

# The legal ‘freedom of contract’ framework is flawed because it ignores the persistent absence of full employment

By [Lawrence Mishel](#) • February 3, 2022



## Unequal Power

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Part of the [Unequal Power](#) project, an EPI initiative to reestablish the understanding in law, politics, economics, and philosophy, that equal bargaining power between workers and employers does not exist. Recognizing this inherent workplace inequality will bolster freedom, economic fairness, workplace protections and democracy.

# Executive summary

Embedded in U.S. employment law is the presumption that the employer and the employee have equal power, that either can as readily walk away from an employment relationship as the other, and that the employee can as easily find an equivalent job as the employer can find an equivalent worker. In other words, each is free to contract—to agree to an employment arrangement—on equal terms, without constraint or coercion. But for workers to be on a level playing field with employers requires an economy at full employment, where everyone who wants a job or even just a decent employment situation can find one. Only in this circumstance is an employee free to contract without constraint or coercion.

Yet the economy is rarely at full employment, and even on the rare occasions that it is large segments of the workforce still face substantial unemployment and difficulty finding quality jobs. Blacks, Hispanics, and those without college degrees endure a permanent recession.

This paper uses measures of unemployment from the Bureau of Labor Statistics and reviews important recent work to examine trends in overall labor market slack and the unemployment experiences of specific demographic groups, as well as to illustrate the impact of unemployment on worker behavior (i.e., quitting, switching jobs), employer behavior (i.e., recruiting intensity), and labor market outcomes such as wage growth.

The length of time workers remain unemployed during spells of unemployment and the likelihood that they will quit a job or switch jobs illustrate their diminished options when unemployment is high:

- In recent downturns the duration of unemployment and the share of the unemployed who were long-term unemployed increased as the economy moved into recession. Obviously, the prospect of quitting and becoming unemployed becomes a much more costly prospect when the economy is not at full employment.
- Also in recent downturns, the share of workers quitting declined substantially as unemployment rose, while

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the share climbed as the economy recovered. Thus, a worker's ability to quit and an employer's ability to fill a vacancy are not independent of the unemployment situation.

- Most workers find a new job by directly switching employers, rather than finding a new job after becoming unemployed or leaving the labor force, and data show that a higher unemployment environment adversely affects workers' ability and willingness to switch employers. Compounding this constraint is the fact that switching jobs is an essential component of receiving higher wages.

Unemployment also changes employer behavior. When unemployment is higher employers are able to fill job vacancies more quickly and with less effort; their recruitment activities—choice of methods, expenditures on help-wanted ads, screening of job applicants—differ according to the level of unemployment. Moreover, when unemployment is elevated and employers can more readily find qualified workers, employers opportunistically raise the expected credentials for new hires. In the 2007–2010 downturn, for instance, employers increasingly required a bachelor's degree for physician assistant jobs but retreated from this requirement as unemployment fell.

Finally, there is substantial evidence that higher unemployment lowers wage growth, especially for low- and moderate-wage workers and for Black and Hispanic workers. One indicator of the overall shift in power against workers is that in the last recovery from 2009 to 2019 boosting wages required lower levels of unemployment than before.

Workers in the aggregate experience full employment only occasionally, and millions of workers never experience it at all, ever. The presence of excessive unemployment—beyond full employment—tilts the power balance toward employers. Just acknowledging high unemployment leads one to recognize that in many, if not most, circumstances employers can far more readily replace a worker than a worker can find a comparable job. To believe otherwise is to live in a world without access to windows or newspapers, and it is curious and unsettling that claims of freedom of contract have been made when there was, or had recently been, very high unemployment. Simply acknowledging the persistent absence of full employment for many workers renders the freedom-of-contract framework a flawed basis for assessing employment relationships and arrangements.

## Introduction

Embedded in U.S. employment law is the presumption that the employer and the employee have equal power, that either can as readily walk away from an employment relationship as the other, and that the employee can as easily find an equivalent job as the employer can find an equivalent worker. In other words, each is free to contract—to agree to an employment arrangement—on equal terms, without constraint or coercion. This assumption of equal power is pervasive but also insidious, and it undercuts our ability to have adequate statutory and common law workplace protections (Bagenstos 2020).

This is an assumption similar to the one economists make when they assume “full employment.” In the economics case, however, one can relax an assumption and model how outcomes change. In the legal case the law applies at all times. The freedom-of-contract formulation in the law is oddly applied to employer unilateral changes to contract terms for already-employed workers, as if there is a new contract each day.

Not only do common sense and observation tell us that employees can rarely walk away from their jobs as readily as employers can find replacements, but documenting this fact is easily accomplished by looking at employer and employee behavior. As business cycles proceed and as economies boom and bust, unemployment rises and falls. The economy is rarely at full employment, and even on the rare occasions that it is large segments of the workforce still face substantial unemployment and difficulty finding quality jobs. Blacks, Hispanics, and those without college degrees endure a permanent recession. Less-than-full employment manifests itself in employee behavior through lower quit rates, fewer transitions to new jobs, and longer spells of unemployment between jobs.

Unemployment also changes employer behavior. When unemployment is higher employers are able to fill job vacancies more quickly and with less effort; their recruitment activities—choice of methods, expenditures on help-wanted ads, screening of job applicants—differ according to the level of unemployment, and employers raise hiring standards when unemployment is higher. Also, when unemployment is elevated and employers can more readily find qualified workers, employers opportunistically raise the expected credentials for new hires. In the 2007–2010 downturn, for instance, employers increasingly required a bachelor’s degree for physician assistant jobs but retreated from this requirement as unemployment fell.

Last, there is substantial evidence that higher unemployment lowers wage growth, especially for low-and moderate-wage workers and for Black and Hispanic workers. One indicator of the overall shift in power against workers is that in the last recovery from 2009 to 2019 boosting wages required lower levels of unemployment than before.

There are many other reasons besides the business cycle and higher unemployment that workers, individually, have less power than their employers. For example, individual workers as a rule have little or no wealth to fall back on, they may be locked into an employer for their health coverage, they may have limited transportation options, and child care responsibilities may constrict their scheduling options (Edwards 2022). There is also evidence from the emerging literature on monopsony that quitting is insufficiently powerful to restrain employer exploitation, as evidenced by the fact that even when employers reduce wages only a small share of employees actually quit (Naidu and Carr 2022). Nevertheless, the simple acknowledgment of the difficulty in finding a job when unemployment exceeds full employment is sufficient to show how otherworldly is the assumption of equal power and the claim that freedom of contract produces optimal outcomes that regulations or institutions should not disturb.

## What is the freedom-of-contract framework?

In the freedom-of-contract framework, employers and employees have equal power, and their negotiated arrangements are optimal and should not be altered or regulated by external forces such as government-set labor standards or unions. But this presumption of equal power willfully ignores the fact that workers rarely enjoy full employment, meaning that employers enjoy plentiful access to willing new workers while employees face more difficulties and costs in finding alternative comparable employment. By itself, the absence of full employment creates a power asymmetry between employers and employees.

