



## Chapter 2

# How Remote Work is Reshaping the Economy

Remote work has transformed the day-to-day experience of tens of millions of Americans. Instead of commuting to an office five days a week, many American workers now do their job from home at least some of the time.

In some cases, fully remote jobs remove the need to live near one's employer and dramatically change how workers interact with each other. In other cases, partially remote jobs provide a mixture of traditional and remote workplace experiences. This matters for wellbeing and wages, access to jobs, and where workers decide to reside. Labor and housing markets operate differently in a world where either type of remote work is common, with downstream effects for governments, downtowns, and the U.S. economy.

In spring 2020, the surge in remote work was inextricably linked to the COVID-19 pandemic. It was unclear at the time whether remote work would persist at levels much higher than those in the pre-pandemic period, and it was difficult to disentangle its labor market footprint from that of the pandemic itself. But as the pandemic subsided and remote work, also known as telework, remained, it became possible to learn more about the phenomenon and its effects.

As of late 2024, remote work appeared to be a key labor market experience of at least 20 percent of the American workforce, roughly half of whom were fully remote and half of whom were partially remote (i.e., hybrid). For context, this share is roughly double that of workers represented by unions and about the same share of the workforce with an occupational license, two groups deservedly receiving considerable research focus.

For many Americans, remote work has improved the working experience and added valuable labor market options. Employers who offer remote work can draw on expanded talent pools—including workers needing flexible work arrangements as well as workers across the country—when filling open positions. However, in many instances remote work remains technically infeasible or inordinately costly for businesses to implement. Emerging research also points to costs of remote work in the form of reduced collaboration: less-experienced workers are especially likely to miss out on valuable feedback and mentoring. Because these benefits and costs vary widely across workers and firms, experimentation by employers will generate valuable information and help achieve better outcomes.

A striking fact about remote workers is just how likely they are to possess other labor market advantages. On average, they have more education and higher incomes than non-remote workers. Remote work—like other non-wage benefits—therefore tends to be part of a larger pattern of labor market inequality. For example, Black and Hispanic workers are less likely to work remotely than Asian and white workers.

Like other large, abrupt economic changes, the shift to remote work can also be disruptive. Long-established patterns of economic activity, particularly in housing markets, stand to be altered by remote work. Exploiting the opportunities and minimizing the costs of remote work is a joint challenge for workers, businesses, and policymakers.

This chapter examines who currently works remotely. It then provides an economic framework for thinking about remote work's labor market implications. Building on recent research, the chapter provides analysis of remote work's implications for wages and job access. The analysis is especially focused on job search and matching, but also on geographic sorting—all key aspects of labor market function likely to be reshaped by remote work. The chapter concludes with a discussion of the big picture and relevant remote work issues for policymakers.

## Figure 2-1. Share of Paid Workdays That Are Remote

Percent



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Sources: Barrero, Bloom, and Davis (2021a); CEA calculations.

Note: Remote work share is defined as the share of full paid days worked from home. Pre-2020 estimates are derived from the American Time Use Survey. Estimates beginning in May 2020 are from the Survey of Working Arrangements and Attitudes. Gray bars indicate recessions.

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## The Rise of Remote Work

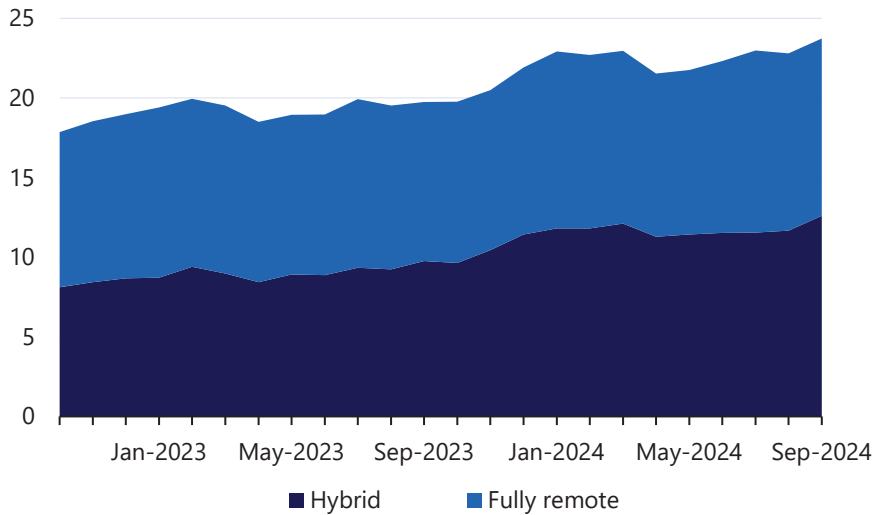
Remote work is not new, but it has quickly made the leap from marginal labor market phenomenon to common practice. Figure 2-1 shows the share of paid workdays that are remote, based on the Survey of Working Arrangement and Attitudes (SWAA) for recent years and American Time Use Survey (ATUS) for earlier years (Barrero, Bloom, and Davis 2021a). The share rose dramatically from 7.2 percent in 2019 (in the ATUS) to 27.7 percent (SWAA) in September 2024. The two data sources are related but distinct, which complicates the pre- and post-pandemic comparison. Nevertheless, remote work is clearly much more common than previously.

Since October 2022, the Bureau of Labor Statistics Current Population Survey (CPS) has estimated the share of workers (by contrast to workdays) who are remote at least part of the time. Figure 2-2 shows the estimates, broken out for hybrid (remote for some but not all work hours) and fully remote workers.<sup>1</sup> Like the SWAA, the CPS also indicates a substantial degree of remote work in the contemporary labor market: 12.6 percent of

<sup>1</sup> Workers are considered fully remote only if 100 percent of total hours worked were reported as such.

## Figure 2-2. Share of Workers Who Work Remotely

Percent



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Sources: Bureau of Labor Statistics; CEA calculations.

Note: Respondents are considered fully remote if they report 100 percent of their total hours worked were remote. Estimates are from published BLS tables.

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workers, or 19.8 million, were on hybrid schedules in September 2024, and 11.1 percent (17.5 million) were fully remote.<sup>2</sup> However, CPS estimates of the share of hours worked (16.4 percent in September 2024) are lower than in the SWAA. Like the SWAA, the ATUS shows a higher rate of remote work than the CPS. It is not clear what accounts for these differences, but they are important to keep in mind when interpreting CPS-derived estimates in Figure 2-2 and elsewhere.

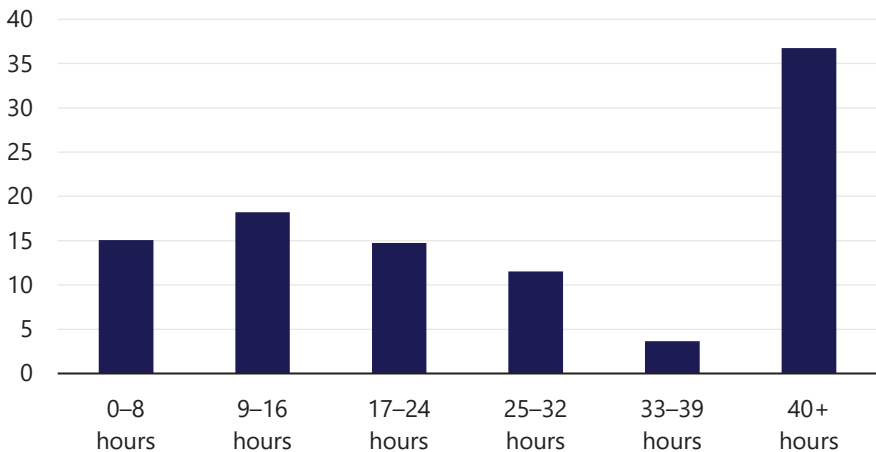
Among remote workers, hours worked remotely varies considerably. Figure 2-3 shows the distribution of remote hours, inclusive of both hybrid and fully remote workers. More than one third of the group (36.8 percent) reported working 40 remote hours a week or more, and 15.1 percent reported working eight remote hours a week or fewer.

Regardless of the data source and how remote work is measured, it is clear that the phenomenon has become more common than it was five years ago. But will this shift prove durable? Immediately following pandemic closures, it was unclear whether and to what extent the rise in remote

<sup>2</sup> A change in the preamble of the relevant CPS survey question was made in December 2023 (Barrero et al. 2024). Before the change, the preamble read: “I now have some questions related to how the COVID-19 pandemic affected where people work.” It now reads: “I now have a few questions related to where people work.” The change may have affected who answers in the affirmative to the remote work question.

## Figure 2-3. Distribution of Hours Worked Remotely

Percent



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Sources: Bureau of Labor Statistics; CEA calculations.

Note: Sample consists of workers who report at least some remote hours. Estimates are for October 2023 through September 2024. Estimates are from published BLS tables.

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work would be temporary. Much of the increase during 2020 and 2021 was impelled by public health concerns associated with the pandemic. And some of the increase did prove temporary, as many workers were called back to the office when the pandemic abated.

