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CHAPTER 15
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In public debate, the pros and cons of the minimum wage are frequently boiled down to a supposedly simple tradeoff between earnings gains and job losses. On the benefit side of the ledger, a higher minimum wage can translate into higher earnings for workers because of higher hourly wage rates. On the cost side, some workers might lose their jobs as firms find it more expensive to employ them. In this frame, the calculus appears deceptively simple: if evidence shows few jobs are lost and many workers receive wage gains, a minimum wage hike is deemed effective. As a result, analyses of the minimum wage's employment effects will appear to have outsized stakes for policy.

An emphasis on the minimum wage's employment effects therefore pervades analyses from government agencies and advocacy organizations alike. In 2019, for example, the Congressional Budget Office (CBO) released a widely discussed report titled "The Effects on Employment and Family Income of Increasing the Federal Minimum Wage."[1] The report's content delivered on its title, as did the accompanying interactive tool; forecasts of earnings and employment effects were front and center.[2]

Reports from progressive labor advocacy organizations, including the Economic Policy Institute and the National Employment Law Project, have had similar emphases, though with a reading of the evidence that casts the minimum wage in a more positive light.[3] Indeed, minimum wage advocates sought to discredit the CBO's analysis by impugning its assessment of research on the employment effects of high minimum wages. Berkeley economist Michael Reich, for example, told the *Washington Post* that the CBO's summary of academic studies "reveals an unwillingness to recognize the major differences in scientific quality among studies."[4] In an op-ed in *The Hill*, economists Jesse Rothstein and

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[1] Nabeel Alsalam et al., "The Effects on Employment and Family Income of Increasing the Federal Minimum Wage," Congressional Budget Office, Washington, July 2019.
[2] Congressional Budget Office, "How Increasing the Federal Minimum Wage Could Affect Employment and Family Income Interactive Tool," August 18, 2022.
[3] Yannet Lathrop, T. William Lester, and Matthew Wilson, "Quantifying the Impact of the Fight for $15: $150 Billion in Raises for 26 Million Workers, with $76 Billion Going to Workers of Color," National Employment Law Project Policy & Data Brief no. 1, July 27, 2021; and Economic Policy Institute, "Why the U.S. Needs a $15 Minimum Wage," January 26, 2021.
[4] Andrew Van Dam, "It's Not Just Paychecks: The Surprising Society-Wide Benefits of Raising the Minimum Wage," *Washington Post*, July 8, 2019.

Heidi Shierholz laid claim to the mantle of "modern scientific evidence" and wrote that the CBO was simply "wrong" in its assessment of the minimum wage's costs.[5]

In their attacks on the CBO's credibility, advocates' insistence that minimum wage increases have no effects on employment, even when those wage increases are large, is puzzling. A 2022 review of the empirical literature by economists David Neumark and Peter Shirley found the CBO's conclusions to be in line with the full body of evidence.[6] And indeed, studies of large minimum wage increases regularly find evidence that those increases result in substantial job losses, especially for the least-skilled, least-experienced, and least-productive workers.[7]

In focusing on the rightness or wrongness of minimum wage advocates' claims, however, we risk entrenching a conceptual framework about the tradeoffs that is too narrow. The broad point is that firms can make myriad adjustments to blunt the minimum wage's impact on their costs. These adjustments can often be described as entailing reductions in the quality of the job from a worker's perspective. It is thus crucial to appreciate that these adjustments will tend to mitigate, if not reverse, the minimum wage's effect on workers' well-being. Furthermore, job quality will tend to adjust more seamlessly than the quantity of jobs. As a result, an absence of adverse effects on employment is far from dispositive as an argument over a minimum wage hike's attractiveness.

Appreciating the varied aspects of job quality along which adjustments might occur in the wake of a mandated wage increase can require some imagination. Among the channels through which declines in job quality can emerge, some are intuitive, whereas others are less obvious despite their having high practical relevance. A fuller appreciation of these margins is essential for us to reliably evaluate the effects of minimum wages and other price controls in their totality.[8]

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[5] Jesse Rothstein and Heidi Sherholz, "Full COVID Recovery Requires Raising the Minimum Wage," *The Hill*, February 10, 2021.

[6] David Neumark and Peter Shirley, "Myth or Measurement: What Does the New Minimum Wage Research Say about Minimum Wages and Job Loss in the United States?," National Bureau of Economic Research Working Paper no. 28388, March 2022.