Bagenstos (2020) explained the freedom-of-contract and employer-employee equality assumptions underlying the at-will employment doctrine:

[The at-will] doctrine authorizes both employers and employees to terminate the relationship at any time. The Supreme Court expressly relied on this supposed equality when it gave constitutional significance to at-will employment in its *Lochner*-era decisions. In *Adair*, Justice Harlan wrote that “the right of the employe to quit the service of the employer, for whatever reason, is the same as the right of the employer, for whatever reason, to dispense with the services of such employe.”<sup>1</sup> He went on to say that “the employer and the employe have equality of right, and any legislation that disturbs that equality is an arbitrary interference with the liberty of contract which no government can legally justify in a free land.”<sup>2</sup> And he declared, “it cannot be...that an employer is under any legal obligation, against his will, to retain an employe in his personal service any more than an employe can be compelled, against his will, to remain in the personal service of another.”<sup>3</sup>

Richard Epstein (1984), in his iconic defense of the at-will doctrine, also relied heavily on the freedom-of-contract framework and the presumed equality between employer and employee:

One manifestation of that position was the prominent place that the common law, especially as it developed in the nineteenth century, gave to the contract at will. The basic position was well set out in an oft-quoted passage from *Payne v. Western & Atlantic Railroad*:

[M]en must be left, without interference to buy and sell where they please, and to discharge or retain employees at will for good cause or for no cause, or even for bad cause without thereby being guilty of an unlawful act *per se*. It is a right which an employe may exercise in the same way, to the same extent, for the same cause or want of cause as the employer. (pp. 947–8)

Further, Epstein wrote, under an at-will arrangement:

The employer is free to demand whatever he wants of the employee, who in turn is free to withdraw for good reason, bad reason, or no reason at all. (p. 966)

The freedom-of-contract framework was central to the Supreme Court’s majority opinion in

2018 in *Epic Systems*,<sup>4</sup> which determined that the Federal Arbitration Act providing for individualized arbitration proceedings must be enforced, and that neither the Arbitration Act's saving clause nor the National Labor Relations Act suggests otherwise.<sup>5</sup>

Justice Gorsuch opened the majority opinion with these questions:

Should employees and employers be allowed to agree that any disputes between them will be resolved through one-on-one arbitration? Or should employees always be permitted to bring their claims in class or collective actions, no matter what they agreed with their employers?

Justice Gorsuch presumes there is no basis for interfering with any seemingly voluntary employer-employee agreement and that the Federal Arbitration Act predominates over the National Labor Relations Act's (NLRA) guarantee of employee *collective* actions (such as class actions in private arbitration proceedings), a guarantee that was affirmed by the National Labor Relations Board in 2012.

In her dissent, Justice Ginsburg noted:

To explain why the Court's decision is egregiously wrong, I first refer to the extreme imbalance once prevalent in our Nation's workplaces, and Congress' aim in the NLGA [Norris-LaGuardia Act] and the NLRA *to place employers and employees on a more equal footing* [emphasis added].

The *Epic Systems* case highlighted the disagreement within the court about the freedom-of-contract framework and the assumed equality of power between employers and employees. The majority accepted the freedom-of-contract framework even though employers imposed the forced individual arbitration agreements on employees long after they had negotiated for, and accepted, employment.<sup>6</sup>

Notably absent from any of these arguments and cases relying on the freedom-of-contract framework is any consideration of the business cycle or the fact that workers, because they typically face unemployment higher than that prevailing at full employment, are rarely on equal footing with their employers.

Indeed, unemployment was or had been excessively high at the time of these key court cases and writings. In the three years leading up to the *Adair* decision (1906–1908), unemployment in *manufacturing, transportation, building trades, and mining* (the only historic data available) rose from 5.9% to 6.9% to 16.4%.<sup>7</sup> In 1984, the year of publication of Epstein's famous analysis, the economy was emerging from the greatest economic downturn (at that time) since the Great Depression, with unemployment falling from 9.7% in 1982 to 9.6% in 1983 and to 7.5% in 1984 (still far above full employment).<sup>8</sup> The 2018 opinion in *Epic Systems* followed the recovery from the financial crisis of 2007-2009 and the lowering of unemployment from a peak of 10% in October 2009 to just 3.9% in the summer of 2018.<sup>9</sup>

This willful ignoring of unemployment trends is essential to the presumption, perhaps the pretense, that employee-employer employment agreements are optimal, characterized as

occurring between equal parties, one as willing as the other to depart the arrangement. Yet, as documented below, excess unemployment severely weakens the relative bargaining position of workers.

## What is full employment?

This paper argues that the economy is rarely at full employment and sometimes never so for large segments of the workforce. To measure whether the economy is above, below, or at full employment requires an operational, measurable definition of the concept. This is a challenge, as there is no consensus on the definition of full employment, and the unemployment rate considered full employment shifts over time. The benchmark used in our analysis is setting full employment at 5%, slightly below

One approach is to categorize unemployment by reason, separately identifying those unemployed due to cyclical, structural, or frictional unemployment. As defined by the Congressional Research Service (CRS 2020), cyclical unemployment is the extra unemployment resulting from the ups and downs of the business cycle; structural unemployment is “unemployment resulting from a mismatch of skills or interest between workers and the jobs available,” due to trade, technological change, or shifts in consumer preferences; frictional unemployment is “short-term unemployment due to job searching or transition.” Full employment, in this scheme, occurs when “the economy is operating at its full potential, cyclical unemployment is zero and the unemployment rate is roughly equal to the sum of structural and frictional unemployment” (CRS 2020). However, estimates of the amount of cyclical, structural, and frictional unemployment are not readily available to operationalize this definition.

Similarly, the Full Employment Action Council, the advocacy group that campaigned to pass the Humphrey-Hawkins Full Employment Act in the 1970s, describes full employment as the absence of involuntary unemployment—everyone who wants a job can get one.

The freedom-of-contract framework presumes an equality between employers’ concerns over vacancies and workers’ fears of becoming unemployed. In this light, a balanced labor market is one where vacancies equal the number of unemployed and where outside options are comparable: Workers and firms, respectively, have equal and ready access to a replacement job or worker. This framework is comparable to an analysis of the standard macroeconomic model of unemployment.<sup>10</sup> Certain measures of vacancies (i.e., job openings) and unemployment allow us to gauge when the two are in balance. Davis, Faberman, and Haltiwanger (2013), who provide such data (including data made available on their website) from 2001 through June 2017, find that in no month in that period did job openings exceed unemployment; on average, there were 2.7 unemployed for every opening. Even in the periods of the lowest unemployment (the first halves of 2001, 2007, and 2017), when unemployment was 4.5% or less, there were 24-49% more unemployed than job openings. This evidence suggests that the full employment rate needed to balance openings and unemployment is certainly less than 4.5%.

Much economic analysis over the last few decades has chosen as a definition of full employment the non-accelerating inflation rate of unemployment (NAIRU), or the rate below which inflation will begin to accelerate.<sup>11</sup> There have been many critiques of the NAIRU (Galbraith 1997; Staiger, Stock, and Watson 1997; Baker 2000; Bernstein and Baker 2013a), and inflation has not accelerated when the unemployment rate has fallen (sometimes far) below it (Crump et al. 2019). For instance, unemployment averaged 3.7% in the last half of 2019, a rate below the Congressional Budget Office (CBO)'s estimate of NAIRU of 4.5% for that period, without any sign of accelerating inflation. Crump et al. (2019) "estimate that the natural rate of unemployment was about 4.0 percent toward the end of 2018." Bernstein and Baker (2013b) detail the lack of inflation acceleration in the late 1990s boom despite unemployment falling to 4.0% in 2000, far below the 5.2% NAIRU estimated by CBO for that year. CBO, which provides an estimate of NAIRU back to 1949 and uses it to estimate potential output and the corresponding fiscal consequence of departures from full capacity, estimates that the NAIRU averaged about 5.3% over the entire 1979–2019 period and just 4.9% from 2000 to 2019.