However, the share of workers reporting some amount of remote work has stabilized in recent years and even increased. From September 2023 to September 2024, the share reported in the SWAA rose from 19.8 percent to 23.7 percent. Similarly, the share of paid workdays conducted remotely held roughly steady, at just under 30 percent, during 2024. In the same survey, respondents are asked how many days their employers intend for them to work remotely each week after the pandemic. When first asked in mid-2020, just above 1 day per week was expected. That expectation rose to a peak of 1.6 in mid-2022, subsequently falling slightly to 1.5 days in September 2024 ([Barrero, Bloom, and Davis 2021a](#)).

Job openings data can also shed light on whether remote work is here to stay. While the information can be murky—given that not every hybrid or remote job advertises itself as such, and the tendency to mention remote work in job postings may change over time—examining recent trends is useful. Prior to the pandemic, only about 3 percent of U.S. job postings stated that new employees could work remotely one or more days a week.

By 2024, the share had risen to between 8 and 10 percent, depending on the data source ([Hansen et al. 2023](#); [Indeed n.d.](#)).<sup>3</sup>

As time has passed since the widespread distribution of COVID-19 vaccines and relaxation of pandemic measures, it appears less likely that the increase in remote work is a purely temporary phenomenon. Earlier in the pandemic, the Bureau of Labor Statistics (BLS) asked workers if they teleworked specifically because of COVID-19. By the time that question was discontinued after September 2022, the share of all workers who teleworked because of COVID-19 had already plummeted from 35.4 percent of employees in May 2020 to 5.2 percent.

The large-scale social and economic experiment prompted by the pandemic has generated durable improvements in teleworking technology and practices, as well as new information about remote work's efficacy and desirability. As pointed out by [Davis \(2024\)](#), the pandemic allowed employers to learn what would happen when large shares of workers collaborated virtually across entire industries, information that could not have been discovered by a single employer experimenting in isolation.<sup>4</sup> Employers responded to the new technology and information by making choices—often quite varied even for firms in the same industry employing similar workers—about how to structure their workplace ([Hansen et al. 2023](#)). Employers continue to experiment with remote work, and use of the practice could rise or fall based on their unique experiences, but it appears to be here to stay for many workers.<sup>5</sup>

## Who Works Remotely?

A bit more than one fifth of the workforce now works remotely at some point during their workweek. Because remote work data are integrated into the CPS—a rich worker survey used to calculate the monthly unemployment rate, among many other statistics—they present an opportunity to learn who is working remotely in the post-pandemic labor market. In the figures that follow, the CEA examines the more than one fifth of employed workers who

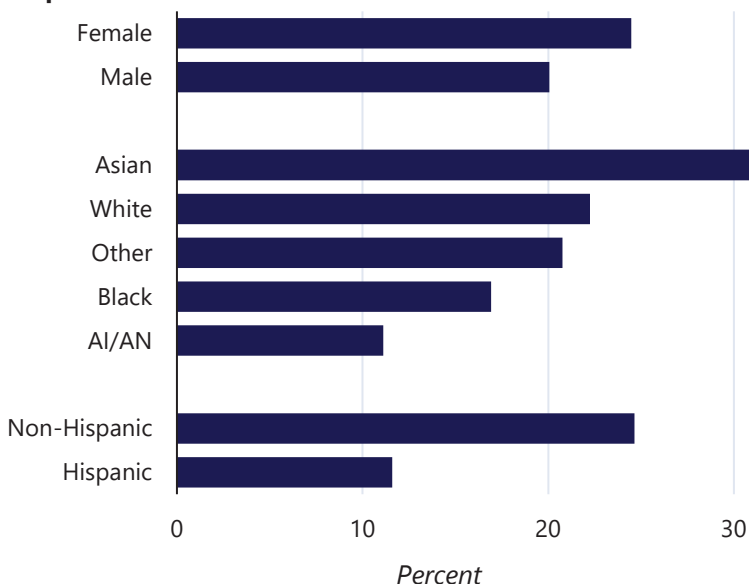
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<sup>3</sup> As of late 2024, updated estimates from [Hansen et al. \(2023\)](#) are available at <https://wfhmap.com/> and from [Indeed \(n.d.\)](#) at <https://data.indeed.com/#/remote>. One might conclude that the lower share of vacancies with remote options compared to the employed population indicates that remote jobs' share of employment will decline. However, this is not necessarily the case, even if all remote vacancies are being accurately described as such in the data. For example, if the rate at which workers leave their jobs (thereby necessitating that vacancies be posted) is lower for remote than for non-remote jobs, this would tend to lower the remote share of vacancies.

<sup>4</sup> From the worker perspective and consistent with the same pattern of information-gathering, [Chen et al. \(2023\)](#) find that elevated exposure to remote work during the initial pandemic shock was positively correlated with intensity of worker preference for remote work later.

<sup>5</sup> Reviewing some of the same trends and studies discussed, other researchers have come to similar conclusions about the persistence of remote work ([Metcalfe, Spinelli, and LaSalvia 2024](#); [Abel et al. 2023](#); [Adrjan et al. 2021](#)).

**Figure 2-4. Share of Workers Who Work Remotely, by Group**



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Sources: Current Population Survey accessed via IPUMS; CEA calculations.

Note: Estimates are for October 2023 through September 2024 and include both hybrid and fully remote work. AI/AN refers to American Indian and Alaska Native workers.

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reported teleworking in the prior week, pooled over the period from October 2023 to September 2024.<sup>6</sup>

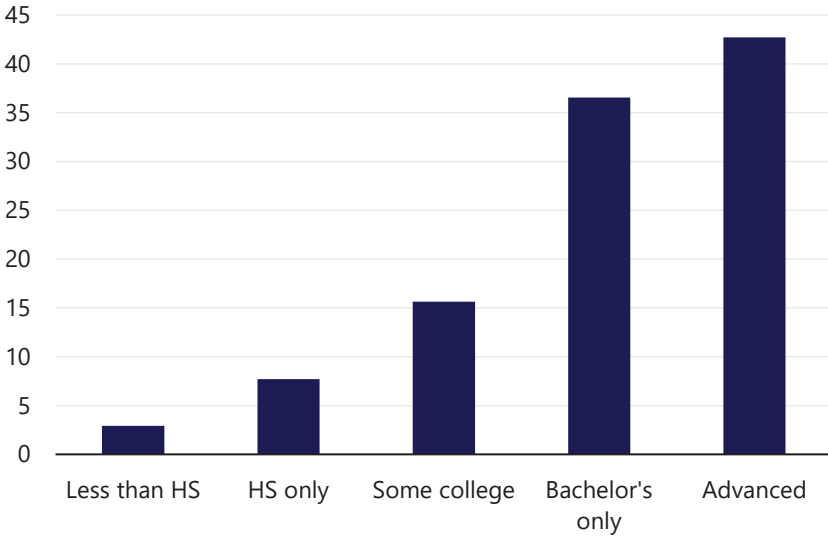
Remote work is more common among women, Asian, and white workers than it is among men, Black, Hispanic, and American Indian and Alaska Native workers. Compared to 20.1 percent of men, 24.5 percent of women report working remotely. Among racial demographics, Asian workers have the highest share of remote work (32.8 percent), followed by white (22.2 percent), Black (16.9 percent), and American Indian and Alaska Native (11.1 percent) workers. And as demonstrated in figure 2-4, Hispanic workers (11.6 percent) have a lower share of remote work than non-Hispanic workers (24.6 percent).<sup>7</sup> Restricting the sample to 25- to 54-year-olds, mothers (31.1 percent) and fathers (23.0 percent) of children five and under have slightly higher rates of remote work than do women and men without young children (28.4 percent and 21.4 percent, respectively).

<sup>6</sup> Of the remote workers, the average hours of teleworking a week reported was 27. Roughly 45 percent reported teleworking more than 30 hours.

<sup>7</sup> Consistent with BLS practice, self-employed workers are included in our calculations here and in other CPS-derived figures.

## Figure 2-5. Share of Workers Who Work Remotely, by Education

Percent



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Sources: Current Population Survey accessed via IPUMS; CEA calculations.

Note: Estimates are for October 2023 through September 2024 and include both hybrid and fully remote work.

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Remote work also varies considerably by educational attainment. Figure 2-5 shows that those with at least a four-year degree are more likely to work at least partially remotely than are workers with a high school degree or less. Remote work is reported by 36.5 percent of workers with a four-year degree—and even higher, at 42.7 percent, by those with an advanced degree—as compared to only 7.7 percent by those with a high school degree only.