[7] Jeffrey Clemens and Michael Wither, "The Minimum Wage and the Great Recession: Evidence of Effects on the Employment and Income Trajectories of Low-Skilled Workers," *Journal of Public Economics* 170 (February 2019): 53–67; Jeffrey Clemens and Michael R. Strain, "The Heterogeneous Effects of Large and Small Minimum Wage Changes: Evidence over the Short and Medium Run Using a Pre-Analysis Plan," National Bureau of Economic Research Working Paper no. 29264, September 2021; Ekaterina Jardim et al., "Minimum-Wage Increases and Low-Wage Employment: Evidence from Seattle," *American Economic Journal: Economic Policy* 14, no. 2 (May 2022): 263–314; John J. Horton, "Price Floors and Employer Preferences: Evidence from a Minimum Wage Experiment," Elsevier, January 16, 2017; Terry Gregory and Ulrich Zierahn, "When the Minimum Wage Really Bites Hard: The Negative Spillover Effect on High-Skilled Workers," *Journal of Public Economics* 206 (February 2022): 104582; and Loukas Karabarbounis, Jeremy Lise, and Anusha Nath, "Minimum Wages and Labor Markets in the Twin Cities," National Bureau of Economic Research Working Paper no. 30239, August 2022.

[8] The remainder of this chapter's discussion draws in large part on my own recent paper that connects these considerations to a more fully developed analytic framework. See Jeffrey Clemens, "How Do Firms Respond

Minimum Wage Increases Can Be Offset through Adjustments to Fringe Benefits

As implemented in the United States, the minimum wage imposes a floor on the hourly wage rate an employer can pay its workers. When the legislated wage floor exceeds what a worker would otherwise have been paid, we describe that floor as binding.

How might a firm's working conditions respond to a binding minimum wage? A straightforward starting point is to recognize that cash wage payments are not the only aspect of compensation. To be sure, wages and salaries account for a majority of employers' labor costs. Bureau of Labor Statistics data show, however, that firms' spending on "fringe benefits" like health insurance, paid leave, and pensions accounts, on average, for nearly one-third of total compensation.[9]

When a firm hires a new worker, it considers the worker's impact on its bottom line. The firm's benefit from hiring the worker is the resulting increase in production. Compensation sits on the opposite side of the ledger. Because compensation includes both wages and benefits, a firm can react to the imposition of a higher hourly wage floor by reducing fringe benefits.

In some cases, these adjustments might fully neutralize the impact of the higher wage on total costs. Yet if benefit reductions fully offset an increase in the minimum wage, neither the firm nor even the worker is necessarily made worse or better off by the policy. Having seen wages rise and employees be retained, however, an analyst who looked no further than earnings would declare the increased minimum wage a success. Focusing narrowly on wage and employment impacts can therefore mislead about the true economic effect.

How important are adjustments to fringe benefits in practice? Across several data sources, recent analyses have consistently found negative effects of minimum wage increases on a worker's likelihood of having employer-provided health insurance (EPHI). RAND Corporation economists Michael Dworsky and others, for example, found evidence of a negative relationship between minimum wage increases and EPHI in data from the Current Population Survey.[10] Economists Mark Meiselbach and Jean Abraham found complementary results in the Medical Expenditure Panel Survey.[11] My own research with economists Jonathan Meer and Lisa Kahn finds similar results in data from the American

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to Minimum Wage Increases? Understanding the Relevance of Non-Employment Margins," *Journal of Economic Perspectives* 35, no. 1 (Winter 2021): 51–72.

[9] "Employer Costs for Employee Compensation," Bureau of Labor Statistics news release no. USDL-23-0488, March 17, 2023.

[10] Michael S. Dworsky et al., "The Effect of the Minimum Wage on Employer-Sponsored Insurance for Low-Income Workers and Dependents," *American Journal of Health Economics* 8, no. 1 (Winter 2022): 99–126.

[11] Mark K. Meiselbach and Jean M. Abraham, "Do Minimum Wage Laws Affect Employer-Sponsored Insurance Provision?," *Journal of Health Economics* 92 (December 2023): 102825.