For the 1979–2019 period the analysis below employs a somewhat arbitrary 5.0% as the full employment benchmark, a bit below the 5.3% estimated by CBO though close to the 4.9% of 2000–2019. There are three reasons for choosing 5.0% rather than 5.3%. One is simplicity. Second, experience shows that the NAIRU overstates the unemployment level corresponding to actual acceleration of inflation. Third, as discussed above, the unemployment rate that equates vacancies and unemployment is substantially below 5.0%. Choosing a 5% full employment benchmark is a conservative choice. Regardless, the choice of 5.0% rather than 5.3% does not materially affect any of our conclusions: The economy is rarely at full employment, and large segments of the workforce never experience full employment.

It should be acknowledged that the unemployment rate does not fully capture the many dimensions and negative consequences of *underemployment*: workers working part time but wanting full-time work; workers who have stopped looking for work and left the labor force; and workers employed at jobs for which they are overqualified. At any given rate of unemployment, there are many more workers suffering from various types of underemployment than there are unemployed workers. The selection of a particular unemployment rate as the full employment benchmark may be appropriate for designating periods of full employment and slack, though it does understate the number of workers adversely affected by slack conditions.

## The employee side of higher unemployment

The share of the labor force that is unemployed is a good indicator of the labor market climate or labor market slack. Unemployment, as officially measured by the Bureau of Labor Statistics (BLS), reflects "people who meet all of the following criteria: were not employed during the survey reference week; were available for work (except for

temporary illness); had made a specific, active effort to find employment sometime during the 4-week period ending with the survey reference week” (BLS 2018, 3-4). This is considered an *activity* measure, since unemployment is equated with not having a job and actively looking for work. The unemployment rate is measured as, “The number of unemployed people as a percentage of the labor force,” and the labor force is the sum of the employed and the unemployed (BLS 2018, 4).

This paper relies on the BLS measures of unemployment to examine trends in overall labor market slack and the unemployment experiences of specific demographic groups, as well as to illustrate the impact of unemployment on worker behavior (i.e., quitting, switching jobs), employer behavior (i.e., recruiting intensity), and labor market outcomes such as wage growth. But, as noted above, unemployment does not capture the full extent of underemployment in the labor market and therefore substantially underrepresents the extent of labor market slack at any point in time and for the persons affected.

## Aggregate unemployment

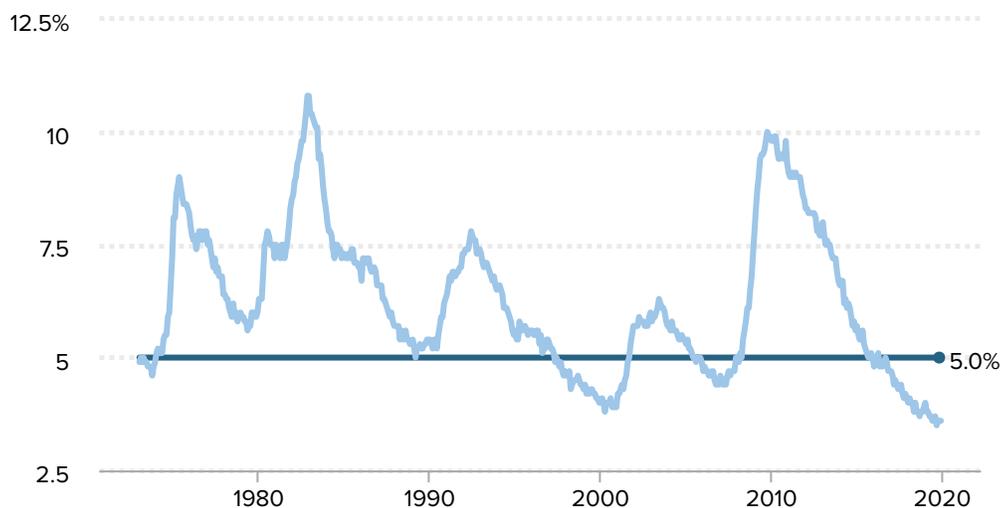
The basic trends in the unemployment rate are presented in **Figure A**, which shows the ups and downs of the quarterly unemployment rate from 1973 through 2019. The line at a presumed full employment rate of 5% illustrates how frequently unemployment remained above full employment. The average unemployment rate over this period was 6.25%, meaning that the economy averaged 1.25 percentage points of unemployment above (a presumed) 5% full employment rate. **Table 1** shows that, in the 188 quarters comprising the 1973-2019 period, in only 50 of them was unemployment at 5% or less, or 26.6% of the time (equivalent to 12.5 of the 47 years). Unemployment exceeded 6% for 85 quarters, or 45.2% of the time, equivalent to 21.5 of the 47 years from 1973 to 2019. In other words, the economy of the last five decades was infrequently at or below an unemployment rate of 5%,<sup>12</sup> and full employment is far from the norm.

## Unemployment for specific demographic groups

Not only is the unemployment rate frequently greater than that associated with full employment, but the unemployment rate experienced by many demographic groups never achieves full employment, ever. **Table 2** presents the distribution of unemployment over the months from 1979 through 2019 for demographic groups delineated by education and race/ethnicity.<sup>13</sup> These tabulations illustrate some regularities (reflecting our institutions and systems of discrimination) in the unemployment realm: Workers who are Black or Hispanic have higher unemployment at every level of education, and workers with less educational credentials (e.g., high school graduates) have higher unemployment than those with more credentials (e.g., college graduates). This can be seen in the average unemployment rates presented in the last row of Table 2. Blacks and Hispanics experienced unemployment rates of 11.9% and 8.6% on average, respectively, over the 1979–2019 period, far greater than whites, whose unemployment was 5.1%. This means that the norm for whites was a roughly full employment economy, while Blacks had

Figure A

### Unemployment rate of workers age 16 and older, 1973–2019



Source: Bureau of Labor Statistics' Current Population Survey, public data series.

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Table 1

### Distribution of unemployment, 1973–2019

Unemployment rate	Number of quarters	Share of quarters
More than 6%	85	45.2%
5.1% to 6.0%	53	28.2%
5% or less	50	26.6%

Source: Bureau of Labor Statistics' Current Population Survey, public data series.

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unemployment twice as high and Hispanics 70% higher than whites.

Of course, the averages for particular race/ethnic groups obscure the much higher unemployment for those in the working class of each race/ethnic group. This can be seen by examining the average unemployment of high school graduates in each group: Black, 12.8%; Hispanic, 8.2%; and white, 5.7%. The entire group with less than a four-year college degree (those with some college, a high school degree, or less than a high school education) experiences high unemployment, and this group comprises 81% of the Black workforce over the 1979–2019 period. Blacks without a high school degree averaged 21.4% unemployment, and those with some college (including those with a two-year degree) averaged 9.7%.

Table 2 also illustrates how rarely certain demographic groups enjoy full employment by showing the share of the months over the 1979–2019 period at which specific ranges of

Table 2 **Unemployment by education and race/ethnicity, 1979–2019**

	Education		Race/ethnicity			Race/ethnicity: high school & college						
	All	High school	College	Black	White	Hispanic	Black high school	Black college	Hispanic high school	Hispanic college	White high school	White college
<i>Shares of months, 1979–2019, at unemployment of:</i>												
<b>5% or less</b>	25.8%	11.2%	93.9%	0.0%	59.6%	4.7%	0.0%	61.4%	3.7%	79.7%	43.7%	99.6%
<b>5.1% to 6.0%</b>	31.1%	32.1%	6.1%	0.0%	17.9%	12.6%	0.0%	15.4%	13.8%	9.6%	23.4%	0.4%
<b>6.1% to 10.0%</b>	41.7%	46.3%	0.0%	29.3%	22.6%	50.6%	19.3%	23.2%	63.4%	10.8%	30.1%	0.0%
<b>More than 10.1%</b>	1.4%	10.4%	0.0%	70.7%	0.0%	32.1%	80.7%	0.0%	19.1%	0.0%	2.8%	0.0%
<b>Total</b>	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
<b>Average unemployment</b>	6.2%	6.9%	3.2%	11.9%	5.1%	8.6%	12.8%	5.0%	8.2%	4.3%	5.7%	2.9%

Source: Author's analysis of EPI Current Population Survey Extracts, Version 1.0 (2021), <https://microdata.epi.org>.

