Disability Transitions: Explaining the Post-COVID Labor Market for People with Disabilities

by

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Abstract

Since the onset of the COVID-19 pandemic, people with disabilities have experienced considerably greater employment growth than people without disabilities. This paper seeks to investigate the nature and causes of this difference, from several sources of survey data. A set of supplemental questions related to the COVID-19 pandemic were part of the Current Population Survey from May 2020 through September 2022 and helps elucidate the impact of the pandemic on people with disabilities. Discontinuities in the disabled population are examined via the basic monthly Current Population Survey, also utilized to determine the true extent of faster employment growth for people with disabilities and how this relates to the contact intensity and teleworkability of occupations. Supplemental questions concerning telework were added to the Current Population Survey in October 2022 and are utilized to investigate the impact of telework, as are the Disability Supplements fielded in July 2019 and July 2021, as well as the American Community Survey and the American Time Use Survey. Finally, the panel nature of the Current Population Survey is employed to examine transitions between labor market statuses.

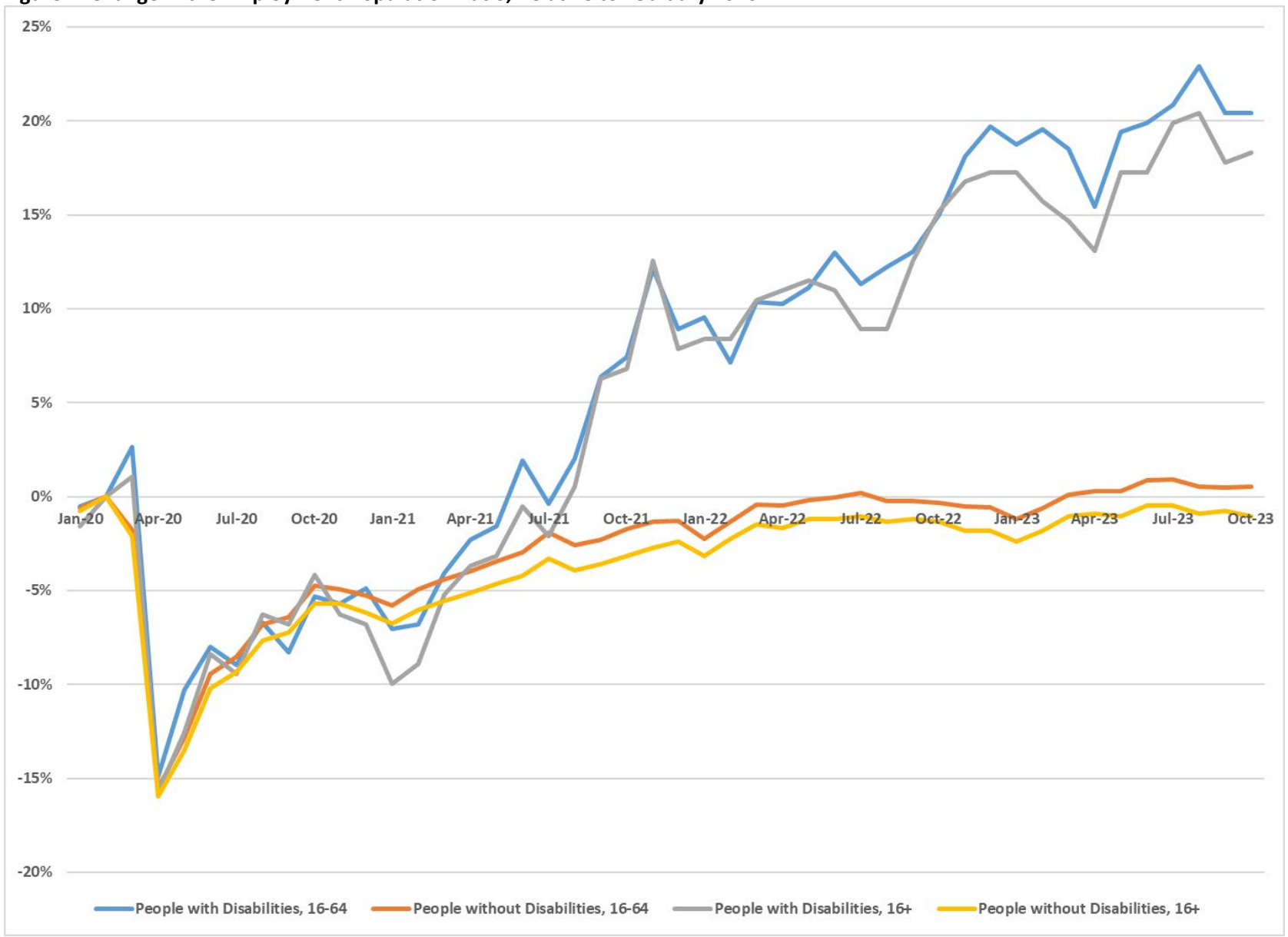
Background

Disparities in labor market outcomes between people with and without disabilities have been vast and persistent, even when controlling for relevant observable factors such as age, for as long as data on people with disabilities has existed. There is great diversity among people with disabilities in the type of disability experienced and its impact on ability to work, but the aggregate impact on employment, labor force participation, and unemployment is considerable. In the eleven years from 2009 through 2019, people with disabilities in the 'working-age' population (ages 16 through 64) had an average employment-population ratio of 28.2% versus 71.8% for people without disabilities, a gap of 43.6 percentage points and a ratio just below two-fifths. Older sources of data, not fully comparable due to relying on different definitions of disability status, reveal similarly large and chronic disparities, stemming from a variety of barriers faced by people with disabilities that affect transitions into employment and retention of employment. Over the decades, there have been extensive government actions to reduce these disparities through legislation and other means, including the Americans with Disabilities Act (ADA) of 1990 and the establishment of the Office of Disability Employment Policy (ODEP) within the Department of Labor (DOL) in 2000. Part of these activities consist of encouraging the use of assistive technologies to surmount barriers for people with disabilities, but the impact of such technological assistance is dependent in part on the willingness of employers to permit their use as accommodations. Prevailing norms among employers tends to change only gradually with time, but might also abruptly change in a discontinuous manner as a result of exogeneous shocks.

The onset of the COVID-19 pandemic in early 2020 and its continuing consequences have held both greater hazards for people with disabilities, in terms of affecting occupations and industries in which a larger proportion of people with disabilities are employed, and also greater potential benefits, in increasing opportunities for telework and other accommodations. Repercussions from COVID-19 resulted in drastic employment loss from February to April 2020, but declines were especially severe

and persistent in lower-skilled employment, where people with disabilities are more prevalent. Difficulties with transportation to sites of employment have long been an obstacle to the economic well-being of many people with disabilities, and this may also have worsened for many during the pandemic. Although the development of information technologies enabled the possibility of telework for many occupations, employer attitudes had shifted only gradually towards allowing it. This gradual process altered abruptly in 2020, as the rapid shift in conditions following the onset of the COVID-19 pandemic prompted not only a sudden change in employer policies but also a surge of innovation in the use of information technologies to make telework feasible in situations where earlier it might not have been considered possible. As will be detailed later in this paper, a considerable portion of the employed engaged in some amount of telework or work-at-home due to the COVID-19 pandemic, reaching 35.5% in May 2020. Although the proportion ascribing telework or work-at-home to the Coronavirus Pandemic dwindled over the following months, not only does this group remain substantial but this phenomenon might have given rise more permanently to a discontinuous leap in the willingness and ability of employers to offer telework as a regular, non-emergency policy. Though the benefits are not limited to people with disabilities, this is especially important in opening access to a broader range of jobs for those whose disability had been a hindrance. In the three-year period ending August 2023, the employment-population ratio for 'working-age' people with disabilities averaged 33.4% versus 73.4% for people without disabilities, a much more substantial improvement for people with disabilities, who have been experiencing seemingly the best labor market outcomes on record. This motivation for research is displayed visually in Figure 1 below.

Figure 1: Change in the Employment-Population Ratio, Relative to February 2020



Measurement of Disability Status

There is no common standard for defining disability in federal surveys, meaning that determination of disability status had generally been limited and inconsistent across data sources, although this situation has improved over the last decade-and-a-half. The Americans with Disabilities Act (ADA) of 1990 established a definition of disability based on impairment that substantially limits one or more "major life activities", which however were left unspecified at the time.[1] The later amended 2008 version of the ADA lists as examples of major life activities "caring for oneself, performing manual tasks, seeing, hearing, eating, sleeping, walking, standing, lifting, bending, speaking, breathing, learning, reading, concentrating, thinking, communicating, and working" but is not limited to the examples cited.[2] This definition, although crucial for legal issues, is less suitable for use in surveys. The Current Population Survey's annual Annual Social and Economic Supplement (ASEC, also referred to as the March Supplement), has for decades included a question asking about "a health problem or a disability which prevents work or which limits the kind or amount of work?", without defining disability or asking about limitations not related to work.[3] This definition appears to include individuals with temporary health problems while excluding many considered to have a disability by other definitions. Although each individual survey might have been internally consistent with its own question(s) about disability, the lack of consistency across surveys and the paucity of surveys including any disability questions rendered it difficult to analyze the population of people with disabilities.

In 2008, the American Community Survey (ACS) introduced a set of six disability questions asking about certain types of functional limitations causing difficulty with certain basic activities, namely:

[1] The text of the 1990 ADA can be found at https://www.eeoc.gov/americans-disabilities-act-1990-original-text
[2] This current ADA definition of disability can be found at https://www.ada.gov/pubs/adastatute08.htm
[3] For further details see https://www.census.gov/topics/health/disability/guidance/data-collection-cps.html and https://www2.census.gov/programs-surveys/demo/guidance/disability/cpstableexplanation.pdf

1. Is this person deaf or does he/she have serious difficulty hearing?
2. Is this person blind or does he/she have serious difficulty seeing even when wearing glasses?
3. Because of a physical, mental, or emotional condition, does this person have serious difficulty concentrating, remembering, or making decisions?
4. Does this person have serious difficulty walking or climbing stairs?
5. Does this person have difficulty dressing or bathing?
6. Because of a physical, mental, or emotional condition, does this person have difficulty doing errands alone such as visiting a doctor's office or shopping?

A respondent is considered to have a disability if answering affirmatively to any of these questions. The monthly basic Current Population Survey (CPS), which had been developing a set of similar questions, adopted this set of ACS disability questions on a test basis in June 2008 and then on a regular basis in January 2009. This precedent has since been followed by a number of other federal surveys, including the Behavioral Risk Factor Surveillance System (BRFSS) managed by the Centers for Disease Control and Prevention (CDC), the CDC's National Health Interview Survey, the National Survey on Drug Use and Health managed by the Department of Health and Human Services (HHS), HHS' Medical Expenditure Panel Survey, and the Annual Business Survey conducted by the Census Bureau and the National Science Foundation. By adopting identical definitions for disability, these surveys allow for more meaningful cross-survey comparisons on characteristics and outcomes for people with disabilities.

Nonetheless, caution must still be exercised, since there remains potential for respondents to interpret the same questions, even with identical wording, differently across surveys, due to variations in survey methodology and framing. Figure 2 below illustrates disability prevalence by age generated from data from three surveys --- CPS, ACS, and BRFSS--- from age 16 to age 79, combining as many survey years (or months for the CPS) as possible, conditional on existence of the common set of six

disability questions.[4] Disability prevalence in the CPS and ACS follow a similar pattern with an extremely high correlation, though prevalence is consistently lower in the CPS, rising from 3.7% for 16-year-olds to 34.9% for 79-year-olds, than for the ACS, rising from 6.3% for 16-year-olds to 43.0% for 79-year-olds. The BRFSS has much higher disability prevalence among the younger end of the age-range, around 15% to 18%. However, disability prevalence in the BRFSS increases more slowly with age so that the gap narrows and by age 79 prevalence is 45.8%, not much higher than in the ACS. The ACS is a relatively brief questionnaire filled out by the respondent following instructions, whereas the other three surveys are considerably more extensive and rely on interviewers or other assisted interviewing techniques. More importantly, the prior framing of these disability questions can vary substantially between surveys, with the CPS intrinsically linking disability-related questions to employment whereas the BRFSS more expansively frames disability in a general health context, possibly leading people to give a different answer to questions in one survey than would have been the case in another. Further, although all these surveys aim to be nationally representative, it is not possible to completely exclude differences in the population of respondents from explaining some of the difference in estimated disability prevalence.

It is also important to note that disability prevalence among the employed is much lower than among the general population, partly because of the older age distribution of people with disabilities, with a larger proportion beyond the usual age of retirement, and partly due to lower rates of employment at any given age. From CPS data, people with disabilities comprise 3.7% of the employed aged 16 years and older, falling to 3.2% of the employed in the 'working-age population' age range 16 through 64. For comparison, disability prevalence in the CPS is 11.7% among all those aged 16 and older, or 7.6% for those aged 16 through 64. Similarly, according to ACS data, people with disabilities comprise 5.9% of the employed aged 16 years and older, falling to 5.3% of the employed in the

[4] Cumulative data comprised of the time periods 2009-2022 for the CPS, 2008-2022 for the ACS, and 2015-2022 for the BRFSS.

'working-age population' age range 16 through 64, while, without regard to labor market status, disability prevalence in the ACS is 15.3% among those aged 16 and older, or 10.4% for those aged 16 through 64.

Not only does overall disability prevalence increase with age, but also the composition of disabilities, in terms of both underlying conditions and functional limitations, also changes substantially. Figure 3 below shows the proportion of respondents answering affirmatively to each of the six disability questions in the CPS, by year of age. At the younger end of the age range, cognitive limitations are by far the most common, though with a prevalence of only about three percent, and the increase with age in this category is fairly slow, reaching four percent only at age 56 and five percent at age 75. By contrast, mobility limitations, which have a prevalence of less than half a percent at the younger end of the age range, pass two percent by age 38, four percent by age 47, six percent by age 52, and continue to increase rapidly to nearly 22% at age 79. Among the other four limitations, prevalence of hearing limitations accelerates later on to become the second-most common disability type at age 66, difficulty with conducting errands alone is the second- or third-most common disability type at every year of age, while limitations concerning vision and dressing/bathing are relatively uncommon, passing one percent at 46 and 44 years of age, respectively, and passing two percent at 58 and 54 years age. Disability types also differ dramatically in their probability of occurring in isolation; the last two disability questions, about dressing/bathing and conducting errands alone, arguably are less distinct disability types and more indicators of severity of other functional limitations. Of those answering affirmatively to the question about difficulty with dressing or bathing, only 2.5% do not answer affirmatively to any of the other five disability questions. Similarly, of those answering affirmatively to the question about difficulty conducting errands alone, only 8.7% do not answer affirmatively to any of the other five disability questions. Even limiting the age range to 16 through 64, the proportions are 3.3% for the question about difficulty with dressing and bathing and 9.7% for the question about difficulty

conducting errands alone. By comparison, the proportions with only one category of disability, for the more limited age range, are 40.1% for vision, 57.8% for hearing, 41.0% for mobility, and 38.2% for cognitive difficulties. Overall, 53.3% of people with disabilities have a single category of disability, or 56.8% for the limited age range 16 through 64.

An underlying issue with the six disability questions developed for the ACS is whether the functional limitations covered by these questions are fully comprehensive of all disabilities, even those which affect employment. The basic monthly CPS records the reason for a respondent being not in the labor force, with two major subcategories capturing specifically people who are retired or not in the labor force due to a disability and a third for those not in the labor force due to other reasons, which itself captures those who are not in the labor force due to ill-health, being in school, taking care of the household or a family member, or assorted other reasons. To be considered disabled, a person must possess a specific mental or physical condition, which is not a combination of minor disabilities associated with aging, that prevents the person from doing any type of work for at least the next six months. About 5.3% of the population falls into this category of being not in the labor force due to disability, with little difference when restricting on age. However, for the working-age population ages 16 through 64, this labor market status includes 2.2% of those without a disability as defined by the six questions versus 45.6% of those with a disability. Nonetheless, this still means that over a third of people not in the labor force due to having a disability answer negatively to all six of the questions about functional limitations that together define disability status.

Moreover, the Annual Social and Economic Supplement (ASEC) also known as the March Supplement to the CPS, contains a question asking whether respondents “have a disability or health problem that prevented them from working, even for a short time, or which limited the work they could do”. This question directly asks about the impact of a disability or health problem on ability to work, rather than examining specific functional limitations as with the six questions used to define disability

status. Although there is substantial overlap between the two groups, which are approximately the same size in ASEC data, only about half of each group overlaps with the other. This indicates a large portion of respondents are experiencing some condition that substantially impacts their ability to work but does not result in a functional limitation as defined by the six questions. This subset of respondents has labor market outcomes similar to the entire group of those answering affirmatively to at least one of the six disability questions, half of whom also answer affirmatively to the question about work limitations. More exactly, the subset that answers affirmatively both to at least one of the six questions and to the work-limiting disability question has much worse labor market outcomes than the group answering affirmatively to at least one of the six questions but negatively to the work-limiting disability question, whereas the group answering negatively to all six functional limitation questions but affirmatively to the work-limiting disability question has labor market outcomes almost exactly between the other two groups.

A limitation of surveys that collect individual-level data but are conducted on a household basis is that information for all individuals within the household is collected from a single reference person. In CPS data, 34.7% of individuals ages 16 and older with a labor force status are the reference person, whereas 25.0% are the spouse of the reference person, 13.0% are a child of the reference person, 4.1% are another type of relative, and 23.2% are not a family member. Overall, disability prevalence is 10.3% for the reference person versus 12.5% for others, but there are great differences among those other groups, from 6.5% for children, 9.0% for spouses, 18.5% for non-family-members, and 19.3% for other relatives. However, this does not control for any other characteristics, in particular age, which would naturally differ greatly between these groups, especially for children of the reference person. Controlling solely on age, relative to the reference person, spouses have somewhat lower disability rates (-1.9%), while disability rates are similarly higher for children (7.2%), other relatives (7.7%), and non-family-members (6.6%). However, controlling on other characteristics is not sufficient to surmount the

fundamental endogeneity of disability status and probability of being the reference person, rather than another household member for whom the reference person provides answers. A child with a disability severe enough to require care by others would be more likely to remain with their parents rather than leave their parents' household, a relative with a disability severe enough to require care by others is more likely to be a member of someone else's household, and non-relatives with severe disabilities are more likely to live in group settings, where one person would be responding for a larger number of non-relatives. Even spouses and disability status are endogenous, since disability status itself affects likelihood of being married. This topic requires further research to determine if respondent status biases information about disability status.

Figure 2: Disability Prevalence by Age in the CPS, ACS, and BRFSS

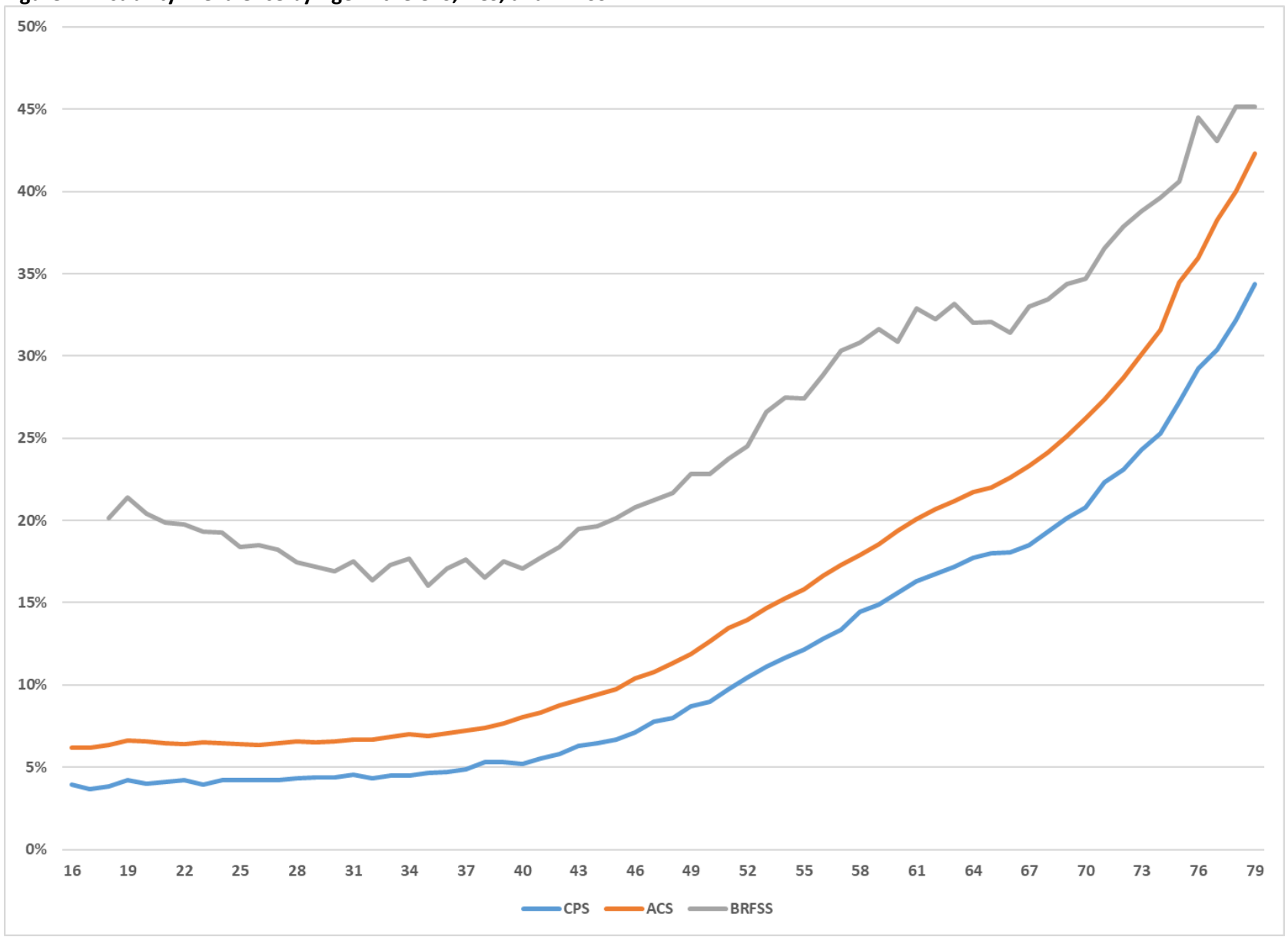
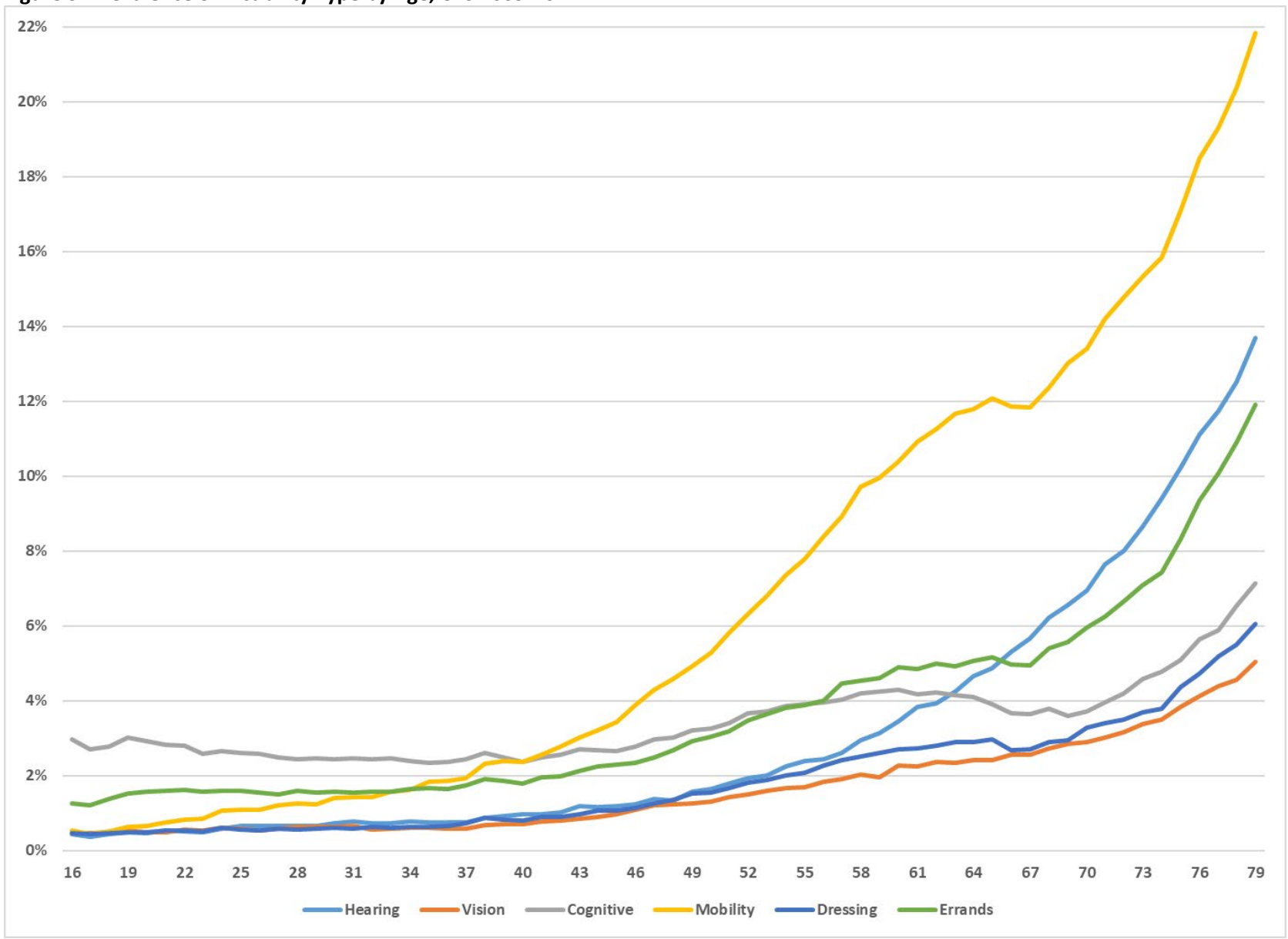


Figure 3: Prevalence of Disability Type by Age, CPS 2009-2022



COVID-19 Supplemental CPS Questions

COVID-19 and the measures to slow its spread generated massive economic repercussions by April 2020, and the Bureau of Labor Statistics responded by quickly adding to the Current Population Survey (CPS) a set of five questions aimed at assessing the extent of certain COVID-related effects on employment, earnings, telework, and medical care.[5] Specifically, starting in May 2020 the CPS now asked of household members aged 16 and older:

1. For those currently employed, did they telework or work at home at any time during the last 4 weeks due to the Coronavirus Pandemic
2. Were they unable to work at any time in the last 4 weeks due to the employer having closed or lost business due to the Coronavirus
    - Analysis of this question is restricted in this paper to those in the labor force, i.e. those who are either employed or unemployed, although there was no such limitation in the survey or the public-use datasets
3. For those answering affirmatively to question 2, did they receive any pay from their employer for the hours not worked during the last 4 weeks
4. For those not in the labor force, were they prevented from looking for work during the past 4 weeks due to the Coronavirus
5. Were they unable to obtain needed medical care at any time during the last 4 weeks due to the Coronavirus Pandemic
    - This was asked as two separate questions and recoded into one field in the public-use datasets

Although these COVID-19 questions are provided as separate monthly datasets from the basic monthly CPS, the two can be merged together at the individual level. All individuals in the CPS basic monthly datasets for which labor force status can be ascertained are also asked each of the COVID-19 questions; these supplemental questions are not a subsample of the CPS population but rather the entire CPS population. The COVID-19 supplemental questions were discontinued after September 2022.

