</sup> Ibid.
- <sup>14</sup> Sherk, James. “How \$15-per-Hour Minimum Starting Wages Would Affect Each State.” Heritage Foundation Issue Brief #4601, 17 August 2016, <http://www.heritage.org/budget-and-spending/report/how-15-hour-minimum-starting-wages-would-affect-each-state>.
- <sup>15</sup> Shackford, Scott. “Gov. Brown Admits \$15 Minimum Wage Does Not Make Economic Sense, Approves It Anyway.” *Reason*, 4 April 2016, <http://reason.com/blog/2016/04/04/gov-brown-admits-15-minimum-wage-does-no>.
- <sup>16</sup> Sabia, Joseph J. and Richard V. Burkhauser. “Minimum Wages and Poverty: Will a \$9.50 Federal Minimum Wage Really Help the Poor?” *Southern Economic Journal*, 2010, 76(3), 592–623, [http://cdn.theatlantic.com/newsroom/img/posts/Sabia\\_Burkhauser\\_SEJ\\_Jan10.pdf](http://cdn.theatlantic.com/newsroom/img/posts/Sabia_Burkhauser_SEJ_Jan10.pdf).
- <sup>17</sup> Zimmerman, Seth. “Labor Market Institutions and Economic Mobility.” The Urban Institute. <https://www.urban.org/sites/default/files/publication/31191/1001163-labor-market-institutions-and-economic-mobility.pdf>.
- <sup>18</sup> Smith, Noah. “Be Careful When Raising Minimum Wages.” *Bloomberg View*, 11 January 2018, <https://www.bloomberg.com/view/articles/2018-01-11/be-careful-when-raising-minimum-wages>.

- <sup>19</sup> Berger, Guy. “Will This Year’s College Grads Job-Hop More Than Previous Grads?” LinkedIn Official Blog, 12 April 2016, [https://blog.linkedin.com/2016/04/12/will-this-year\\_s-college-grads-job-hop-more-than-previous-grads](https://blog.linkedin.com/2016/04/12/will-this-year_s-college-grads-job-hop-more-than-previous-grads).
- <sup>20</sup> Miller, Claire Cain. “The Long-Term Jobs Killer is not China. It’s Automation.” *The New York Times*, 21 December 2016, <https://www.nytimes.com/2016/12/21/upshot/the-long-term-jobs-killer-is-not-china-its-automation.html>.
- <sup>21</sup> Hicks, Michael J. and Srikant Devaraj. “The Myth and Reality of Manufacturing in America.” Ball State University, June 2015, <http://projects.cberdata.org/reports/MfgReality.pdf>.
- <sup>22</sup> Collard-Wexler, Allan and Jan De Loecker. “Reallocation and Technology: Evidence from the US Steel Industry.” *American Economic Review*. 2015, 105(1): 131–171, [http://www.princeton.edu/~jdeloeck/CWDL\\_AER.pdf](http://www.princeton.edu/~jdeloeck/CWDL_AER.pdf).
- <sup>23</sup> McDonald, Steven. “Goods VS Services—The Decline of US Manufacturing Jobs.” GAI Consultants, 6 April 2017, <https://gaiconsultants.com/goods-vs-services/>.
- <sup>24</sup> Buera, Francisco J. and Joseph P. Kaboski. “The Rise of the Service Economy.” *American Economic Review*. [http://www.econ.ucla.edu/fjbuera/papers/BK\\_AER\\_Final.pdf](http://www.econ.ucla.edu/fjbuera/papers/BK_AER_Final.pdf).
- <sup>25</sup> Johnston, Katie. “As Amazon booms, retail jobs shift.” *Boston Globe*, 12 August 2017, <https://www.bostonglobe.com/business/2017/08/12/amazon-booms-retail-jobs-shift/AAKEjq2kLsGgiMldh3ihRN/story.html>.
- <sup>26</sup> Pethokoukis, James. “Why the gap between worker pay and productivity might be a myth.” *AEIdeas Blog*, 23 July 2015, <http://www.aei.org/publication/the-decline-of-unions-didnt-cause-the-growing-gap-between-pay-and-productivity-which-may-not-be-happening-either-study/>.
- <sup>27</sup> Heckman, James J. and Tim D. Kautz. “Hard Evidence on Soft Skills,” NBER Working Paper #18121, June 2012, [http://www.nber.org/papers/w18121.pdf?mc\\_cid=21f810148d&mc\\_eid=%5bUNIQID%5d](http://www.nber.org/papers/w18121.pdf?mc_cid=21f810148d&mc_eid=%5bUNIQID%5d).