Part of the reason for the educational disparity is likely the relative difficulty of implementing remote collaboration in different industries. Remote work is distributed unequally by sector, with workers in industries like financial activities (53.1 percent), information (52.0 percent), and professional and business services (44.8 percent) more likely to work remotely at least sometimes than those in leisure and hospitality (8.0 percent), construction (8.8 percent), and transportation and utilities (10.6 percent), as shown in figure 2-6. Similarly, workers in occupations like management, business, and finance (43.5 percent), professional (32.1 percent), and office and administrative support (24.6 percent) are more likely to work remotely than their counterparts in transportation (1.9 percent), construction and extraction



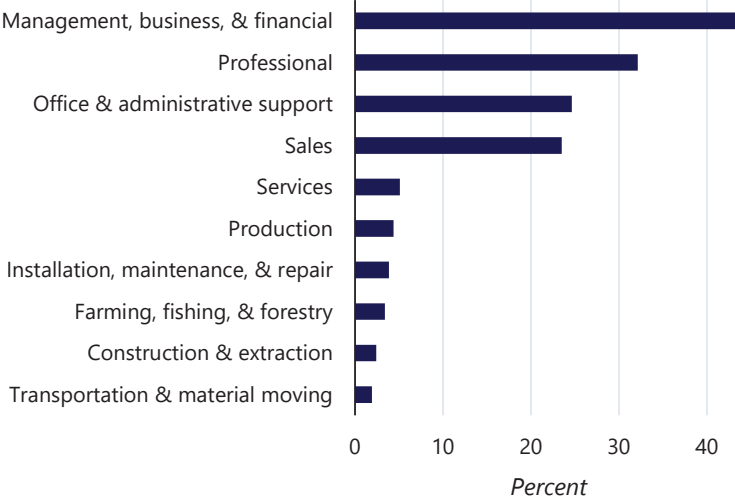
**Figure 2-6. Share of Workers Who Work Remotely, by Industry**



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Sources: Current Population Survey accessed via IPUMS; CEA calculations.  
 Note: Estimates are for October 2023 through September 2024 and include both hybrid and fully remote work.  
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**Figure 2-7. Share of Workers Who Work Remotely, by Occupation**

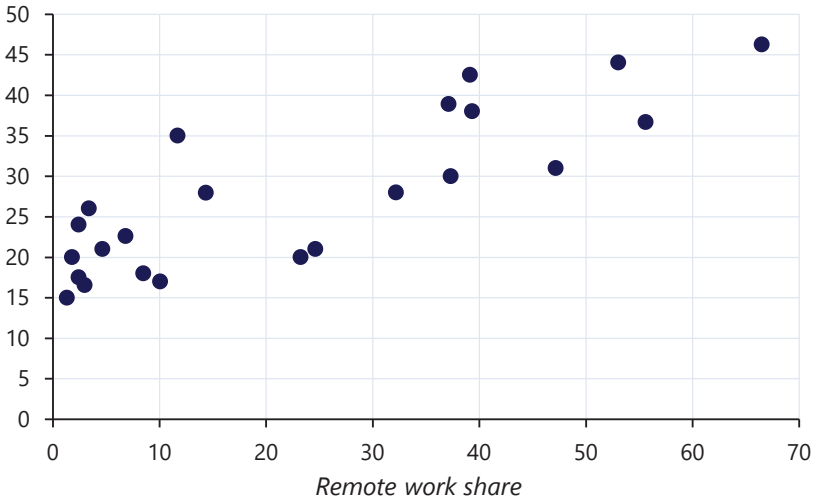


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Sources: Current Population Survey accessed via IPUMS; CEA calculations.  
 Note: Estimates are for October 2023 through September 2024 and include both hybrid and fully remote work.  
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## Figure 2-8. Median Hourly Wage by Occupation's Remote Work Share

Median wage (dollars per hour)



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Sources: Current Population Survey accessed via IPUMS; CEA calculations.

Note: Estimates are for October 2023 through September 2024 and include both hybrid and fully remote work. Hourly wages are computed using the Economic Policy Institute definition and are not adjusted for inflation.

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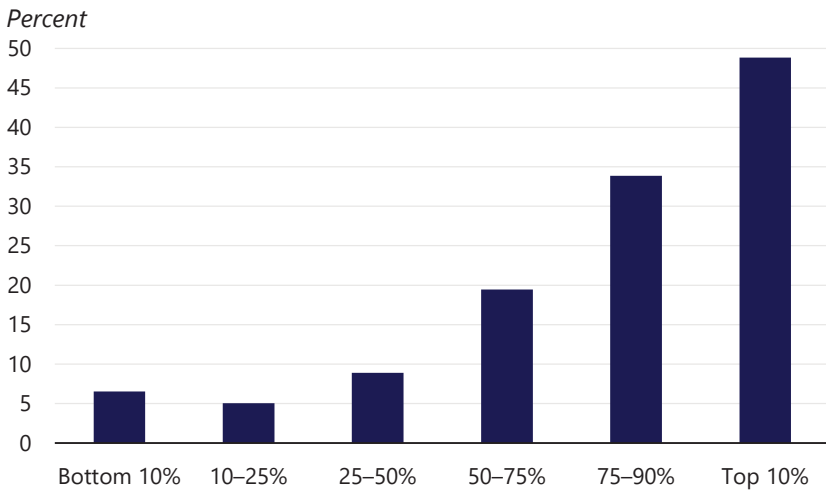
(2.4 percent), and farming, fishing, and forestry (3.4 percent), as shown in figure 2-7.

Differences in remote work share by occupation are closely related to median wages paid in that occupation. Each data point in figure 2-8 represents an occupation, with the percentage working remotely on the horizontal axis and the median hourly wage of all the occupation's workers on the vertical axis. A strong positive relationship is immediately apparent.

The remote work variation in wages across occupations is accompanied by large differences at the individual worker level. Figure 2-9 shows that the likelihood of remote work rises sharply with wages. Remote work is uncommon for low earners—at only 6.5 percent for the bottom hourly wage decile—but common among the highest earning workers, at just under half of those in the top decile.

Remote workers are not distributed uniformly across the country. Areas with the highest share of remote workers tend to be those with more highly educated workers and occupations suited to remote work. Much of the Northeast and West feature high rates of remote work, as shown in figure 2-10.

## Figure 2-9. Share of Workers Who Work Remotely, by Wage



### Council of Economic Advisers

Sources: Current Population Survey accessed via IPUMS; CEA calculations.

Note: Estimates are for October 2023 through September 2024 and include both hybrid and fully remote work. Wage groups are based on hourly wages computed using the Economic Policy Institute definition.

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Considered simultaneously, standard demographic and work characteristics tend to be significant and economically meaningful predictors of remote work status.<sup>8</sup> Educational attainment, occupation, and industry stand out as the key determinants, jointly accounting for most of the explainable individual-level variation in remote work propensity.<sup>9</sup>

In the figures above, the CEA combines those who work remotely for part of the workweek (hybrid workers) and those who work remotely for all of the workweek. However, the groups are meaningfully different for some purposes. Critically, fully remote workers are relatively untethered to a particular employer's location, while hybrid workers must commute at least some of the time.

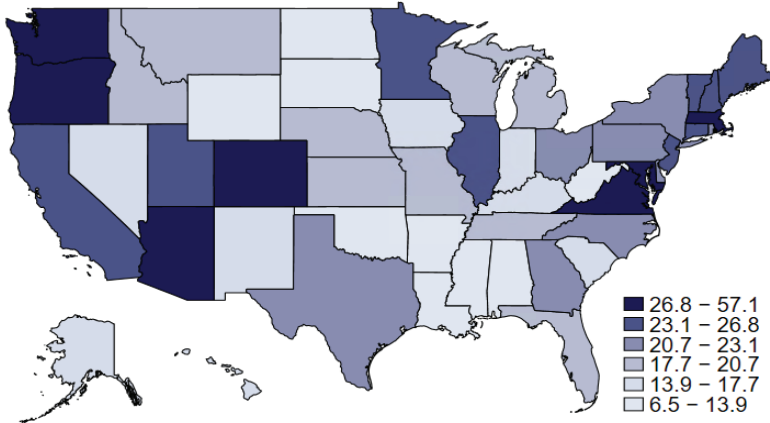
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<sup>8</sup> The following variables are included: age, sex, race, ethnicity, educational attainment, marital status, presence of a child, state, industry, and occupation.

<sup>9</sup> Collectively, the same characteristics predicting remote work also predict higher wages, and the CEA finds that remote workers have an hourly wage that is 74 percent higher (without controlling for worker characteristics) than that for non-remote workers. The wage advantage is not necessarily caused by remote work but reflects the tendency of those with labor market advantages to have greater remote work access.

## Figure 2-10. Share of Workers Who Work Remotely, by State

Percent



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Sources: Current Population Survey accessed via IPUMS; CEA calculations.

Note: Estimates are for October 2023 through September 2024 and include both hybrid and fully remote work.

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## The Remote Work Framework

How should analysts think about the rise in remote work and its impact on the labor market? To begin answering that question, the CEA considers how employers structure the jobs that they create. When an employer looks to fill an open job, it sets a wage, certain non-wage benefits (e.g., health insurance), and terms of employment (e.g., required work hours and the option to work remotely). The particular combination of non-wage benefits and terms that workers encounter (and in some cases, negotiate) are determined by the interplay of (i) available technology, (ii) job design and managerial practices, (iii) a worker's preferences, and (iv) the balance of bargaining power.

First, jobs differ in the type of work performed and the available technology, including the computer equipment and software provided to employees. The technology and the physical constraints related to specific tasks affect the cost of imposing different job conditions. For example, remote work may be low cost for an office worker but infeasible for a construction worker.<sup>10</sup> Even in cases where remote work is feasible, it could degrade productivity if collaboration is more difficult than it would be in person.

<sup>10</sup> Technology is not the only kind of limitation; institutional and legal constraints also exist. For instance, state licensure rules could make it costly for a medical professional to advise out-of-state patients remotely (Maheu 2024).

Second, jobs are defined by how employees are directed to work. A technology might exist for some time before businesses figure out how to use it effectively. In the case of remote work, new management practices might be called for, as when supervising and motivating the work of employees whose effort cannot be directly monitored at a workplace. Workers themselves may learn over time how best to interact with remote colleagues.