[5] Technical documentation for the CPS supplemental COVID-19 questions can be obtained from https://www2.census.gov/programs-surveys/cps/techdocs/Covid19_TechDoc.pdf

Figure 4: Percentage Answering Affirmatively by Month, CPS COVID-19 Supplement

	Q1	Q2	Q3	Q4	Q5
2020 May	35.5%	26.9%	17.6%	9.7%	6.2%
2020 June	31.3%	21.5%	15.4%	7.2%	4.3%
2020 July	26.4%	16.5%	12.6%	6.6%	3.4%
2020 August	24.3%	12.6%	11.6%	5.2%	2.5%
2020 September	22.6%	9.9%	10.4%	4.5%	1.9%
2020 October	21.2%	7.6%	11.7%	3.6%	1.4%
2020 November	21.8%	7.5%	13.8%	3.9%	
2020 December	23.7%	8.0%	12.7%	4.5%	
2021 January	23.2%	7.4%	12.8%	4.6%	
2021 February	22.6%	6.6%	10.4%	4.1%	
2021 March	21.0%	5.7%	10.1%	3.7%	
2021 April	18.3%	4.7%	9.2%	2.8%	
2021 May	16.6%	3.8%	9.1%	2.5%	
2021 June	14.4%	3.1%	9.9%	1.6%	
2021 July	13.2%	2.5%	9.1%	1.6%	
2021 August	13.4%	2.9%	14.0%	1.5%	
2021 September	13.2%	2.5%	15.4%	1.6%	
2021 October	11.7%	1.9%	13.2%	1.3%	
2021 November	11.3%	1.8%	15.8%	1.2%	
2021 December	11.1%	1.5%	15.9%	1.1%	
2022 January	15.4%	3.2%	23.7%	1.8%	
2022 February	13.0%	2.2%	20.3%	1.2%	
2022 March	10.0%	1.2%	15.5%	0.9%	
2022 Apri	7.7%	0.8%	19.0%	0.6%	
2022 May	7.4%	0.9%	19.8%	0.5%	
2022 June	7.1%	1.0%	25.1%	0.6%	
2022 July	7.1%	1.1%	24.9%	0.6%	
2022 August	6.5%	1.0%	21.5%	0.5%	
2022 September	5.2%	0.7%	21.2%	0.5%	
Total	**16.2%**	**5.7%**	**13.9%**	**2.8%**	**3.3%**

Rates of affirmative responses to these supplemental questions rapidly decreased over the course of a year following their inception, as can be seen in Figure 4 above, which displays the aggregate values for the entire population in each month. The fifth question, on inability to access medical care, had the lowest initial rate of affirmative response at 6.2% in May 2020 and by October had fallen to a mere 1.4%, prompting BLS to discontinue this question without a replacement, leaving just four

remaining questions from November 2020 through September 2022. The first question about telework/work-from-home had the highest rates of positive responses, with 35.5% of those employed reporting telework/work-from-home due to COVID-19 in May 2020, falling to 5.2% in September 2022. In May 2020, 26.9% of those in the labor force reported being unable to work at some time in the last 4 weeks due to Coronavirus having caused their employer to close or lose business, declining more rapidly to 0.7% in September 2022. Of those answering affirmatively to question 2, 17.6% in May 2020 received pay from their employer for hours not worked, remaining at 21.2% in September 2022. Finally, for those not in the labor force, in May 2020 9.7% reported that the Coronavirus Pandemic prevented them from looking for work (i.e. from being unemployed seeking a job or possibly even from obtaining a job and therefore being employed), declining to 0.5% in September 2022.

The universe of respondents for question 4, concerning the Coronavirus Pandemic preventing people not in the labor force from seeking employment, requires reconsideration, however, due to considerable differences in the impact of COVID-19 across existing categories of reasons for being out of the labor force. In May 2020, affirmative response to the question of the Coronavirus Pandemic preventing the seeking of employment was only 2.4% for those not in the labor force due to retirement and 3.9% for those not in the labor force due to disability but 20.3% for those not in the labor force due to other reasons. Although the pandemic prompted some individuals to shift from labor force participation into being not in the labor force due to retirement or due to disability, there was a vastly greater movement into the "Other" category, and more precisely into an undefined "Other" subcategory that excludes the reasons of family/childcare, attending school, or temporary illness. Due to the direct and indirect consequences of the pandemic, the proportion of the population not in the labor force due to unspecified reasons --- not only excluding retirement and disability but also family/childcare, education, and temporary illness --- tripled from 1.0% in February 2020 to 3.0% in April 2020 before gradually declining to its pre-COVID levels by December 2021.

Figure 5: Proportion Prevented from Seeking Employment by Coronavirus Pandemic, by Month and Reason for Non-Participation in Labor Force, CPS COVID-19 Supplement

	Not in Labor Force Due to…					
	Retirement	Disability	Other	Specified	Unspecified	Total
2020 May	2.4%	3.9%	20.3%	14.4%	50.5%	9.7%
2020 June	1.8%	2.5%	16.0%	11.5%	39.1%	7.2%
2020 July	1.7%	2.6%	14.7%	11.7%	30.5%	6.6%
2020 August	1.6%	2.7%	11.0%	8.4%	27.3%	5.2%
2020 September	1.3%	2.8%	9.1%	7.2%	23.9%	4.5%
2020 October	1.1%	2.0%	7.4%	5.6%	23.5%	3.6%
2020 November	1.2%	2.4%	7.9%	5.9%	23.9%	3.9%
2020 December	1.3%	2.5%	9.4%	7.5%	25.0%	4.5%
2021 January	1.4%	2.7%	9.6%	7.4%	27.1%	4.6%
2021 February	1.4%	3.0%	8.2%	6.3%	23.4%	4.1%
2021 March	1.4%	2.6%	7.2%	5.6%	20.6%	3.7%
2021 April	1.1%	1.9%	5.5%	4.4%	16.1%	2.8%
2021 May	1.0%	1.7%	5.0%	3.9%	14.7%	2.5%
2021 June	0.6%	0.8%	3.4%	2.8%	8.1%	1.6%
2021 July	0.5%	1.4%	3.4%	2.8%	7.3%	1.6%
2021 August	0.5%	1.0%	3.1%	2.4%	9.0%	1.5%
2021 September	0.7%	1.7%	2.9%	2.4%	8.0%	1.6%
2021 October	0.6%	1.0%	2.4%	1.9%	7.5%	1.3%
2021 November	0.5%	1.0%	2.2%	1.7%	7.3%	1.2%
2021 December	0.4%	1.3%	2.0%	1.5%	6.2%	1.1%
2022 January	0.8%	1.7%	3.3%	2.8%	8.3%	1.8%
2022 February	0.7%	1.0%	2.1%	1.6%	7.5%	1.2%
2022 March	0.5%	0.9%	1.4%	1.2%	3.7%	0.9%
2022 Apri	0.3%	0.5%	1.0%	0.8%	2.7%	0.6%
2022 May	0.3%	0.6%	0.7%	0.6%	1.1%	0.5%
2022 June	0.3%	0.8%	1.0%	0.9%	1.5%	0.6%
2022 July	0.4%	0.8%	0.8%	0.6%	1.5%	0.6%
2022 August	0.4%	0.6%	0.6%	0.6%	1.2%	0.5%
2022 September	0.2%	0.6%	0.8%	0.7%	1.7%	0.5%
Total	0.9%	1.7%	5.7%	4.4%	17.0%	2.8%

Of this unspecified sub-subcategory, 50.5% answered affirmatively to this COVID-19 question in May 2020, falling to 6.2% in December 2021, as displayed in Figure 5 above, which contains the proportion answering affirmatively to the fourth COVID-19 question for the three main categories of being not in the labor force (retirement, disability, and everything else) as well as the subcategory for other reasons

specified in the public-use CPS data (retirement, disability, family/childcare, education, and illness), for reasons not specified, and in total (identical to column Q4 in the previous figure).

People with disabilities were superficially worse off in all five COVID-19 questions than people without disabilities, as seen in Figure 6 below. Even for the question about telework/work-from-home, in May 2020 just 25.7% of people with disabilities answered affirmatively compared to 35.8% of those without, though the gap was gradually reduced thereafter. Similarly, in May 2020 33.6% of people with disabilities in the labor force were unable to work at some time in the last four weeks due to COVID-19 compared to 26.6% of people without disabilities, and of these unable to work a slightly smaller share of people with disabilities received pay for hours not worked, 15.7% to 17.7%. Of those not in the labor force for reasons other than retirement or disability, in May 2020 a slightly higher share (22.6% to 20.2%) of people with disabilities did not seek employment due to COVID-19; if everyone not in the labor force were included, there would be a misleading gap in the opposite direction, for the reasons explained earlier. Given that people with disabilities tend to have greater need of medical care, it is unsurprising though worrisome that in May 2020 13.5% of this group were unable to obtain needed medical care in the previous four weeks due to COVID-19 compared to only 5.2% of people without disabilities. The averages for all questions over the entire period covered similarly show that people with disabilities, not controlling for any other factors, had somewhat lower rates of telework due to the pandemic, higher rates of being unable to work due to the pandemic, lower rates of being paid for lost work due to the pandemic, and higher rates of being prevented from conducting a job search due to the pandemic.

To provide context for the environment facing workers and potential workers in any given month of this period, Figure 7 below displays weekly excess mortality from the beginning of 2020

through the end of 2022. This data originates with the CDC[6], with excess mortality defined as the difference between actual mortality and expected mortality for each week but constrained to be non-negative, i.e. if actual mortality is lower than expected mortality then that week is assigned a value of zero. Excess mortality surpassed five thousand in the week ending March 28 2020 and remained above that threshold through the week ending February 27 2021. It again surpassed five thousand in the week ending July 31 2021 and remained there through the week ending February 26 2022. In this entire three-year period, the sum of excess mortality was 1.3 million. The exact timing of these waves of excess mortality may have impacted the trends displayed in Figure 4 above and Figure 6 below, with particularly deadly periods being associated with a halt or even partial reversion of the downward trends in affirmative answers to these questions.

Many other economic and personal characteristics can affect these outcomes, however. Ordinary Least Squares regression analysis is conducted with an equation of the form

$$Y_{it} = \alpha + \beta_1 * \text{Disability}_{it} + \beta_2 * \text{Month}_t + X_{it}\beta + \varepsilon_{it}$$

After controlling for the myriad relevant characteristics possible in the CPS, people with disabilities were 2.1 percentage points more likely to have teleworked or worked from home due to the Coronavirus Pandemic, were 0.8 percentage points more likely to have lost work due to their employer cutting hours or closing business, and for those in this category were 0.8 percentage points less likely to have been paid for the lost hours of work, although this last difference is not statistically significant. For those not in the labor force for reasons other than disability or retirement, people with disabilities were 0.9 percentage points more likely to have been prevented from looking for work. An Oaxaca-Blinder decomposition of these results reveals that telework was particularly impacted by differences in education, age, hours worked, occupation, and MSA size between people with disabilities and people

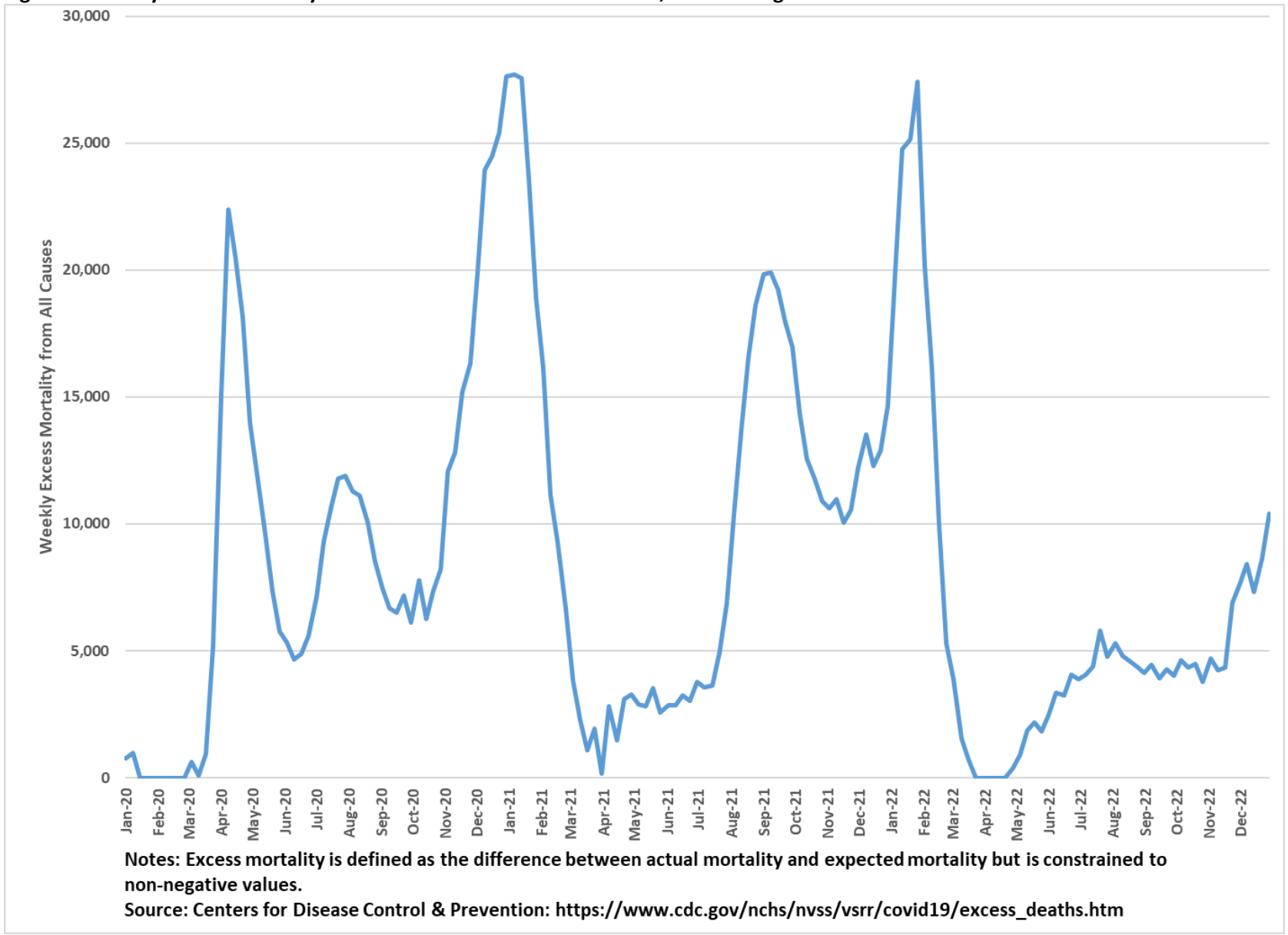
[6] https://www.cdc.gov/nchs/nvss/vsrr/covid19/excess_deaths.htm

without. However, the probability of losing work hours due to COVID-19 and, if so, not being paid for these lost hours was particularly impacted by differences in hours worked, with other characteristics having relatively slight effects. Those with varying hours were much more likely to have lost time, while full-time employees were less likely to have lost time, both of which caused people with disabilities to be more likely to have lost hours. Similarly, full-time employees were much more likely to have been paid for time lost. In regard to being prevented from job-seeking, the number of characteristics available for those not in the labor force is more limited, due to the loss of employment-related information. The age distribution had a large impact while effects from other characteristics were relatively slight, indicating that, even controlling for disability status, the potential harm from COVID-19 did more to dissuade older individuals from seeking employment. Results for these decompositions are displayed in Figure 8 below. Full regression results are displayed in Figures 9a and 9b further below, with logit regression results as a robustness check for the OLS regression results.

Figure 6: Percentage Answering Affirmatively by Disability Status and Month, CPS COVID-19 Supplement

	Telework			Unable to Work			Pay for Lost Hours			Prevented from Job-Search			Unable to Obtain Medical Care		
	No Dis.	Disability	Total	No Dis.	Disability	Total	No Dis.	Disability	Total	No Dis.	Disability	Total	No Dis.	Disability	Total
2020 May	35.8%	25.7%	35.5%	26.6%	33.6%	26.9%	17.7%	15.7%	17.6%	20.2%	22.6%	20.3%	5.2%	13.5%	6.2%
2020 June	31.6%	22.7%	31.3%	21.4%	25.8%	21.5%	15.6%	12.4%	15.4%	16.0%	16.2%	16.0%	3.6%	10.0%	4.3%
2020 July	26.6%	21.8%	26.4%	16.4%	18.1%	16.5%	12.7%	11.4%	12.6%	14.8%	13.4%	14.7%	2.7%	8.8%	3.4%
2020 August	24.5%	18.1%	24.3%	12.5%	15.3%	12.6%	11.7%	10.5%	11.6%	11.0%	10.3%	11.0%	2.1%	6.3%	2.5%
2020 September	22.8%	17.7%	22.6%	9.7%	12.9%	9.9%	10.6%	6.7%	10.4%	8.9%	12.1%	9.1%	1.5%	5.5%	1.9%
2020 October	21.4%	17.9%	21.2%	7.5%	11.1%	7.6%	11.8%	10.0%	11.7%	7.2%	11.4%	7.4%	1.1%	3.9%	1.4%
2020 November	21.9%	18.6%	21.8%	7.3%	12.9%	7.5%	13.8%	13.6%	13.8%	7.7%	11.0%	7.9%			
2020 December	23.9%	19.9%	23.7%	7.8%	11.7%	8.0%	12.9%	9.8%	12.7%	9.1%	14.4%	9.4%			
2021 January	23.4%	18.4%	23.2%	7.2%	12.0%	7.4%	13.2%	7.3%	12.8%	9.2%	15.8%	9.6%			
2021 February	22.7%	21.1%	22.6%	6.5%	10.2%	6.6%	10.7%	6.6%	10.4%	8.0%	12.1%	8.2%			
2021 March	21.0%	19.0%	21.0%	5.6%	7.5%	5.7%	10.3%	7.5%	10.1%	7.0%	9.6%	7.2%			
2021 April	18.3%	16.2%	18.3%	4.6%	7.6%	4.7%	9.2%	10.0%	9.2%	5.5%	6.2%	5.5%			
2021 May	16.6%	15.3%	16.6%	3.8%	5.5%	3.8%	8.6%	15.7%	9.1%	4.9%	6.1%	5.0%			
2021 June	14.5%	12.7%	14.4%	3.1%	4.4%	3.1%	9.8%	10.5%	9.9%	3.3%	5.2%	3.4%			
2021 July	13.3%	11.1%	13.2%	2.5%	3.4%	2.5%	9.0%	10.0%	9.1%	3.3%	4.8%	3.4%			
2021 August	13.5%	11.6%	13.4%	2.8%	4.9%	2.9%	13.9%	14.8%	14.0%	3.0%	5.0%	3.1%			
2021 September	13.3%	11.3%	13.2%	2.4%	4.0%	2.5%	15.4%	15.7%	15.4%	2.8%	4.9%	2.9%			
2021 October	11.7%	11.7%	11.7%	1.8%	3.6%	1.9%	13.0%	15.8%	13.2%	2.2%	5.1%	2.4%			
2021 November	11.3%	10.6%	11.3%	1.7%	2.4%	1.8%	15.7%	17.2%	15.8%	2.0%	4.9%	2.2%			
2021 December	11.1%	11.0%	11.1%	1.4%	2.7%	1.5%	15.6%	17.7%	15.9%	1.9%	3.5%	2.0%			
2022 January	15.4%	14.1%	15.4%	3.2%	4.7%	3.2%	24.0%	20.5%	23.7%	3.2%	5.2%	3.3%			
2022 February	12.9%	14.3%	13.0%	2.0%	5.7%	2.2%	21.6%	10.3%	20.3%	1.9%	4.6%	2.1%			
2022 March	10.0%	9.8%	10.0%	1.2%	2.3%	1.2%	14.9%	19.7%	15.5%	1.3%	2.9%	1.4%			
2022 Apri	7.8%	6.4%	7.7%	0.7%	1.6%	0.8%	17.8%	28.2%	19.0%	1.0%	1.2%	1.0%			
2022 May	7.4%	6.6%	7.4%	0.8%	1.7%	0.9%	20.5%	14.2%	19.8%	0.6%	1.6%	0.7%			
2022 June	7.0%	7.5%	7.1%	1.0%	1.8%	1.0%	24.8%	26.7%	25.1%	0.9%	2.0%	1.0%			
2022 July	7.1%	6.9%	7.1%	1.1%	1.6%	1.1%	24.7%	27.1%	24.9%	0.7%	1.7%	0.8%			
2022 August	6.5%	6.4%	6.5%	0.9%	2.0%	1.0%	21.1%	24.0%	21.5%	0.6%	1.1%	0.6%			
2022 September	5.2%	4.5%	5.2%	0.7%	1.1%	0.7%	21.3%	20.7%	21.2%	0.7%	1.4%	0.8%			
Total	**16.3%**	**13.5%**	**16.2%**	**5.6%**	**7.5%**	**5.7%**	**14.0%**	**12.6%**	**13.9%**	**5.6%**	**7.3%**	**5.7%**	**2.7%**	**8.0%**	**3.3%**

Figure 7: Weekly Excess Mortality from All Causes in the United States, 2020 through 2022



Notes: Excess mortality is defined as the difference between actual mortality and expected mortality but is constrained to non-negative values.

Source: Centers for Disease Control & Prevention: https://www.cdc.gov/nchs/nvss/vsrr/covid19/excess_deaths.htm

Figure 8: Oaxaca-Blinder Decomposition for COVID-19 Supplement Questions

By Disability Status	Q1	Q2	Q3	Q4
Apparent Gap (% pts.)	-2.79%	1.86%	-1.39%	1.63%
Explained by Month	-0.60%	-0.36%	0.17%	-0.33%
Explained by Gender	0.00%	0.00%	0.00%	0.15%
Explained by Race	-0.12%	-0.03%	-0.05%	0.00%
Explained by Citizenship	0.12%	-0.09%	0.36%	0.06%
Explained by Education	-1.33%	0.06%	-0.23%	0.11%
Explained by Age	-0.62%	0.18%	0.09%	1.00%
Explained by Hours Worked	-0.53%	1.38%	-1.49%	0.00%
Explained by Industry of Employer	-0.21%	0.02%	-0.70%	-0.01%
Explained by Occupation of Job	-0.86%	0.05%	0.29%	0.00%
Explained by MSA Size	-0.57%	-0.13%	0.14%	-0.11%
Explained by State	-0.09%	-0.03%	0.18%	-0.05%
Size of Gap Explained in Total	-4.81%	1.06%	-1.24%	0.81%
Percentage of Initial Gap Explained	172.4%	57.0%	88.9%	49.8%
Size of Remaining Unexplained Gap	2.02%	0.80%	-0.15%	0.82%