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unemployment rates prevailed.<sup>14</sup> For instance, there was no time over the 1979–2019 period when the Black unemployment rate was 5% or less, or even 6% or less. Blacks, on average, never experienced anything near full employment. Meanwhile, Black high school graduates faced unemployment rates of more than 10.1% for roughly 81% of the 1979–2019 period. Hispanic high school graduates experienced unemployment rates of 5% or less in only 18 (3.7%) of the 492 months in the 1979–2019 period; they faced unemployment exceeding 6.0% in 82.5% of the months. In contrast, college graduates enjoyed long periods of full employment (of 5% or less), though it was more common for white college graduates (99.6% of the time) than for Black (61.4% of the time) or Hispanic (79.7% of the time) college graduates.

In sum, full employment is a rare experience, and even when the aggregate economy has full employment large groups (primarily Blacks and Hispanics and those lacking a four-year college credential) still face excessive unemployment. Employers persistently enjoy an uneven playing field tilted to their advantage simply because workers face excessive unemployment and other types of underemployment.

## How high unemployment shapes workers' options

High unemployment carries consequences for workers and changes their behaviors and outlook. When unemployment is higher workers face greater difficulties switching jobs, have longer spells of unemployment if they become unemployed, and believe that it is harder to find a job. Accordingly, workers are far less likely to quit when unemployment is high. The idea that workers can as readily walk away from a job as an employer can

Table 3

### Unemployment, duration of unemployment, and share of long-term unemployed, 1979–2019

Year	Unemployment rate	Unemployment duration (weeks)		Percent unemployed more than 26 weeks
		Average	Median	
1979	5.9%	10.8	5.4	8.7%
1983	9.6%	20.0	10.1	23.9%
2007	4.6%	16.8	8.5	17.6%
2009	9.3%	24.4	15.1	31.5%

Source: Author's analysis of Bureau of Labor Statistics data on unemployment duration.

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replace a worker does not hold if workers do not consistently enjoy a full employment environment.

**Length of unemployment spells.** Unemployment rises in recessions as more people are laid off and then stay unemployed for longer spells because jobs are difficult to find (Elsby, Sahin, and Hobijn 2010; Davis, Faberman, and Haltiwanger 2011). The BLS unemployment duration data can be used to demonstrate the general pattern of the lengthening of unemployment spells in recessions, as unemployment escalates.<sup>15</sup> Higher unemployment, in fact, arises from more workers becoming unemployed after losing jobs rather than unemployment spells lasting longer.

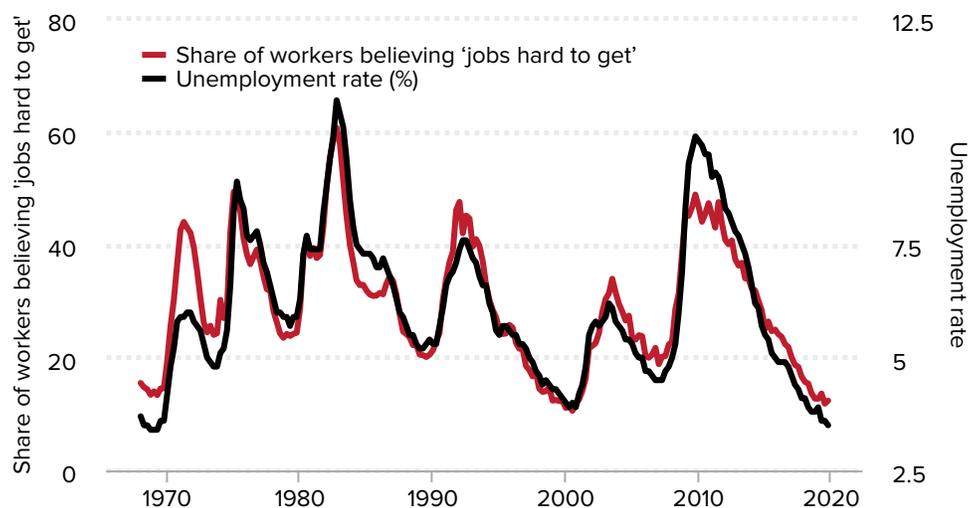
**Table 3** uses the 1979–1983 and 2007–2009 downturns to show how the duration of unemployment (average and median) and the share of the unemployed who are long-term unemployed (greater than 26 weeks) increases as the economy moves from the cyclical peak (low unemployment) into a recession. It shows, for instance, that the duration of unemployment, both average and median, nearly doubled between 1979 and 1983, and both also increased remarkably during the 2007–2009 downturn. The share of workers experiencing long spells of unemployment (exceeding 26 weeks) also spiked. Obviously then, the prospect of quitting and becoming unemployed becomes a much more costly prospect for workers when the economy is not at full employment.

**Workers find “jobs hard to get” when unemployment rises.** Not surprisingly, the share of workers who say in the Conference Board’s Consumer Confidence Survey that they find “jobs hard to get” closely follows the rise and fall of unemployment (**Figure B**).<sup>16</sup> In the periods of high unemployment in 1975, 1983, 1991, and 2009, about half the respondents said it was hard to find a job, up from around 11% in 2000, when unemployment was low, and from about 20% in 2007, before the financial crisis.

**Quits.** It has long been established that the scale of workers quitting their jobs is tightly related to the level of and changes in unemployment. In fact, 30 years ago Akerlof, Rose,

Figure B

## Unemployment rate and share of workers believing 'jobs hard to get,' 1969–2019



Source: Conference Board and Bureau of Labor Statistics.

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and Yellen (1988), using BLS data from manufacturing over the 1948–1981 period to document the procyclical nature of quits, opened their paper by writing: “One indisputable [macroeconomic] regularity is the highly procyclical nature of quits: many more people voluntarily leave their jobs when unemployment is low than when it is high.”

Davis, Faberman, and Haltiwanger (2011) combined data from two BLS data sets—Business Employment Dynamics (BED) and Job Openings and Labor Turnover (JOLTS)—to trace quits from 1990 to 2010; they extended the series to 2019 using more recent JOLTS data (**Figure C**).<sup>17</sup> These data clearly show the substantial decline in quits in the downturns of the early 1990s and early 2000s and from 2007 to 2009, as well as the increase in quits in the recoveries of the late 1990s, 2003–2007, and 2009–2019. The willingness and ability to quit are tightly linked to the level of unemployment. Therefore, a worker’s ability to quit work and the ability of an employer to fill job vacancies (more on this below) are not independent of the unemployment situation, a situation that generates a substantial power asymmetry between employers and employees, contrary to the assumptions of the freedom-of-contract framework. Whatever power the ability of workers to quit has on restraining employer exploitation is diminished when unemployment exceeds the levels prevailing in the relatively rare moments of full employment.

The relationship between quits and unemployment in downturns and recoveries is illustrated in **Table 4** using Davis, Faberman, and Haltiwanger quits data since 2001.<sup>18</sup> One conclusion from Table 4 is that there are a large number of quits each year: For instance, the 45.0 million quits in 2019 represented 29.8% of total jobs held. Second, quits fluctuate a great deal and much more so than unemployment. For instance, unemployment rose 1.9 million in the 2001–2003 downturn but quits diminished far more, by 8.2 million. Likewise,

Figure C

**Quarterly quit rate, 1990–2019**

Source: Extended version of Davis, Faberman, and Haltwanger (2012a).