Community Survey.[12] A back-of-the-envelope calculation based on estimates from my own work suggests that offsetting declines in EPHI led the value of compensation for retained employees to rise roughly 15 percent less than it otherwise would have because of minimum wage increases that took effect in several U.S. states between 2014 and 2016. Evidence from earlier papers on this topic tended to arrive at mixed results.[13]

Unfortunately, data on fringe benefits are far less complete or readily available than those on employment. Health insurance, as discussed, is the primary benefit tracked in standard data sets. Even employer-provided health insurance, however, tends to be measured on the basis of *whether or not* an individual has an insurance benefit, rather than the value of that benefit. Consequently, the data tend not to tell us about a health insurance plan's deductibles and other cost-sharing arrangements, let alone the expansiveness of its networks of hospitals and physicians. This is important because moderate declines in generosity in these margins may be sufficient to offset the cost of small increases in the minimum wage.

We know less still about the effects of minimum wages on miscellaneous benefits like employee discounts, which are common at the sorts of food service and retail establishments that regularly hire minimum wage workers.[14] Through its national employee discount, for example, McDonald's has offered its employees 30 percent discounts on meal orders at participating McDonald's restaurants in recent years.[15] Employee discounts provide a mundane but practically important example of an aspect of employment that it is essential to account for in order to fully evaluate the minimum wage, but on which data are sparse.

Firms Can Recoup Higher Costs by Changing Other Aspects of Employment

The aspects of jobs that an employer can adjust in response to changes in minimum wages extend far beyond fringe benefits. Additional margins of interest include performance requirements, schedule flexibility, training opportunities, and safety provisions. In economics jargon, these aspects of jobs are called "amenities" (meaning "desirable features") and "disamenities" (meaning "undesirable features").

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[12] Jeffrey Clemens, Lisa B. Kahn, and Jonathan Meer, "The Minimum Wage, Fringe Benefits, and Worker Welfare," National Bureau of Economic Research Working Paper no. 24635, May 2018.

[13] Anne Beeson Royalty, "Do Minimum Wage Increases Lower the Probability that Low-Skilled Workers Will Receive Fringe Benefits?," Joint Center for Poverty Research Working Paper no. 172, May 2001; Kosali Ilayperuma Simon and Robert Kaestner, "Do Minimum Wages Affect Non-Wage Job Attributes? Evidence on Fringe Benefits," *ILR Review* 58, no. 1 (2004): 52–70; Laura Bucila, "Employment-Based Health Insurance and the Minimum Wage," College of the Holy Cross Working Paper Series no. 08-12, September 2008; and Mindy S. Marks, "Minimum Wages, Employer-Provided Health Insurance, and the Non Discrimination Law," *Industrial Relations* 50, no. 2 (2011): 241–62.

[14] Robert Bruce, "These 22 Major Employers Offer Some of the Best Employee Discounts," *Penny Hoarder*, May 22, 2023.

[15] McDonald's, "Implementing the National Employee Discount," September 1, 2020.

Firms can spend money, for example, to improve workers' experiences on the job by creating a more comfortable workplace environment or improving mentorship. Because these positive job features are costly to firms, workers may have to choose between these amenities and higher wages.

Similarly, firms can save money by skimping on investments targeted at further reducing workplace risks of injury, on worker training, or on improving the aesthetics of the workplace. Ugly decor, poor mentorship, and marginal safety deteriorations are classic disamenities. Here again, there is a tradeoff. Workers will demand higher wages to work at firms that are known to be undesirable along dimensions such as these. The key point is that if jobs become less pleasant, less safe, or more taxing, workers are made worse off. Whether a minimum wage increase leaves workers better or worse off overall depends on how they value these features of their work environments relative to the wage gains an increase in the minimum wage might deliver.

Additionally, there is widespread evidence that increases in minimum wages lead to declines in compliance with the minimum wage itself.[16] In one recent paper, economist Michael Strain and I found that increased incidences of underpayment eroded roughly one-sixth of the wage gains that were mandated by minimum wage increases enacted over the past decade by U.S. states. In an analysis of 10 central and eastern European countries, economists Karolina Goraus-Tańska and Piotr Lewandowski provide complementary evidence that underpayment becomes more prevalent when wage floors are high relative to average wages. Economists Uma Rani and others develop a similar finding in an analysis of 11 developing countries. These results, which span labor markets around the world, highlight an underappreciated tradeoff between price controls and respect for the rule of law.