Figure 9a: Regression results for Q1 & Q2, CPS COVID-19 Supplement

		Q1 Telework					Q2 Unable to Work				
		OLS			Logit		OLS			Logit	
Excluded Value		Coeff.	Std. Error	t-Value	Adj. Coeff.	Z	Coeff.	Std. Error	t-Value	Adj. Coeff.	Z
	Disability	2.1%	0.0014	14.58	2.9%	12.32	0.8%	0.0009	9.28	1.0%	8.96
	Female	1.4%	0.0006	23.02	1.5%	16.17	0.4%	0.0004	10.03	0.4%	6.61
White NH	Black NH	-0.3%	0.0009	-3.29	-0.7%	-4.21	0.9%	0.0006	14.76	1.1%	12.59
	Hispanic	-1.5%	0.0009	-16.85	-1.5%	-9.97	0.9%	0.0006	16.31	1.0%	12.92
	Asian NH	5.5%	0.0013	41.89	3.9%	22.32	-0.1%	0.0009	-1.34	0.0%	-0.23
	Native American NH	1.2%	0.0034	3.68	2.2%	3.90	0.8%	0.0022	3.80	1.1%	3.71
	Pacific Islander NH	0.7%	0.0048	1.51	1.1%	1.43	0.3%	0.0031	1.02	0.7%	1.79
	Multiple Race NH	2.8%	0.0022	12.70	3.2%	8.61	1.2%	0.0014	8.28	1.5%	7.68
Native	Naturalized Citizen	-2.5%	0.0011	-22.09	-2.6%	-15.17	0.8%	0.0007	10.47	0.7%	6.97
	Non-Citizen	-0.5%	0.0012	-4.41	0.0%	-0.14	1.2%	0.0007	16.06	1.1%	10.87
Post-Graduate Degree	Less Than HS	-16.1%	0.0015	-111.12	-23.3%	-58.75	0.1%	0.0009	1.48	0.5%	4.05
	High School or Equivalent	-16.5%	0.0011	-154.29	-17.5%	-104.34	0.8%	0.0007	11.09	1.0%	9.76
	Some College	-15.0%	0.0010	-149.86	-12.4%	-91.69	1.2%	0.0007	17.79	1.5%	15.07
	4-Year College Degree	-6.8%	0.0009	-73.90	-4.2%	-39.24	0.7%	0.0006	11.12	0.8%	8.92
16-24	25-29	2.0%	0.0012	16.57	5.3%	23.25	2.0%	0.0008	26.70	2.0%	17.75
	30-34	2.0%	0.0012	17.21	5.6%	25.01	2.4%	0.0008	31.70	2.6%	22.89
	35-39	1.7%	0.0012	14.45	5.4%	24.15	2.6%	0.0008	34.19	2.9%	25.97
	40-44	1.2%	0.0012	9.52	4.8%	21.49	2.8%	0.0008	36.16	3.1%	27.87
	45-49	0.3%	0.0012	2.75	3.9%	16.93	3.0%	0.0008	37.18	3.3%	28.36
	50-54	0.0%	0.0012	-0.37	3.5%	15.24	3.1%	0.0008	38.64	3.4%	29.80
	55-59	-0.1%	0.0012	-1.17	3.2%	13.97	2.9%	0.0008	36.64	3.2%	28.77
	60-64	-0.8%	0.0013	-5.75	2.6%	10.71	3.0%	0.0009	34.64	3.3%	27.97
	65-69	-1.9%	0.0017	-11.17	1.4%	4.94	3.2%	0.0011	30.17	3.6%	26.75
	70-74	-2.7%	0.0023	-11.97	0.3%	0.93	3.5%	0.0015	23.60	4.0%	23.34
	75+	-3.9%	0.0026	-14.79	-1.4%	-3.20	3.1%	0.0017	17.86	3.7%	18.52
<15 Hours Usually	Varying Hours	0.4%	0.0020	1.96	0.7%	1.74	10.0%	0.0012	80.55	4.4%	32.77
	15-25	0.4%	0.0020	1.83	-0.2%	-0.48	-0.9%	0.0013	-7.17	-0.9%	-6.21
	25-35	0.6%	0.0020	2.92	-0.2%	-0.55	-1.2%	0.0013	-8.78	-1.2%	-7.79
	35-45	3.9%	0.0017	22.45	5.4%	16.89	-4.7%	0.0012	-40.29	-5.7%	-41.54
	45-55	4.9%	0.0019	25.36	6.2%	18.39	-4.5%	0.0013	-35.48	-5.6%	-34.00
	55-65	3.7%	0.0022	16.66	5.1%	13.59	-4.1%	0.0015	-27.73	-4.9%	-24.00
	65+	0.8%	0.0029	2.78	1.2%	2.40	-3.5%	0.0019	-18.36	-3.9%	-14.84
Construction	Agriculture	-3.8%	0.0032	-12.08	-6.8%	-10.11	-3.6%	0.0021	-17.44	-4.8%	-14.07
	Mining	7.2%	0.0045	15.89	11.3%	15.48	-0.9%	0.0029	-2.98	-1.0%	-2.69
	Manufacturing	7.2%	0.0018	41.01	9.9%	33.46	-1.0%	0.0011	-8.45	-1.4%	-8.87
	Wholesale and retail trade	1.7%	0.0017	9.62	1.7%	5.54	-1.4%	0.0011	-12.74	-1.9%	-12.33
	Transportation and utilities	2.8%	0.0019	15.09	4.8%	13.74	-0.6%	0.0012	-5.15	-0.8%	-4.69
	Information	15.9%	0.0026	62.13	15.9%	44.30	0.2%	0.0017	0.99	0.2%	1.07
	Financial activities	15.3%	0.0018	84.69	15.6%	54.12	-1.8%	0.0012	-15.47	-2.7%	-15.72
	Prof. and business services	11.9%	0.0017	71.25	13.4%	48.17	-0.5%	0.0011	-4.92	-0.6%	-4.03
	Educ. and health services	0.1%	0.0017	0.59	2.6%	8.99	-1.2%	0.0011	-11.36	-1.5%	-10.46
	Leisure and hospitality	2.2%	0.0018	11.91	0.7%	2.01	3.5%	0.0012	29.59	2.3%	15.26
	Other services	5.0%	0.0020	25.51	8.2%	23.67	2.3%	0.0013	17.97	1.7%	10.58
	Public administration	11.6%	0.0020	59.38	14.9%	48.13	-2.7%	0.0013	-21.38	-4.4%	-21.18
Mngmt./Business/Fin.	Professional and related occ.	-2.6%	0.0009	-27.46	-2.1%	-18.18	0.3%	0.0006	5.59	0.3%	3.10
	Service occupations	-16.8%	0.0011	-152.69	-27.8%	-115.38	1.9%	0.0007	26.41	1.8%	18.40
	Sales and related occ.	-10.7%	0.0013	-85.27	-9.2%	-49.69	1.3%	0.0008	15.72	1.6%	14.34
	Office and admin. Occ.	-6.1%	0.0011	-54.25	-3.9%	-25.99	-0.3%	0.0007	-4.71	-0.6%	-5.27
	Agricultural occupations	-8.1%	0.0042	-19.28	-20.5%	-14.48	1.3%	0.0027	4.89	2.0%	4.66
	Construction occupations	-13.2%	0.0018	-71.87	-26.3%	-55.62	1.9%	0.0012	16.28	2.0%	12.33
	Installation occupations	-16.7%	0.0018	-93.81	-26.7%	-58.35	-0.1%	0.0012	-1.07	-0.3%	-1.78
	Production occupations	-18.1%	0.0016	-114.81	-28.9%	-74.04	1.0%	0.0010	10.02	1.2%	8.60
	Transportation occupations	-16.2%	0.0014	-116.82	-32.2%	-75.81	0.7%	0.0009	7.78	0.8%	6.40
Not MSA	100,000 - 249,999	1.6%	0.0014	11.56	4.9%	21.18	0.4%	0.0009	4.74	0.5%	4.25
	250,000 - 499,999	3.6%	0.0013	28.62	8.4%	38.95	0.6%	0.0008	7.80	0.8%	7.01
	500,000 - 999,999	3.4%	0.0011	29.69	8.3%	43.31	0.3%	0.0007	3.99	0.5%	4.87
	1,000,000 - 2,499,999	6.5%	0.0011	61.26	12.3%	68.38	1.1%	0.0007	16.45	1.4%	15.08
	2,500,000 - 4,999,999	7.8%	0.0012	64.53	12.9%	65.88	1.0%	0.0008	13.18	1.3%	12.28
	5,000,000+	7.6%	0.0011	67.84	13.4%	69.72	1.8%	0.0007	25.29	2.1%	20.17
Month variables not shown											
State geographic variables not shown											
Constant		41.8%	0.0033	125.71	-12.6%	-22.70	24.9%	0.0022	115.37	-6.6%	-25.44

Figure 9b: Regression results for Q3 & Q4, CPS COVID-19 Supplement

		Q3 Pay for Lost Hours					Q4 Prevented from Job-Search				
		OLS			Logit		OLS			Logit	
Excluded Value		Coeff.	Std. Error	t-Value	Adj. Coeff.	Z	Coeff.	Std. Error	t-Value	Adj. Coeff.	Z
	Disability	-0.8%	0.0045	-1.75	-0.7%	-1.34	0.9%	0.0017	5.35	1.0%	5.17
	Female	0.4%	0.0024	1.52	0.3%	0.90	-2.3%	0.0009	-26.50	-2.4%	-21.27
White NH	Black NH	0.3%	0.0035	0.86	0.4%	0.86	3.0%	0.0013	23.03	2.9%	17.93
	Hispanic	1.2%	0.0033	3.63	1.4%	3.14	1.4%	0.0012	11.71	1.5%	10.16
	Asian NH	-1.1%	0.0050	-2.19	-1.3%	-1.91	-0.1%	0.0017	-0.65	-0.1%	-0.42
	Native American NH	1.1%	0.0125	0.87	1.1%	0.72	2.2%	0.0040	5.46	2.3%	4.70
	Pacific Islander NH	-0.5%	0.0174	-0.26	-0.7%	-0.31	-0.4%	0.0064	-0.62	-0.3%	-0.34
	Multiple Race NH	-1.7%	0.0078	-2.23	-1.9%	-1.65	1.1%	0.0028	4.12	1.3%	3.28
Native	Naturalized Citizen	-2.3%	0.0039	-5.83	-2.6%	-4.82	0.4%	0.0017	2.68	0.3%	1.38
	Non-Citizen	-3.6%	0.0040	-8.92	-4.4%	-7.48	-1.0%	0.0014	-6.89	-0.9%	-5.28
Post-Graduate Degree	Less Than HS	-3.9%	0.0054	-7.24	-4.1%	-6.03	0.3%	0.0021	1.36	-0.4%	-1.46
	High School or Equivalent	-2.8%	0.0045	-6.31	-2.4%	-4.75	2.2%	0.0020	10.88	2.1%	8.55
	Some College	-3.0%	0.0043	-6.81	-2.4%	-5.07	1.9%	0.0020	9.12	1.8%	7.40
	4-Year College Degree	-0.8%	0.0043	-1.87	-0.2%	-0.52	1.1%	0.0021	5.24	1.1%	4.25
16-24	25-29	2.5%	0.0045	5.44	2.9%	4.53	3.6%	0.0015	23.23	3.9%	19.33
	30-34	1.9%	0.0046	4.04	2.2%	3.59	3.6%	0.0016	22.79	4.1%	20.03
	35-39	1.7%	0.0046	3.69	2.1%	3.42	3.7%	0.0017	22.54	4.2%	20.22
	40-44	1.7%	0.0047	3.56	2.0%	3.15	3.9%	0.0018	22.47	4.4%	20.52
	45-49	1.7%	0.0048	3.65	2.0%	3.13	4.0%	0.0019	21.60	4.5%	20.29
	50-54	1.5%	0.0048	3.15	1.8%	2.82	4.5%	0.0019	23.16	4.9%	21.66
	55-59	3.0%	0.0048	6.37	3.4%	5.47	4.9%	0.0020	24.50	5.2%	22.99
	60-64	1.7%	0.0050	3.28	2.1%	3.22	5.9%	0.0023	26.11	5.9%	25.00
	65-69	0.1%	0.0059	0.09	0.4%	0.56	6.8%	0.0032	21.29	6.4%	21.43
	70-74	0.6%	0.0072	0.85	1.3%	1.47	4.7%	0.0043	10.89	5.1%	11.70
	75+	3.6%	0.0079	4.55	4.4%	4.89	2.3%	0.0040	5.82	2.9%	6.47
<15 Hours Usually	Varying Hours	1.1%	0.0066	1.62	0.8%	0.81	Omitted			Omitted	
	15-25	3.5%	0.0076	4.64	4.6%	4.23	Omitted			Omitted	
	25-35	3.3%	0.0076	4.34	4.3%	4.01	Omitted			Omitted	
	35-45	13.0%	0.0067	19.38	12.9%	13.58	Omitted			Omitted	
	45-55	12.5%	0.0082	15.13	12.4%	11.62	Omitted			Omitted	
	55-65	8.5%	0.0102	8.29	9.4%	7.42	Omitted			Omitted	
	65+	4.6%	0.0137	3.36	5.9%	3.48	Omitted			Omitted	
Construction	Agriculture	0.2%	0.0175	0.09	0.6%	0.28	-5.6%	0.0300	-1.86	-2.7%	-1.21
	Mining	7.8%	0.0186	4.18	8.0%	4.22	11.4%	0.0407	2.79	3.9%	1.45
	Manufacturing	7.5%	0.0080	9.35	7.7%	7.90	-1.4%	0.0181	-0.80	-0.9%	-0.68
	Wholesale and retail trade	4.1%	0.0077	5.38	4.7%	4.80	0.7%	0.0167	0.40	0.5%	0.37
	Transportation and utilities	5.4%	0.0085	6.40	6.0%	5.57	-2.3%	0.0180	-1.25	-1.7%	-1.23
	Information	4.1%	0.0107	3.85	5.0%	3.81	5.0%	0.0242	2.07	1.4%	0.78
	Financial activities	4.9%	0.0087	5.59	5.4%	5.09	3.4%	0.0196	1.76	1.4%	0.98
	Prof. and business services	2.0%	0.0073	2.81	2.6%	2.76	-1.3%	0.0168	-0.76	-0.6%	-0.43
	Educ. and health services	11.9%	0.0074	16.09	11.0%	11.98	0.9%	0.0165	0.54	1.0%	0.78
	Leisure and hospitality	2.4%	0.0073	3.28	1.7%	1.75	2.9%	0.0164	1.77	1.9%	1.50
	Other services	2.0%	0.0079	2.53	1.8%	1.67	3.5%	0.0179	1.93	1.6%	1.24
	Public administration	22.5%	0.0105	21.42	16.7%	15.07	-5.2%	0.0206	-2.54	-2.8%	-1.80
Mngmt./Business/Fin.	Professional and related occ.	1.1%	0.0046	2.43	0.5%	0.96	-1.1%	0.0101	-1.12	-0.2%	-0.28
	Service occupations	-4.5%	0.0045	-10.08	-5.0%	-9.12	0.2%	0.0094	0.17	0.4%	0.58
	Sales and related occ.	-4.1%	0.0056	-7.43	-4.5%	-6.47	-2.2%	0.0110	-2.04	-0.3%	-0.35
	Office and admin. Occ.	-0.1%	0.0055	-0.17	-0.2%	-0.28	1.3%	0.0104	1.25	1.0%	1.23
	Agricultural occupations	-2.6%	0.0213	-1.23	-3.0%	-1.14	-0.4%	0.0301	-0.15	0.5%	0.20
	Construction occupations	-3.2%	0.0075	-4.21	-3.9%	-3.88	-3.5%	0.0177	-1.96	-1.9%	-1.41
	Installation occupations	-1.1%	0.0084	-1.35	-0.9%	-0.92	-5.6%	0.0172	-3.25	-3.4%	-2.43
	Production occupations	-3.4%	0.0072	-4.75	-3.1%	-3.61	-2.0%	0.0150	-1.30	-1.0%	-0.83
	Transportation occupations	-0.6%	0.0061	-1.04	-0.3%	-0.46	-2.2%	0.0113	-1.92	-1.0%	-1.04
Not MSA	100,000 - 249,999	-1.8%	0.0060	-3.05	-1.8%	-2.79	0.3%	0.0020	1.33	0.3%	1.01
	250,000 - 499,999	-2.6%	0.0053	-4.82	-2.6%	-4.19	1.4%	0.0019	7.53	1.9%	7.71
	500,000 - 999,999	0.4%	0.0049	0.74	0.5%	0.99	1.0%	0.0017	5.97	1.5%	6.62
	1,000,000 - 2,499,999	-2.8%	0.0045	-6.26	-2.7%	-5.31	1.4%	0.0016	8.51	1.8%	8.55
	2,500,000 - 4,999,999	-2.6%	0.0049	-5.25	-2.6%	-4.47	1.4%	0.0018	7.56	1.7%	7.40
	5,000,000+	-2.6%	0.0046	-5.52	-2.4%	-4.41	1.7%	0.0016	10.23	2.0%	9.33
Month variables not shown											
State geographic variables not shown											
Constant		10.0%	0.0122	8.19	-28.5%	-17.79	30.6%	0.0231	13.29	-3.9%	-3.05

Discontinuity in the Disabled Population, during and after COVID

Prior to the onset of COVID-19, disability prevalence as defined by the CPS had fluctuated within a fairly narrow range in monthly data: between 7.2% and 7.9% for those aged 16 through 64, and between 10.9% and 12.0% for the entire age range 16 and older. Holding everything else constant, the gradual aging of the population distribution would be expected to increase disability prevalence, more so in the full age range, due to the rapid increase in disability prevalence with age as examined earlier. As seen in Figure 10 below, the arrival of COVID-19 in 2020 was accompanied by a decline in disability prevalence, dropping in July 2020 to 7.0% for those aged 16-64, the lowest on record, and to 11.1% for the full age range, still the lowest in nearly a decade. Over the next three years, however, disability prevalence increased to reach new heights, with the current records standing at 8.2% in August 2023 for those aged 16-64 and at 12.8% in June 2023 for the full age range 16 and older. Since disability status is not necessarily permanent, there are questions about transitions into and out of functional limitations during this period, possibly caused by lasting effects of COVID-19. Furthermore, there is also a question as to the differential impact of COVID-19 on mortality rates, since the population with disabilities might overall be more susceptible to fatal impacts from this disease. If the characteristics of the population with disabilities has changed substantially as a result of COVID-19, this in itself might have an impact on labor market outcomes, which could explain part or all of the improvement relative to the population without disabilities.

Before conducting an analysis of whether employment outcomes have changed holding other characteristics constant, some description should be provided of what these characteristics are and how they differ for people with disabilities relative to people without disabilities. The Current Population Survey (CPS) captures a substantial number of background characteristics, several of which are employed to generate the weighting of individual respondents, based on Census Bureau estimates of the population by age, gender, race and ethnicity, state of residence, and other factors. Of particular

interest is educational attainment, which is endogenous to disability status, not only because those with a disability from birth or childhood have worse educational outcomes but also because the probability of becoming disabled during adulthood is affected by one's occupation and other factors, which in turn are affected by education.

Interestingly, there has been a considerable increase in the proportion of people with disabilities, restricted to the 'working-age' population ages 16-64, who are ages 16-24, from 10.4% in 2019 to 12.6% in 2023 (excluding November and December); for people without disabilities, the increase was relatively mild, from 18.9% in 2019 to 19.4% in 2023. Unlike most other observed changes in demographic characteristics, this would tend to worsen employment outcomes for the disabled relative to the non-disabled, given much lower labor force participation in this group relative to the rest of the 'working-age' population. Disability prevalence for this younger end of the age range increased from 4.2% in 2019 to 5.3% in 2023, driven by an increase in the proportion answering affirmatively to the cognitive disability question, from 2.9% in 2019 to 3.9% in 2023. Over the entire age range 16 through 64, the proportion with a cognitive disability increased from 3.1% in 2019 to 3.6% in 2023. In regard to education, the proportion of people with disabilities ages 16 through 64 who have a post-graduate degree increased from 4.8% in 2019 to 6.2% in 2023, while the proportion with a bachelor's degree (but not a post-graduate degree) increased from 10.9% in 2019 to 12.5% in 2023; however, there were similar increases for people without disabilities, from 11.8% to 12.9% for post-graduate degree attainment and from 22.2% to 23.4% for Bachelor's Degree attainment. These differences for people with disabilities are all highly statistically significant.

Taking advantage of the rich set of characteristics included in the CPS, it is possible to determine whether and how much employment has changed for people with disabilities relative to those without disabilities while controlling for myriad other characteristics that affect employment outcomes. A

differences-in-differences model compares people by disability status and year, while controlling for other factors, with an equation of the form

$$Y_{it} = \alpha + \beta_1 * \text{Disability}_{it} + \text{Year}_t * \beta + (\text{Disability}_{it} * \text{Year}_t) * \beta + X_{it}\beta + \varepsilon_{it}$$

Figure 11 below shows the discrepancy between those with and without disabilities by calendar year, from 2009 through 2023 (excluding November and December), for the working-age population ages 16-64. It has been observed that, as with other groups that have relatively poor employment outcomes, people with disabilities tend to lag behind during recoveries, and this seems to have occurred in the 2010s as well, with the gap in employment growing larger from 2009 to 2014, reaching -43.0%. This is followed by a modest improvement from 2014 to 2019, though the gap of -40.4% in 2019 is nearly identical to the -40.6% gap in 2011. By contrast, there appears to be a discontinuous jump from -40.4% in 2019 to -37.5% in 2020, followed by further improvement to 35.0% in 2023 (partial). The difference between 2019 and 2020 is not merely highly statistically significant but is by far the largest single-year change on record, and it was followed by further substantial improvements from 2021 to 2022 and again from 2022 to 2023 (partial). Robustness checks performed using logit regressions confirm similar results, as displayed in Figure 12 below. Various other robustness checks on the exact explanatory variables included have been performed here and elsewhere, also yielding similar results, but are not included in this paper. This demonstrates the true trends of employment for people with disabilities, controlling as much as possible for changes in the characteristics of this population that can affect employment, positively or negatively.

Oaxaca-Blinder decomposition illustrates the limited extent to which the employment gap between people with and without disabilities can be explained by other factors. Various background characteristics and their estimated impact on the employment of people with disabilities relative to those without disabilities, for those ages 16 to 64, by calendar year for 2019 through 2023, are displayed in Figure 13 below. Only age and education have a substantial impact on employment gaps, and the

latter is not truly exogenous of disability status, since incurring a disability from birth or childhood often affects the probability of achieving greater educational attainment. The total explanatory power of these characteristics is similar across the five years in this range.

More interestingly, there has been a substantial change in the impact of these characteristics on employment within the population with disabilities ages 16 to 64, comparing 2019 to each later year. In 2020, there is already a shift in the age and educational distributions of people with disabilities tending to increase employment, making the actual decrease in employment greater. The influence of these two characteristics in particular increases over the following three years, while other characteristics have relatively minor impact. By 2023, 2.5 percentage points of a 6.1 percentage point improvement in employment can be ascribed to changes in these background characteristics, which still leaves a considerable 3.6 percentage point increase in employment for people with disabilities attributable to other factors. Due to the relatively low employment-population ratio for people with disabilities, this still amounts to an estimated 11.8% increase in employment relative to 2019, attributable to factors other than these background characteristics, among which could be an increase in opportunities for telework or other policy changes by employers.

During the height of the COVID-19 pandemic, there was a great interest in certain characteristics of jobs that determined how easily they could be maintained during state-imposed COVID-related restrictions and how much of a risk they posed regarding exposure to COVID-19. One relevant aspect of jobs is their contact intensity, meaning the proximity to co-workers or customers of a worker carrying out necessary job functions. Another is the teleworkability of jobs, whether they can be performed remotely via a computer and an internet connection versus requiring the worker to be present in-person at the site of employment. Although individual-level data on these characteristics is not available, both these characteristics can be observed indirectly at the level of occupational categories. Naturally, many jobs that both were contact intensive and could not be performed via telework nonetheless remained

filled even during the worst of the pandemic and the height of COVID-19 restrictions regarding employment. However, these two characteristics may explain much of the pattern in occupational decline and resurgence during and after the COVID-19 pandemic, with potentially interesting differences between people with and without disabilities.

Contact intensity relates to the physical proximity of a worker to co-workers or customers during the performance of necessary job duties. The Department of Labor's O*Net system includes results from a question about physical proximity with five response options, each given a numerical score that provides an average for each occupational category, narrowly defined. This permits the categorization of occupation according to three levels of contact intensity: low, medium, and high.[7] It would be expected that low contact intensity occupations would be less adversely affected by the COVID-19 pandemic than medium contact intensity occupations, which in turn would be less affected than high contact intensity occupations. Figure 14 below displays the change in population-adjusted employment, relative to 2019, for the years 2020 through 2023 (partial), for each of the three contact intensity categories and a total category, and separately for people with and without disabilities. As expected, the numbers for 2020 show large differences in employment decline across contact intensity categories: for people without disabilities, there were losses of -1.4% for low contact intensity occupations, -7.8% for medium contact intensity occupations, and -11.7% for high contact intensity occupations, while for people with disabilities these changes were -0.3% for low, -8.5% for medium, and -13.2% for high. Overall employment change, without adjusting for the various changes in

[7] Contact intensity categories are derived from Leibovici, Santacreu, and Famiglietti (2020) at https://www.stlouisfed.org/on-the-economy/2020/march/social-distancing-contact-intensive-occupations Responses are given a quantitative score of 0 for I don't work near other people (beyond 100 ft.), 25 for I work with others but not closely (e.g., private office), 50 for Slightly close (e.g., shared office), 75 for Moderately close (at arm's length), and 100 for Very close (near touching). Each occupation is assigned into a category based on its average score, with a cutoff of 50 between low and medium contact intensity and a cutoff of 75 between medium and high contact intensity.

characteristics affecting employment described earlier, was nearly identical at -6.8% for people without disabilities and -7.2% for people with disabilities.

As the labor market improved over the next three years, marked differences in overall employment growth emerged between people with and without disabilities, but differences within each group across contact intensity categories remained similar. For people with disabilities, growth in the low contact intensity category remained far higher than the others, increasing from 6.1% in 2021 to 16.8% in 2022 and 20.5% in 2023. However, there was more pronounced growth in the other two categories in 2022 and 2023, so that the gap between these categories actually shrank somewhat, though remaining sizable in 2023 at 5.3 percentage points between low and medium and at 7.8 percentage points between low and high contact intensity. By contrast, in 2021, with more waves of COVID-19 variants occurring, the gap in growth between the low and high contact intensity categories for people with disabilities reached 15.0 percentage points, the highest for any difference between categories for either group. For people without disabilities, employment change has similarly remained higher in the low contact intensity category, reaching 5.2% in 2023, while employment remained lower in the medium category at -2.9% and still lower in the high category at -4.2% relative to 2019. This might indicate that although contact intensity was particularly important in 2020 and 2021, it became less so during the later recovery as mortality from COVID-19 receded.

Telework more straightforwardly permitted employees to avoid the risk of exposure to COVID-19 and other contagious diseases by avoiding one's physical presence at the worksite, which can also be particularly beneficial to people with disabilities in allowing them to surmount other barriers to employment, especially regarding transportation. Only two categories are generated, determined by whether an occupation is considered teleworkable or not based on responses to numerous questions in

the O*Net database.[8] As with contact intensity, the occupations are narrowly defined, to accurately capture the true characteristics of a job. Similar to the previous chart regarding contact intensity, Figure 15 below displays population-adjusted employment change relative to 2019 for teleworkability by year and disability status. In 2020, the differences in employment change by teleworkability are smaller than differences by contact intensity; for people with disabilities, teleworkable occupations contracted by 3.3% versus 9.4% for non-teleworkable occupations, similar to reductions of 4.4% and 8.5% for people without disabilities.

For people with disabilities, a larger gap emerged in later years between teleworkable occupations and those not considered teleworkable, in contrast to people without disabilities. Employment change in teleworkable occupations relative to 2019 for people with disabilities jumped to 5.6% in 2021, 16.0% in 2022, and a prodigious 25.1% in 2023; employment change in non-teleworkable occupations, though still improving markedly, lagged at -4.3% in 2021, 7.7% in 2022, and 11.0% in 2023. For people without disabilities, teleworkable occupations still outpaced non-teleworkable occupations, improving to 2.2% growth in 2023 versus -3.0% for non-teleworkable occupations, but remaining a much

[8] Telework categories are derived from Dingel and Neiman (2020) at https://bfi.uchicago.edu/working-paper/how-many-jobs-can-be-done-at-home/
The following items from the Work Context survey are used as criteria that an occupation is not teleworkable:

1. Average respondent says they use email less than once per month (Q4)
2. Average respondent says they deal with violent people at least once a week (Q14)
3. Majority of respondents say they work outdoors every day (Q17 & Q18)
4. Average respondent says they are exposed to diseases or infection at least once a week (Q29)
5. Average respondent says they are exposed to minor burns, cuts, bites, or stings at least once a week (Q33)
6. Average respondent says they spent majority of time walking or running (Q37)
7. Average respondent says they spent majority of time wearing common or specialized protective or safety equipment (Q43 & Q44)

The following items from the Generalized Work Activities survey are used as criteria that an occupation is not teleworkable:

1. Performing General Physical Activities is very important (Q16A)
2. Handling and Moving Objects is very important (Q17A)
3. Controlling Machines and Processes [not computers nor vehicles] is very important (Q18A)
4. Operating Vehicles, Mechanized Devices, or Equipment is very important (Q20A)
5. Performing for or Working Directly with the Public is very important (Q32A)
6. Repairing and Maintaining Mechanical Equipment is very important (Q22A)
7. Repairing and Maintaining Electronic Equipment is very important (Q23A)
8. Inspecting Equipment, Structures, or Materials is very important (Q4A)

smaller gap than for people with disabilities. This suggests that a shift towards telework, in occupations amenable to it, may have contributed disproportionately to recent employment gains for people with disabilities, though as indicated by the considerably larger gains even in non-teleworkable occupations for people with disabilities, there are other relevant components, possibly relating to other shifts in employer policies, or perhaps even to increasing ease in telework for occupations that had previously not been amenable to it.