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the downturn of 2007–2009 caused unemployment to rise by 7.2 million but quits declined by 15.7 million. Unemployment declines in recoveries, but quits increase much more: In the 2003–2007 and 2009–2019 recoveries the change in quits were, respectively, 3.3 and 2.6 times the fall in unemployment.

Quit rates in years of relatively low unemployment (2001, 2007, and 2019) reveal that there is no strong secular trend in quitting. The quit rate was higher in 2001 than in 2007 (31.6% versus 28.5%) but increased only slightly from 2007 to 2019 (from 28.5% to 29.8%).

Much recent research has also identified the procyclical nature of quits, i.e., falling in downturns and rising in recoveries. Elsby, Sahin, and Hobijn (2010) note that “the quit rate moves procyclically.” Davis, Faberman, and Haltwanger (2012a) find “strongly pro-cyclical movements in quit rates even after conditioning on the employer’s growth rate,” and “the main story for quits appears to involve worker responses to outside labor market conditions [i.e., unemployment]” rather than a cross-sectional relationship to establishment growth rates.

The changes in quits affects far more workers than those who actually quit. Increases (and decreases) of quits affect the motivation of employers to retain their staff. That is, a fall in quits will affect the employment conditions of those who stay. This is an important mechanism by which higher unemployment affects a large segment of the workforce.

The logic of how unemployment affects quits and wages was ably described by Faberman and Justiniano (2015):

The fact that quits are procyclical makes intuitive economic sense. Quits reflect job

Table 4

## Quits and unemployment in downturns and recoveries, 2001–2019

	Annual quit rate	Annual quit level (millions)	Civilian unemployment level (millions)
<b>2001</b>	31.6%	41.8	6.8
<b>2003</b>	25.8%	33.6	8.8
<b>2007</b>	28.5%	39.2	7.1
<b>2009</b>	17.9%	23.6	14.3
<b>2019</b>	29.8%	45.0	6.0
<b>Changes:</b>			
<b>Downturns</b>			
<b>2001–2003</b>	-5.8%	-8.2	1.9
<b>2007–2009</b>	-10.5%	-15.7	7.2
<b>Recoveries</b>			
<b>2003–2007</b>	2.7%	5.6	-1.7
<b>2009–2019</b>	11.9%	21.4	-8.3

**Source:** Quits data from Davis, Faberman, and Haltiwanger (2011), updated June 2021. EPI analysis of Bureau of Labor Statistics Job Openings and Labor Turnover Survey and Current Population Survey.

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switching. People are more likely to switch jobs during economic expansions. During these times, there are more jobs available and labor markets are tighter. A tighter labor market implies that employers are more willing to offer higher wages to attract new workers. These higher wages provide a greater incentive for workers to leave their current position and move up what is often referred to as the job ladder. During recessions, labor markets are more slack. There are fewer available jobs and unemployment is higher, so workers have less bargaining power to obtain a better wage offer.

Elsby, Michaels, and Ratner (2020) emphasize that quits generate “replacement hiring” by employers needing to fill vacancies, and this need in turns lures workers from other firms, thereby generating even more quits in a “vacancy chain”; this replacement hiring can account “for a large fraction of aggregate hiring in the U.S. economy.” As Akerlof, Rose, and Yellen (1988) noted, “Quits increase as opportunities expand; the opportunities for job switching are significantly greater when unemployment is low than when it is high.” This process enables workers to obtain better jobs and compensation, as shown by Faberman and Justiniano (2015).

**Switching employers.** Quits reflect employees leaving their employment voluntarily (with the exception of retirements or transfers to other locations). Researchers have focused on one component of quits that is strongly linked to wage growth—employment-to-

employment transitions involving switching employers. Quits, in fact, are dominated by those switching employers rather than those entering unemployment (Elsby, Sahin, and Hobijn 2010).<sup>19</sup> This section examines the relationship between the rate of job switching and changes in unemployment.

Fallick and Fleischman (2004) pioneered the measurement of month-to-month labor flows between unemployment, employment, and “not in the labor force” using the BLS Current Population Survey (CPS). However, Fujita, Moscarini, and Postel-Vinay (2021) identify changes in the CPS in 2007 that led to a sizable understatement in employer-to-employer switching significant enough to force an evaluation of previously identified trends (specifically, CPS data suggested there was no secular decline in employer switching over the last 15 years). Their research has focused on an increased (nonrandom) incidence of missing answers to a key survey question on whether the respondent had the same employer. They correct the data with imputations to develop an alternative series, which is what is used in this section.<sup>20</sup>

**Figure D** and **Table 5**, drawing on the Fujita, Moscarini, and Postel-Vinay data, show the changes in levels and rates at which workers switch employers and experience unemployment.<sup>21</sup> Figure D shows the rate of employment-to-employment switching rising as unemployment falls and declining as unemployment spikes in a downturn. Table 5 elaborates these trends by examining the rise and fall of job switching over recoveries and downturns. The table shows first that there is a substantial amount of job switching each year. In years of low unemployment, such as 2000 or 2007, those switching employers amounted to 30% or more of employment (there were 43.2 million job switches in 2007). Second, employment switching, like quitting, falls in downturns and rises in recoveries. For instance, employer switching fell from a 33.0% rate in 2000 and to 27.4% in 2003, a 5.6 percentage point decline (17% of the 2000 switching rate). In the 2000 to 2003 downturn an additional 3.4 million workers became unemployed but 7.6 million fewer workers switched jobs. Similarly, the switching rate fell 4.5 percentage points during the financial crisis in 2007–2009. The number of workers added to the unemployment rolls (up 8.4 million) equaled the decline in job switchers (8.5 million). In recoveries there is a larger increase in employment-to-employment switching than there is a decline in unemployment. Looking over the longer term at years of low unemployment reveals a decline in job switching between 2000 and 2007 (from 33.0% to 29.6%) but relative stability between 2007 and the end of the recovery in 2019.

These data show that the level and changes in unemployment greatly affect the rate and amount of employment-to-employment switching. Most workers find a new job by directly switching employers, rather than finding a new job after becoming unemployed or leaving the labor force, and a higher unemployment environment adversely affects workers’ ability and willingness to switch employers.

Researchers have established that switching jobs is an essential component of workers receiving higher wages. Fujita, Moscarini, and Postel-Vinay (2021) recently wrote that “on-the-job search by, and competition between firms for, employed workers are a natural source of worker bargaining power.” Direct moves from one employer to another have

Figure D

### Annual employer-to-employer switch rate, 1995–2019



Source: Quarterly averages of monthly rates from Fujita, Moscarini, and Postel-Vinay (2021).

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also been shown to be a major source of earnings growth (Topel and Ward 1992), and being thrown off the “job ladder” can drastically reduce lifetime earnings (Davis and Von Wachter 2011).<sup>22</sup>

Moscarini and Postel-Vinay (2017) have identified changes in employer switching as more important to wage growth than changes in unemployment:

We thus find no empirical evidence to support the view that workers, when negotiating their wages, have a credible threat to quit to unemployment, whose continuation value naturally depends on how easy it would be to then find alternative employment. Our evidence is instead consistent with a credible threat to quit, hence an ability to extract a wage raise, only once an alternative offer has arrived, or is likely to arrive soon.

Another interpretation is simply that a key way that higher unemployment affects wage growth is by eroding opportunities, which are reflected in reducing both quits and employer switching.