Third, workers have their own preferences about non-wage benefits, the ways in which they conduct their work, and other conditions of employment. When employees value remote work to a greater degree, employers tend to make it more available, though possibly at a cost to wages or other non-wage benefits. Employers do not necessarily do so out of regard for their workers, but because supplying a remote work option may be less expensive than paying the wage premium required to attract workers to a non-remote job. This wage difference is what economists call a compensating differential, with workers accepting less money in exchange for some other non-wage benefit they desire.

Finally, the balance of bargaining power affects remote work options. When labor markets are strong and competition is fierce, both wages and desirable non-wage amenities (i.e., the benefits and conditions of work) are abundant ([CEA 2024a](#)). The strong post-pandemic labor market, therefore, may have been a contributor to the sustained rise in remote work ([Autor, Dube, and McGrew 2024](#)).

### *Search and matching*

Workers and firms tend to sort themselves based on the differing value they apply to remote work. As emphasized in [Davis \(2024\)](#), individuals with the highest valuation of working remotely look for jobs in which they can do so, and firms with the lowest cost of doing so supply the remote work jobs.

After the sudden pandemic-era rise in remote work, re-sorting likely affected a variety of labor market outcomes ([Bagga et al. 2024](#)). For instance, a person with a non-remote job at a medical practice might have left their job to become a medical records specialist in a remote capacity, leading to increased job churn.

Remote work, however, is not only an amenity. Fully remote work—and to a lesser extent, hybrid remote work—also substantially relaxes the geographic constraints on the jobs workers can take. When work occurs in person, only a relatively small group of workers and firms, limited by proximity, can effectively search for each other and form matches. By contrast, when a job is advertised as fully remote, a broader pool of potential applicants can consider the job.

Remote work therefore offers the potential to lower the degree of mismatch across local labor markets. Focusing on geography, mismatch

arises when job vacancies and workers seeking jobs are unbalanced across local labor markets ([Shimer 2007](#)). The process is inefficient: Overall hiring would be faster if workers in areas with weak demand could access vacancies from places with strong demand. By reducing geographic barriers, remote work has the potential to ameliorate the mismatch.

In addition to raising hiring rates, diminished geographic barriers can lead to improved hiring. Because workers and firms have their unique characteristics, it becomes easier to form the best possible matches when job search is less costly. Remote work could have an impact in this regard: Now that workers and employers can search outside their own local labor markets, they can achieve better matches that fit the skills and preferences of workers, as well as the needs of employers. Each of these potential effects warrants further testing with real-world data.

### *Geographic sorting*

To the extent that remote work relaxes geographic restrictions on workers and businesses, it also affects where the individuals and firms choose to locate. A standard economic model of location choice entails that workers “pay” for high wages through increased housing costs and/or a reduction in desirable locational amenities ([Rosen 1979](#); [Roback 1982](#)). All else being equal, productive locations featuring high wages also feature high housing prices.<sup>11</sup>

Remote work scrambles this equilibrium. In the extreme case, suppose all jobs suddenly included a fully remote option. It would no longer be necessary to reside in New York City, for example, to receive the high wage jobs the city offers; residents of other places could access the same wages without paying for expensive housing. The situation would put upward pressure on housing prices in less expensive places and downward pressure on New York real estate prices, until the difference in housing costs was small enough to discourage further migration.<sup>12</sup>

More realistically, only a minority of jobs are likely to supply a fully remote option, leaving most workers tied to their place of employment. Economic theory offers less dramatic predictions in this scenario. To some

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<sup>11</sup> This statement assumes that amenities are similar across more- and less-productive places. But consider a world in which locations differ in two respects: productivity and appeal (i.e., amenity value). Some places (e.g., New York City) are especially productive for businesses, and others (e.g., Honolulu) are especially appealing for residence. Workers make their choice about where to live while considering wages, housing costs, and this appeal. To avoid an unrealistic situation where every worker chooses to live in the same place, wages (net of housing costs) must adjust to make workers indifferent about where they live—if net wages were everywhere identical, all workers would prefer to live in Honolulu.

<sup>12</sup> [Brueckner, Kahn, and Lin \(2023\)](#) present a formal model, building on the Rosen-Roback framework, for spatial equilibrium with remote work. In their model, as in this example, remote work is implemented for all workers.

extent, reverse migration of non-remote workers to more-expensive places (due to house prices being bid up in less-expensive places by remote workers) would partially offset remote worker migration. Hybrid work would have smaller-scale effects than fully remote work because the workers would still need to commute occasionally. Many hybrid and fully remote workers would also demand larger homes, in part because remote work requires home office space.

Economic theory therefore implies that a rise in remote work should lead workers to move farther from expensive cities whose chief economic advantage is the availability of high-wage jobs. The migration could be a few miles down the road or, in the case of fully remote workers, to some other place entirely. Conversely, workers living outside expensive places desiring jobs offered in those places could stay where they are and work remotely. The extent to which these dynamics are evident in available data is an important subject for ongoing research.

## Remote Work, Welfare, and Wages

Considered as a valued amenity, how much of an improvement in worker welfare does remote work imply? And to what extent is this amenity value added to or offset by corresponding changes in productivity and wages?

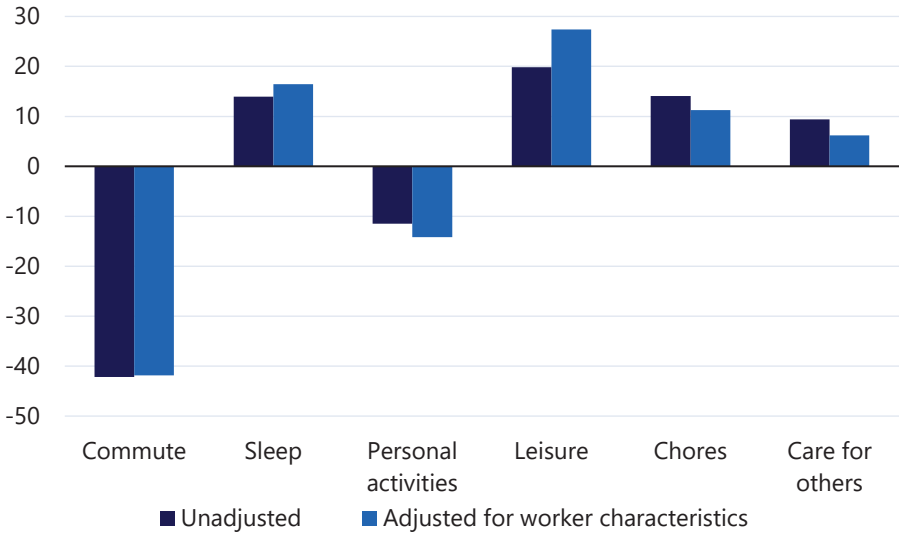
The most straightforward way to answer the first question is to ask workers. Recent surveys exploring workers' willingness to pay for remote work find that they generally value it considerably. When asked how large a pay cut they would accept to work remotely for about half the week, respondents said 5 percent to 8 percent of their pay on average ([Aksoy et al. 2022](#); [Davis 2024](#); [Mas and Pallais 2017](#)). And 31 percent of those currently working at least partially remotely said they would actively seek other employment—or leave their job—if required to return to the office full time ([Board of Governors 2024](#)). The averages belie substantial variation across workers; early in the pandemic, nearly one fifth of workers said they would accept at least a 15 percent pay cut to work remotely two or three days a week ([Barrero, Bloom, and Davis 2021a](#)).

To understand why workers value remote work, it is helpful to explore how time allocation changes when they work remotely. Time-use data allow for comparisons between remote and non-remote workers, but the comparisons are not apples-to-apples. Remote workers tend to have elevated education levels and work the types of jobs in which virtual interaction is productive.

While it may not be possible to adjust for all such differences using available data, the CEA adjusts for several important factors in figure 2-11

## Figure 2-11. Differences in Time Use of Fully Remote and Non-remote Workers

Minutes



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Sources: American Time Use Survey accessed via IPUMS; CEA calculations.

Note: Sample is limited to people who work at least 5 hours. Data are from 2021 through 2023. Remote workers are defined as spending all time working at their home. Time spent working is not shown. Worker characteristics are gender, education, age, race, presence of children, and year.

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and finds that they do not substantially change the picture.<sup>13</sup> Using ATUS data for 2021 through 2023, the figure compares the non-work time allocation for fully remote workers to the same allocation for non-remote workers on a given day.<sup>14</sup> Importantly, the figure does not capture the simultaneous

<sup>13</sup> Displayed categories are aggregates of related activities. Commute includes all work-related travel. Personal activities include personal care (except for sleeping), education, job search and interviewing, professional and personal care services, and eating and drinking. Leisure includes socializing, relaxing, and leisure; sports, exercise, and recreation; religious and spiritual activities; and volunteer activities. Chores include household activities, consumer purchases, household services, government services and civic obligations, and telephone calls. Care for others includes care for and helping household and non-household members. Except for work and sleep, all categories include travel related to that activity.