Figure 10: Disability Prevalence, 2009-2023, CPS

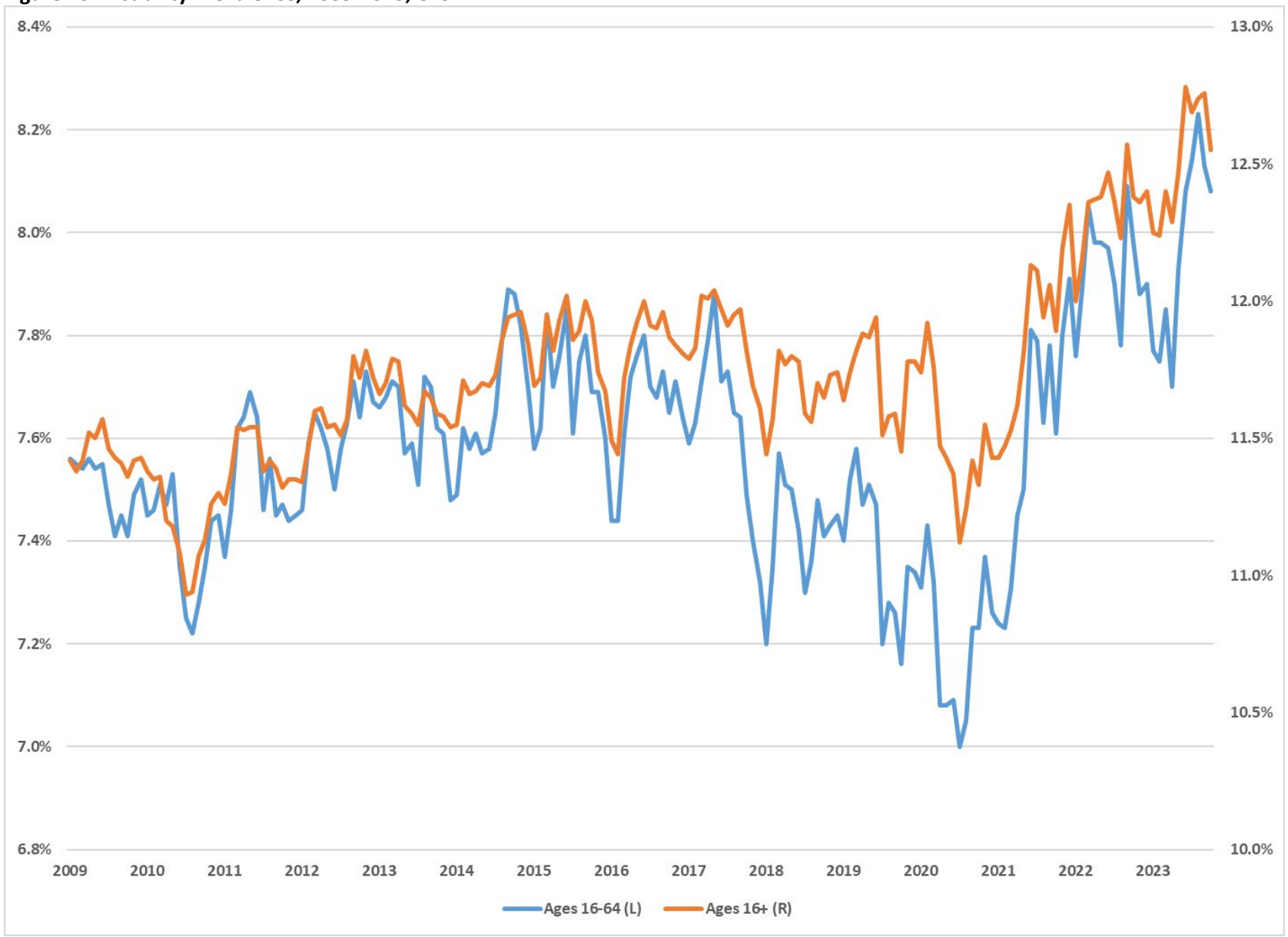


Figure 11: OLS Regression Results on Employment of People with Disabilities Relative to People without Disabilities, Ages 16-64, CPS

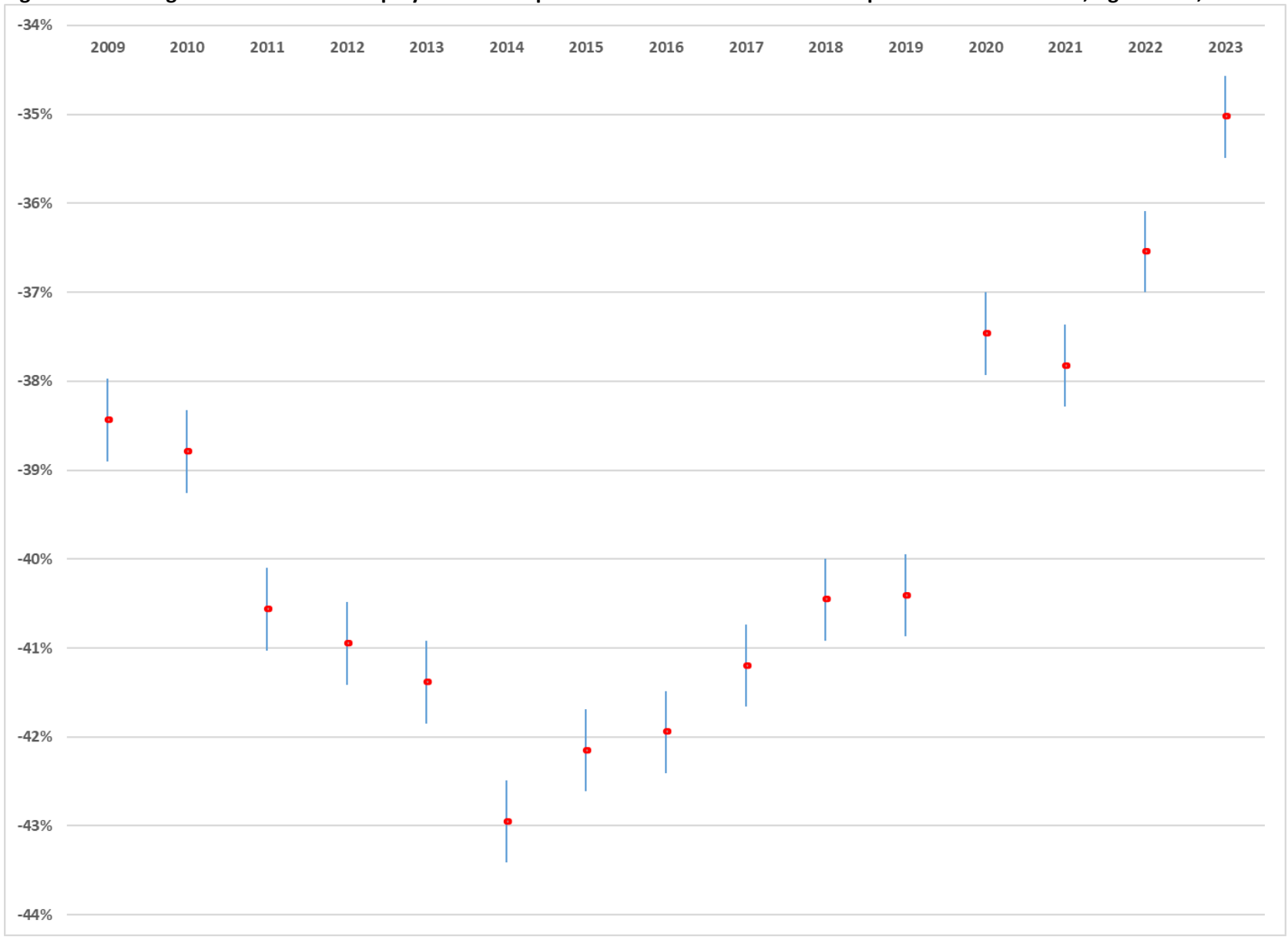


Figure 12: Logit Regression Results on Employment of People with Disabilities Relative to People without Disabilities, Ages 16-64, CPS

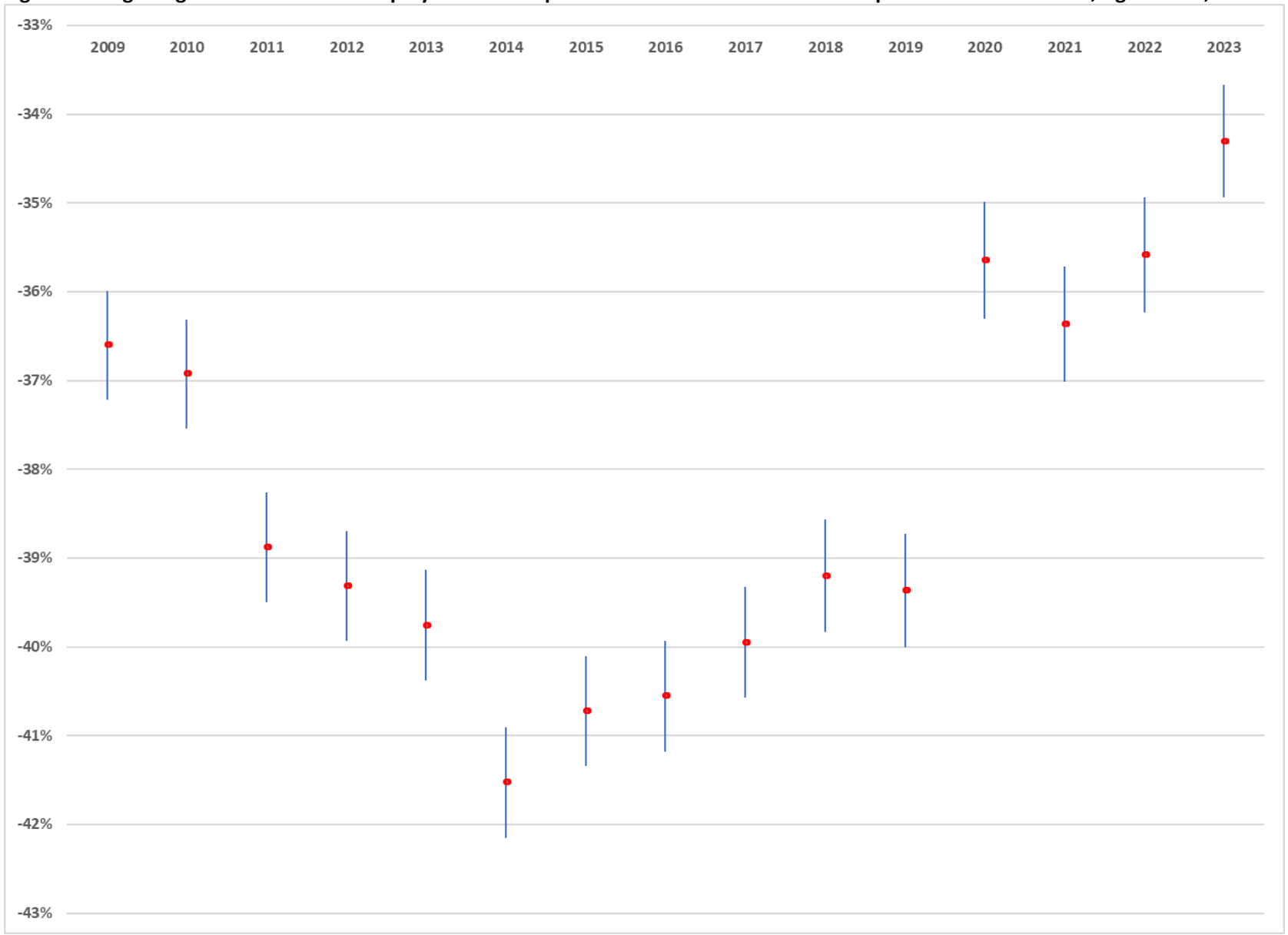


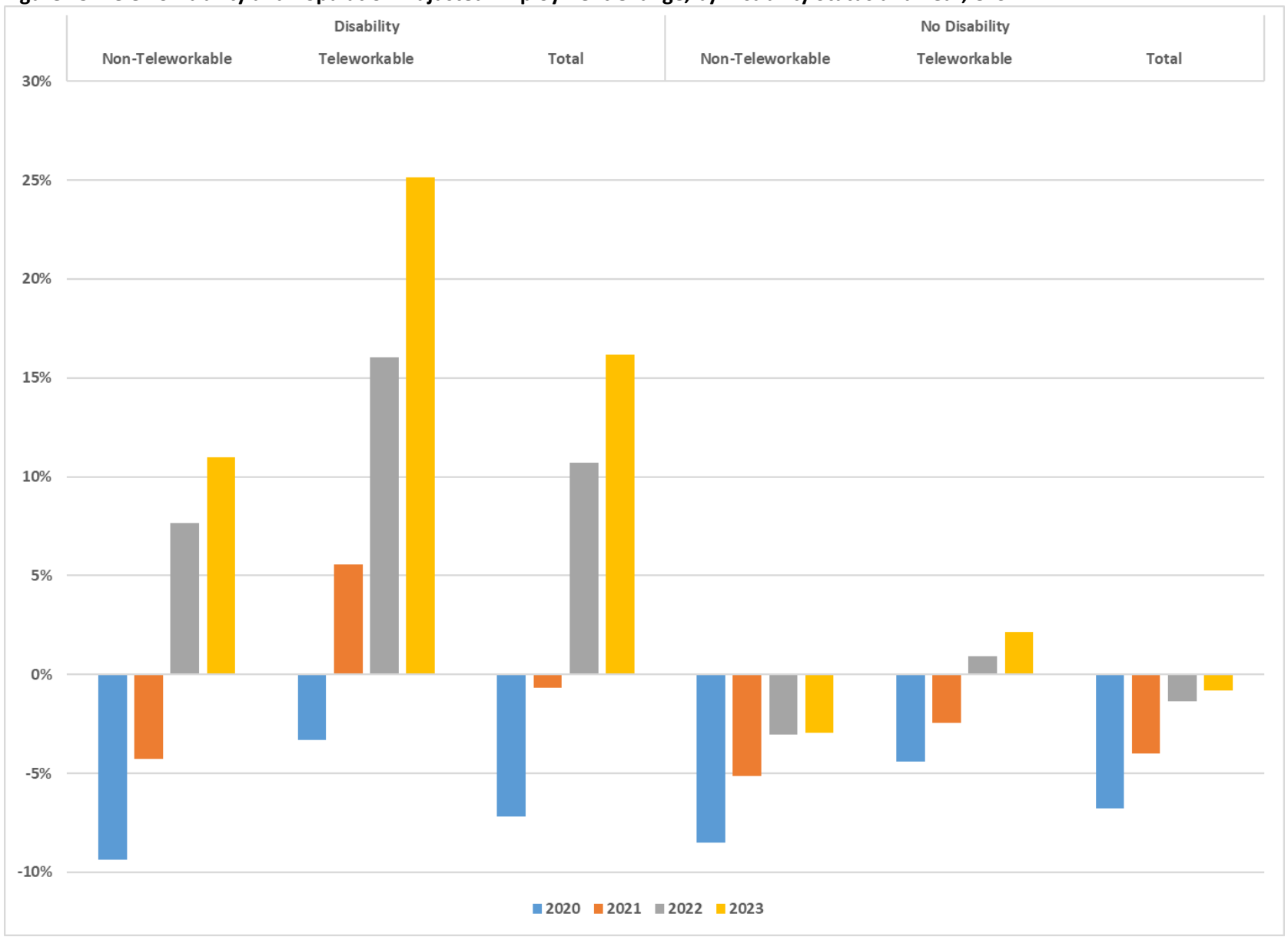
Figure 13: Oaxaca-Blinder Decomposition for Employment by Year, by Disability Status and Relative to 2019, CPS

By Disability Status, Ages 16-64	2019	2020	2021	2022	2023
Apparent Gap (% pts.)	-43.72%	-40.96%	-41.16%	-39.70%	-38.01%
Explained by Month	0.00%	0.05%	0.03%	0.00%	0.01%
Explained by Gender	0.01%	0.12%	0.01%	-0.01%	-0.07%
Explained by Race	0.01%	0.06%	0.01%	0.04%	0.00%
Explained by Citizenship	-0.07%	-0.01%	-0.13%	-0.11%	-0.11%
Explained by Education	-2.98%	-3.59%	-3.39%	-2.92%	-2.63%
Explained by Age	-1.92%	-1.72%	-1.90%	-1.99%	-1.78%
Explained by MSA Size	-0.23%	0.02%	-0.10%	-0.17%	-0.18%
Explained by State	0.10%	0.14%	0.17%	0.11%	0.19%
Size of Gap Explained in Total	-5.10%	-4.94%	-5.31%	-5.05%	-4.57%
Percentage of Initial Gap Explained	11.7%	12.1%	12.9%	12.7%	12.0%
Size of Remaining Unexplained Gap	-38.62%	-36.02%	-35.85%	-34.65%	-33.44%

Relative to 2019 for People with Disabilities 16-64	2020	2021	2022	2023
Apparent Gap (% pts.)	-1.81%	0.50%	3.85%	6.10%
Explained by Month	0.00%	0.03%	0.00%	0.41%
Explained by Gender	-0.05%	0.00%	-0.01%	0.01%
Explained by Race	0.00%	0.01%	0.07%	-0.03%
Explained by Citizenship	-0.05%	0.01%	0.01%	0.03%
Explained by Education	0.20%	0.40%	0.73%	1.00%
Explained by Age	0.11%	0.28%	0.38%	0.78%
Explained by MSA Size	0.03%	0.07%	0.06%	0.08%
Explained by State	-0.01%	0.09%	0.22%	0.18%
Size of Gap Explained in Total	0.25%	0.89%	1.46%	2.46%
Percentage of Initial Gap Explained	-13.7%	177.3%	37.9%	40.3%
Size of Remaining Unexplained Gap	-2.06%	-0.39%	2.39%	3.64%

Figure 14: Contact Intensity and Population-Adjusted Employment Change, by Disability Status and Year, CPS

Figure 15: Teleworkability and Population-Adjusted Employment Change, by Disability Status and Year, CPS



Telework Supplemental CPS Questions

Although the COVID-19 Supplemental questions to the basic monthly CPS were terminated after September 2022, a new set of Telework Supplemental questions to the basic monthly CPS were initiated the following month, October 2022. These questions are asked only of the subset of CPS respondents who have a labor status of employed and at work (excluding those who were employed but entirely absent the previous week). This new set of questions includes one asking about current "telework or work at home for pay", during the last week, without specifying for COVID-related (or any other) reasons, a crucial distinction from the telework question in the earlier set of COVID-19 supplemental questions, allowing it to remain relevant in a post-COVID environment. Furthermore, there is also a question about whether the respondent conducted "telework or work at home for pay" at any time in February 2020, with the further indication "before the COVID-19 pandemic started". A limitation of this second question, aside from the expansion of the time period from one week to one month, is that neither the basic CPS nor these supplemental questions capture whether someone was not employed in February 2020; anyone not employed in February 2020 is recorded with the same value as those who were employed but did not engage in telework or work at home, which results in an undercount of the proportion of telework among those were employed in February 2020. Nonetheless, it is perhaps instructive to examine the descriptive statistics that in February 2020 9.6% engaged in telework or work at home, rising to 19.1% who engaged in telework or work-at-home in the week prior to being surveyed from October 2022 through September 2023. Without controlling for other factors, there is little difference by disability status, with 10.3% of people with disabilities having engaged in telework or work-at-home in February 2020 compared with 9.5% of those without disabilities, rising to 19.3% of workers with disabilities in October 2022 through September 2023 and 19.1% of workers without disabilities.

A regression of the form is employed of the form

$$Y_{it} = \alpha + \beta_1 * \text{Disability}_{it} + \beta_2 * \text{Period} + \beta * (\text{Disability}_{it} * \text{Period}_t) + X_{it}\beta + (X_{it} * \text{Period}_t)\beta + \varepsilon_{it}$$

A limitation of this analysis is that it treats respondents as having remained in the same job and with the same other characteristics in February 2020 as in the current month, although it is possible for some to have changed, especially if the respondent changed jobs or was not employed in February 2020. As shown in Figure 16 below, people with disabilities were already slightly more likely to telework than people without disabilities, holding other factors constant. People with disabilities were 1.1% more likely to engage in telework in February 2020 with statistical significance and this gap increased to 3.4% in the period October 2022 through September 2023, with the increased difference itself having statistical significance. This is only one many substantial changes between the two periods, from the time immediately prior to the COVID-19 lockdowns to a post-COVID era in which telework has become regularized as far more common, as a result of which the impact of various background or employment characteristics on the probability of telework has changed. Women have become relatively more likely to telework (from 0.9% in February 2020 to 2.7% in October 2022 through September 2023), there was greater separation between the highest two categories of educational attainment --- having a bachelor's degree and having a post-graduate degree --- and the rest (from 6.5% and 8.7% relative to those with less than a high school degree to 13.2% and 18.3%), Asians become more likely to telework (from -1.1% earlier to 2.9% later), greater separation occurred in certain services industries that were already relatively likely to telework but became much more so (information, finance and real estate, and professional/business services), there was generally more of a divide amongst occupations between those amenable and not amenable to telework with management/business/financial services occupations being the most likely to telework and becoming more so (accompanied by professional, service, and office/administrative support occupations), and a geographic divide emerged with residents of MSAs having a population of 1 million or more becoming more likely to telework than residents of

smaller MSAs or non-metropolitan areas. Although age, usual hours worked, and state of residence were included in the regression as explanatory factors, they are excluded from the regression results table for reasons of brevity. However, it should be noted that likelihood of telework tends to increase with age but much less in the later period than before COVID-19. Also, certain states experienced a considerable relative increase in likelihood of telework, and the District of Columbia far more so than any state.

Logit regressions were conducted as robustness checks and results are displayed in Figure 17 below. These results are generally similar to the Ordinary Least Squares results, but they demonstrate somewhat larger magnitudes of impacts of disability status on propensity to telework. The impacts and changes in the impacts of demographic and employment characteristics are also similar; statistically significant results include women becoming even more likely to telework relative to men, Asians becoming more likely to telework and Hispanic less likely, the gap between non-citizens and non-naturalized citizens shrinking substantially, people with higher educational attainment becoming even more likely to telework relative to those with lower education attainment, certain services industries (information, finance and real estate, professional/business services) expanding already large relative impacts, certain occupational categories relatively amenable to telework (management/business/financial, professional, and office/administrative support) becoming relatively even more so, larger geographical discrepancies emerging based on MSA size, age differences shrinking substantially, and residents of some states becoming relatively much more likely to telework (and the District of Columbia even more so).

The other two CPS Telework Supplemental questions ask about the number of hours in which people currently telework, for those who do so, and how the amount of telework compared to February 2020, for those who engaged in telework in both periods. For those who did telework in both periods, 67.3% answered “about the same” in comparing the amount of telework, while 20.9% answered

"more", and 11.8% answered "less". Descriptive differences on this question were minimal between those with and without disabilities. Although 20.4% of people with disabilities eligible for this question answered "more" to 20.9% of people without disabilities, regression results reveal that people with disabilities, controlling for other demographic and employment factors while limited to those who did telework in both periods, were more likely to have increased the amount of telework or work-at-home for pay since the comparison period of February 2020. Disability status had a substantial and statistically significant impact of 2.7% on the likelihood of having increased the amount of telework. Some of the shifts in relative propensity to telework from February 2020 to the later period are also reflected in relative likelihood of engaging in a greater amount of telework. Those with higher educational attainment (some college, bachelor's degree or post-graduate degree) were more likely to increase amount of telework, Hispanics and Asians were less likely to increase amount of telework, naturalized citizens were less likely to increase amount of telework, the public administration industry had the highest increase in likelihood of engaging in more telework, professional occupations were more likely to increase of telework (as were management/business/financial occupations relative to all categories except professional), and people residing in higher-population MSAs were more likely to engage in more telework. These results are displayed in Figure 18 below.

The number of hours for which people teleworked (or engaged in work at home) in the prior week can be compared to the total number of hours actually worked at jobs in the past week. This total number of hours is provided to the respondent as a reminder before the response for number of hours teleworked, and the resulting percentage of hours teleworked is correctly in the range from 0 to 100 percent. For those who teleworked, the proportion of hours teleworked averaged 76.7% for people with disabilities and 74.4% for people without disabilities. An Ordinary Least Squares regression conducted with the usual explanatory characteristics show the impact of disability status to be a diminished but still statistically significant 1.4%, meaning that teleworkers with disabilities engage in

telework to a slightly higher degree when measured as a proportion of hours worked. As shown in Figure 19 below, many of the results differ from those for likelihood of teleworking. Although female teleworkers do have a higher percentage of telework hours than men (2.6%), there are increasingly large negative impacts from successively higher educational attainment categories, up to -9.9% for those with post-graduate degrees relative to less than a high school education. Asians (3.1%) and Blacks (1.8%) have a higher proportion of telework hours, as do naturalized citizens (1.7%). A few industries (information, finance and real estate, and professional or business services) that are particularly conducive to telework also have among the highest impacts on proportion of hours teleworked, but there are no significant geographical differences across metropolitan area size categories. While categories for usual hours worked are not displayed in the table, there is a substantial decrease in proportion of hours teleworked at the higher end, up to -10.2% for the category of those usually working 65 hours or more per week. Results are robust to excluding those with a smaller number of hours actually worked in the last week, even up to everyone working under 35 hours in the past week.