- <sup>28</sup> Kautz, Tim, James J. Heckman, Ron Diris, Bas ter Weel, and Lex Borghans. “Fostering and Measuring Skills: Improving Cognitive and Non-Cognitive Skills to Promote Life Success,” NBER Working Paper #20749, December 2014, <http://www.nber.org/papers/w20749>.
- <sup>29</sup> Edin, Per-Anders, Peter Fredriksson, Martin Nybom, and Björn Öckert. “The Rising Return to Non-Cognitive Skill,” IZA DP No. 10914, July 2017, <http://ftp.iza.org/dp10914.pdf>.
- <sup>30</sup> Cappelli, Peter. “Skill Gaps, Skill Shortages and Skill Mismatches: Evidence for the US,” NBER Working Paper #20382, August 2014, <http://www.nber.org/papers/w20382>.
- <sup>31</sup> Davidson, Kate. “Employers Find ‘Soft Skills’ Like Critical Thinking in Short Supply,” *The Wall Street Journal*, 30 August 2016, <https://www.wsj.com/articles/employers-find-soft-skills-like-critical-thinking-in-short-supply-1472549400>.
- <sup>32</sup> McGurn, William. “Bring Back the Work Ethic.” *The Wall Street Journal*, 4 September 2017, <https://www.wsj.com/articles/bring-back-the-work-ethic-1504549941>.
- <sup>33</sup> Deming, David J. “The Growing Importance of Social Skills in the Labor Market.” *The Quarterly Journal of Economics* 132, no. 4 (1 November 2017): 1593-1640. <https://academic.oup.com/qje/article/132/4/1593/3861633>.
- <sup>34</sup> Powell, Alvin. “Golden Age for Team Players: Strong social skills increasingly valuable to employers, study finds.” *Harvard Gazette*, 23 October 2017, <https://news.harvard.edu/gazette/story/2017/10/social-skills-increasingly-valuable-to-employers-harvard-economist-finds/>.
- <sup>35</sup> Ibid.
- <sup>36</sup> Mazumder, Bhashkar. “Inequality in skills and the Great Gatsby curve.” *Chicago Fed Letter*, No. 330, 2015, <https://www.chicagofed.org/publications/chicago-fed-letter/2015/330>.
- <sup>37</sup> Kautz, Tim, James J. Heckman, Ron Diris, Bas ter Weel, and Lex Borghans. “Fostering and Measuring Skills: Improving Cognitive and Non-Cognitive Skills to Promote Life Success,” NBER Working Paper #20749, December 2014, <http://www.nber.org/papers/w20749>.

- <sup>38</sup> Lippman, Laura H., Renee Ryberg, Rachel Carney, and Kristen A. Moore. “Workforce Connections: Key ‘Soft Skills’ That Foster Youth Workforce Success: Toward a Consensus Across Fields,” USAID, June 2015, <https://www.usaid.gov/sites/default/files/documents/1865/KeySoftSkills.pdf>.
- <sup>39</sup> Mortimer, Jeylan T. *Working and Growing Up in America*. Cambridge, MA: Harvard University Press, 2005.
- <sup>40</sup> Baum, Charles L. and Christopher J. Ruhm. “The Lasting Benefits of Early Work Experience,” Employment Policies Institute, August 2014, [https://www.epionline.org/wp-content/uploads/2014/08/EPI\\_LastingBenefitsofEarlyWorkExperience2.pdf](https://www.epionline.org/wp-content/uploads/2014/08/EPI_LastingBenefitsofEarlyWorkExperience2.pdf).
- <sup>41</sup> McGurn, William. “Bring Back the Work Ethic.” *The Wall Street Journal*, 4 September 2017, <https://www.wsj.com/articles/bring-back-the-work-ethic-1504549941>.
- <sup>42</sup> Sunde, Joseph. “Mike Rowe on the Minimum Wage: There’s No Such Thing as a Bad Job,” *Acton Institute PowerBlog*, 10 February 2015, <http://blog.acton.org/archives/75794-mike-rowe-minimum-wage-theres-nothing-bad-job.html>.
- <sup>43</sup> Gillespie, Nick and Ian Keyser. “Puzder on Minimum Wage, Automation, and Withdrawing as Trump’s Labor Secretary Nominee: The former fast food restaurant CEO says a \$15 wage floor steals opportunities from entry-level workers.” *Reason*, 27 September 2017, <http://reason.com/reasonTV/2017/09/27/puzder-trump-labor-minimum-wage>.
- <sup>44</sup> Ashworth, Jared, V. Joseph Holtz, Arnaud Maurel, and Tyler Ransom. “Changes Across Cohorts in Wage Returns to Schooling and Early Work Experience,” NBER Working Paper #24160, December 2017, <http://www.nber.org/papers/w24160>.