<sup>14</sup> The sample is limited to workers reporting that they worked at least five hours on an identified day. Fully remote workers are defined as spending all of their work time at home, and non-remote workers are defined as those who spend at least some of their working time away from home.



use of time for different activities—e.g., caregiving and chores—but shows the distribution of time spent on primary activities.<sup>15</sup>

The total amount of time remote and non-remote workers spend working is similar, with a statistically insignificant difference of six minutes (not shown). Remote workers spend less time on commuting and personal care. From the hour remote workers save across the two categories, they allocate about half to leisure and half to sleep and caregiving of children or other adults.<sup>16</sup> In general, the differences in time allocation between remote and non-remote workers do not change considerably when adjusting for observable differences between workers.

In addition to shifting the amounts of time spent on different activities, remote work affects when individuals work and the flexibility they have. During the pandemic, some remote workers spent increased amounts of time working on weekends and outside typical weekday hours (McDermott and Hansen 2021). Mothers working from home reported working more in the evenings (Pabilonia and Vernon 2023).

### *How remote work affects productivity*

In addition to shifting how people spend their time, remote work can change how productive they are while they are working. Current evidence does not suggest a simple positive or negative relationship between remote work and productivity that holds across the board. In some settings, evidence points toward remote work increasing productivity. Bloom et al. (2015) find that in a call center where workers were randomly assigned to work remotely, remote personnel had higher output than their in-office counterparts because they worked longer hours and answered more calls per minute. At the industry level, researchers find that total factor productivity was higher in sectors that experienced larger increases in remote work (Pabilonia and Redmond 2024), though labor productivity was not similarly associated (Fernald et al. 2024). Other research, such as that by Bloom, Han, and Liang (2024) examining hybrid remote work, finds no effect on performance.

Still others have found a negative effect of remote work on productivity, particularly through its effect on teamwork, collaboration, and learning. Gibbs, Mengel, and Siemroth (2024) find a decline in innovation related to remote work, which they explain through a decline in “watercooler” conversations that matter for collaboration. Remote work may also lead to a decrease in mentoring and other interactions, so even in the cases where

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<sup>15</sup> Some research finds patterns in how time is shared across multiple activities: mothers report simultaneous childcare and paid work to a greater extent than do fathers (Pabilonia and Vernon 2023).

<sup>16</sup> By contrast, Bloom, Davis, and Barrero (2020) directly ask workers how they use time saved from reduced commuting and find that more than one third of the saved time is allocated to paid work.

remote work presents short-run gains for younger workers, long-run losses may emerge ([Emanuel, Harrington, and Pallais 2023](#); [Yang et al. 2022](#)).

Not every association between remote work and productivity will have a causal interpretation. Researchers have suggested that some of the measured productivity difference between remote and non-remote workers could be due to selection: which workers choose to work remotely and how remote work affects an individual worker's productivity depend on how productive that worker was initially ([Emanuel and Harrington 2024](#); [Atkin, Schoar, and Shinde 2023](#)).

The available research literature indicates that the industry, the extent of remote work (i.e., hybrid or fully remote), the seniority of the worker, and the job's context are all important determinants of effects on productivity. It is intuitive that the productivity effect should differ by how well-suited an occupation is to being performed remotely. Given that remote work may negatively impact teamwork and learning, one should expect productivity impacts to depend on how frequently workers interact with each other. Additionally, while experienced workers could be more productive working remotely, newer workers can lose out on valuable feedback ([Emanuel, Harrington, and Pallais 2023](#)).

### *How wages differ for remote workers*

The relationship between remote work and wages depends on various factors including the relative productivity of remote work, any change in match quality, and the amenity value to workers. To identify the combined impact, researchers could in principle calculate the average wage gap between remote and non-remote workers after adjusting for all relevant differences in which workers and jobs tend to be remote. However, in practice it can be difficult or impossible to make all necessary adjustments using available data, and CEA analysis finds that remote workers continue to earn higher wages after controlling for observed characteristics. These findings are consistent with other research finding higher wages for remote workers ([Pabilonia and Vernon 2024](#)).

An alternative is to examine wage changes over time for specific workers who experience changes in their remote work status, a methodology which helps to adjust for persistent differences between remote and non-remote workers. The CEA first examined job switchers who also changed their remote work status. Movements from non-remote to hybrid jobs, or from hybrid to fully remote jobs, tended to come with larger wage increases than movements in the opposite direction. However, this pattern would also be expected if remote work were disproportionately provided in higher-quality jobs—the pattern evident in figures 2-8 and 2-9. Turning to job-stayers—for whom job quality seems less likely to change along with a

shift in remote work status—the pattern is more mixed. Some remote-status transitions are consistent with the existence of a compensating differential, but some are not. The CEA regards this evidence as inconclusive and illustrative of the difficulty in identifying compensating differentials amidst the various ways that workers and jobs can differ ([Lavetti 2023](#)).

Other kinds of evidence point more clearly to lower wage growth for remote workers and therefore notable compensating differentials. In a survey of business executives, [Barrero et al. \(2022\)](#) ask about the connection between remote work and compensation strategies. They find that, as of spring 2022, 38 percent of businesses report having increased remote work to moderate wage growth. A similar share reported an intention to implement this strategy in the coming months. Averaging across businesses that did and did not use remote work in this way, executives believed that—through deployment of remote work—they had limited wage growth by about 1 percentage point over the prior year.<sup>17</sup>

Additional research is needed to better understand how remote work affects wages. Because remote work is so unequally distributed, and because the relationship between remote work and wages can differ over time and across groups of workers, this question is especially difficult to answer.

## Remote Work and Job Access

In addition to affecting the welfare of workers already in the labor market, remote work has the potential to affect who participates in the labor force. During the Biden-Harris Administration, prime-age labor force participation reached a record high for women in 2024. Prime-age men’s participation also recovered from the pandemic, but against a backdrop of decline for more than 70 years ([CEA 2024b](#)). Moreover, U.S. population aging has and will continue to put downward pressure on labor force participation.

If remote work removes impediments to joining the workforce, it will give some individuals new options and strengthen the U.S. economy. One group that could gain job access includes people with disabilities. For disabled workers, remote work can remove physical barriers to accessing the workplace. For example, workers with mobility restrictions might benefit from wheelchair accessibility features already incorporated into their residence.<sup>18</sup>

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<sup>17</sup> Two relevant factors imply that measured wage growth could understate welfare improvements for remote workers. First, any reduction in nominal wage growth could be offset by reductions in cost of living, if remote work allows households to locate farther from expensive places. Second, the reduction in commute time implies that earnings per hour (inclusive of hours spent commuting) would rise more than earnings per hour worked.

<sup>18</sup> Individuals with work-limiting characteristics other than disabilities could also benefit. For example, working from home could allow neurodivergent workers to limit overstimulation or sensory overload ([Doyle 2022](#)).

Being able to work remotely also has potential benefits for those caring for children or elderly parents, which can make in-office work requirements impossible to satisfy. Additionally, individuals moving to take care of a parent or other family member could use remote work to keep their existing job or access other distant jobs. Given that caregiving responsibilities are not equally distributed across men and women, remote work could mitigate gender disparities in labor force participation.<sup>19</sup> Consistent with this hypothesis, increases in sector-specific remote work are associated with a diminished gap in employment between mothers and other women ([Harrington and Kahn 2023](#)).

Finally, remote work could affect labor force accessibility not only through encouraging entry, but also by delaying exit ([Liu and Quinby 2024](#)). For example, workers considering retirement or unretirement might find it appealing to work if remote jobs facilitated traveling while working or other flexible arrangements.

To better understand remote work's impact on labor force participation, the CEA examines non-participating workers from October 2021 through September 2023 who had obtained jobs by 12 months after first appearing in the CPS. Figure 2-12 shows the percentage of those individuals taking remote work positions, separated by their reason for initial non-participation.<sup>20</sup> Of workers who initially said they were out of the labor force because of a disability, 6 percent of those working one year later were doing so remotely. A comparatively large share of initially retired workers and those with caregiving responsibilities took remote jobs (17 and 14 percent, respectively).

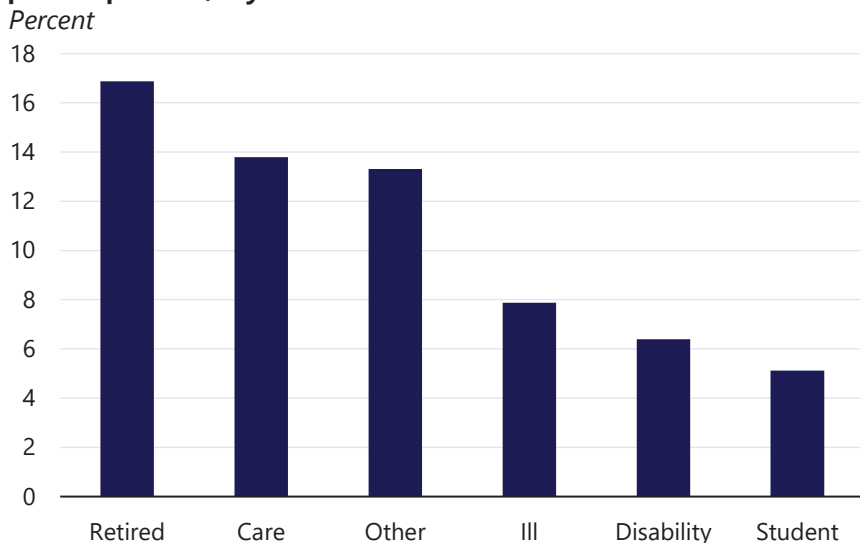
Regardless of reason, many newly employed workers from outside the labor force are finding remote jobs, and in at least some cases, the individuals would have not been able to work without a remote option. Additionally, research supports the hypothesis that remote work raises employment for people with disabilities, despite the relatively low share of disabled workers transitioning from non-participation to remote work in the CEA analysis. Bloom, Dahl, and Rooth ([2024](#)) find that most of the recent increase in employment for those with disabilities ages 18 through 64, from 31.5 percent in 2019 to 38.3 percent in 2024, can be explained by the rise of remote work.