Some of the best recent research to consider the effects of minimum wages on amenities has focused on the intensity of work. One way that employers might seek to make up for rising wage costs is to demand more output from their workers, through tighter productivity tracking, reduced break times, or more stringent work targets. Recent economics research by Hyejin Ku and by Decio Coviello, Erika Deserranno, and Nicola Persico has found that low-productivity workers in agricultural and retail sales settings increase their work effort in

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[16] Haroon Bhorat, Ravi Kanbur, and Benjamin Stanwix, "Minimum Wages in Sub-Saharan Africa: A Primer," *World Bank Research Observer* 32, no. 1 (February 2017): 21–74; Karolina Goraus-Tańska and Piotr Lewandowski, "Minimum Wage Violation in Central and Eastern Europe," *International Labour Review* 159, no. 2 (March 2018): 297–336; Uma Rani et al., "Minimum Wage Coverage and Compliance in Developing Countries," *International Labour Review* 152, no. 3–4 (December 2013): 381–410; Andrea Garnero, "The Dog That Barks Doesn't Bite: Coverage and Compliance of Sectoral Minimum Wages in Italy," *IZA Journal of Labor Policy* 7, no. 1 (2018): 1–24; Andrea Garnero and Claudio Lucifora, "Turning a 'Blind Eye'? Compliance with Minimum Wage Standards and Employment," *Economica* 89, no. 356 (March 2022): 884–907; Jeffrey Clemens and Michael R. Strain, "Understanding 'Wage Theft': Evasion and Avoidance Responses to Minimum Wage Increases," *Labour Economics* 79 (December 2022): 102285; and Jeffrey Clemens and Michael R. Strain, "Does Measurement Error Explain the Increase in Subminimum Wage Payment Following Minimum Wage Increases?," *Economics Letters* 217 (August 2022): 110638.

the wake of minimum wage increases. Furthermore, both papers find large effects in the sense that increases in output offset a large fraction of the wage bill increase firms faced because of the uplift in the minimum wage.[17] A key point in this discussion is that a job's physical and mental toll are among its costs. An increase in those costs will thus tend, like a decline in a job's fringe benefits, to reduce a worker's well-being even as the associated increase in wages augments it. Put differently, workers "pay" in part for a higher minimum wage by enduring more intense, or otherwise less pleasant, working conditions.

Research on the responsiveness of other job features to minimum wage changes is sparse. One dimension of potential interest involves scheduling. Michael Strain and I, for example, developed a hypothetical example to illustrate how a shift away from worker-driven schedules toward employer-driven ones may help firms offset the costs of an increase in the minimum wage. We suppose that employer-driven schedules increase hourly output by enabling a manager to send workers home when there are few customers. By increasing hourly output, a shift to such scheduling practices can restore the balance between wages and output in the wake of a minimum wage increase. This shift may be costly for workers, however, as it makes their schedules and incomes less dependable.[18]

As with adjustments to fringe benefits, such a change would thus tend to nullify both the benefits to workers and the costs to firms of a higher minimum wage. In the United Kingdom, the increasing use of "zero hour" contracts, through which workers are effectively on call, illustrates concretely how increasing minimum wages can lead to these scheduling practices becoming more prominent.[19]

Adjustments to Whom Firms Employ and How Much They Employ Them

An additional point of interest is that data on industry-wide wage bills and employment counts can hide changes in the types of workers that are actually employed. If the least-skilled are replaced by higher-skilled workers, industry employment counts may mask job losses for the minimum wage's intended beneficiaries.

Several recent studies have found evidence that minimum wage increases change hiring patterns, as higher-skilled workers tend to replace lower-skilled workers. A notable study in

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[17] Hyejin Ku, "Does Minimum Wage Increase Labor Productivity? Evidence from Piece Rate Workers," *Journal of Labor Economics* 40, no. 2 (April 2022): 325–59; and Decio Coviello, Erika Deserranno, and Nicola Persico, "Minimum Wage and Individual Worker Productivity: Evidence from a Large US Retailer," *Journal of Political Economy* 130, no. 9 (September 2022): 2315–60. Interestingly, the effort margin has been taken seriously in data-driven studies of minimum wages since as early as a 1915 analysis of minimum wage laws in Oregon by Marie Obenauer and Bertha von der Nienburg, who worked at that time for the Bureau of Labor Statistics. See Marie L. Obenauer and Bertha von der Nienburg, Effect of Minimum- Wage Determinations in Oregon (Washington: Government Printing Office, July 1915).
[18] Jeffrey Clemens and Michael R. Strain, "Implications of Schedule Irregularity as a Minimum Wage Response Margin," *Applied Economics Letters* 27, no. 20 (2020): 1691 1694.
[19] Nikhil Datta, Giulia Giupponi, and Stephen Machin, "Zero-Hours Contracts and Labour Market Policy," *Economic Policy* 34, no. 99 (July 2019): 369–427.