Figure 16: OLS Regression Results on Telework, CPS Telework Supplemental Questions, 10/22-09/22

OLS		Telework Currently		Telework Feb. 2020		Difference	
		Coeff.	t	Coeff.	t	Coeff.	t
	Disability	3.4%	14.7	1.1%	5.7	2.3%	7.8
	Female	2.7%	25.5	0.9%	10.9	1.7%	12.9
Relative to White NH	Black NH	-1.5%	-9.6	-1.0%	-8.1	-0.5%	-2.3
	Hispanic	-3.4%	-22.9	-1.4%	-11.2	-2.1%	-10.6
	Asian NH	2.9%	13.1	-1.1%	-5.9	4.0%	13.9
	AIAN NH	-1.5%	-2.6	-0.8%	-1.7	-0.7%	-0.9
	NHOPI NH	0.3%	0.4	-0.1%	-0.2	0.5%	0.5
	Multiple NH	2.8%	7.6	0.8%	2.6	2.0%	4.2
Relative to Non-Naturaliz. Citizen	Naturalized Citizen	-2.1%	-11.6	-1.3%	-8.5	-0.9%	-3.6
	Non-Citizen	-1.2%	-6.2	-2.0%	-12.6	0.8%	3.2
Relative to Less Than High School	High School	0.5%	2.3	0.6%	3.2	-0.1%	-0.3
	Some College	3.2%	14.6	2.4%	13.4	0.8%	2.9
	Bachelor's	13.2%	57.0	6.5%	34.6	6.7%	22.4
	Post-Graduate	18.3%	72.2	8.7%	42.0	9.6%	29.4
Relative to Construction	Agriculture	-3.7%	-7.0	-0.4%	-0.9	-3.3%	-4.8
	Mining	4.2%	5.3	-0.5%	-0.8	4.7%	4.6
	Manufacturing	7.8%	26.4	2.1%	8.7	5.7%	15.0
	Trade Retail/Whol.	1.6%	5.7	-0.3%	-1.1	1.9%	5.1
	Transportation/Utilit.	1.8%	5.7	-0.5%	-2.0	2.3%	5.7
	Information	25.6%	60.7	9.9%	28.9	15.7%	28.8
	Finance	23.3%	76.0	10.5%	42.1	12.8%	32.3
	Prof./Busin. Services	20.6%	73.2	9.5%	41.4	11.1%	30.6
	Education/Health	-5.6%	-19.9	-2.6%	-11.6	-2.9%	-8.1
	Leisure/Hospitality	-0.1%	-0.3	0.2%	0.9	-0.3%	-0.8
	Other Services	4.3%	12.9	1.8%	6.7	2.5%	5.8
	Public Administration	6.6%	20.1	0.8%	3.2	5.7%	13.6
Relative to Mngt./Bus./Financial	Professional	-6.3%	-40.4	-2.4%	-19.1	-3.9%	-19.3
	Service	-19.4%	-105.6	-8.0%	-53.3	-11.4%	-48.2
	Sales	-10.3%	-47.9	-1.4%	-8.2	-8.8%	-32.0
	Office/Admin. Support	-8.2%	-43.0	-4.6%	-29.4	-3.6%	-14.7
	Agricultural	-12.1%	-16.7	-5.9%	-9.9	-6.2%	-6.7
	Construction/Extr.	-16.7%	-54.0	-7.3%	-29.1	-9.4%	-23.5
	Install./Maint./Repair	-21.5%	-71.2	-9.1%	-37.0	-12.4%	-31.8
	Production	-22.0%	-82.9	-8.7%	-40.1	-13.4%	-39.0
	Transportation	-20.7%	-88.5	-8.6%	-45.2	-12.1%	-40.0
Relative to not MSA	100,000 - 249,999	0.7%	3.2	0.5%	2.6	0.2%	0.8
	250,000 - 499,999	3.0%	13.9	1.2%	6.8	1.8%	6.5
	500,000 - 999,999	2.9%	14.9	1.5%	9.3	1.4%	5.7
	1,000,000 - 2,499,999	7.1%	39.4	2.5%	17.4	4.6%	19.6
	2,500,000 - 4,999,999	7.1%	34.6	2.8%	16.5	4.4%	16.4
	5,000,000+	6.8%	35.8	2.9%	18.6	3.9%	16.0
Age not shown							
Usual Hours Worked not shown							
State of residence not shown							

Figure 17: Logit Regression Results on Telework, CPS Telework Supplemental Questions, 10/22-09/22

Logit		Telework Currently		Telework Feb. 2020		Difference	
		Adj. Coef.	z	Adj. Coef.	z	Adj. Coef.	z
	Disability	5.0%	14.6	1.5%	6.6	3.8%	4.4
	Female	3.1%	20.1	1.0%	9.7	2.1%	5.3
Relative to White NH	Black NH	-2.3%	-8.5	-1.2%	-6.1	-0.4%	-0.6
	Hispanic	-4.7%	-18.2	-1.7%	-9.1	-2.8%	-4.1
	Asian NH	1.9%	6.3	-0.7%	-3.0	5.0%	6.2
	AIAN NH	-3.3%	-3.0	-1.4%	-1.9	-1.4%	-0.5
	NHOPI NH	0.7%	0.5	0.1%	0.1	0.9%	0.3
	Multiple NH	3.6%	6.0	1.0%	2.4	2.9%	1.9
Relative to Non-Naturaliz. Citizen	Naturalized Citizen	-2.5%	-8.9	-1.3%	-6.6	-0.4%	-0.6
	Non-Citizen	-1.7%	-5.1	-2.6%	-10.4	4.7%	5.3
Relative to Less Than High School	High School	7.9%	11.2	3.0%	6.9	4.1%	2.4
	Some College	14.7%	21.1	6.8%	15.7	4.1%	2.4
	Bachelor's	24.0%	34.5	10.1%	23.2	9.7%	5.8
	Post-Graduate	27.2%	38.4	10.9%	24.8	12.4%	7.2
Relative to Construction	Agriculture	-2.4%	-2.8	0.7%	1.4	-6.0%	-2.9
	Mining	6.9%	4.9	-0.5%	-0.4	12.5%	3.3
	Manufacturing	10.3%	21.2	2.6%	7.9	9.2%	7.5
	Trade Retail/Whol.	2.8%	5.6	-0.1%	-0.3	4.8%	3.8
	Transportation/Utilit.	3.3%	5.8	-0.8%	-2.0	7.7%	5.2
	Information	22.9%	39.2	7.5%	19.8	15.3%	10.6
	Finance	20.8%	44.1	7.5%	24.2	12.0%	10.3
	Prof./Busin. Services	20.4%	45.1	7.7%	25.6	10.9%	9.6
	Education/Health	-4.5%	-9.5	-2.5%	-7.7	-0.2%	-0.2
	Leisure/Hospitality	-1.8%	-3.3	-0.3%	-0.9	-1.9%	-1.4
	Other Services	7.7%	13.6	2.7%	7.3	4.5%	3.2
	Public Administration	10.0%	19.6	1.7%	5.0	11.1%	8.5
Relative to Mngt./Bus./Financial	Professional	-4.6%	-23.7	-1.2%	-9.4	-3.9%	-7.9
	Service	-29.5%	-77.7	-10.6%	-44.0	-17.1%	-18.5
	Sales	-7.0%	-24.3	0.0%	-0.2	-11.3%	-15.5
	Office/Admin. Support	-5.1%	-20.2	-3.0%	-16.5	0.4%	0.7
	Agricultural	-28.9%	-13.3	-9.6%	-8.5	-19.1%	-4.0
	Construction/Extr.	-33.8%	-39.9	-14.1%	-26.9	-13.9%	-6.8
	Install./Maint./Repair	-35.9%	-41.3	-13.8%	-25.3	-18.4%	-8.7
	Production	-32.9%	-51.7	-12.9%	-30.1	-16.1%	-10.0
	Transportation	-44.6%	-53.5	-16.8%	-35.1	-23.5%	-12.2
Relative to not MSA	100,000 - 249,999	2.7%	7.2	1.0%	4.1	0.7%	1.5
	250,000 - 499,999	6.4%	18.1	2.0%	8.3	2.3%	5.2
	500,000 - 999,999	6.1%	20.0	2.3%	11.1	1.7%	4.4
	1,000,000 - 2,499,999	11.6%	40.0	3.5%	17.9	4.3%	12.0
	2,500,000 - 4,999,999	10.4%	32.5	3.3%	15.1	3.6%	9.1
	5,000,000+	11.1%	35.5	3.7%	17.7	3.6%	9.3
Age not shown							
Usual Hours Worked not shown							
State of residence not shown							

Figure 18: More Telework Relative to February 2020, CPS Telework Supplemental Questions

		OLS		Logit	
		Coeff.	t	Coeff.	z
	Disability	2.7%	2.9	2.9%	3.8
	Female	-0.2%	-0.5	-0.3%	-0.7
Relative to White NH	Black NH	-0.3%	-0.4	-0.3%	-0.4
	Hispanic	-2.9%	-3.9	-3.3%	-4.7
	Asian NH	-2.3%	-2.7	-2.4%	-3.4
	AIAN NH	-0.9%	-0.3	-1.2%	-0.4
	NHOPI NH	8.6%	2.4	7.9%	2.7
	Multiple NH	4.5%	3.0	4.1%	3.2
Relative to Non-Naturaliz. Citizen	Naturalized Citizen	-1.5%	-2.0	-1.6%	-2.4
	Non-Citizen	-0.7%	-0.7	-0.8%	-0.9
Relative to Less Than High School	High School	1.3%	0.6	7.6%	2.6
	Some College	4.4%	2.1	12.5%	4.4
	Bachelor's	7.9%	3.8	16.4%	5.7
	Post-Graduate	9.8%	4.7	18.1%	6.3
Relative to Construction	Agriculture	-2.6%	-1.1	-6.8%	-2.7
	Mining	6.1%	1.2	7.8%	1.7
	Manufacturing	7.1%	5.0	8.3%	5.9
	Trade Retail/Whol.	3.8%	2.6	4.7%	3.3
	Transportation/Utilit.	8.7%	4.8	10.4%	6.1
	Information	7.7%	5.0	8.9%	6.0
	Finance	6.3%	4.7	7.7%	5.7
	Prof./Busin. Services	3.9%	3.0	5.2%	3.9
	Education/Health	3.6%	2.6	5.0%	3.6
	Leisure/Hospitality	0.2%	0.1	1.1%	0.7
	Other Services	4.3%	2.6	5.5%	3.4
	Public Administration	12.4%	8.0	13.0%	8.8
Relative to Mngt./Bus./Financial	Professional	1.7%	3.5	1.6%	4.2
	Service	-8.6%	-7.6	-12.6%	-10.1
	Sales	-5.9%	-8.4	-6.7%	-10.4
	Office/Admin. Support	-3.2%	-4.2	-3.6%	-5.4
	Agricultural	-4.0%	-0.6	-14.8%	-1.9
	Construction/Extr.	-3.4%	-1.2	-4.9%	-1.7
	Install./Maint./Repair	-3.3%	-1.2	-3.5%	-1.4
	Production	-7.3%	-3.5	-9.3%	-4.5
	Transportation	-10.2%	-3.4	-15.6%	-4.3
Relative to not MSA	100,000 - 249,999	2.1%	1.8	2.7%	2.5
	250,000 - 499,999	3.6%	3.3	4.5%	4.7
	500,000 - 999,999	2.8%	2.9	3.5%	4.2
	1,000,000 - 2,499,999	5.0%	5.7	6.1%	7.9
	2,500,000 - 4,999,999	7.6%	8.2	8.6%	10.9
	5,000,000+	5.0%	5.4	5.9%	7.3
Age not shown					
Usual Hours Worked not shown					
State of residence not shown					

Figure 19: Proportion of Hours Teleworked for Those with Telework Hours, CPS Telework

		OLS	
		Coeff.	t
	Disability	1.4%	3.1
	Female	2.6%	12.8
Relative to White NH	Black NH	1.8%	5.0
	Hispanic	-0.2%	-0.5
	Asian NH	3.1%	7.9
	AIAN NH	0.4%	0.3
	NHOPI NH	1.1%	0.6
	Multiple NH	0.7%	1.0
Relative to Non-Naturaliz. Citizen	Naturalized Citizen	1.7%	4.6
	Non-Citizen	0.3%	0.8
Relative to Less Than High School	High School	-2.9%	-2.5
	Some College	-4.3%	-3.7
	Bachelor's	-5.9%	-5.2
	Post-Graduate	-9.9%	-8.7
Relative to Construction	Agriculture	13.6%	9.3
	Mining	-0.4%	-0.2
	Manufacturing	5.9%	8.1
	Trade Retail/Whol.	10.7%	14.3
	Transportation/Utilit.	6.5%	7.5
	Information	15.5%	19.8
	Finance	11.0%	16.0
	Prof./Busin. Services	15.8%	23.5
	Education/Health	3.5%	5.0
	Leisure/Hospitality	1.8%	2.1
	Other Services	4.6%	5.4
	Public Administration	3.5%	4.6
Relative to Mngt./Bus./Financial	Professional	-0.7%	-2.9
	Service	1.9%	3.1
	Sales	-1.0%	-2.5
	Office/Admin. Support	2.9%	8.5
	Agricultural	-2.7%	-0.6
	Construction/Extr.	-12.8%	-8.6
	Install./Maint./Repair	-5.6%	-3.7
	Production	0.8%	0.8
	Transportation	-11.5%	-7.8
Relative to not MSA	100,000 - 249,999	-0.3%	-0.5
	250,000 - 499,999	-0.7%	-1.3
	500,000 - 999,999	-0.8%	-1.7
	1,000,000 - 2,499,999	-0.3%	-0.6
	2,500,000 - 4,999,999	-0.1%	-0.3
	5,000,000+	0.1%	0.1
Age not shown			
Usual Hours Worked not shown			
State of residence not shown			

CPS Disability Supplements

A special disability supplement to the Current Population Survey has been conducted on an irregular basis, most recently in July 2021 and July 2019, with an earlier one having been held in May 2012 and a future one scheduled for July 2024. The two disability supplements conducted in 2019 and 2021 are identical in questions and response options. Both include a series of questions asking those who are currently employed about their typical method of commute to work, one of which is "work from home", which was the case for in 2019 for 7.9% of the employed with disabilities and 4.7% without disabilities, increasing to 12.5% and 13.1% in 2021. Furthermore, both contain a broader question concerning telework, framed as asking whether the respondent does any work at home for the respondent's job or business, which in 2019 was true for 26.2% of the employed with disabilities and 23.0% without disabilities, increasing to 30.9% and 30.7% in 2021. Figure 20 below shows OLS regression results on the probability of carrying out some work from home; although the difference in the impact of disability status between years is negligible, it increases from a statistically insignificant impact of 1.9% in 2019 to a statistically significant impact of 2.4% in 2021. Among other notable, statistically significant changes from 2019 to 2021, women became more likely than men to telework, Asians became more likely to telework relative to Whites, non-naturalized citizens became even more likely to telework than naturalized citizens, certain industries such as information and finance became much more likely to telework relative to construction, management/business/financial occupations became much more likely to telework, and there was a general separation between metropolitan areas with those having a population of a quarter million and above becoming more likely to telework than smaller or non-MSA areas, holding all other factors constant.

Logit regressions performed as robustness checks reveal similar results, with larger coefficients for disability status, which is positive and statistically significant in both 2019 (3.2%) and 2021 (3.9%). Women became more likely to telework relative to men, while there were several significant changes by

race/ethnicity, and naturalized citizens became less likely to telework while the opposite occurred for non-citizens. Industries and occupations more amenable to telework substantially diverged from those industries and occupations where telework is intrinsically more difficult. Geographically, there was a divergence between MSAs with populations of at least a quarter-million and residents of smaller MSAs or non-metropolitan areas.

Since July 2021 occurred as the COVID-19 pandemic was ongoing, these results from the disability supplements may not be reflective of the post-COVID environment established in 2022 and 2023. Although the relative employment of people with disabilities seems to have improved substantially already in 2020, once other factors are controlled for, as discussed previously telework seems to have been less important than contact intensity in the immediate COVID environment. In 2022 and 2023, as further relative gains in employment occurred for people with disabilities, there was also seemingly a shift from contact intensity to telework in a more post-COVID environment. Therefore, the CPS Disability Supplement might have shown substantially different results for people with disabilities even a year or two later than July 2021.

The Disability Supplements to the CPS also examined, among other issues, various barriers to employment for people with disabilities. For those who have a disability and are not currently employed, a set of separate questions are asked about whether the respondent considers to be a barrier lack of education or training, lack of job counseling, lack of transportation, loss of government assistance, need for special features on the job, attitudes of employers or coworkers, the respondent's own disability, and anything not already covered ("other"). For the questions about transportation, excluding those who have already retired and are therefore unlikely to find anything a barrier to employment, 8.4% answer affirmatively, indicating that surmounting transportation difficulties alone might enable a substantial portion of the disabled population to find employment. Although telework most obviously enables the circumvention of transportation difficulties, it can also bypass some

difficulties of other types. For example, need for special features likewise is answered affirmatively by 8.4% of respondents (again, excluding those not in the labor force due to retirement), and telework might obviate this need or permit the worker to implement special features. Similarly, of the 56.4% who answer affirmatively to the question about their own disability being a barrier, this might be mitigated in a telework situation versus being required to work onsite. A follow-up question asked of those who answered affirmatively to at least question about barriers, not including the question about own disability being a barrier, indicates that a majority state they would be able to work if this barrier were removed. Another question asks whether those who are currently employed have flexible work hours, something more common for those with disabilities (46.1%) than those without (38.5%).

Figure 20: Disability Supplement 2019/2021, OLS Regression Results on Some Work at Home

OLS		2019		2021		Diff. between Years	
	Disability	1.9%	1.81	2.4%	2.2	0.5%	0.31
	Female	0.4%	1.01	2.4%	5.23	2.0%	3.2
Relative to White NH	Black NH	-5.0%	-7.99	-3.9%	-5.62	1.1%	1.14
	Hispanic	-3.0%	-4.94	-4.9%	-7.46	-1.9%	-2.13
	Asian NH	-5.6%	-6.19	3.2%	3.25	8.7%	6.6
	AIAN NH	-6.8%	-2.99	-4.3%	-1.82	2.5%	0.77
	NHOPI NH	-3.2%	-0.96	-9.1%	-2.74	-5.8%	-1.23
	Multiple NH	-1.5%	-1.06	1.2%	0.76	2.7%	1.27
Relative to Non-Naturaliz. Citizen	Naturalized Citizen	-3.3%	-4.36	-6.4%	-7.91	-3.1%	-2.82
	Non-Citizen	-4.2%	-5.32	-3.2%	-3.7	1.0%	0.84
Relative to Less Than High School	High School	1.0%	1.14	0.5%	0.57	-0.4%	-0.33
	Some College	4.9%	5.65	4.8%	4.88	-0.1%	-0.09
	Bachelor's	15.2%	16.52	16.6%	16.06	1.4%	1.05
	Post-Graduate	24.7%	24.33	26.8%	23.65	2.0%	1.35
Relative to Construction	Agriculture	10.6%	4.7	12.5%	4.87	1.9%	0.55
	Mining	-5.4%	-1.93	5.8%	1.88	11.2%	2.7
	Manufacturing	-6.2%	-5.18	4.1%	3.07	10.3%	5.77
	Trade Retail/Whol.	-10.2%	-8.56	-5.5%	-4.19	4.8%	2.7
	Transportation/Utilit.	-9.7%	-7.38	-2.6%	-1.84	7.1%	3.66
	Information	5.5%	3.25	18.0%	9.65	12.5%	4.98
	Finance	4.4%	3.51	23.0%	16.95	18.7%	10.12
	Prof./Busin. Services	4.5%	3.89	17.7%	14.1	13.3%	7.79
	Education/Health	-9.3%	-8.03	-7.3%	-5.85	1.9%	1.13
	Leisure/Hospitality	-9.1%	-7.38	-5.2%	-3.76	3.9%	2.14
	Other Services	0.0%	0.01	5.4%	3.68	5.4%	2.71
	Public Administration	-13.2%	-9.8	2.7%	1.82	15.9%	8
Relative to Mngt./Bus./Financial	Professional	-5.1%	-7.87	-7.2%	-10.49	-2.1%	-2.27
	Service	-16.9%	-22.92	-27.8%	-34.29	-10.8%	-9.91
	Sales	-6.0%	-7.03	-12.9%	-13.71	-6.9%	-5.47
	Office/Admin. Support	-15.5%	-20.56	-15.8%	-18.68	-0.3%	-0.28
	Agricultural	-27.1%	-9.58	-33.5%	-10.21	-6.4%	-1.48
	Construction/Extr.	-22.4%	-17.93	-27.2%	-19.71	-4.8%	-2.58
	Install./Maint./Repair	-23.1%	-19.32	-32.1%	-25.23	-9.0%	-5.16
	Production	-21.9%	-20.52	-33.9%	-29.26	-12.0%	-7.65
	Transportation	-20.5%	-20.57	-30.7%	-29.76	-10.2%	-7.14
Relative to not MSA	100,000 - 249,999	0.1%	0.09	-0.4%	-0.44	-0.5%	-0.38
	250,000 - 499,999	0.2%	0.22	4.4%	4.67	4.2%	3.34
	500,000 - 999,999	1.5%	1.91	2.0%	2.42	0.6%	0.51
	1,000,000 - 2,499,999	2.6%	3.65	5.9%	7.64	3.4%	3.19
	2,500,000 - 4,999,999	2.6%	3.23	5.5%	6.17	2.8%	2.38
	5,000,000+	4.2%	5.61	5.7%	6.89	1.5%	1.35
Age not shown							
Usual Hours Worked not shown							
State of residence not shown							
Relative to Year 2019	Year 2021						
Interaction	Year 2019 * Disability						

Figure 21: Disability Supplement 2019/2021, Logit Regression Results on Some Work at Home

Logit		2019		2021		Diff. between Years	
	Disability	3.2%	2.1	3.9%	2.2	0.0%	0.0
	Female	1.0%	1.6	3.3%	4.5	2.0%	2.1
Relative to White NH	Black NH	-7.4%	-6.6	-5.8%	-4.3	2.9%	1.6
	Hispanic	-4.3%	-4.1	-7.2%	-6.0	-1.8%	-1.2
	Asian NH	-4.9%	-3.7	3.8%	2.5	8.9%	4.4
	AIAN NH	-12.4%	-3.2	-6.8%	-1.7	7.6%	1.3
	NHOPI NH	-4.8%	-0.9	-14.4%	-2.0	-7.9%	-0.9
	Multiple NH	-1.0%	-0.4	2.4%	0.8	3.3%	0.9
Relative to Non-Naturaliz. Citizen	Naturalized Citizen	-3.9%	-3.3	-8.6%	-6.1	-3.6%	-1.9
	Non-Citizen	-6.3%	-4.5	-4.6%	-2.9	2.8%	1.3
Relative to Less Than High School	High School	4.9%	2.6	5.2%	2.3	-0.7%	-0.2
	Some College	13.1%	7.1	14.6%	6.5	-1.2%	-0.4
	Bachelor's	23.2%	12.5	26.8%	11.9	-1.2%	-0.4
	Post-Graduate	29.6%	15.4	35.5%	15.1	-0.3%	-0.1
Relative to Construction	Agriculture	9.3%	3.4	16.9%	4.6	5.1%	1.1
	Mining	-6.7%	-1.6	8.4%	1.7	15.2%	2.3
	Manufacturing	-8.3%	-4.9	5.2%	2.5	14.0%	5.2
	Trade Retail/Whol.	-14.6%	-8.3	-8.8%	-4.1	8.3%	3.0
	Transportation/Utilit.	-13.5%	-6.6	-3.0%	-1.2	12.3%	3.8
	Information	3.1%	1.4	18.9%	6.7	13.9%	3.9
	Finance	1.5%	0.9	23.5%	11.2	19.9%	7.4
	Prof./Busin. Services	2.7%	1.7	20.6%	10.5	15.9%	6.3
	Education/Health	-11.3%	-7.0	-8.5%	-4.3	4.8%	1.9
	Leisure/Hospitality	-14.7%	-8.0	-11.9%	-5.1	5.4%	1.8
	Other Services	0.9%	0.5	9.3%	3.8	7.6%	2.4
	Public Administration	-15.8%	-8.0	4.2%	1.9	21.5%	7.1
Relative to Mngt./Bus./Financial	Professional	-3.2%	-4.0	-6.7%	-6.9	-2.6%	-2.0
	Service	-20.0%	-17.3	-36.9%	-24.6	-11.6%	-6.2
	Sales	-2.1%	-1.9	-10.1%	-7.0	-6.9%	-3.8
	Office/Admin. Support	-14.9%	-13.8	-14.5%	-11.5	3.2%	1.9
	Agricultural	-23.8%	-5.4	-37.8%	-6.7	-8.3%	-1.2
	Construction/Extr.	-25.7%	-13.0	-36.3%	-14.3	-4.7%	-1.5
	Install./Maint./Repair	-29.4%	-12.4	-44.2%	-15.3	-7.8%	-2.1
	Production	-34.9%	-15.2	-52.2%	-19.3	-9.0%	-2.5
	Transportation	-29.5%	-15.2	-51.7%	-20.0	-14.6%	-4.6
Relative to not MSA	100,000 - 249,999	0.3%	0.2	0.4%	0.2	0.3%	0.2
	250,000 - 499,999	0.2%	0.1	7.5%	4.8	0.2%	0.1
	500,000 - 999,999	1.9%	1.8	3.7%	2.6	2.1%	1.8
	1,000,000 - 2,499,999	3.1%	3.0	9.2%	7.1	3.4%	3.0
	2,500,000 - 4,999,999	2.8%	2.4	8.5%	5.8	3.1%	2.4
	5,000,000+	5.2%	4.6	9.2%	6.4	5.8%	4.6
Age not shown							
Usual Hours Worked not shown							
State of residence not shown							
Relative to Year 2019	Year 2021						
Interaction	Year 2019 * Disability						

Telework, American Community Survey

The American Community Survey (ACS) has existed since 2005 and is an annual, nationally-representative, household-level survey that also includes a set of questions about every individual within the household. While the number of questions is relatively small in comparison to some other surveys, this is compensated for by the extraordinarily large sample size, with around 2 million households surveyed in each year. Person-level data includes standard demographic characteristics, including disability status defined by the set of six questions that originated with the ACS and were first implemented in 2008. Other information captured by the ACS includes, for anyone who worked during the previous week, a question about the usual method of commuting, with a list of 12 response options, one of which is "worked from home" which would include, though would not be limited to, telework. Survey information is collected throughout the year, with each year of data released as a compilation late the next year; therefore, 2022 ACS data is the most recent currently available.

With telework defined as having selected "worked from home" for the usual method of commute in the previous week, it is therefore possible to conduct an analysis of the influencing factors on telework in a similar manner to the current population survey. The proportion of people teleworking, of those who were employed and at work the previous week, rose from 5.7% in 2019 to 15.6% in 2020 and 17.9% in 2021, before falling to 15.2% in 2022. For people with disabilities, the numbers were 6.3% in 2019 to 13.8% in 2020, 15.9% in 2021, and 14.1% in 2022. Figure 22 below displays the typical methods of commuting, by disability status for the years 2019 through 2022. Aside from teleworking, the chief differences in commuting between people with and without disabilities, are that people with disabilities were superficially less likely to telework or travel by automobile but more likely to travel by bus or walking. As previously demonstrated from other data sources, these descriptive statistics can be misleading. As detailed earlier, the proportion of respondents determined to have a disability is consistently higher in the ACS than in the CPS. During this period, the proportion

with a disability in the age-range 16 to 64 rose slightly from 10.3% in 2019 to 10.5% in 2020, 10.8% in 2021, and 11.1% in 2022. The proportion with a disability among those who were employed and at work in the previous week rose more rapidly, from 5.8% in 2019 to 5.9% in 2020, 6.4% in 2021, and 7.0% in 2022, marking a 20.2% increase in three years, quite close to the 18.3% increase in CPS data from 2019 to 2022.