## The employer side of higher unemployment

In contrast to employees, the situation of employers becomes more favorable as unemployment rises: Employers recruit less intensively, fill vacancies more quickly, and generally find qualified workers more easily. Employers also use periods of high

Table **Employer-to-employer (EE) switching in downturns and recoveries**

Year: quarter	Unemployment rate	Unemployment level (millions)	Employment-to-employment annualized rate**	Employment-to-employment switches (millions)
<b>1995:4</b>	5.6%	7.4	34.2%	42.8
<b>2000:4</b>	3.9%	5.6	33.0%	45.3
<b>2003:2</b>	6.2%	9.0	27.4%	37.7
<b>2007:2</b>	4.5%	6.9	29.6%	43.2
<b>2009:4</b>	9.9%	15.2	25.1%	34.7
<b>2019:4</b>	3.6%	5.9	28.8%	45.7
<b>Changes in downturns and recoveries *</b>				
<b>1995:4–2000:4</b>	-1.7%	-1.8	-1.1%	2.6
<b>2000:4–2003:2</b>	2.3%	3.4	-5.6%	-7.6
<b>2003:2–2007:2</b>	-1.7%	-2.2	2.2%	5.4
<b>2007:2–2009:4</b>	5.4%	8.4	-4.5%	-8.5
<b>2009:4–2019:4</b>	-6.3%	-9.3	3.8%	11.0

\* Based on unemployment rate peaks and troughs. Employment switches evaluated at end date employment level.

\*\* Seasonally adjusted quarterly average based on monthly rates, multiplied by 12 to annualize.

**Source:** Employer switching data from Fujita, Moscarini, and Postel-Vinay (2021), unemployment data from Bureau of Labor Statistics.

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unemployment to elevate their demands for skills, requiring workers to offer more credentials for similar rates of pay. One can summarize this pattern of evidence as employers increasing their power relative to workers, especially low- and middle-wage workers, in the common instances when unemployment exceeds its full employment level.

We rely heavily on the innovative research by Davis, Faberman, and Haltiwanger (2012a, 2012b, 2013) and Faberman and Justiniano (2015), as well as the BLS JOLTS data, to illustrate key indicators reflecting the employer side of the hiring process. Davis, Faberman, and Haltiwanger build on and improve the JOLTS data on job openings, quits, etc. and extend various data series back to the early 1990s (JOLTS data started in late 2000) using the BED microdata.<sup>23</sup>

## Recruitment intensity

Davis, Faberman, and Haltiwanger (2013) provide a recruiting intensity index that “summarizes, in a quantitative manner, the intensity of employer efforts to recruit for, and fill, their open job positions,” and describe<sup>24</sup> what their metric attempts to capture:

Figure E

**Recruiting intensity per vacancy, 2001–2017**

**Source:** Updated series based on Davis, Faberman, and Haltiwanger (2013) available from <https://www.dice.com/indicators/>.

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Employers with open job positions take several actions and decisions that affect how quickly those positions are filled. Examples include the choice of recruiting methods, expenditures on help-wanted ads, how rapidly employers screen job applicants, their hiring standards, and the attractiveness of compensation packages they offer to prospective new hires.

Recruiting intensity is shorthand for the instruments employers use to influence the pace of new hires—e.g., advertising expenditures, screening methods, hiring standards, and the attractiveness of compensation packages. These instruments affect the number and quality of applicants per vacancy, the speed of applicant processing, and the acceptance rate of job offers.” The authors note that their metric is an indirect one due to data limitations.

The trends in recruiting intensity per vacancy are presented in **Figure E** for the years 2001–2017. The metric fell about 13% from the low-unemployment first quarter of 2001 to the unemployment high point of the second quarter of 2003; it grew modestly during the ensuing recovery (up just 3.9% by the second quarter of 2007) but then fell sharply, by 17.8%, in the financial crisis downturn through 2009.<sup>25</sup> By the second quarter of 2017 (the latest data available) recruiting intensity per vacancy was still slightly below its 2007 peak. Clearly, recruiting requires and receives less effort by employers as unemployment rises.

Figure F

## Average vacancy duration measure, 2001–2017



Source: Updated series based on Davis, Faberman, and Haltiwanger (2013) available from <https://www.dice.com/indicators/>.

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## Employer efficacy in filling jobs and the duration of vacancies

Employers may exert less effort recruiting workers as unemployment rises, and they are definitely more successful in filling vacancies when unemployment is higher. This can be seen in the vacancy duration measure, which “quantifies the average number of working days taken to fill vacant job positions,” developed by Davis, Faberman, and Haltiwanger (2013)<sup>26</sup> and presented in **Figure F**.

The average days to fill a vacancy, or job opening, in early 2001 was 22.5 days, but it fell to just 18.1 days at the recession’s unemployment high point in 2003. As the economy recovered from 2003 to 2007, the days needed to fill a vacancy grew back to 23.3, a bit above the early 2001 level. Not surprisingly, as the economy descended during the financial crisis, the days required to fill a vacancy fell by 7.2 days (a 30.7% drop) to just 16.2 days. In the second quarter of 2017, when the unemployment rate had fallen to 4.4%, it was taking much longer, 29 days, to fill a vacancy, many more than observed in the series’ starting date in 2001.

Another way to observe the ease with which employers fill jobs is by examining the “job-filling rate,” the number of new hires compared with the number of vacancies, or job openings, in the prior month, as shown in **Figure G** using JOLTS data.<sup>27</sup> These data draw on the same data as Figure F, though scaled to the number of days in a month available to fill a vacancy; therefore, Figure G’s measure of the job-filling rate is another way to

Figure G

## Monthly job-filling rate, 2001–2019



**Note:** Job-filling rate is monthly hires divided by prior month's openings measured on a quarterly basis.

**Source:** EPI analysis of Bureau of Labor Statistics Job Openings and Labor Turnover Survey and Current Population Survey.

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illustrate the vacancy duration. Employers hired 1.07 workers for every job opening in early 2001 but were able to hire 1.45 workers per prior job opening at the unemployment trough of the early 2000s recession in the second quarter of 2003. Hiring per job opening slowed down by the time the recovery ended in 2007, to 1.13, but escalated to 1.56 by the summer of 2009, when unemployment was high due to the financial crisis. At the end of the recent recovery, in late 2019, with unemployment down to 3.6%, employers were only roughly half as efficient in filling job openings—a rate of 0.82—as in the very high unemployment year of 2009.

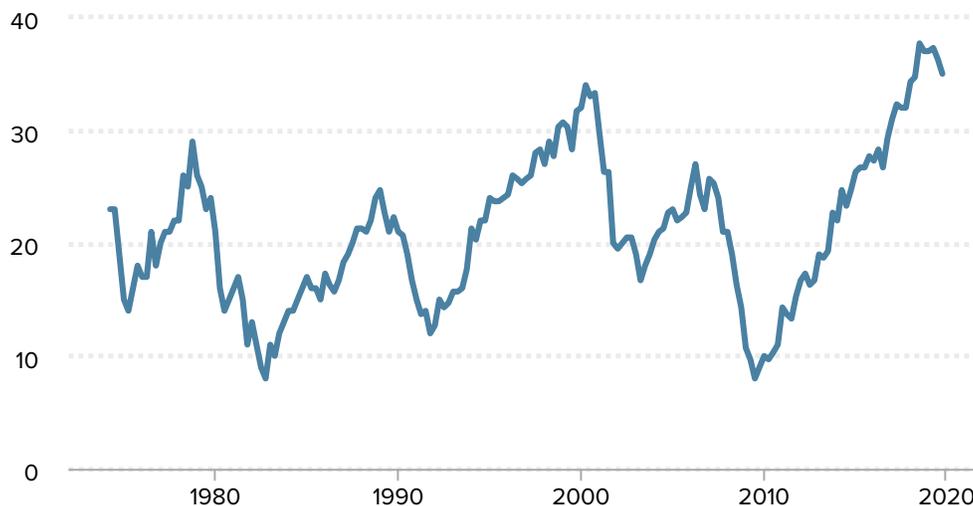
Employers clearly are more able to recruit workers, and do so more quickly, when unemployment is higher than when it approaches full employment.