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<sup>19</sup> As of January 2020, 14 percent of all 25- to 54-year-old women reported that caregiving responsibilities were their reason for not participating in the labor force. By contrast, only 1 percent of 25- to 54-year-old men reported the same.

<sup>20</sup> Of the population not in the labor force in January 2020, 15 percent did not participate because they were ill or had a disability, 13 percent did not participate due to house or family care, 48 percent did not participate because they were retired, 20 percent did not participate because they were in school, and 4 percent had other reasons for non-participation.

**Figure 2-12. Remote Work Share of Entrants from Non-participation, by Reason**



### Council of Economic Advisers

Sources: Current Population Survey accessed via IPUMS; CEA calculations.

Note: Estimates are for October 2021 through September 2024 and include both hybrid and fully remote work. Graph shows the share of remote work among individuals who report not being in the labor force in month  $t$  and employed in month  $t+12$ .

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## Implications for Matching and Sorting

Remote work affects how workers and firms find each other. By relaxing a geographic constraint—that workers need to live close to their employer—remote work has potentially sweeping implications for matching and locational choices. The CEA therefore examines remote work’s effects on the sorting of workers into jobs, mismatch and match efficiency, and match quality between workers and firms.

### *Re-sorting in the short run*

In the wake of the COVID-19 pandemic, many but not all jobs suddenly became remote. For example, Indeed data show that communications and marketing jobs became more likely to feature remote options during the pandemic. At the same time, many job vacancies (e.g., in food preparation and nursing) featured little change in remote work status (Judes et al. 2021). Within and across fields, workers differed in their strength of preference for remote work and were often ill-matched with their current job after the shift. The temporary misallocation of workers across remote and non-remote jobs

led to a surge in quitting and gave remote vacancies a strong recruitment advantage (Bagga et al. 2024). Bagga and coauthors find that this pattern was unlikely to be caused by other factors at play during the pandemic. To illustrate the dynamic, figure 2-13 recreates a similar figure.<sup>21</sup>

Panel A in the figure compares the average change in job-filling rate (hires per vacancy) from January 2020 to 2021 among multiple industries, with each sector's remote work share shown on the horizontal axis. Job filling was substantially easier during the pandemic for industries with many remote jobs, as indicated by the positive slope in panel A.<sup>22</sup>

The pattern appears to have been temporary. By the time the shift to remote work had settled and the labor market began normalizing, the job-filling rate advantage for industries with high remote shares had mostly disappeared, as shown in panel B.

Though it is difficult to determine the current stage of the job-sorting process, one interpretation of the two panels in figure 2-13 is that because a valuable amenity became widely available in some jobs but not others, the labor market endured a sustained period of above-normal churn on the way to a new equilibrium. The reshuffling was largely accomplished between 2022 and 2024.

### *Diminished mismatch in the long run*

As this effect subsides, it may be replaced by longer-run modifications that remote work makes to the matching process. As previously discussed, one important feature of any labor market is mismatch: the extent to which job seekers and job vacancies are poorly aligned across places or sectors. Over the long run, remote work should diminish mismatch by breaking down geographic barriers that make it difficult for job seekers to compete for vacancies on a level playing field.

One way to test this hypothesis empirically is to examine how state-level job-finding rates in the post-pandemic era have evolved relative to the pre-pandemic era. If geographic mismatch has lessened, then job-finding rates should have converged across places, given that workers in areas with low job-finding rates now have access to job openings in places where plentiful opportunities exist.<sup>23</sup>

Figure 2-14 shows the expected pattern. On the vertical axis is the change in state job-finding rates from 2017–2019 to a recent 12-month

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<sup>21</sup> The CEA uses actual remote work shares, averaged from October 2022 through August 2024, rather than a classification of industries from Dingel and Neiman (2020) by potential for remote work. However, the results are qualitatively similar when using the researchers' classification.

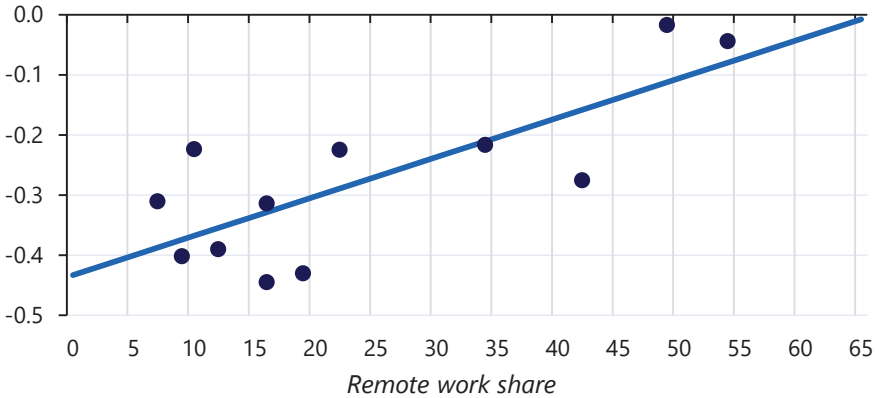
<sup>22</sup> This analysis places equal weight on all industries. The analysis is qualitatively similar when weighting industries by their January 2020 job openings share.

<sup>23</sup> Convergence in job-filling rates would not necessarily be expected because they depend on where remote vacancies are posted, which may be spatially concentrated.

## Figure 2-13. Change in Job-Filling Rate, by Industry

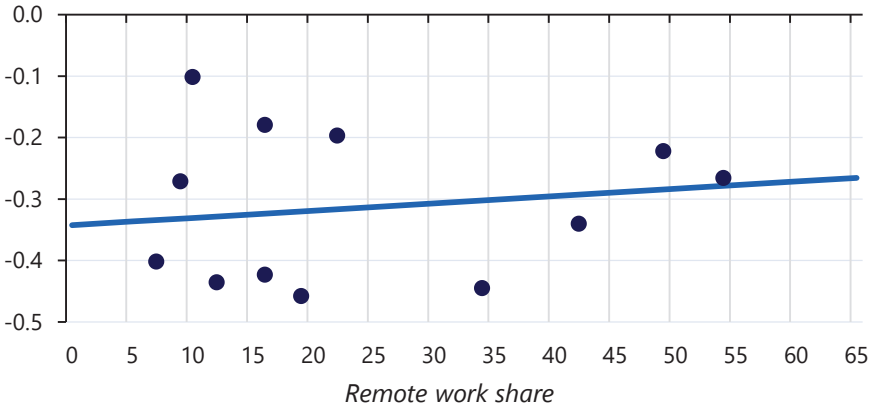
### A. Change from January 2020 to January–December 2021

*Log change in job-filling rate*



### B. Change from January 2020 to January 2022–August 2024

*Log change in job-filling rate*



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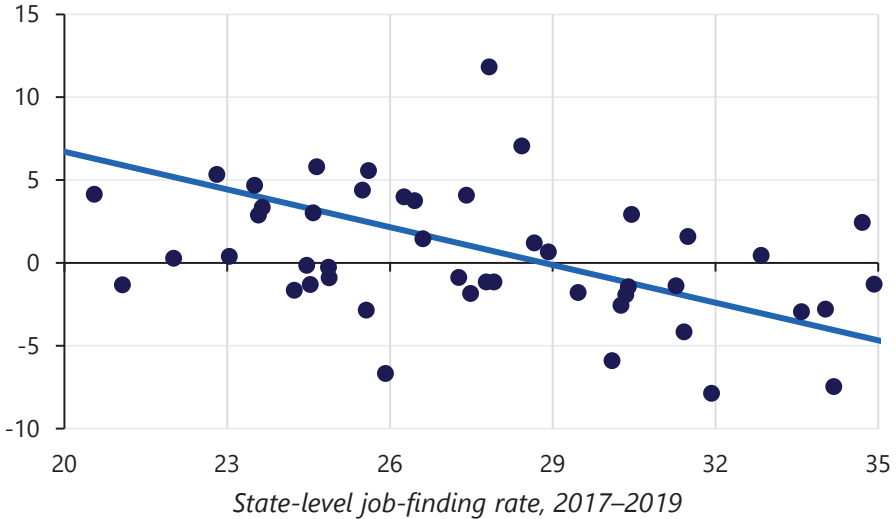
Sources: Bureau of Labor Statistics; Current Population Survey accessed via IPUMPS; CEA calculations.

Note: Job-filling data are from the Job Openings and Labor Turnover Survey. Job-filling rate is defined as the seasonally adjusted ratio of hires to job openings. The figure plots the log deviation of the industry-level job-filling rate from its January 2020 level, averaged over 2021 in panel A and over January 2022 through August 2024 in panel B. Industries are JOLTS-defined sectors. Remote work share is the average share of an industry's workforce that reported working remotely between October 2022 and August 2024.