Figure 22: Usual Method of Commuting by Disability Status, ACS 2019-2022

	Total	No Dis.	Disability
Car/Truck/Van	78.7%	78.8%	77.4%
Bus	1.7%	1.6%	2.6%
Subway	1.3%	1.3%	0.9%
Train	0.4%	0.4%	0.2%
Streetcar/Trolley	0.1%	0.1%	0.1%
Ferryboat	0.0%	0.0%	0.0%
Taxicab	0.2%	0.2%	0.4%
Motorcycle	0.1%	0.1%	0.2%
Bicycle	0.4%	0.4%	0.5%
Walked	2.4%	2.3%	3.2%
Telework	13.6%	13.7%	12.7%
Other	1.1%	1.1%	1.8%

A regression is employed of the form

$$Y_{it} = \alpha + \beta_1 * \text{Disability}_{it} + \text{Year}_t * \beta + (\text{Disability}_{it} * \text{Year}_t) * \beta + X_{it}\beta + (X_{it} * \text{Year})\beta + \varepsilon_{it}$$

As shown in Figure 23 below, when controlling for relevant demographic and employment characteristics, people with disabilities are more likely to telework as their usual commute, although the impacts are lower than those found from the CPS Supplemental Telework questions or from the CPS Disability Supplement, increasing from 0.2% in 2019 to 0.7% in 2020, 1.1% in 2021, and 1.0% in 2022. Impacts from other characteristics and shifts of these impacts during and after COVID-19 are similar to those found previously. Women were more likely to telework and became more so, Asians had been relatively less likely to telework and became more likely, people with higher educational attainment (bachelor's or post-graduate degree) became much more likely to telework, people employed in certain

industries (information, finance, and professional services) became much more likely to telework, and occupations relatively amenable to telework (management/business/financial, professional, and office/administrative support) became more so. Logit regression results are presented as a robustness check in Figure 24 below and yield similar results, with the impact of disability status increasing from a statistically insignificant 0.3% in 2019 to statistically significant differences of 0.9% in 2020, 1.4% in 2021, and 1.2% in 2022. Changes in the impacts of gender, race/ethnicity, citizenship, educational attainment, industry, and occupation are likewise similar.

Figure 23: OLS Regression Results on Telework, ACS

OLS		2019		2020		2021		2022	
	Disability	0.2%	2.37	0.7%	5.02	1.1%	8.89	1.0%	9.09
	Female	1.1%	26.35	2.6%	36.11	3.5%	51.61	3.0%	49.35
Relative to White NH	Black NH	-0.9%	-14.16	-0.6%	-5.71	1.3%	12.97	0.8%	8.07
	Hispanic	-1.3%	-21.65	-2.3%	-21.9	-1.8%	-19.1	-1.6%	-17.86
	Asian NH	-1.8%	-19.98	1.3%	8.41	3.6%	24.63	2.0%	14.85
	AIAN NH	-0.7%	-2.82	-1.2%	-2.38	-1.5%	-3.11	-1.2%	-2.9
	NHOPI NH	-0.3%	-0.78	-0.2%	-0.23	-0.3%	-0.48	0.2%	0.23
	Multiple NH	-0.2%	-1.41	0.6%	3.49	1.3%	8.24	1.1%	7.39
	Other NH	-0.1%	-0.17	-0.6%	-1.18	-0.7%	-1.75	-0.7%	-1.81
Relative to Non-Naturaliz. Citizen	Naturalized Citizen	-0.8%	-11.07	-1.6%	-12.53	-1.6%	-13.74	-1.4%	-12.86
	Non-Citizen	-0.4%	-5.75	-0.6%	-4.79	-0.8%	-6.02	-0.8%	-7.14
Relative to Less Than High School	High School	0.4%	4.92	0.3%	2.13	0.1%	0.63	0.1%	1.12
	Some College	1.2%	15.45	1.9%	14.18	2.0%	16.31	1.7%	15.29
	Bachelor's	2.7%	32.72	8.6%	58.77	9.3%	68.38	7.6%	60.78
	Post-Graduate	2.2%	22.79	10.2%	62.15	10.4%	68.42	7.1%	50.89
Relative to Construction	Agriculture	6.0%	25.5	7.7%	18.95	4.5%	12.05	4.1%	11.85
	Mining	-0.1%	-0.4	1.1%	2.23	-0.2%	-0.41	-1.3%	-2.77
	Utilities	-0.3%	-1.2	5.3%	14.03	8.8%	24.77	5.1%	15.7
	Manufacturing	0.5%	3.95	3.3%	16.22	4.3%	22.59	3.3%	18.9
	Wholesale Trade	2.2%	14.05	5.6%	20.87	5.8%	22.84	5.4%	22.56
	Retail Trade	-1.1%	-9.35	-0.4%	-2.03	0.8%	4.32	1.1%	6.41
	Transportation	0.7%	5.4	1.1%	4.55	1.5%	6.95	1.5%	7.43
	Information	5.2%	30.6	17.3%	59.62	22.9%	84.78	20.7%	84.15
	Finance	4.2%	33.83	13.9%	65.31	18.6%	93.45	16.5%	89.85
	Professional Services	8.5%	68.97	17.4%	83.65	22.8%	116.98	22.0%	122.54
	Business Services	1.5%	10.7	5.0%	20.99	7.8%	35.37	7.6%	37.36
	Education	0.4%	3.17	4.8%	21.09	1.6%	7.67	-0.2%	-1.11
	Health Care	-0.3%	-2.41	-3.6%	-17.64	-3.0%	-15.89	-0.8%	-4.68
	Leisure/Hospitality	-1.0%	-7.95	-1.2%	-5.5	-1.0%	-4.8	-0.2%	-1.25
	Other Services	-0.3%	-1.91	1.8%	7.95	3.3%	15.02	3.1%	15.37
	Public Administration	1.6%	10.43	5.4%	20.76	9.3%	37.78	8.1%	35.79
Relative to Mngt./Bus./Financial	Professional	-1.6%	-25.46	-2.6%	-23.98	-4.4%	-43.83	-4.0%	-43.17
	Service	-2.2%	-29.41	-7.5%	-56.69	-9.9%	-80.46	-8.4%	-75.09
	Sales	-0.5%	-5.32	-5.2%	-35.18	-7.6%	-55.66	-6.1%	-48.78
	Office/Admin. Support	-1.8%	-23.54	-3.1%	-23.49	-3.4%	-27.27	-2.4%	-20.87
	Agricultural	-5.1%	-17.13	-11.5%	-21.87	-11.1%	-22.6	-9.2%	-20.25
	Construction/Extr.	-3.4%	-27.12	-8.4%	-38.8	-9.8%	-47.93	-8.2%	-43.33
	Install./Maint./Repair	-3.1%	-25.91	-10.5%	-50.81	-13.5%	-70.11	-11.1%	-61.98
	Production	-3.0%	-28.69	-10.6%	-57.71	-12.9%	-76.56	-10.6%	-68.02
	Transportation	-3.4%	-35.87	-9.7%	-58.94	-11.9%	-78.57	-10.0%	-71.58
Age not shown									
Wage/Salary Income not shown									
State of residence not shown									

Figure 24: Logit Regression Results on Telework, ACS

Logit		2019		2020		2021		2022	
	Disability	0.3%	1.02	0.9%	3.93	1.4%	6.30	1.2%	5.53
	Female	1.4%	7.89	2.9%	24.77	3.9%	34.62	3.2%	27.41
Relative to White NH	Black NH	-1.1%	-3.55	-1.1%	-5.38	1.5%	7.94	0.8%	4.11
	Hispanic	-1.6%	-5.58	-2.8%	-14.99	-2.4%	-13.65	-1.9%	-10.34
	Asian NH	-1.5%	-3.72	1.2%	4.78	3.2%	14.10	1.7%	7.19
	AIAN NH	-0.8%	-0.61	-2.3%	-2.14	-2.7%	-2.70	-2.0%	-1.96
	NHOPI NH	-0.3%	-0.12	-0.3%	-0.17	-0.7%	-0.49	0.1%	0.08
	Multiple NH	-0.1%	-0.14	0.7%	2.27	1.5%	5.41	1.1%	3.98
	Other NH	0.1%	0.07	-0.5%	-0.62	-0.5%	-0.67	-0.6%	-0.79
Relative to Non-Naturaliz. Citizen	Naturalized Citizen	-0.7%	-2.08	-1.6%	-7.73	-1.8%	-8.97	-1.4%	-6.75
	Non-Citizen	-0.4%	-1.10	-1.0%	-4.19	-1.3%	-5.71	-1.2%	-5.03
Relative to Less Than High School	High School	0.3%	0.66	1.3%	4.01	1.2%	4.01	0.9%	3.00
	Some College	1.3%	3.36	4.6%	14.95	5.2%	17.85	3.9%	12.92
	Bachelor's	2.7%	6.38	10.7%	34.10	11.9%	39.92	8.7%	28.68
	Post-Graduate	2.0%	4.43	11.4%	34.55	12.4%	39.65	8.2%	25.33
Relative to Construction	Agriculture	2.8%	3.75	7.6%	12.36	6.0%	9.55	4.9%	7.50
	Mining	-1.8%	-1.14	1.5%	1.45	-0.2%	-0.21	-2.5%	-2.07
	Utilities	-2.1%	-1.54	6.6%	10.26	10.9%	18.26	6.2%	9.42
	Manufacturing	-0.3%	-0.55	3.8%	10.25	5.2%	14.79	3.7%	9.83
	Wholesale Trade	1.7%	2.65	6.4%	14.03	7.2%	15.99	6.0%	12.58
	Retail Trade	-1.9%	-3.44	-1.3%	-3.41	0.6%	1.59	0.9%	2.32
	Transportation	1.0%	1.61	1.5%	3.28	2.4%	5.45	2.1%	4.57
	Information	3.8%	6.10	13.8%	31.96	19.0%	45.27	15.4%	36.11
	Finance	2.6%	5.29	11.5%	32.46	15.8%	46.22	12.5%	35.25
	Professional Services	4.7%	9.71	12.5%	36.15	17.3%	51.44	14.7%	42.21
	Business Services	1.5%	2.54	6.8%	16.23	10.6%	26.71	9.0%	21.93
	Education	0.3%	0.47	5.5%	13.91	3.1%	8.01	0.4%	0.88
	Health Care	-0.9%	-1.79	-4.4%	-11.81	-3.4%	-9.42	-0.8%	-2.21
	Leisure/Hospitality	-1.9%	-3.39	-2.3%	-5.55	-2.1%	-5.29	-1.2%	-2.82
	Other Services	0.1%	0.24	3.2%	7.63	5.2%	12.75	4.5%	10.52
	Public Administration	2.2%	2.75	6.7%	14.79	12.2%	27.63	10.9%	22.85
Relative to Mngt./Bus./Financial	Professional	-1.1%	-4.49	-1.5%	-9.71	-2.9%	-20.09	-2.4%	-15.82
	Service	-2.3%	-6.67	-9.5%	-39.07	-12.6%	-54.11	-9.9%	-41.08
	Sales	-0.2%	-0.72	-4.2%	-18.04	-6.4%	-29.09	-4.7%	-20.89
	Office/Admin. Support	-1.2%	-3.67	-1.4%	-7.06	-1.4%	-7.63	-0.6%	-3.25
	Agricultural	-1.9%	-1.70	-11.0%	-11.03	-12.7%	-12.33	-9.9%	-9.23
	Construction/Extr.	-4.1%	-6.75	-12.3%	-26.71	-14.5%	-32.13	-11.2%	-23.85
	Install./Maint./Repair	-4.0%	-6.02	-14.4%	-30.19	-18.9%	-40.13	-14.3%	-29.30
	Production	-4.3%	-7.12	-15.3%	-36.85	-17.5%	-46.52	-13.9%	-34.57
	Transportation	-4.9%	-8.98	-14.8%	-39.04	-17.7%	-50.12	-14.0%	-38.01
Age not shown									
Wage/Salary Income not shown									
State of residence not shown									

Telework, American Time Use Survey

The American Time Use Survey (ATUS) has existed since 2003 and is formed from a subset of households responding to the CPS, from those that have completed the full eight months of interviews. ATUS tracks usage of time for individuals from responding households, enabling the generation of nationally representative estimates categorized by activity in extensive detail. Since ATUS is drawn from the CPS, the sample universe consists of the civilian, non-institutionalized population residing in occupied households within the United States. Two months after completing the eighth month of interviews, a CPS household becomes eligible for entry into the ATUS sample, which is stratified based on state of residence, race/ethnicity, presence and age of children, and number of adults. From each household selected for survey inclusion, one individual, aged at least 15, is randomly selected for inclusion in ATUS. This produces a sample size of approximately 26 thousand households per year.[9] However, response rates are well below 100% and have tended to diminish over the years, so that the number of respondents in recent years has been around 8 to 10 thousand.

Respondents are asked for a full record of their activities during the previous day, during which they kept a diary allocating how their time was spent. Daily activities are tracked separately and recorded in a dataset that includes one observation for each activity for each respondent, potentially including multiple observations with the same activity conducted by the same respondent at different times of the day. The general category for work and work-related activities has a sub-category for "working" that distinguishes between time spent working at the main job and time spent working at jobs other than the main. There are also three additional subcategories within "working" that do not distinguish between the main job and other jobs, for "security procedures related to work", "waiting associated with working", and "working, n.e.c.". Within the general category for work and work-related

[9] The ATUS User's Guide can be downloaded from https://www.bls.gov/tus/other-documentation/howto.htm
ATUS data dictionaries can be obtained from https://www.bls.gov/tus/dictionaries.htm

activites but outside the category for “working” are categories for “work-related activities”, “other income-generating activities”, “job search and interviewing”, and “work and work-related activities, n.e.c.”. These categories outside of “working” are excluded from definitions of telework versus work. Anything inside the “working” category is included except for work at other jobs, in order to distinguish each respondent’s main job from secondary jobs. Furthermore, the location in which each activity took place is recorded, with the most common entries being “respondent’s home or yard” and “respondent’s workplace”. Telework is defined as including any work falling into the categories previously discussed that occur in the “respondent’s home or yard”, and similarly work more broadly includes the same at any location.

Respondents to the ATUS are not necessarily employed and, even if employed, were not necessarily engaged in any work during the previous day. Over the six-year period from 2017 through 2022, about 41.3% of weighted respondents engaged in any work during the previous day, with an average time of almost eight hours for those who did engage in any work. If telework is considered to be any amount of telework or work-at-home, then 29.1% of those engaged in work also engaged in some telework during the six-year period, increasing from 22.9% in 2019 to 36.5% in 2020. However, this definition includes people who finished a small amount of work from home while spending far more time at the worksite, or who simply completed a small quantity of work tasks at home while being otherwise unengaged in work on that day. Therefore, telework is defined more strictly as having worked from home for at least half the time worked that day, while excluding observations with less than four hours of work total in that day (this still excludes all hours spent working at jobs other than the main job). Average time spent at work is eight-and-half hours, for those who worked at least four hours that day, with slightly less time on average for those who are defined as having teleworked. This results in an average of 16.0% telework over the six-year period, with a jump from 8.3% in 2019 to 25.0% in 2020. For people with disabilities, this is an average of 13.7% telework, rising from 7.7% in

2017 through 2019 to 19.4% in 2020 through 2022; the small sample sizes involved once the ATUS has been subset in this manner for people with disabilities precludes even the presentation of descriptive statistics for individual years and hinders statistical analysis.

Due to small sample sizes, these six years of ATUS data are pooled into two groups of three years, along with one group pooling all six years from 2017 through 2022. Establishing a regression in a similar manner to the earlier regressions on likelihood of telework produces results that are not statistically significant in regard to the impact of disability status.

$$Y_{it} = \alpha + \beta_1 * \text{Disability}_{it} + \beta_2 * \text{Period} + \beta * (\text{Disability}_{it} * \text{Period}_t) + X_{it}\beta + (X_{it} * \text{Period}_t)\beta + \varepsilon_{it}$$

Some of the other variables still yield statistically significant results despite the low sample sizes, generally consistent with those found earlier. As shown in Figure 25 below, there were a number of statistically significant changes from a "pre" period of 2017 through 2019 to a "post" period of 2020 through 2022. Women were more likely to telework than men, non-citizens and naturalized citizens became less likely to telework than non-naturalized citizens, Asians had been less likely to telework but became more likely to telework, the greater likelihood of telework for those with higher educational attainment (Bachelor's degree or post-graduate degree) increased further to a considerable degree, there were large increases in relative likelihood of telework for certain services industries (information, finance and real estate, professional/business services, and public administration), occupational categories more amenable to telework (management/financial/business, professional, and office/administrative support) became even more so, and residents of metropolitan statistical areas became more likely to telework. This nonetheless appears inconsistent with data from other sources, in that it does not show a statistically-significant greater propensity of people with disabilities to telework, after controlling for other characteristics.

Aside from the regular ATUS surveys, the Women's Bureau of the United States Department of Labor sponsored a Leave and Job Flexibilities Module for the ATUS in 2017 and 2018. Currently-

employed wage and salary workers responding to ATUS in these two years were eligible for inclusion into the Leave Module but were excluded if not responding to four basic questions about paid leave, unpaid leave, flexible work hours, and telework capability.[10] However, the subset of those eligible and replying to these four basic leave and flexibility questions consisted of only 5,187 individuals in 2017 and 4,884 individuals in 2018, for a total of 10,071 respondents for this Leave Module. A similar module had been implemented earlier in 2011, but it differed from the later module in crucial aspects, including telework, and therefore cannot be pooled with the later module.

The Leave and Job Flexibilities Module for 2017 and 2018 contained questions about working at home that were missing from its 2011 predecessor. First, respondents were asked whether as part of their (main) job there was the possibility of working at home. A series of questions about working at home includes one specifying whether there are days in which the respondent only works at home, to fully separate from people who are simply completing work at their home rather than truly teleworking or working at home in lieu of commuting to the normal workplace. Although 14.9% of people without disabilities have days where they work only from home, this is true only for 9.6% of people with disabilities. This is indicative that people with disabilities tended to work in occupations where telework or work-from-home is more difficult if not impossible. Another question ascertained the main reason why respondents work at home, with six possible response options and a catch-all seventh "Other" category. Of those who sometimes work only from home, 13.0% of people without disabilities cite as their main reason reducing commuting time or expense, versus 31.6% of people with disabilities. Both differences are statistically significant at the 95% level despite the small sample size, especially for people with disabilities who have just 372 observations in the 2017/2018 Leave and Job Flexibilities

[10] The four mandatory questions that must be answered for inclusion into the Leave Module are (1) "Do you receive paid leave on your (main) job?", (2) "Are you allowed to take time off from work without pay?", (3) "Do you have flexible work hours that allow you to vary or make changes in the times you begin and end work?", and (4) "As part of your (main) job, can you work at home?".

Module, of which just 40 observations answered affirmatively to the question about days working only from home.

Figure 25: Telework regression results, ATUS-CPS

OLS		2017-2022		2017-2019		2020-2022		Difference	
	Disability	-0.8%	-0.55	-0.5%	-0.28	-1.9%	-0.79	-1.5%	-0.51
	Female	3.4%	5.44	1.9%	2.93	4.1%	3.95	2.1%	1.79
Relative to White NH	Black NH	-1.2%	-1.28	-1.9%	-1.97	-1.6%	-1.02	0.4%	0.19
	Hispanic	-1.0%	-1.07	-1.5%	-1.5	-1.9%	-1.32	-0.5%	-0.27
	Asian NH	5.2%	3.76	-3.4%	-2.28	9.0%	4.17	12.4%	4.73
	AIAN NH	3.8%	0.86	-5.3%	-1.24	17.1%	2.1	22.4%	2.57
	NHOPI NH	5.8%	0.79	10.1%	1.33	-0.9%	-0.08	-11.1%	-0.78
	Multiple NH	3.1%	1.06	1.7%	0.49	1.7%	0.41	0.0%	0.01
Relative to Non-Naturaliz. Citizen	Naturalized Citizen	-3.0%	-2.77	-1.4%	-1.23	-4.0%	-2.26	-2.6%	-1.23
	Non-Citizen	-2.2%	-2	0.3%	0.23	-4.2%	-2.37	-4.5%	-2.12
Relative to Less Than High School	High School	1.2%	1	1.2%	0.92	0.9%	0.44	-0.3%	-0.13
	Some College	3.6%	2.84	2.9%	2.26	4.5%	2.16	1.5%	0.63
	Bachelor's	11.1%	8.37	5.1%	3.69	15.5%	7.19	10.4%	4.13
	Post-Graduate	15.5%	10.66	7.7%	5.01	20.8%	8.84	13.1%	4.71
Relative to Construction	Agriculture	14.7%	4.52	15.7%	4.9	16.7%	2.93	1.1%	0.17
	Mining	-3.3%	-0.74	-5.5%	-1.32	5.0%	0.6	10.5%	1.2
	Manufacturing	3.1%	1.75	4.8%	2.57	4.1%	1.39	-0.6%	-0.18
	Trade Retail/Whol.	-0.4%	-0.22	0.0%	-0.03	2.1%	0.7	2.1%	0.61
	Transportation/Utilit.	-0.2%	-0.1	-0.6%	-0.26	2.4%	0.73	2.9%	0.77
	Information	11.5%	4.59	6.1%	2.33	18.5%	4.52	12.5%	2.61
	Finance	14.2%	7.53	7.1%	3.58	23.0%	7.5	15.9%	4.4
	Prof./Busin. Services	13.5%	7.73	8.2%	4.45	20.3%	7.15	12.1%	3.64
	Education/Health	-3.1%	-1.76	-0.6%	-0.35	-3.2%	-1.11	-2.6%	-0.77
	Leisure/Hospitality	-1.1%	-0.56	1.6%	0.83	-0.6%	-0.19	-2.2%	-0.61
	Other Services	4.3%	2.04	4.2%	1.9	4.4%	1.31	0.2%	0.05
	Public Administration	4.0%	1.96	-1.7%	-0.81	11.1%	3.39	12.9%	3.32
Relative to Mngt./Bus./Financial	Professional	-4.5%	-4.84	-1.4%	-1.49	-5.8%	-3.9	-4.4%	-2.52
	Service	-13.8%	-12	-5.2%	-4.47	-21.9%	-11.49	-16.7%	-7.64
	Sales	-5.9%	-4.53	1.5%	1.08	-12.9%	-6.09	-14.4%	-5.8
	Office/Admin. Support	-8.7%	-7.66	-4.6%	-4.01	-10.5%	-5.47	-5.8%	-2.68
	Agricultural	-17.6%	-4.27	-14.9%	-3.84	-19.5%	-2.54	-4.6%	-0.57
	Construction/Extr.	-12.1%	-6.43	-4.0%	-2.13	-18.3%	-5.71	-14.3%	-3.96
	Install./Maint./Repair	-13.7%	-7.83	-6.8%	-3.81	-19.5%	-6.69	-12.7%	-3.82
	Production	-14.8%	-9.4	-7.3%	-4.53	-22.5%	-8.63	-15.2%	-5.05
	Transportation	-13.9%	-9.54	-6.5%	-4.02	-21.8%	-9.59	-15.3%	-5.48
Relative to MSA	Not MSA	-2.1%	-2.2	0.2%	0.16	-4.8%	-3.07	-4.9%	-2.75
	Not Identified	-0.2%	-0.07	0.5%	0.15	-1.9%	-0.31	-2.4%	-0.36
Age not shown									
Usual Hours Worked not shown									
State of residence not shown									

Transitions between Labor Market Statuses

Although the Current Population Survey (CPS) is primarily a cross-sectional design, it does include a longitudinal component, since each household is surveyed for up to eight months. After being included in the CPS for four consecutive months, a household is shifted out of the survey for the next eight months, then re-introduced for another four months, meaning the fifth month in which a household is surveyed occurs exactly one year after the initial month. Since the CPS is a household-based survey, even though most of the information collected is at the individual level, it lacks a direct person-level identifier across monthly surveys. However, the CPS not only contains a unique household-level identifier but also notes the number of a person within each household, with the caveat that the numbering of people within the household can be inconsistent, since it is subject to change across months of the survey. In cases where the individuals within the household are renumbered at some point, it might be possible to match people across months based on various demographic characteristics contained within the CPS, but this creates substantial risk of generating false positives, especially if the individuals within the household have been changed. There is also risk of generating false positives on cross-month matching even under the assumption that the same individual will remain with the same number in the same household, but this can be reduced by examining available characteristics across months and check potential inconsistencies.

Of individuals in the CPS for eight months with a labor force status for all eight months, so as to reject any household line-number with any change outside certain parameters as potentially being a false positive, 97.4% of individuals with a labor force status for all eight months are accepted as cross-month matches. The drawback to this approach is that a certain, unknown portion of those rejected are false negatives, the same person with information entered inaccurately in one or more months so as to create the appearance of the household or line numbering having changed. Certain information can be determined about household size and the relationship of individuals within households. Of these

weighted individuals, who are matched and have a labor force status for all eight possible months (and therefore at least 16 years old), 37.4% are the reference person responding to the survey for all household members, 27.9% are the spouse of the reference person, 11.6% are the child of the reference person, 3.3% are the relative (other than spouse or child) of the reference person, and 19.8% are unrelated to the reference person.

Disability status is not necessarily caused by a permanent condition but can instead be a medical condition that is either transitory or eventually ameliorated to a sufficient extent such that the individual no longer has serious difficulty in whichever function caused them to be initially classified as disabled. Of individuals who remain in the CPS with a labor force status for eight months and are not rejected as cross-month matches, 9.6% are categorized as having a disability for four months versus 7.8% having a disability for all eight months. Not only is the proportion of people experiencing a disability lower at younger ages, but the ratio of experiencing a disability in all eight months relative to only four months also declines, from 0.815 for the entire age-range 16 and older to 0.717 for the 'working-age population' ages 16-64 and to 0.669 for the 'prime-age' population 25-54.