## Employers know that it is easier to recruit at higher unemployment

The National Federation of Independent Business publishes a survey, Small Business Economic Trends (SBET), that tracks small businesses' assessments of the hiring process and outcomes.<sup>28</sup> The SBET data demonstrate the cyclical nature of business assessments of the quality of labor and the difficulty in obtaining qualified workers and filling job openings. **Figures H, I, and J** present the NFIB quarterly data as far back as they go (to 1973 for unfilled job openings and "labor quality as the single most important problem," and to 1993 for lack of qualified job applicants) through 2019. Though the SBET samples are relatively small (514 respondents in the March 2021 survey, but 1600-1700 in January, April, July, and

Figure H

### Share of small firms with unfilled job openings, 1974–2019



Source: National Federation of Independent Business, Small Business Economic Trends (SBET) survey.

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October of each year), the data do provide insights on time trends over business cycles.

One can readily see in Figure H that the share of firms with unfilled job openings is greatest in years of low unemployment (1973, 1979, 1989, 2000, 2007, 2019), and there are fewer job openings when unemployment is high (1975, 1982–1983, 1992–1993, 2003–2004, 2009–2010). In fact, the share of firms with an unfilled job opening fell from 24% in the fourth quarter of 1979 to just 8% in 1982:4, and it fell from 33.3% in 2000:4 to just half as many, 16.3%, in 2003:2. It is certainly easier for firms to fill openings when unemployment is greatest, according to the small businesses themselves (who are generally the last in line to obtain new hires).

The ability to find qualified job applicants also seems to be far easier when unemployment is high. The trend in whether a firm is seeing “few or no qualified applicants” (aggregating two series) is also clearly related to the level of unemployment (Figure I). These data show that nearly half (48.9%) of small firms reported trouble finding qualified applicants in 2000 but only a third did so in 2003:2 after unemployment peaked in the recession. Similarly, the 43.3% of small firms challenged to find qualified applicants in 2007 was reduced to just 24.7% in 2009:4 when unemployment had risen to 9.9%. Thus, higher unemployment allows firms to fill openings and do so with qualified applicants relative to times of low unemployment.

Finally, small firms assessing “labor quality” as their single most important problem seems to be at its highest when unemployment is low but is greatly minimized when unemployment is very high, as in 1982–1983, 1992–1993, and 2009–2010 (Figure J). High unemployment seems to be associated with small businesses being readily able to fill openings with qualified applicants and satisfy their needs for “labor quality.”

Figure I

### Share of firms with no or few qualified job applicants, 1993–2019



Source: National Federation of Independent Business, Small Business Economic Trends (SBET) survey.

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Figure J

### Share of firms with labor quality as single most important problem, 1974–2019



Source: National Federation of Independent Business, Small Business Economic Trends (SBET) survey.

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## Employers opportunistically ask for more credentials when unemployment rises

Evidence from the Great Recession shows that employers take advantage of their easier access to new workers when unemployment is high to require greater credentials for low- and middle-wage jobs (Modestino, Shoag, and Balance 2020). This research confirms what a CareerBuilder (2014) survey in 2013 found, that “almost one-third of employers said that their educational requirements for employment had recently increased, and specifically that they were hiring more college-educated workers for positions previously held by high school graduates” (Modestino 2019). So, employers not only fill openings more readily and do so with qualified candidates when unemployment is high, but they are also able to opportunistically require greater credentials (without increasing pay) than they previously did when unemployment was lower.

Modestino, Shoag, and Balance (2020) use the near-universe of online job postings (roughly 159 million total) aggregated by Burning Glass Technologies to document that the share of job postings requiring greater credentials—both a college degree (or more) and four or more years of experience—spiked between 2007 and 2011–2012 and then declined as unemployment declined in the recovery. Moreover, the upskilling was largely temporary for occupations in the middle- and low-skill sectors, prevailing when unemployment remained high but mostly reversing once the labor market tightened (by 2017, the latest data) (Burke et al. 2020). This opportunistic upskilling occurs within occupations and in occupations in the same firm and does not “simply reflect a shift in the composition of employers or the positions that they seek to fill” (Modestino, Shoag, and Balance 2020). Researchers found that “the increase in employer skill requirements was greater in areas where the unemployment rate rose more dramatically and the decrease was larger in areas where the unemployment rate fell more swiftly during the recovery. These effects are very robust, showing up within specific occupations and even job titles. For example, only 15% of physician assistant jobs required a Bachelor’s degree or higher in 2007. That share jumped to 35% in 2010 and has since fallen to just 12% as of 2017” (Modestino and Shoag 2018).

This pattern of evidence confirms that this opportunistic credential upskilling reflected employers’ increased power relative to low- and middle-wage workers when unemployment escalated in the Great Recession. As unemployment receded, employers were forced to normalize the credentials they required, retreating to what they asked for before the recession.

# The bottom line: Higher unemployment leads to lower wage growth, especially for low- and middle-wage workers

It has long been established that higher unemployment leads to lower wage growth (Phillips 1958) and does so particularly for those with the least power in the labor market. This uncontested fact alone validates the importance of recognizing the persistent divergence of actual unemployment from full employment as it pertains to the supposed equal power of workers and their employers.

Mishel and Bivens (2021) review the impact of excessive unemployment—the degree to which unemployment exceeds full employment—on the wages of low- and middle-wage workers. They first note the degree to which unemployment departed from full employment over the last few decades:

These contractionary policies caused unemployment to remain 0.8 percentage points above even a conservative estimate of full employment (the NAIRU)—5.5%—between 1979 and 2017, a sharp contrast from the 0.51 percentage points that unemployment remained *below* the NAIRU in the prior 30 years.

They also estimate the corresponding wage impact, drawing on the lower bound of estimates from Bivens and Zipperer (2018)<sup>29</sup>:

The impact of excessive unemployment...reduced wages for the median worker by 10.0% between 1979 and 2017. Adjusting for the “flattening of the Phillips curve since 2008, as we do here, lessens the impact of higher unemployment on wage growth; without this adjustment the impact would have been 12.2%. If the unemployment rate had been held lower, say to 5% on average, then median wages would have been about 18.3% higher by 2017. Of course, a 5.5% target for full employment is a modest goal, and if policymakers had achieved a reasonable target of 4.5% the impact of excessive unemployment would be double the 10.0% adverse wage impact on the median worker.

Excessive unemployment had a somewhat larger impact on low-wage than middle-wage workers. Had unemployment averaged 5.5% rather than the 6.3% that prevailed over the 1979–2017 period, the wages of the 10th percentile [low-wage] worker would have been 11.6% higher...[T]hese estimates take into account the “flattening” of the Phillips curve post-2008. We would note that the impact of higher unemployment would be twice as large if full employment was assumed to be 5.0%.

Mishel and Bivens note that these estimated wage impacts are far below those of Katz and

Krueger (1999, Table 8), whose Phillips curve estimates using a 1973–1998 time series were double those of Bivens and Zipperer (2018) at the median and three times those at the 10th percentile.

In sum, higher unemployment has consequential adverse wage impacts for middle-wage workers and even more so for lower-wage workers.