- <sup>45</sup> “Characteristics of minimum wage workers, 2016,” Bureau of Labor Statistics Report 1067, April 2017, <https://www.bls.gov/opub/reports/minimum-wage/2016/home.htm>.
- <sup>46</sup> Clemens, Jeffrey. “The Minimum Wage and the Great Recession: Evidence from the Current Population Survey,” NBER Working Paper #21830, December 2015, <http://www.nber.org/papers/w21830>.
- <sup>47</sup> U.S. Bureau of Labor Statistics, Civilian Labor Force Participation Rate: 16 to 19 years [LNS11300012], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/LNS11300012>, November 27, 2017.
- <sup>48</sup> Morisi, Teresa L. “The early 2000s: a period of declining teen summer employment rates,” Bureau of Labor Statistics, Monthly Labor Review, May 2010, <https://www.bls.gov/opub/mlr/2010/05/art2full.pdf>.
- <sup>49</sup> Neumark, David, and William Wascher. 1995b. “Minimum Wage Effects on School and Work Transitions of Teenagers.” *American Economic Review Papers and Proceedings*. Vol. 85, no. 2 (May), pp. 244-49.
- <sup>50</sup> Sabia, Joseph J. “The Effect of Minimum Wage Increases on Retail and Small Business Employment.” Employment Policies Institute, May 2006, [https://www.epionline.org/wp-content/studies/sabia\\_05-2006.pdf](https://www.epionline.org/wp-content/studies/sabia_05-2006.pdf).
- <sup>51</sup> Kalenkoski, Charlene M. and Donald J. Lacombe. “Effects of Minimum Wages on Youth Employment: the Importance of Accounting for Spatial Correlation,” *Journal of Labor Research*, December 2008, Vol. 29, No. 4, pp 303-317.
- <sup>52</sup> Kalenkoski, Charlene Marie. “The effects of minimum wages on youth employment and income,” *IZA World of Labor*, March 2016, <https://wol.iza.org/uploads/articles/243/pdfs/effects-of-minimum-wages-on-youth-employment-and-income.pdf?v=1>.
- <sup>53</sup> “Minimum Wage Backfire.” *The Wall Street Journal*, 22 October 2014, <https://www.wsj.com/articles/minimum-wage-backfire-1413934569?mg=prod/accounts-wsj>.
- <sup>54</sup> Johnson, Hollis. “Fast food workers are becoming obsolete.” *Business Insider*, 16 May 2016, <http://www.businessinsider.com/self-service-kiosks-are-replacing-workers-2016-5>.
- <sup>55</sup> Luca, Dara Lee and Michael Luca. “Survival of the Fittest: The Impact of the Minimum Wage on Firm Exit,” *Harvard Business School NOM Unit Working Paper No. 17-088*, 11 April 2017, [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2951110](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2951110).
- <sup>56</sup> Ibid.



- <sup>57</sup> “Fine Dining Server Salaries in the United States.” *Indeed*, 21 January 2018, <https://www.indeed.com/salaries/Fine-Dining-Server-Salaries>.
- <sup>58</sup> Lordan, Grace and David Neumark. “People Versus Machines: The Impact of Minimum Wages on Automatable Employment,” NBER Working Paper #23667, August 2017, <http://www.nber.org/papers/w23667>.
- <sup>59</sup> Meer, Jonathan and Jeremy West. “Effects of Minimum Wage on Employment Dynamics,” NBER Working Paper #19262, August 2013, <http://www.nber.org/papers/w19262>.
- <sup>60</sup> “Minimum wages impede job growth in the long run,” IZA Institute of Labor Economics, 24 April 2015, <http://newsroom.iza.org/en/2015/04/24/minimum-wages-impede-job-growth-in-the-long-run/>.
- <sup>61</sup> Frey, Carl Benedikt and Michael A. Osborne. “The Future of Employment: How Susceptible Are Jobs to Computerisation?” Oxford University, 17 September 2013, [https://www.oxfordmartin.ox.ac.uk/downloads/academic/The\\_Future\\_of\\_Employment.pdf](https://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf).
- <sup>62</sup> Smith, Noah. “Higher Minimum Wages Will Give High Tech a Boost,” *Bloomberg View*, 22 August 2017, <https://www.bloomberg.com/view/articles/2017-08-22/higher-minimum-wages-will-give-high-tech-a-boost>.
- <sup>63</sup> Powell, Alvin. “Golden Age for Team Players: Strong social skills increasingly valuable to employers, study finds.” *Harvard Gazette*, 23 October 2017, <https://news.harvard.edu/gazette/story/2017/10/social-skills-increasingly-valuable-to-employers-harvard-economist-finds/>.

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