Figure 26: # Months with a Disability by Age-Range

# Months	16+	16-64	25-54
0	82.47%	89.04%	91.38%
1	0.07%	0.05%	0.05%
2	0.02%	0.01%	0.01%
3	0.04%	0.03%	0.02%
4	9.55%	6.30%	5.10%
5	0.02%	0.01%	0.00%
6	0.01%	0.01%	0.00%
7	0.04%	0.03%	0.02%
8	7.78%	4.52%	3.41%

Before examining longitudinal differences in labor market status, further attention should be paid to the vast cross-sectional differences in labor market status between those with and without disabilities. By combining all available monthly CPS data with disability status, it is possible to provide cross-sectional data of labor market status for each year of age, with a substantial number of observations in each year for people without disabilities (or the total). Given the lower proportion of people with disabilities, the resulting smaller sample sizes do produce noticeably lower serial correlation in the categories of labor market status, as can be visually ascertained in Figure 27 versus Figure 28 below, but the results are robust enough to be meaningful. The primary indicator of labor market status in the CPS provides seven categories that separates the employed according to whether they were present at work or entirely absent in the preceding week, the unemployed according to whether they are on temporary layoff or seeking work, and those not in the labor force according to whether this is due to retirement, disability, or some other reason; importantly, disability here is not based on the six questions used to define disability status, but rather on whether a person must possess a specific mental or physical condition, which is not a combination of minor disabilities associated with aging, that prevents the person from doing any type of work for at least the next six months. For greater clarity, Figures 27 and 28 combine the two unemployment categories, separate employment on the basis of full-time or part-time work rather than on presence or absence from work, and separate another two categories from being not in the labor force for other reasons: due to education and due to home- or family-care.

The distribution of these eight labor force statuses, for each year of age from 16 through 79, is displayed in Figure 27 below, for the total population, regardless of disability status. The dominant labor market status at age 16 is being not in the labor force due to education, at 78% of the population, which diminishes rapidly as people transition into the labor force from secondary or higher education, falling to 6.7% at age 25 and 2.4% at age 30. The shift between categories occurs overwhelmingly in full-

time employment, which increases from a mere 1.8% at age 16 to 60.8% at age 25 and 67.9% at age 30, by which time it is close to its peak of 70.0%. Part-time employment increases rapidly from 12.2% at age 16 to a peak of 27.2% at age 20 before falling to 12.8% at age 25 and 9.4% at age 30, after which it is fairly stable into the 70s. Similarly, the proportion unemployed increases from 4.0% at age 16 to 8.1% at age 20 before falling to 6.4% at age 25 and 5.0% at age 30, after which it slowly diminishes. Consistent with trends in disability prevalence, the proportion not in the labor force due to disability increases slowly at first but accelerates, from 2.7% at age 30 to 4.0% at age 40, 7.5% at age 50, and 12.0% at age 60, but thereafter it declines rapidly as people shift into retirement. For its part, the proportion not in the labor force due to retirement accelerates in the 50s and surpasses half the population by age 66, reaching 85.0% by age 79. Finally, the proportion not in the labor force due to home/family-care increases from 1.1% at age 16 to a peak of 10.5% at age 35 before falling more gradually to 1.8% at age 65. The remaining portion not in the labor force for other reasons (i.e. excluding retirement, disability, education, and home- or family-care) has its maximum at 4.3% at age 19 and accounts for just 2.1% of the overall population.

As expected, even though being not in the labor force due to disability is not defined the same way as disability status, this is nonetheless the main drive of differences between people with and without disabilities, as can be viewed in Figure 28 below. The difference in this category is already 16.0% of the population at age 16, when most people in either group are not in the labor force due to education, rises rapidly to exceed three-tenths of the population by age 21, exceeds two-fifths of the population by age 37, and finally exceeds half the population at age 52, before subsiding after age 57 as a larger proportion of people in both groups enter the status of not in the labor force due to retirement, so that at age 69 the difference between the two is only 16.6% of the population. The other dominant difference is in full-time employed, with less than two-fifths as large a proportion of people with disabilities in this category as people without disabilities, even controlling for age; as a proportion of the

population, this difference is largest at age 52 where the proportion of people with disabilities who are employed full-time is 50.1 percentage points lower than for people without disabilities. The unemployed as a proportion of the population is about 1 to 2 percentage points higher for people with disabilities from ages 17 to 39 but falling lower at higher ages, while the proportion of the population that is employed part-time is much lower at the youngest end of the age-range, becomes higher from ages 26 to 33, and then descends to 0.9 percentage points lower at age 40, 2.1 percentage points lower at age 50, and 4.0 percentage points lower at age 60.

Figure 27: Labor Force Status by Year of Age

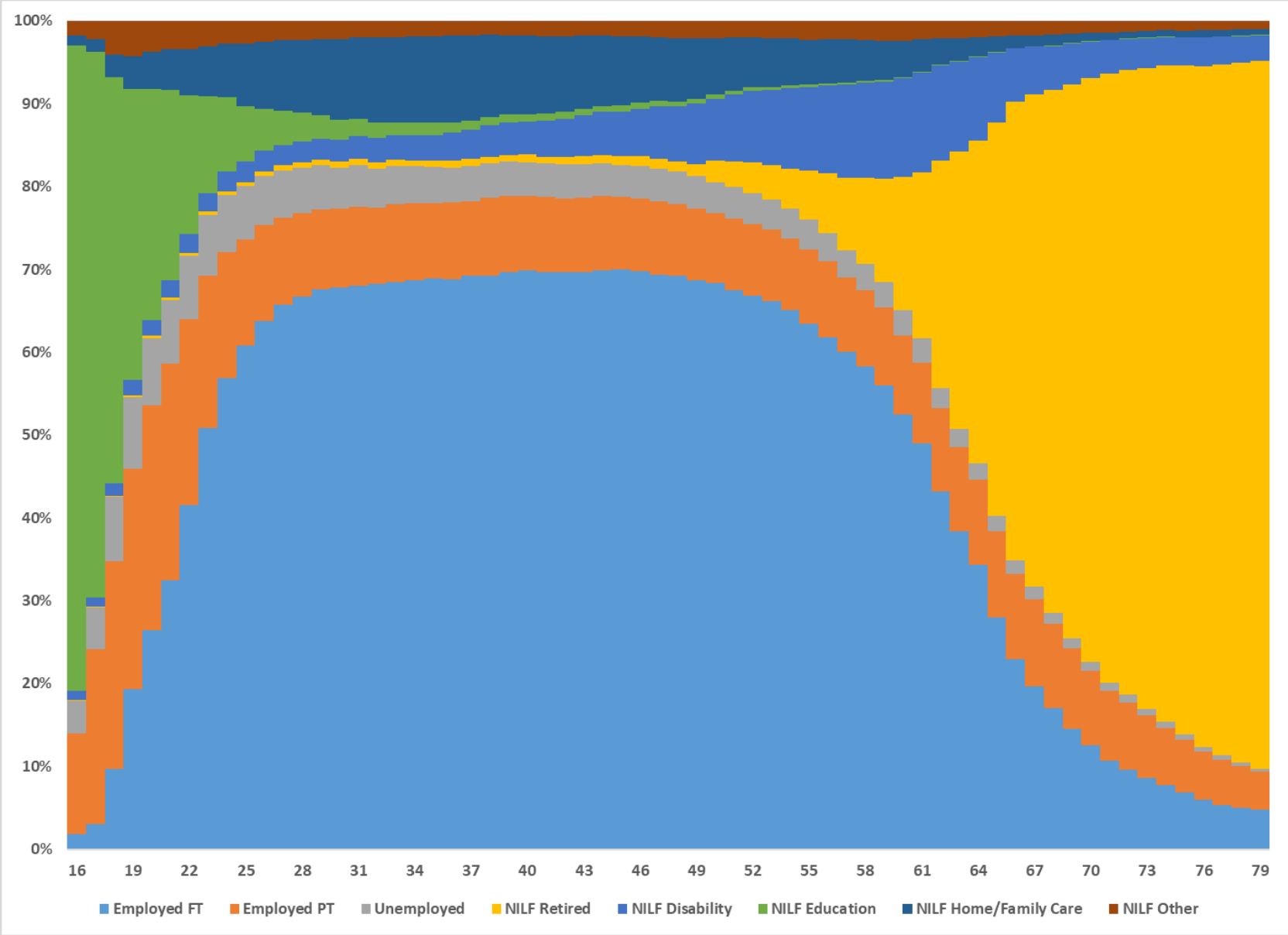
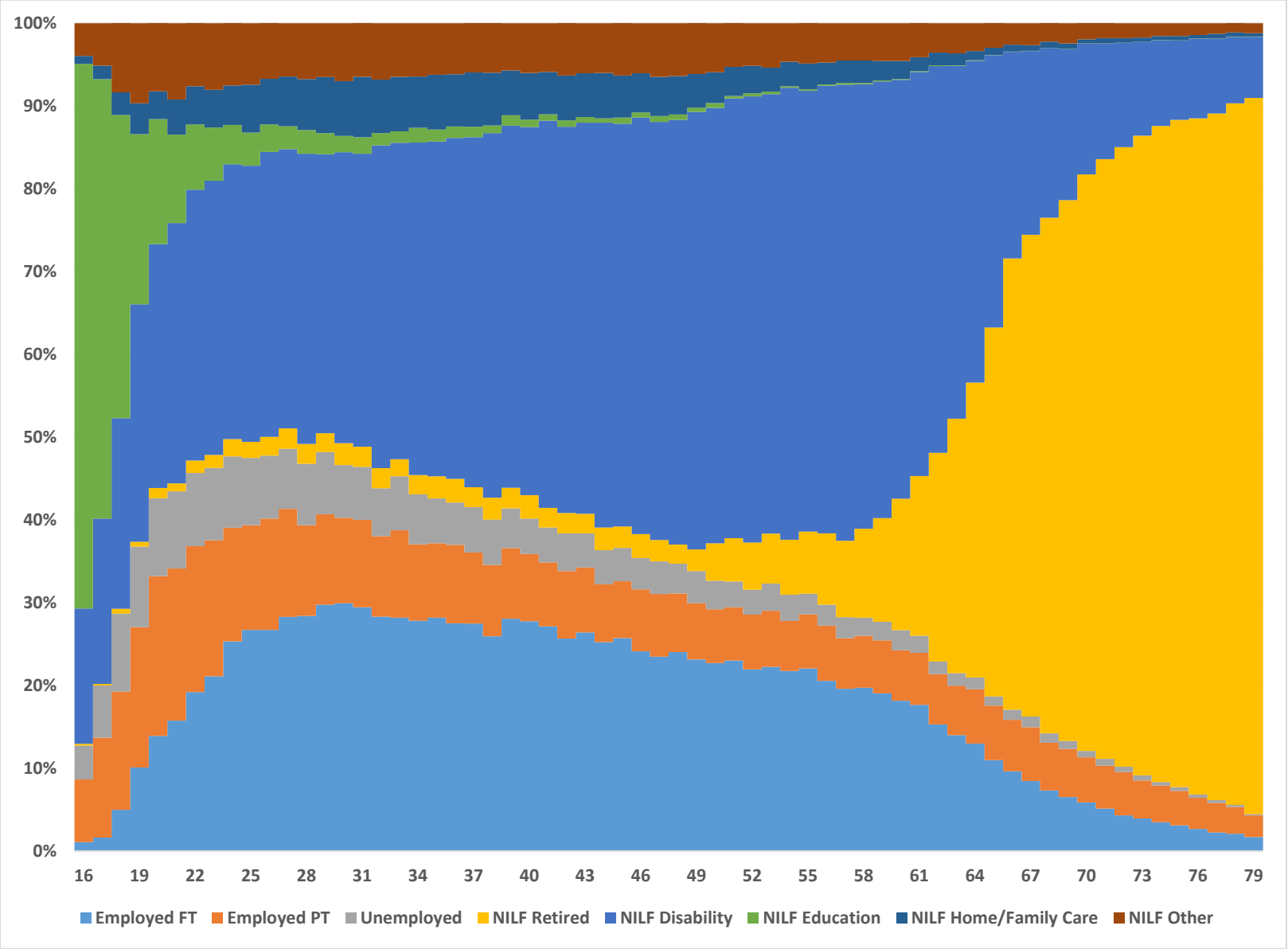


Figure 28: Labor Force Status by Year of Age, for People with Disabilities



Limiting the data to persons who appear in the CPS for all eight possible months, with a fair degree of certainty based on matching across the demographic characteristics of age, gender, and race, it is possible to determine what, if any, transition occurred in labor force status between any possible pair of months. From the first month in the CPS to the fifth month being surveyed, which occurs exactly one year later, the total number of observations is about 1.2 million, combining all data from January 2009 through October 2023, though excluding those who do not have a labor force status for all 8 months; adding an upper boundary for age of 64 (those below the age of 16 are already excluded), the number of observations falls to about 868 thousand. Figure 29 below shows these transitions for the restricted age range separately by disability status, with initial labor force status shown in rows and the labor force status one year later shown in columns; therefore, each row sums to 100 percent. Overall, 5.1% of weighted observations in the first month have the status not in the labor force due to disability, but this increases to 43.0% for persons with a disability. By contrast, 68.5% of people were employed and at work in the first month, but only 29.2% of people with disabilities. For the transitions, the proportion of people with disabilities who are employed in the second period (i.e. one year later) are lower for every initial labor status relative to people without disabilities, as are the proportions in the labor force in the second period. For example, of people employed and at work, 92.3% of people without disabilities are employed in the second period and 94.7% in the labor force, whereas for people with disabilities 85.8% are employed and 89.2% in the labor force; or of people not in the labor force due to disability, for people without disabilities (1.7% have this status) 6.7% are employed in the second period and 8.4% in the labor force, versus 3.1% and 3.8% for people with disabilities. These lower transitions generate the large, long-term gap in labor force participation and employment between these two groups.

Although disability status in Figure 29 is determined solely by answers to the six disability questions in the initial month, these transition comparisons can also differentiate disability status by

whether it was held in both the initial month and one year later, only in the first, only in the second, or neither. Figures 30a and 30b below show these same transitions for six groups: the total regardless of disability status, those with a disability in both periods, those not in the previous group, those with a disability only in the first period, those with a disability only in the second period, and those with a disability in neither period. For people with a disability in both periods, the proportion employed and at work in the initial month is even lower at 19.0%, while the proportion not in the labor force due to disability is even higher at 56.3%, indicating that these persistent conditions are more severe in their impact on employment. Similarly, rates of transitions into employment and the labor force are lower, regardless of the initial labor status. Interestingly, comparing people with a disability only in the initial period to people with a disability only in the second period, the proportion employed and at work is only slightly lower (42.1% to 44.7%) and the proportion not in the labor force due to disability only somewhat higher (26.1% to 20.1%); this indicates that people with a disability only in the second period, despite answering negatively to the disability questions in the first period, tended to already be experiencing impacts on employment. Since the difference in answers to the disability questions between the two periods indicates that health conditions improved for one group while deteriorating for the other, it is unsurprising that transitions into employment and into the labor force are higher for those with a disability only in the first period in every initial labor status relative to people with a disability only in the second period. Comparing people with a disability only in the second period to people with disabilities in both periods, the former were less likely to be employed or in the labor force when employed at work in the initial period but more likely to be employed or in the labor force when not in the labor force in the initial period.

To determine how these transitions have changed between the pre-COVID, COVID, and post-COVID eras, they are calculated separately by year of the initial month, for 2017 through 2022, meaning the second period is in 2018 through 2023. Figures 31a and 31b display these results regardless of

disability status, while Figures 32a and 32b show these results for people with disabilities. For all people regardless of disability status, chances of being employed or being in the labor force in the second period, as expected, are lower for transitions from 2019 to 2020 in nearly every starting labor status. This was reversed by the time of transitions from 2021 to 2022, which were more likely to result in being employed and being in the labor force for nearly every initial labor status. People with disabilities, however, recovered one year earlier, with transitions from 2020 to 2021. Moreover, there were higher rates of transitions into employment and into the labor force than previously for those with an initial status of not in the labor force due to reasons other than retirement or disability.

Figure 29: Transitions from First CPS Month to Fifth CPS Month (One Year Later), by Disability Status

Transitions from first month to one year later, Ages 16-64

	Employed at work	Employed absent	Unemployed on layoff	Unemployed looking for work	NILF Retired	NILF Disability	NILF Other	% in Row
Employed at work	89.5%	2.6%	0.6%	1.8%	1.1%	0.5%	3.9%	**68.5%**
Employed absent	65.4%	15.9%	1.6%	2.5%	2.8%	2.8%	9.0%	**2.5%**
Unemployed on layoff	52.7%	5.7%	14.2%	9.8%	2.4%	2.0%	13.4%	**0.6%**
Unemployed looking for work	43.9%	1.5%	1.2%	23.9%	2.2%	3.4%	24.0%	**3.9%**
NILF Retired	5.2%	0.5%	0.1%	0.7%	79.8%	6.9%	6.8%	**3.6%**
NILF Disability	3.9%	0.3%	0.1%	0.9%	6.9%	77.5%	10.4%	**5.1%**
NILF Other	19.4%	1.0%	0.4%	5.1%	3.4%	5.4%	65.2%	**15.8%**

Transitions from first month to one year later, Ages 16-64, Persons with a Disability

	Employed at work	Employed absent	Unemployed on layoff	Unemployed looking for work	NILF Retired	NILF Disability	NILF Other	% in Row
Employed at work	82.4%	3.3%	0.8%	2.7%	2.6%	3.7%	4.5%	**29.2%**
Employed absent	54.2%	11.8%	1.1%	3.0%	5.5%	16.2%	8.2%	**2.1%**
Unemployed on layoff	42.7%	4.0%	12.6%	9.6%	4.6%	10.8%	15.7%	**0.4%**
Unemployed looking for work	32.8%	1.2%	0.9%	22.5%	3.3%	15.9%	23.6%	**3.7%**
NILF Retired	3.1%	0.4%	0.1%	0.5%	69.7%	22.0%	4.4%	**7.2%**
NILF Disability	2.9%	0.2%	0.0%	0.7%	6.1%	80.7%	9.4%	**43.0%**
NILF Other	10.9%	0.7%	0.3%	4.7%	5.9%	36.7%	40.8%	**14.4%**

Transitions from first month to one year later, Ages 16-64, Persons without a Disability

	Employed at work	Employed absent	Unemployed on layoff	Unemployed looking for work	NILF Retired	NILF Disability	NILF Other	% in Row
Employed at work	89.8%	2.6%	0.6%	1.8%	1.0%	0.4%	3.9%	**71.9%**
Employed absent	66.2%	16.2%	1.6%	2.4%	2.7%	1.8%	9.0%	**2.5%**
Unemployed on layoff	53.2%	5.8%	14.3%	9.8%	2.2%	1.4%	13.2%	**0.7%**
Unemployed looking for work	44.8%	1.5%	1.2%	24.1%	2.1%	2.4%	24.0%	**4.0%**
NILF Retired	5.6%	0.5%	0.2%	0.7%	81.7%	4.1%	7.2%	**3.3%**
NILF Disability	6.3%	0.4%	0.2%	1.5%	8.5%	70.4%	12.8%	**1.7%**
NILF Other	20.1%	1.1%	0.5%	5.1%	3.2%	2.9%	67.2%	**15.9%**

Figure 30a: Transitions from First CPS Month to Fifth CPS Month (One Year Later), by Disability Status

Transitions from first month to one year later, Ages 16-64

	Employed at work	Employed absent	Unemployed on layoff	Unemployed looking for work	NILF Retired	NILF Disability	NILF Other	% in Row
Employed at work	89.5%	2.6%	0.6%	1.8%	1.1%	0.5%	3.9%	**68.5%**
Employed absent	65.4%	15.9%	1.6%	2.5%	2.8%	2.8%	9.0%	**2.5%**
Unemployed on layoff	52.7%	5.7%	14.2%	9.8%	2.4%	2.0%	13.4%	**0.6%**
Unemployed looking for work	43.9%	1.5%	1.2%	23.9%	2.2%	3.4%	24.0%	**3.9%**
NILF Retired	5.2%	0.5%	0.1%	0.7%	79.8%	6.9%	6.8%	**3.6%**
NILF Disability	3.9%	0.3%	0.1%	0.9%	6.9%	77.5%	10.4%	**5.1%**
NILF Other	19.4%	1.0%	0.4%	5.1%	3.4%	5.4%	65.2%	**15.8%**

Transitions from first month to one year later, Ages 16-64, Persons with a Disability in Both Periods

	Employed at work	Employed absent	Unemployed on layoff	Unemployed looking for work	NILF Retired	NILF Disability	NILF Other	% in Row
Employed at work	77.6%	4.1%	0.7%	2.8%	2.7%	7.6%	4.5%	**19.0%**
Employed absent	41.0%	12.7%	1.3%	2.8%	5.4%	30.0%	6.9%	**1.6%**
Unemployed on layoff	29.2%	2.5%	12.3%	11.0%	5.7%	19.8%	19.6%	**0.3%**
Unemployed looking for work	24.8%	1.0%	1.2%	21.0%	3.3%	29.6%	19.2%	**2.8%**
NILF Retired	1.8%	0.3%	0.1%	0.4%	60.7%	32.2%	4.4%	**6.7%**
NILF Disability	1.5%	0.2%	0.0%	0.4%	4.4%	85.9%	7.6%	**56.3%**
NILF Other	6.1%	0.3%	0.2%	3.6%	4.3%	54.1%	31.3%	**13.4%**

Transitions from first month to one year later, Ages 16-64, Persons Other Than Those with a Disability in Both Periods

	Employed at work	Employed absent	Unemployed on layoff	Unemployed looking for work	NILF Retired	NILF Disability	NILF Other	% in Row
Employed at work	89.7%	2.6%	0.6%	1.8%	1.1%	0.5%	3.9%	**70.8%**
Employed absent	66.1%	16.0%	1.6%	2.5%	2.8%	2.0%	9.0%	**2.5%**
Unemployed on layoff	53.2%	5.8%	14.2%	9.7%	2.3%	1.6%	13.2%	**0.7%**
Unemployed looking for work	44.5%	1.5%	1.1%	24.0%	2.1%	2.6%	24.1%	**4.0%**
NILF Retired	5.5%	0.5%	0.2%	0.7%	81.5%	4.6%	7.0%	**3.5%**
NILF Disability	6.4%	0.4%	0.1%	1.5%	9.4%	68.9%	13.3%	**2.6%**
NILF Other	20.0%	1.1%	0.5%	5.1%	3.3%	3.5%	66.6%	**15.9%**

Figure 30b: Transitions from First CPS Month to Fifth CPS Month (One Year Later), by Disability Status

Transitions from first month to one year later, Ages 16-64, Persons with a Disability in Only the First Period

	Employed at work	Employed absent	Unemployed on layoff	Unemployed looking for work	NILF Retired	NILF Disability	NILF Other	% in Row
Employed at work	85.2%	2.9%	0.8%	2.6%	2.5%	1.4%	4.5%	**42.1%**
Employed absent	63.8%	11.1%	1.0%	3.2%	5.5%	6.2%	9.1%	**2.7%**
Unemployed on layoff	51.4%	5.0%	12.8%	8.8%	3.9%	4.9%	13.2%	**0.6%**
Unemployed looking for work	38.6%	1.3%	0.7%	23.6%	3.2%	5.8%	26.8%	**4.8%**
NILF Retired	4.4%	0.4%	0.1%	0.5%	79.2%	11.1%	4.3%	**7.9%**
NILF Disability	6.6%	0.3%	0.1%	1.4%	11.0%	66.3%	14.3%	**26.1%**
NILF Other	16.0%	1.1%	0.4%	5.9%	7.6%	17.9%	51.2%	**15.7%**

Transitions from first month to one year later, Ages 16-64, Persons with a Disability in Only the Second Period

	Employed at work	Employed absent	Unemployed on layoff	Unemployed looking for work	NILF Retired	NILF Disability	NILF Other	% in Row
Employed at work	68.5%	6.3%	0.7%	3.3%	2.9%	10.5%	7.7%	**44.7%**
Employed absent	40.7%	12.3%	1.2%	3.1%	5.1%	27.0%	10.5%	**2.7%**
Unemployed on layoff	27.1%	3.3%	13.9%	14.8%	1.4%	17.6%	21.9%	**0.9%**
Unemployed looking for work	20.4%	1.4%	0.2%	22.8%	4.3%	27.5%	23.4%	**5.4%**
NILF Retired	3.1%	0.3%	0.1%	0.6%	66.4%	22.5%	7.0%	**8.9%**
NILF Disability	1.7%	0.2%	0.1%	0.7%	5.6%	83.0%	8.8%	**20.1%**
NILF Other	8.3%	0.7%	0.4%	5.0%	5.9%	37.5%	42.1%	**17.3%**

Transitions from first month to one year later, Ages 16-64, Persons with a Disability in Neither Period

	Employed at work	Employed absent	Unemployed on layoff	Unemployed looking for work	NILF Retired	NILF Disability	NILF Other	% in Row
Employed at work	90.2%	2.5%	0.6%	1.8%	1.0%	0.2%	3.8%	**72.8%**
Employed absent	67.0%	16.3%	1.7%	2.4%	2.6%	1.0%	9.0%	**2.5%**
Unemployed on layoff	54.4%	6.0%	14.3%	9.5%	2.3%	0.7%	12.8%	**0.7%**
Unemployed looking for work	45.8%	1.5%	1.2%	24.1%	2.0%	1.3%	24.0%	**3.9%**
NILF Retired	5.8%	0.6%	0.2%	0.7%	83.1%	2.4%	7.3%	**3.1%**
NILF Disability	8.9%	0.5%	0.2%	2.0%	10.1%	63.3%	15.1%	**1.1%**
NILF Other	20.5%	1.1%	0.5%	5.1%	3.1%	1.7%	68.1%	**15.8%**

Figure 31a: Transitions from First CPS Month to Fifth CPS Month (One Year Later), by Start Year

Transitions from first month to one year later, Ages 16-64, Starting Month in 2017

	Employed at work	Employed absent	Unemployed on layoff	Unemployed looking for work	NILF Retired	NILF Disability	NILF Other	% in Row
Employed at work	90.3%	2.5%	0.3%	1.3%	1.2%	0.5%	3.8%	**69.8%**
Employed absent	68.4%	15.2%	1.1%	1.5%	2.5%	2.8%	8.4%	**2.5%**
Unemployed on layoff	50.0%	4.1%	16.4%	8.5%	3.3%	1.0%	16.6%	**0.4%**
Unemployed looking for work	50.5%	1.9%	0.7%	16.1%	2.0%	4.5%	24.2%	**2.5%**
NILF Retired	5.1%	0.4%	0.1%	0.4%	78.6%	7.7%	7.5%	**3.6%**
NILF Disability	5.2%	0.3%	0.1%	0.5%	7.1%	75.8%	11.0%	**5.1%**
NILF Other	21.0%	1.0%	0.3%	3.6%	3.9%	5.6%	64.6%	**16.0%**

Transitions from first month to one year later, Ages 16-64, Starting Month in 2018