## Conclusion

The freedom-of-contract view of the world, and the assumption of equal power between employers and employees, ignores the obvious and basic truth about labor markets: The economy is rarely at full employment, and many workers never experience full employment. The presence of excessive unemployment—beyond full employment—tilts the power balance toward employers. Just acknowledging high unemployment leads one to recognize that in many, if not most, circumstances employers can far more readily replace a worker than a worker can find a comparable job. To believe otherwise is to live in a world without access to windows or newspapers, and it is curious and unsettling that claims of freedom of contract have been made when there was, or had recently been, very high unemployment. Simply acknowledging the persistent absence of full employment for many workers renders the freedom-of-contract framework a flawed basis for assessing employment relationships and arrangements.

## About the author

**Lawrence Mishel** is a distinguished fellow and former president of the Economic Policy Institute. He is the co-author of all 12 editions of *The State of Working America*. His articles have appeared in a variety of academic and nonacademic journals. His areas of research include labor economics, wage and income distribution, industrial relations, productivity growth, and the economics of education. He holds a Ph.D. in economics from the University of Wisconsin at Madison.

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# Notes

1. *Adair v. United States*, 208 U.S. 161, 174–75 (1908) [citation in original].
2. *Id.* at 175 [citation in original].
3. *Id.* at 175–176 [citation in original].
4. *Epic Systems Corp. v. Lewis*, 138 S. Ct. 1612 (2018).
5. See the [SCOTUS blog](#), “*Epic Systems Corp. v. Lewis*.”
6. Justice Ginsburg points out in the second footnote: “The Court’s opinion opens with the question: ‘Should employees and employers be allowed to agree that any disputes between them will be resolved through one-on-one arbitration?’ *Ante*, at 1. Were the ‘agreements’ genuinely bilateral? Petitioner Epic Systems Corporation e-mailed its employees an arbitration agreement requiring resolution of wage and hours claims by individual arbitration. The agreement provided that if the employees ‘continue[d] to work at Epic,’ they would ‘be deemed to have accepted th[e] Agreement.’ App. to Pet. for Cert. in No. 16–285, p. 30a. Ernst & Young similarly e-mailed its employees an arbitration agreement, which stated that the employees’ continued employment would indicate their assent to the agreement’s terms. See App. in No. 16–300, p. 37. Epic’s and Ernst & Young’s employees thus faced a Hobson’s choice: accept arbitration on their employer’s terms or give up their jobs.”
7. See Table 4, “Unemployment in Manufacturing, Transportation, Building Trades, and Mining, 1897-1926,” as estimated by Paul H. Douglas, from *Real Wages in the United States, 1890-1926*, in the [Committee on Economic Security report](#).
8. BLS data on unemployment from series LNS14000000.
9. BLS data on unemployment from series LNS14000000.
10. In particular, an economic analysis of the Beveridge curve (Beveridge 1942), which focuses on vacancies being equal to openings at full employment. David Ratner pointed this out to me.
11. According to Crump et al. (2019): “This natural rate of unemployment,  $u^*$ , is broadly defined as the unemployment rate such that, controlling for supply shocks, inflation remains stable.”
12. If the analysis had used 5.5% as the benchmark for full employment, then an additional 11.5% of the quarters would have had full employment (36.8% overall), but there were still no quarters in which Blacks experienced full employment, and there were just 3.5% more quarters of full employment for Hispanics.
13. The data are tabulations of the basic BLS monthly Current Population Survey microdata available in the [EPI State of Working America Data Library](#).
14. Bernstein and Jones (2020) present a similar analysis for [all workers, Blacks, and whites by quarter](#).
15. The BLS measure of unemployment duration is flawed, however, because it is a point-in-time measure of not-yet-completed spells of unemployment (Horrigan 1987; Valletta 2002). Valletta

(2002) describes the biases: “The upward bias occurs because longer spells, purely by virtue of their length, are more likely to be in the monthly unemployment sample than are shorter spells. The downward bias arises because the use of in-progress spells precludes measurement of completed spell durations.”

16. This is one of the eight indicators included in the Conference Board Employment Trends Index. I am greatly appreciative of the Conference Board’s sharing of these data.
17. The analysis relies on the Davis, Faberman, and Haltiwanger data because it improves on the available JOLTS data. The authors’ 2013 paper showed that the JOLTS survey understated worker churn at very high/very low growth establishments. Thus, their series differs from JOLTS at the start of the 2000s. The differences disappear by 2017, however. Correspondence from Faberman explains: “the shrinking difference comes from a combination of using the OLS regression as a quick prediction rather than the micro data, [and] the fact that JOLTS people at the BLS responded to our paper (and a couple others on JOLTS measurement) by getting better at capturing the worker churn at very high/low growth establishments over time (for example, they introduced a birth/death adjustment in there at some point).”
18. The quit rates are those developed by Davis, Faberman, and Haltiwanger (2012a) and updated in June 2021. Jason Faberman graciously provided the data and answered numerous questions. These data correct for some understatement of worker churn in the JOLTS data in the earlier years. JOLTS and the Davis, Faberman, and Haltiwanger data are similar in 2019. Unemployment from BLS. The quit level uses the quit rate and the employment level implicit in the JOLTS data (annual quit level divided by the annual quit rate).
19. Another possibility is quitting to leave the labor force.
20. “We uncover a drastic increase in the incidence of missing answers to the pertinent survey question (SAMEMP) starting in January 2007, predating by about a year the full introduction of new interviewing policy, the Respondent Identification Policy (RIP). We provide evidence that these answers are not missing at random, and these interviewing changes caused a serious permanent downward bias in the standard measure of employer-to-employer transitions. We propose a model of selection by observable and unobservable worker characteristics, and build on it to impute the missing answers to recover the true aggregate employer-to-employer monthly transition probability. We show that its decline observed during the Great Recession started about a year later and was much less dramatic than the raw, biased series indicates, and had fully recovered by 2016, if not earlier” (Fujita, Moscarini, and Postel-Vinay 2021, 42).
21. Shigeru Fujita kindly provided the updated data and answered questions.
22. Fujita, Moscarini, and Postel-Vinay (2021) elaborate on the earlier research.
23. The Davis, Faberman, and Haltiwanger indicators can be found at <https://www.dice.com/indicators/>.
24. These are from the [Q&A offered at the website](#) presenting their indicators.
25. Davis, Faberman, and Haltiwanger (2012b) note an even stronger decline, 21%, from December 2007 to the trough of the Great Recession.
26. Rothstein (2012) offers some useful caveats regarding these data. “A more important concern is that measured job openings data and the openings-to-unemployment ratio are only loosely related to the efficiency of the economic matching process, particularly in an unprecedentedly

long period of labor market weakness.” For instance, firms “might hold out for better-qualified workers, extending its search, or might be less choosy in order to hire more quickly (Diamond 2013). Either decision affects the number of measured job openings and the job filling rate, but neither reflects changes in labor market matching efficiency.”

27. The data series developed by Davis, Faberman, and Haltiwanger (2013) and [provided at their website](#) or by Jason Faberman directly does not include job openings. We, therefore, use the BLS JOLTS data.
28. The SBET data were kindly provided by Andrew Heritage. Findings and methodological details are in Wade and Heritage (2020).
29. Bivens and Zipperer (2018) find that a 1 percentage point drop in unemployment results in annual wage growth 0.5–1.5 percentage points faster for workers at the 10th percentile. For example, if annual real wage growth is 1%, then a 1 percentage point fall in unemployment would result in annual real wage growth rising to 1.5% to 2.5%. For workers near the median of the wage distribution, wage growth is faster by 0.4–0.9 percentage points, and for workers at the 90th percentile it is 0.3–0.5 percentage points faster. These estimates indicate that excessive unemployment generates increases in the wage gaps between low- and middle-wage workers and between middle-wage and higher earners.

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