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## Figure 2-14. Change in Job-Finding Rate from 2017–2019 to 2023–2024, by State

Percentage point change



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Sources: Current Population Survey accessed via IPUMS; CEA calculations.

Note: The job-finding rate is calculated as the share of unemployed workers who are employed in the next month. Sample is civilian workers aged 16 and over. Changes are measured from the 2017–2019 average to the October 2023–September 2024 average. Each dot represents a state or D.C.

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period (October 2023 through September 2024). On the horizontal axis is the state job-finding rate in 2017–2019.<sup>24</sup> The negative slope indicates that job-finding rates have converged in the two time periods, suggesting that remote work has lessened geographic mismatch. In other words, places where it was hard to find jobs before the pandemic partially caught up with places where it was comparatively easy to find jobs.

However, the negative relationship between the 2017–2019 job-finding rate and its change over time could reflect mean reversion rather than an effect of remote work. To explore the possibility, the CEA conducts the same exercise for the years 2015–2017 and 2019 and finds that no significant relationship existed between the baseline job-finding rate and its subsequent change. While it is tempting to conclude that remote work is the cause of the recent convergence, the CEA views these findings as an opportunity for further research.

<sup>24</sup> In unreported analysis, the CEA includes controls for the 2017–2019 employment share in 13 major industries, as well as the distribution of the state working-age population using 10-year age bins. The results are similar.



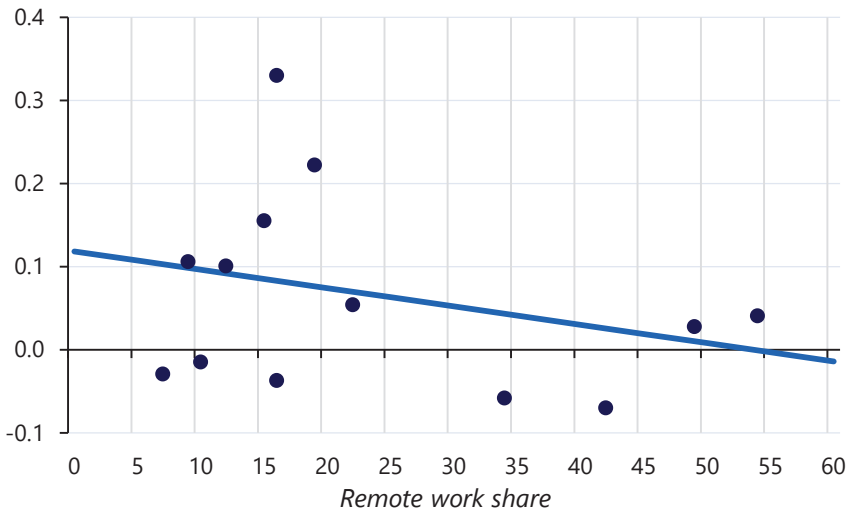
## The quality of matches

Labor market search is fundamentally about getting the right employer matched with the right worker. So, how does remote work affect who is matched with which firm? The answer helps indicate how remote work affects match quality. It is a difficult question to answer, however, because two commonly used match quality metrics—wages and tenure (Belot, Liu, and Triantafyllou 2024)—are poorly suited to understanding remote work. As discussed, wages paid to remote workers may reflect a compensating differential, as well as any effects on match quality and productivity; in this context, wages are likely a poor proxy for the value of a job match. Because the rise in remote work is recent, it is difficult to determine whether specific remote job matches will prove lasting—and, by inference, have relatively high match quality—compared to non-remote jobs.

Another variable useful for understanding match quality is the quits rate. Figure 2-15 shows a negative relationship between the change in an industry’s quits rate (between the pre- and post-pandemic periods) and

**Figure 2-15. Change in Quits Rate, by Industry**

*Log change in quits rate from January 2020 to January 2022–August 2024*



### Council of Economic Advisers

Sources: Bureau of Labor Statistics; Current Population Survey accessed via IPUMS; CEA calculations.

Note: Job-filling data are from the Job Openings and Labor Turnover Survey. Quits rate is defined as the seasonally adjusted ratio of quits to employment. The figure plots the log deviation of the industry-level quits rate from its January 2020 level, averaged over January 2022–August 2024. Industries are the JOLTS-defined sectors. Remote work share is the average share of an industry’s workforce that reported working remotely between October 2022 and August 2024.

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remote work share. Importantly, the relationship exists in the most recent available data, by contrast to the job-filling pattern (shown above) which appears to have been temporary. This result is consistent with higher match quality in industries that have made wider use of remote work.

As discussed, a large share of those working remotely—31 percent of respondents in the Survey of Household Economics and Decisionmaking ([Board of Governors 2024](#))—report that they would actively search for a new job if their current employer required full-time, in-person work. While the finding speaks directly to the value many workers place on remote work, it also suggests that remote work underpins match quality for some workers.

### *Geographic reallocation*

In the past, jobs were almost always tied to particular locations. Matching with an employer meant moving into reasonably close proximity and commuting regularly to a place of business. With remote work, this is no longer the case. To the extent that remote work makes matching more efficient, it is due to relaxed geographic constraints allowing hybrid workers to move moderately farther from their employers and fully remote workers to move anywhere.

Consider a hybrid worker newly permitted to work from home two days a week. For those with a standard workweek, the worker's weekly commute time is immediately cut by 40 percent, and the cost of locating slightly farther from work decreases accordingly. The long commute that was not acceptable five days a week is now potentially tolerable at three days a week. For a fully remote worker, the situation is more dramatically altered: The cost of locating farther from work is reduced to almost zero.

Has the change in incentives affected household movement in recent years, and how does it affect the distance or commute time between workplaces and residences?<sup>25</sup> Research based on U.S. credit files reveals that individuals, especially high-income workers, migrated during the pandemic from high- to low-density areas ([Li and Su 2023](#)).<sup>26</sup> City centers in large metropolitan areas lost residents, while suburbs and small metro areas gained residents. Largely because of variation in occupational mix across metropolitan areas, it was therefore partially possible to predict in advance which places would see the most dramatic changes ([Dingel and Neiman 2020](#)).<sup>27</sup>

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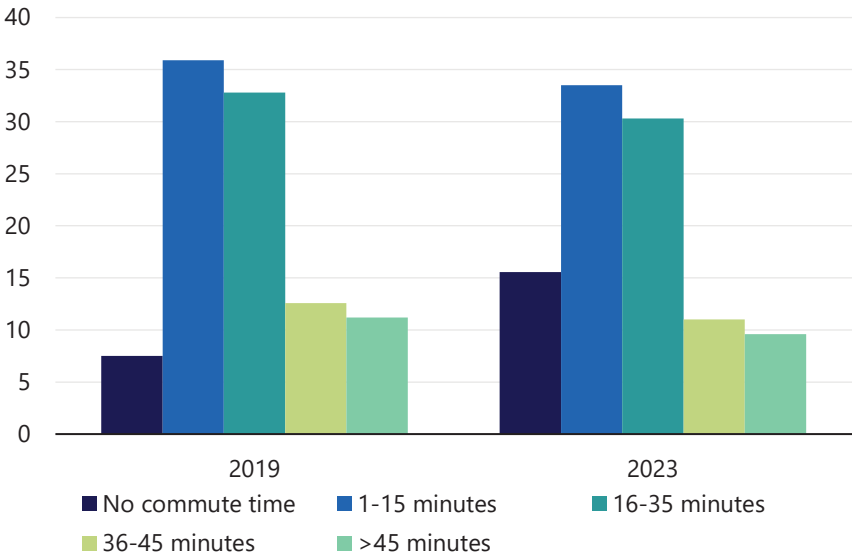
<sup>25</sup> Another question for further research is how remote work might differentially affect dual-earner households. In principle, remote work should make it easier for one worker to access better job opportunities without requiring a partner to accept a less-desirable job.

<sup>26</sup> In Swedish data, researchers found that increases in commuting distance during the pandemic disproportionately occurred among workers for whom remote work was more available ([Nilsson et al. 2024](#)).

<sup>27</sup> See Hansen et al. ([2023](#)) for a discussion of the limitations of an occupation-based assessment.

## Figure 2-16. Commute Time Distribution, 2019 and 2023

Percent



### Council of Economic Advisers

Sources: American Community Survey accessed via IPUMS; CEA calculations.

Note: Sample is limited to employed workers.