this vein involved an actual randomized experiment conducted on the Amazon Mechanical Turk marketplace (an online labor market) by the MIT Sloan School of Management economist John Horton.[20] Horton's study finds strong and clear evidence that higher minimum wage rates lead firms to shift their hiring away from low-productivity workers toward higher-productivity ones.

In a study focused on data from the early to mid-2010s, economists Lisa Kahn, Jonathan Meer, and I analyzed both the types of workers employed in low-wage occupations and the skill sets requested by vacancy postings for workers in those roles. Our analysis found that increases in minimum wages predict increases in the average age and education of workers in low-wage jobs, as well as increases in the likelihood that vacancy postings for these jobs require a high school diploma.[21] A number of additional papers have found evidence consistent with worker substitution along these lines.[22] A high minimum wage may thus increase the wages and employment prospects of some; however, the workers at whose expense these gains come will tend to be those starting at the lowest level of skills.

Firms might also adjust by altering workers' hours. In their analysis of the City of Seattle's large increases in the minimum wage, for example, economists Ekaterina Jardim and others found evidence that work hours in low-wage jobs shifted away from new hires and inexperienced workers toward workers who had accumulated at least moderate levels of experience in low-wage jobs.[23] More experienced workers realized earnings gains, whereas inexperienced workers lost earnings because of reductions in hours. Recent work by economists Radhakrishnan Gopalan and others provides additional evidence that incumbent workers tend to benefit from minimum wage increases, whereas the fresh hiring of low-skilled workers tends to slow.[24]

The Minimum Wage Is a Price Floor

A lack of imagination therefore regularly confounds efforts to analyze and appreciate the distortionary consequences of price controls. At a high level, the key point is that price controls will also tend to influence the quality of the good or service in question. Controls

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[20] John J. Horton, "Price Floors and Employer Preferences: Evidence from a Minimum Wage Experiment," Elsevier, January 13, 2017.
[21] Jeffrey Clemens, Lisa Kahn, and Jonathan Meer, "Dropouts Need Not Apply? The Minimum Wage and Skill Upgrading," *Journal of Labor Economics* 39, no. 51 (January 2021): S107–49.
[22] Clemens and Wither, "Minimum Wage and the Great Recession" (n. 7); David Fairris and Leon Fernandez Bujanda, "The Dissipation of Minimum Wage Gains for Workers through Labor-Labor Substitution: Evidence from the Los Angeles Living Wage Ordinance," *Southern Economic Journal* 75, no. 2 (August 2008): 473–96; and Laura Giuliano, "Minimum Wage Effects on Employment, Substitution, and the Teenage Labor Supply: Evidence from Personnel Data," *Journal of Labor Economics* 31, no. 1 (January 2013): 155–94.
[23] Ekaterina Jardim et al., "Minimum-Wage Increases and Low-Wage Employment: Evidence from Seattle," *American Economic Journal: Economic Policy* 14, no. 2 (May 2022): 263–314.
[24] Radhakrishnan Gopalan et al., "State Minimum Wages, Employment, and Wage Spillovers: Evidence from Administrative Payroll Data," *Journal of Labor Economics* 39, no. 3 (July 2021): 673–707.

on rent, for example, may lead landlords to skimp on maintenance or forgo renovations. Controls on premiums may lead health insurance plans to increase cost-sharing provisions or shrink their networks of physicians and hospitals. These changes in quality may either supplement or occur in lieu of changes in quantities, whether in the quantity of housing units supplied, the number of insurance plans marketed, or the number of low-wage workers demanded.

As this chapter highlights, discussions of minimum wages are replete with this common yet pernicious conceptual error of ignoring these other aspects. The tradeoffs associated with minimum wages involve much more than whether pay raises reduce the number of jobs. Increases in minimum wages can influence benefit offerings, employee discounts, effort requirements, and other aspects of jobs, as well as who holds those jobs. These adjustments, which can undermine the minimum wage's goals in ways that are difficult to detect, can be crucial for appreciating the limits of what is known about the effects of high minimum wages.