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In figure 2-16, the CEA examines U.S. worker-level data on commute time. Between 2019 and 2023, the fraction of people with no commute time increased by over 8 percentage points, indicating a significant shift toward working from home.<sup>28</sup> The share of people with varying non-zero commute lengths all fell by roughly 1.5 to 2.5 percentage points. The finding suggests that the shift to remote work drew on workers whose previous commute times were spread across the distribution (i.e., both short- and long-duration commutes became less common after the increase in remote work).<sup>29</sup>

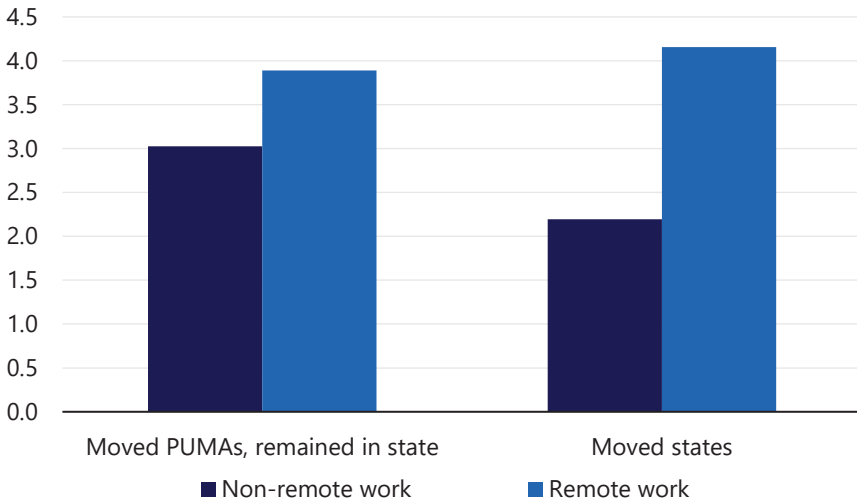
In addition to affecting residential location patterns, remote work changes demand for housing quantity. Many workers were forced to work in cramped spaces at home early in the pandemic. As remote work persisted, some families sought out larger homes that were better equipped for it or

<sup>28</sup> Examining a prior period (2016–2019) for context, almost no change occurs in the share of workers with zero commute time.

<sup>29</sup> The result does not preclude the possibility that, among some hybrid workers, commute times may have increased as they moved farther from their employers. But it does suggest that any such effect was offset by the rise in share of those who usually worked from home.

## Figure 2-17. Share of Workers Who Moved, by Remote Work Status

Percent



### Council of Economic Advisers

Sources: American Community Survey accessed via IPUMS; CEA calculations.

Note: Estimates are for moves from 2022 to 2023. Workers are considered remote if their usual method of transportation was "worked from home." A PUMA is a public-use microdata area of at least 100,000 residents. Sample is limited to employed workers.

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broke off to form new households ([Mondragon and Wieland 2022](#); [Ozimek and Carlson 2023](#)).<sup>30</sup>

All of these shifts have meant changing house price patterns. Price growth has tended to be stronger in areas farther from central business districts and weaker in closer, dense areas ([Li and Su 2023](#)). Other research also finds that the discount for housing positioned away from central business districts has diminished in metropolitan areas with high remote work potential ([Gupta et al. 2022](#); [Brueckner, Kahn, and Lin 2023](#)).

To the extent that newly remote workers tend to seek places with inexpensive housing aligned with their preferences (rather than employer availability), this could affect recent worker mobility. Figure 2-17 indicates that remote workers are somewhat more likely (3.9 percent) than non-remote workers (3.0 percent) to have moved within-state (i.e., out of their so-called public-use microdata area, a location of roughly 100,000 individuals). They are also more likely (4.2 percent) than non-remote workers (2.2 percent)

<sup>30</sup> However, the long-run impacts on housing prices will likely be more muted as supply has time to adjust in response to remote work-induced changes in demand ([Howard, Liebersohn, and Ozimek 2023](#)).

to have moved across state lines. The pattern by itself does not necessarily mean that remote work has caused the additional migration. Remote workers are disproportionately highly educated, which is itself associated with higher rates of interstate migration ([Molloy, Smith, and Wozniak 2011](#)).

Complementary evidence is provided by [Li and Su \(2023\)](#), who find that net in-migration has fallen dramatically in census tracts with the most remote jobs; remote jobs have largely stayed in the tracts, but many of the workers who hold them have left the area. Similarly, [Brueckner, Kahn, and Lin \(2023\)](#) use U.S. Postal Service data to demonstrate heightened population outflows from high-productivity places with high potential for remote work.

The migration responses predicted by theory and observed to some extent by researchers have implications for the distribution of economic activity, tax revenues generated by the activity, and the commercial real estate market in particular. Central business districts are likely the most affected by remote work, given that employers have historically been willing to pay high prices and taxes to locate in close proximity to other employers and key labor markets. Workers are limited in how far from central business districts they can live by the costliness of any required commuting. To the extent that remote work relaxes the limitation, it reduces demand for locating in or near central business districts. Similarly, commercial real estate has shown signs of stress in the wake of the pandemic and rise of remote work, which could have implications for both the financial markets where commercial real estate debt is traded and local public finance. Office vacancies rose to 20.1 percent in the third quarter of 2024, and forecasters project that vacancy rates could peak at 24 percent in 2026 ([Moody's 2024](#); [Metcalf, Spinelli, and LaSalvia 2024](#)). [Gupta, Mittal, and Van Nieuwerburgh \(2024\)](#) estimate that remote work could reduce commercial real estate values by more than \$500 billion, though the potential to convert offices to residential buildings may mitigate some of the long-run impact.<sup>31</sup>

## The Big Picture and Public Policy

Remote work is arguably the most consequential recent shift for U.S. working arrangements and the overall labor market. Researchers are only beginning to process the magnitude, durability, and impact of the changes. As this chapter has shown, the benefits are potentially substantial. Most workers value a remote-work option: For some, it is a source of workday flexibility and an avoided commute; for those with disabilities or caregiving responsibilities, it can make labor force participation more feasible.

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<sup>31</sup> [Van Nieuwerburgh \(2022\)](#) provides a detailed analysis and assesses relevant research on this and other spatial dynamics related to remote work.

Ancillary benefits like reduced commute times—in turn leading to decreased traffic congestion and pollution—have also emerged. Stay-at-home orders during the early pandemic caused substantial declines in air pollution, with slightly larger effects in places that featured more remote work (Brodeur, Cook, and Wright 2021).<sup>32</sup>

In the case of fully remote work, workers and firms can find each other when geographic distance would ordinarily make a match impossible. Without having to relocate, workers and firms can adapt to changing market conditions by quickly forming new matches. To the extent that match quality improves, both worker welfare and national productivity are enhanced.

As with any fundamental labor market shift, remote work also creates potential pitfalls. For some businesses, remote work may turn out to be an unacceptable productivity drag. This could be evident immediately, or in other cases, it could become apparent only with time, as collaboration diminishes and young workers receive insufficient mentoring (Emanuel, Harrington, and Pallais 2023; Yang et al. 2022). The balance of benefits and costs will be different for every employer and worker.

Another challenge appears at scale as the accumulated decisions of individual employers and workers disrupt housing markets. Residential housing has become increasingly expensive in some areas as demand from hybrid and fully remote workers surpasses supply. Conversely, demand for commercial real estate has declined, which poses both risks and opportunities. As economic activity diminishes in central business districts, the ecosystems that support firms also diminish (Althoff et al. 2022), along with the property tax revenue upon which some cities rely heavily (Auxier and Brosy 2024). On the other hand, there are opportunities: For example, the Administration has worked to facilitate the conversion of office space to multifamily housing (CEA 2023). This strategy addresses the chronic undersupply of residential housing and can ameliorate adverse impacts on non-remote workers (Gupta, Martinez, and Van Nieuwerburgh 2023; Richard 2024).

Other potential challenges from remote work are admittedly more speculative. For example, physical workspaces develop social capital (Bandiera, Barankay, and Rasul 2008); it is unclear to what extent virtual work interactions are a replacement. Relatedly, in largely remote workplaces, organizing workers into unions could require different strategies, given the increased distance between employers and employees.

The allocation of remote work across the labor market depends on public policy details. Remote work is not technically feasible in most instances without reliable high-speed internet access (Barrero, Bloom, and

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<sup>32</sup> In China, increased remote work during the early pandemic led to large decreases in air pollution by reducing travel (Chen and Li 2024). However, studies that focus on travel-related pollution may miss other effects like changes in home energy use.

Davis 2021b). Parts of the United States still lack such access, a condition the Administration worked to address through \$90 billion in federal funding to expand access to high-speed, affordable internet across the country. While Congress failed to continue funding for the Affordable Connectivity Program, which provided qualifying households up to \$30 per month off their internet bill, the Administration has helped more than 23 million households save money on connectivity (White House 2024).

Long-standing legal impediments can also shape how remote work plays out in the labor market. For example, occupational licensing rules are usually set at the state level, and in a healthcare context, providers typically must be licensed wherever their patients live. In a world of remote medical work (i.e., telehealth), this system can be a poor fit (Scheffler 2019), limiting its benefits (Zeltzer et al. 2024).<sup>33</sup>

Similar issues are posed by state-based employer tax and employee benefit systems (Aksoy et al. 2022). Remote workers located in a different state than their employer potentially face double taxation, and only 16 states and the District of Columbia have reciprocity agreements with others to navigate taxation of workers commuting across state lines, such as hybrid workers with an infrequent but long commute (Peterson 2024). Employers must report and pay unemployment insurance taxes in the state where a worker lives; setting up operations in each state and understanding applicable law variation is a significant burden (Miller 2020).

In the post-pandemic world, employers and workers will need to make conscious decisions about whether and how to work remotely. Some employers will continue to adjust their practices, making increasing or decreasing use of remote work depending on their circumstances and experiences. But the intensity of worker preference for remote work and its recruiting advantages are strong tailwinds. As researchers add to the understanding of remote work, policymakers can make evidence-based decisions about how to broaden its promise while minimizing its downsides.

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<sup>33</sup> Survey data suggest that many remote workers are affected by licensing rules. In 2023–2024, remote workers were 1.7 percentage points more likely than non-remote workers to have an occupational license (CPS and CEA calculations).