	Employed at work	Employed absent	Unemployed on layoff	Unemployed looking for work	NILF Retired	NILF Disability	NILF Other	% in Row
Employed at work	90.7%	2.5%	0.2%	1.3%	1.1%	0.5%	3.7%	**70.7%**
Employed absent	68.0%	14.4%	1.5%	1.5%	3.8%	2.6%	8.2%	**2.4%**
Unemployed on layoff	46.1%	5.7%	19.0%	8.4%	2.7%	1.0%	17.2%	**0.4%**
Unemployed looking for work	51.0%	2.2%	0.8%	16.0%	2.0%	3.5%	24.3%	**2.6%**
NILF Retired	5.9%	0.5%	0.0%	0.5%	78.8%	7.4%	6.8%	**3.7%**
NILF Disability	3.8%	0.2%	0.0%	0.9%	7.0%	76.9%	11.3%	**5.3%**
NILF Other	20.1%	1.1%	0.2%	3.7%	3.2%	5.4%	66.3%	**15.0%**

Transitions from first month to one year later, Ages 16-64, Starting Month in 2019

	Employed at work	Employed absent	Unemployed on layoff	Unemployed looking for work	NILF Retired	NILF Disability	NILF Other	% in Row
Employed at work	84.9%	3.3%	3.1%	1.8%	1.1%	0.4%	5.4%	**71.3%**
Employed absent	62.8%	13.6%	4.4%	2.7%	2.9%	2.2%	11.5%	**2.5%**
Unemployed on layoff	40.4%	10.2%	29.0%	6.5%	2.2%	0.4%	11.3%	**0.4%**
Unemployed looking for work	43.0%	2.3%	3.8%	15.8%	2.2%	3.4%	29.5%	**2.2%**
NILF Retired	4.0%	0.4%	0.4%	0.4%	82.7%	5.6%	6.4%	**3.6%**
NILF Disability	3.7%	0.4%	0.5%	0.5%	7.5%	77.2%	10.3%	**4.9%**
NILF Other	16.6%	1.3%	1.6%	3.4%	3.5%	5.2%	68.4%	**15.0%**

Figure 31b: Transitions from First CPS Month to Fifth CPS Month (One Year Later), by Start Year

Transitions from first month to one year later, Ages 16-64, Starting Month in 2020

	Employed at work	Employed absent	Unemployed on layoff	Unemployed looking for work	NILF Retired	NILF Disability	NILF Other	% in Row
Employed at work	89.7%	2.5%	0.5%	1.4%	1.2%	0.5%	4.1%	**67.2%**
Employed absent	66.7%	13.4%	2.3%	3.4%	2.2%	3.0%	9.2%	**2.8%**
Unemployed on layoff	64.7%	3.4%	7.3%	7.9%	2.4%	1.5%	12.8%	**2.3%**
Unemployed looking for work	50.3%	1.2%	1.3%	20.5%	1.9%	2.2%	22.6%	**2.9%**
NILF Retired	5.6%	0.4%	0.3%	0.6%	81.7%	5.2%	6.1%	**4.1%**
NILF Disability	4.4%	0.3%	0.1%	0.6%	7.9%	77.8%	8.9%	**4.6%**
NILF Other	21.4%	1.2%	0.6%	4.5%	3.1%	5.2%	64.0%	**16.0%**

Transitions from first month to one year later, Ages 16-64, Starting Month in 2021

	Employed at work	Employed absent	Unemployed on layoff	Unemployed looking for work	NILF Retired	NILF Disability	NILF Other	% in Row
Employed at work	90.6%	2.8%	0.3%	1.1%	1.1%	0.5%	3.6%	**69.1%**
Employed absent	66.9%	14.7%	1.3%	1.2%	2.8%	2.8%	10.2%	**2.4%**
Unemployed on layoff	59.2%	6.6%	8.4%	8.0%	3.2%	0.7%	13.9%	**0.8%**
Unemployed looking for work	54.0%	2.1%	1.1%	15.7%	2.3%	2.4%	22.4%	**3.0%**
NILF Retired	6.2%	0.6%	0.1%	0.4%	80.7%	6.3%	5.7%	**3.8%**
NILF Disability	4.5%	0.3%	0.0%	0.8%	6.7%	75.0%	12.6%	**5.1%**
NILF Other	22.8%	1.1%	0.2%	3.7%	3.4%	5.4%	63.5%	**15.8%**

Transitions from first month to one year later, Ages 16-64, Starting Month in 2022

	Employed at work	Employed absent	Unemployed on layoff	Unemployed looking for work	NILF Retired	NILF Disability	NILF Other	% in Row
Employed at work	90.5%	2.7%	0.3%	1.3%	1.0%	0.6%	3.6%	**70.4%**
Employed absent	68.6%	12.7%	1.9%	3.1%	2.6%	1.2%	9.9%	**2.9%**
Unemployed on layoff	46.0%	12.8%	10.4%	4.0%	3.6%	0.5%	22.8%	**0.4%**
Unemployed looking for work	47.6%	4.0%	1.3%	16.2%	2.6%	5.4%	23.0%	**2.1%**
NILF Retired	7.3%	0.6%	0.0%	0.4%	79.5%	6.1%	6.1%	**4.0%**
NILF Disability	4.8%	0.2%	0.0%	1.1%	7.2%	78.1%	8.6%	**4.7%**
NILF Other	21.9%	1.4%	0.1%	4.2%	3.6%	5.6%	63.3%	**15.5%**

Figure 32a: Transitions from First CPS Month to Fifth CPS Month (One Year Later), by Start Year, People with Disabilities

Transitions from first month to one year later, Ages 16-64, Starting Month in 2017

	Employed at work	Employed absent	Unemployed on layoff	Unemployed looking for work	NILF Retired	NILF Disability	NILF Other	% in Row
Employed at work	84.8%	3.5%	0.4%	2.2%	2.4%	2.9%	3.9%	**29.2%**
Employed absent	63.3%	12.6%	1.5%	0.5%	6.7%	10.3%	5.1%	**2.6%**
Unemployed on layoff	31.8%	3.9%	27.6%	13.0%	0.0%	11.8%	11.9%	**0.4%**
Unemployed looking for work	31.0%	3.3%	0.0%	20.2%	2.9%	22.4%	20.1%	**3.3%**
NILF Retired	4.9%	0.4%	0.0%	0.1%	65.7%	25.0%	4.0%	**7.2%**
NILF Disability	3.5%	0.3%	0.1%	0.3%	5.8%	80.1%	9.9%	**43.2%**
NILF Other	12.6%	0.2%	0.2%	3.6%	7.2%	35.8%	40.5%	**14.1%**

Transitions from first month to one year later, Ages 16-64, Starting Month in 2018

	Employed at work	Employed absent	Unemployed on layoff	Unemployed looking for work	NILF Retired	NILF Disability	NILF Other	% in Row
Employed at work	83.1%	3.3%	0.5%	1.5%	3.3%	3.2%	5.1%	**31.2%**
Employed absent	49.7%	17.4%	1.4%	4.5%	5.2%	11.8%	9.8%	**1.8%**
Unemployed on layoff	50.8%	1.2%	20.0%	2.0%	5.6%	1.9%	18.6%	**0.4%**
Unemployed looking for work	43.3%	0.0%	0.1%	14.3%	4.9%	15.0%	22.3%	**2.6%**
NILF Retired	2.3%	0.6%	0.0%	0.0%	70.2%	22.4%	4.5%	**7.2%**
NILF Disability	3.1%	0.1%	0.0%	0.8%	6.0%	79.2%	10.9%	**43.6%**
NILF Other	12.1%	0.8%	0.5%	3.0%	8.6%	38.4%	36.7%	**13.2%**

Transitions from first month to one year later, Ages 16-64, Starting Month in 2019

	Employed at work	Employed absent	Unemployed on layoff	Unemployed looking for work	NILF Retired	NILF Disability	NILF Other	% in Row
Employed at work	78.0%	3.7%	4.4%	2.7%	2.3%	3.0%	6.0%	**31.8%**
Employed absent	50.4%	8.2%	0.0%	5.1%	1.6%	18.7%	16.0%	**1.8%**
Unemployed on layoff	29.6%	21.1%	37.0%	0.0%	12.3%	0.0%	0.0%	**0.2%**
Unemployed looking for work	31.5%	0.1%	3.3%	14.6%	2.7%	16.3%	31.5%	**2.4%**
NILF Retired	2.8%	0.0%	0.0%	0.7%	72.9%	18.1%	5.6%	**6.6%**
NILF Disability	2.6%	0.5%	0.2%	0.5%	7.4%	80.4%	8.5%	**42.9%**
NILF Other	13.0%	1.7%	0.9%	1.7%	5.0%	33.0%	44.7%	**14.4%**

Figure 32b: Transitions from First CPS Month to Fifth CPS Month (One Year Later), by Start Year, People with Disabilities

Transitions from first month to one year later, Ages 16-64, Starting Month in 2020

	Employed at work	Employed absent	Unemployed on layoff	Unemployed looking for work	NILF Retired	NILF Disability	NILF Other	% in Row
Employed at work	83.1%	3.2%	0.8%	2.3%	2.4%	3.7%	4.6%	**29.7%**
Employed absent	61.4%	7.8%	0.0%	5.0%	1.4%	18.2%	6.3%	**2.5%**
Unemployed on layoff	48.1%	0.0%	5.4%	4.8%	2.9%	13.7%	25.2%	**1.4%**
Unemployed looking for work	42.9%	0.3%	1.4%	26.1%	0.4%	10.4%	18.5%	**3.0%**
NILF Retired	3.9%	0.0%	0.0%	0.0%	75.1%	15.8%	5.1%	**7.9%**
NILF Disability	3.3%	0.2%	0.1%	0.4%	7.5%	80.9%	7.5%	**40.3%**
NILF Other	11.2%	0.6%	0.2%	5.0%	5.9%	35.4%	41.8%	**15.2%**

Transitions from first month to one year later, Ages 16-64, Starting Month in 2021

	Employed at work	Employed absent	Unemployed on layoff	Unemployed looking for work	NILF Retired	NILF Disability	NILF Other	% in Row
Employed at work	84.7%	3.5%	0.2%	2.7%	1.6%	2.9%	4.4%	**31.2%**
Employed absent	56.3%	15.2%	0.0%	1.8%	2.2%	19.8%	4.7%	**2.1%**
Unemployed on layoff	43.7%	0.0%	19.9%	13.0%	8.2%	6.6%	8.5%	**0.6%**
Unemployed looking for work	41.7%	0.0%	0.0%	17.5%	5.2%	14.0%	21.6%	**2.9%**
NILF Retired	2.6%	0.5%	0.4%	0.0%	71.4%	21.5%	3.6%	**7.0%**
NILF Disability	3.5%	0.3%	0.0%	0.4%	5.3%	79.1%	11.4%	**40.5%**
NILF Other	13.9%	1.2%	0.0%	5.0%	4.8%	30.6%	44.5%	**15.7%**

Transitions from first month to one year later, Ages 16-64, Starting Month in 2022

	Employed at work	Employed absent	Unemployed on layoff	Unemployed looking for work	NILF Retired	NILF Disability	NILF Other	% in Row
Employed at work	83.6%	4.5%	0.0%	1.6%	2.6%	3.4%	4.2%	**34.4%**
Employed absent	62.7%	9.1%	0.0%	3.4%	9.3%	7.2%	8.3%	**2.4%**
Unemployed on layoff	14.3%	13.5%	8.6%	0.0%	43.7%	0.0%	19.9%	**0.2%**
Unemployed looking for work	28.9%	6.7%	3.9%	18.3%	0.7%	20.2%	21.3%	**3.1%**
NILF Retired	3.8%	1.9%	0.0%	0.1%	72.2%	17.3%	4.6%	**7.1%**
NILF Disability	3.9%	0.0%	0.0%	0.9%	7.0%	80.6%	7.6%	**38.1%**
NILF Other	14.2%	1.0%	0.0%	4.2%	5.0%	33.6%	41.9%	**14.7%**

For people making the transition from an initial status of being employed, various employment characteristics can be included in the analysis of impacts. As described earlier, specific occupations can be linked to a categorization of occupations by contact intensity (three categories: low, medium, and high), and by teleworkability (two categories: teleworkable or not). Since every individual who is employed in the initial period has a specific occupation, this information on contact intensity category and teleworkability is added and utilized as explanatory variables alongside the usual roster of demographic and employment characteristics. Moreover, interaction variables are included on contact intensity and teleworkability with disability status, to determine if these operated differently for people with disabilities. Figure 33 below present OLS regression results for each year from 2017 through 2022, counting the year of the initial labor status, on being employed in the second period (i.e. one year later). Due to the presence of interaction variables, the coefficient on disability status should be viewed in conjunction with the interaction effects; by itself, it represents the impact on having a disability while being employed in a low-contact-intensity, non-teleworkable occupation. Prior to COVID-19, occupations with low contact intensity have a lower chance of remaining employed for people with disabilities, whereas teleworkability results in a higher probability of remaining employed for people with disabilities. The arrival of COVID-19 disrupts these patterns for transitions from 2019-2020, but the positive effect of teleworkability for people with disabilities returns for transitions from 2020-2021 and 2021-2022 before disappearing again in the most recent period, at which time for people with disabilities a large negative impact of high contact intensity appears and a moderate negative impact for medium contact intensity. More generally, a small but statistically significant positive effect for high contact-intensity occupations prior to COVID-19 becomes negative for two years before disappearing. A robustness check using only transitions from the first survey month to the fifth survey month yielded similar results. Another robustness check using logit regressions also yielded similar results, as can be seen in Figure 34 below.

It is important to note that this examines only transitions for people who were already employed in the initial month, possibly missing crucial differences for transitions from other initial labor market statuses. For example, Figure 35 below shows both ordinary least squares and logit regression results on transitions into the labor force for those who in the initial month were not in the labor force for reasons other than retirement or disability. Lower rates of transitions for people with disabilities from the pre-pandemic period have become slightly ameliorated in the post-pandemic period, while controlling for the limited number of factors possible given an initial status of not being employed. Even a small improvement in these transition rates can have substantial long-term consequences leading to a better steady-state labor market situation for people with disabilities.

Figure 33: Employed in Second Period of Those Employed in First, OLS Regression Results

OLS		2017		2018		2019		2020		2021		2022	
		Coeff.	t	Coeff.	t	Coeff.	t	Coeff.	t	Coeff.	t	Coeff.	t
	Disability	-8.1%	-10.2	-9.5%	-12.8	-3.3%	-3.3	-5.1%	-5.3	-5.2%	-6.2	-2.9%	-3.2
Relative to Low Contact Intensity	Med. Contact Intensity	-0.4%	-2.3	0.1%	0.3	-1.2%	-4.7	-0.1%	-0.4	-0.1%	-0.5	0.0%	0.0
	High Contact Intensity	0.8%	3.5	1.3%	5.7	-1.0%	-3.3	-1.1%	-4.0	0.3%	1.2	0.4%	1.3
Relative to Not Teleworkable	Teleworkable	-0.4%	-2.4	-0.1%	-0.4	-1.0%	-4.5	-0.6%	-2.8	0.2%	1.0	-0.6%	-2.3
	Disability * MCI	3.3%	4.1	4.5%	5.9	-0.6%	-0.5	0.7%	0.7	1.2%	1.4	-2.0%	-2.0
	Disability * HCI	3.6%	3.6	2.1%	2.1	-0.6%	-0.5	-1.2%	-1.0	2.0%	1.7	-7.4%	-6.0
	Disability * Telew.	4.5%	6.2	5.1%	7.5	-1.3%	-1.4	4.3%	4.7	2.7%	3.4	1.4%	1.6
	Female	-2.2%	-16.2	-1.8%	-13.1	-2.2%	-12.7	-1.6%	-9.3	-2.3%	-14.4	-1.4%	-7.3
Relative to White NH	Black NH	-3.2%	-15.0	-2.9%	-13.2	-4.5%	-16.1	-3.6%	-12.8	-2.4%	-9.6	-3.2%	-10.8
	Hispanic	-0.3%	-1.4	-1.0%	-5.1	-1.7%	-6.5	-0.4%	-1.6	0.1%	0.4	-0.4%	-1.6
	Asian NH	-1.9%	-6.4	-1.5%	-5.0	-2.5%	-6.5	0.5%	1.5	0.4%	1.2	-1.2%	-2.9
	AIAN NH	-2.1%	-2.8	-0.5%	-0.7	-7.8%	-8.0	-0.6%	-0.6	-1.5%	-1.7	-2.3%	-2.1
	NHOPI NH	-3.0%	-2.6	-1.8%	-1.6	2.3%	1.4	2.7%	1.8	-3.2%	-2.6	0.8%	0.5
	Multiple NH	-1.0%	-1.9	-0.6%	-1.2	-0.3%	-0.4	-0.8%	-1.2	-0.9%	-1.5	-0.8%	-1.3
Relative to Non-Naturaliz. Citizen	Naturalized Citizen	0.3%	1.3	0.8%	3.2	-0.2%	-0.7	-0.3%	-1.0	0.3%	1.2	1.5%	4.4
	Non-Citizen	0.5%	2.0	1.1%	4.3	-0.2%	-0.7	-0.2%	-0.6	0.3%	1.0	0.0%	-0.1
Relative to Less Than High School	High School	3.0%	11.8	3.0%	11.8	1.9%	5.1	2.1%	5.6	3.2%	10.0	2.9%	7.6
	Some College	4.0%	15.2	3.1%	11.7	1.8%	5.0	2.8%	7.6	4.1%	12.3	3.6%	9.1
	Bachelor's	4.5%	15.9	3.6%	12.5	3.8%	9.6	3.6%	9.2	5.2%	14.8	4.6%	11.0
	Post-Graduate	4.5%	14.2	3.8%	12.0	5.4%	12.6	4.3%	10.0	5.6%	14.6	5.2%	11.3
Relative to Construction	Agriculture	-3.4%	-5.0	-0.9%	-1.3	0.4%	0.4	-2.0%	-2.3	-1.3%	-1.6	-0.4%	-0.5
	Mining	0.4%	0.5	1.2%	1.4	-7.1%	-6.0	-3.1%	-2.8	0.3%	0.3	1.9%	1.2
	Manufacturing	-0.7%	-1.9	0.9%	2.5	-1.5%	-2.9	0.6%	1.3	-0.8%	-1.8	-0.2%	-0.3
	Trade Retail/Whol.	-1.0%	-2.6	0.7%	1.9	-2.1%	-4.2	0.3%	0.6	-1.3%	-3.0	-0.9%	-1.8
	Transportation/Utilit.	-0.5%	-1.1	1.6%	3.9	-1.0%	-1.9	0.4%	0.8	0.0%	0.0	-0.1%	-0.2
	Information	-0.6%	-1.1	-0.1%	-0.1	-4.0%	-5.6	0.4%	0.6	-1.0%	-1.5	-3.3%	-4.4
	Finance	-0.1%	-0.2	1.3%	3.4	1.9%	3.6	2.1%	4.2	-0.7%	-1.6	0.0%	0.0
	Prof./Busin. Services	-0.6%	-1.7	0.5%	1.4	-1.0%	-2.1	0.5%	1.1	-1.2%	-2.9	-0.9%	-1.9
	Education/Health	-0.4%	-1.0	1.1%	2.9	-0.9%	-2.0	1.7%	3.6	0.0%	0.1	-0.3%	-0.7
	Leisure/Hospitality	-0.5%	-1.3	-0.3%	-0.8	-8.6%	-16.3	-1.7%	-3.2	-1.8%	-3.8	-1.5%	-2.6
	Other Services	-0.5%	-1.2	0.6%	1.5	-2.9%	-5.1	0.4%	0.7	0.1%	0.2	0.5%	0.9
	Public Administration	0.0%	0.0	1.6%	3.9	1.4%	2.6	1.8%	3.4	-0.3%	-0.6	0.5%	0.8
Relative to Mngt./Bus./Financial	Professional	-0.5%	-2.3	0.0%	0.2	0.5%	1.8	0.9%	3.5	0.4%	1.7	0.4%	1.3
	Service	-2.1%	-7.7	-1.4%	-5.3	-4.3%	-12.3	-2.6%	-7.5	-0.6%	-1.9	-1.8%	-4.7
	Sales	-1.0%	-3.3	-0.3%	-1.1	-1.6%	-4.0	-1.0%	-2.7	-0.1%	-0.3	-0.6%	-1.4
	Office/Admin. Support	-0.4%	-1.7	-0.7%	-2.8	0.1%	0.3	-0.4%	-1.1	-0.7%	-2.4	0.1%	0.4
	Agricultural	-2.0%	-2.4	-2.2%	-2.7	-5.1%	-4.2	-1.3%	-1.1	-1.6%	-1.4	-3.9%	-2.8
	Construction/Extr.	-2.0%	-4.7	-0.4%	-0.9	-4.2%	-7.4	-1.2%	-2.1	-1.8%	-3.6	-1.6%	-2.8
	Install./Maint./Repair	-0.4%	-1.1	-0.9%	-2.2	-1.3%	-2.3	-0.8%	-1.5	0.3%	0.6	-0.4%	-0.7
	Production	-0.9%	-2.4	-1.3%	-3.7	-2.8%	-5.7	-1.8%	-3.7	0.1%	0.2	-0.5%	-1.0
	Transportation	-1.7%	-5.0	-3.0%	-8.5	-5.6%	-12.1	-1.6%	-3.8	-1.8%	-4.7	-2.0%	-4.4
Relative to not MSA	100,000 - 249,999	-0.1%	-0.4	-0.7%	-2.3	-0.1%	-0.4	0.9%	2.3	0.2%	0.7	1.5%	3.7
	250,000 - 499,999	0.4%	1.6	-0.1%	-0.4	-1.8%	-5.1	0.1%	0.4	0.6%	2.0	1.9%	5.0
	500,000 - 999,999	0.9%	3.6	-0.4%	-1.7	-0.8%	-2.4	-0.8%	-2.7	-0.4%	-1.2	1.2%	3.4
	1,000,000 - 2,499,999	0.5%	2.3	-0.2%	-0.9	-1.6%	-5.5	-0.1%	-0.4	0.5%	1.9	1.7%	5.5
	2,500,000 - 4,999,999	1.1%	4.2	-0.6%	-2.6	-3.2%	-9.6	-0.2%	-0.5	0.1%	0.3	1.1%	3.1
	5,000,000+	0.4%	1.9	-0.5%	-2.1	-3.6%	-11.5	-0.9%	-3.1	1.1%	3.8	0.5%	1.4
Age not shown													
Usual Hours Worked not shown													
State of residence not shown													

Figure 34: Employed in Second Period of Those Employed in First, Logit Regression Results

Logit		2017		2018		2019		2020		2021		2022	
		Adj. Coef.	z	Adj. Coef.	z	Adj. Coef.	z	Adj. Coef.	z	Adj. Coef.	z	Adj. Coef.	z
	Disability	-9.2%	-19.3	-10.4%	-22.1	-4.9%	-8.0	-5.2%	-10.0	-5.4%	-11.9	-3.4%	-6.6
Relative to Low Contact Intensity	Med. Contact Intensity	-1.1%	-3.9	-0.3%	-1.0	-2.8%	-8.2	-0.9%	-3.1	-0.6%	-2.4	-0.4%	-1.2
	High Contact Intensity	0.9%	3.1	2.0%	6.4	-2.0%	-5.7	-2.1%	-6.6	0.0%	0.0	0.3%	0.9
Relative to Not Teleworkable	Teleworkable	-0.7%	-2.6	-0.1%	-0.5	-1.4%	-4.5	-0.9%	-3.2	0.5%	2.0	-1.1%	-3.7
	Disability * MCI	3.8%	7.6	4.6%	9.4	0.6%	0.9	0.5%	0.9	0.9%	2.0	-2.5%	-4.6
	Disability * HCI	4.0%	7.2	1.4%	2.6	0.6%	0.9	-1.4%	-2.4	2.4%	4.5	-7.6%	-13.0
	Disability * Telew.	3.9%	8.2	4.3%	8.9	-3.2%	-5.4	3.6%	6.9	1.2%	2.7	0.3%	0.7
	Female	-4.1%	-17.7	-3.6%	-14.9	-3.9%	-13.8	-3.0%	-12.1	-4.2%	-18.5	-2.8%	-10.5
Relative to White NH	Black NH	-5.0%	-18.3	-4.7%	-16.5	-6.4%	-18.9	-5.4%	-18.2	-3.7%	-13.8	-5.4%	-17.2
	Hispanic	-0.7%	-2.4	-2.0%	-7.0	-2.5%	-7.4	-0.7%	-2.3	-0.1%	-0.3	-1.0%	-3.2
	Asian NH	-3.2%	-9.7	-2.5%	-7.1	-3.9%	-9.5	1.1%	3.0	1.3%	3.8	-2.1%	-5.4
	AIAN NH	-3.2%	-6.3	-0.7%	-1.2	-10.5%	-17.5	-1.1%	-1.8	-2.5%	-4.9	-4.6%	-7.5
	NHOPI NH	-5.3%	-8.4	-3.2%	-4.7	3.9%	4.4	5.9%	7.5	-4.5%	-7.9	2.4%	2.7
	Multiple NH	-1.4%	-3.3	-1.0%	-2.3	-0.6%	-1.1	-1.5%	-3.2	-1.5%	-3.6	-1.6%	-3.3
Relative to Non-Naturaliz. Citizen	Naturalized Citizen	0.2%	0.8	1.2%	3.6	-0.7%	-1.9	-0.6%	-1.8	0.4%	1.2	2.8%	7.7
	Non-Citizen	0.3%	1.0	1.5%	4.5	-0.9%	-2.3	-0.7%	-2.1	0.0%	0.0	-0.6%	-1.7
Relative to Less Than High School	High School	3.1%	10.7	3.5%	11.8	1.5%	4.2	1.7%	5.4	2.9%	10.1	2.8%	8.4
	Some College	4.8%	16.4	3.7%	12.2	1.6%	4.4	2.9%	9.1	4.2%	14.3	4.0%	11.6
	Bachelor's	6.0%	19.1	4.9%	15.0	4.9%	12.3	4.6%	13.3	6.6%	21.2	6.4%	17.5
	Post-Graduate	6.3%	18.4	6.2%	17.1	9.8%	22.5	7.2%	19.0	8.5%	24.8	8.5%	21.2
Relative to Construction	Agriculture	-6.4%	-12.8	-1.5%	-2.9	0.8%	1.1	-2.7%	-5.0	-2.6%	-5.2	-0.8%	-1.3
	Mining	0.9%	1.5	2.4%	3.7	-12.0%	-16.9	-6.0%	-9.8	0.8%	1.3	6.3%	6.9
	Manufacturing	-1.4%	-3.5	1.9%	4.7	-2.8%	-5.6	1.2%	2.9	-1.4%	-3.5	0.0%	0.0
	Trade Retail/Whol.	-1.9%	-4.8	1.5%	3.6	-4.1%	-8.3	0.6%	1.6	-2.2%	-5.7	-1.7%	-3.7
	Transportation/Utilit.	-1.0%	-2.3	3.4%	7.8	-2.1%	-4.1	0.9%	2.1	-0.2%	-0.5	-0.3%	-0.6
	Information	-1.3%	-2.6	-0.3%	-0.6	-7.5%	-13.0	0.5%	1.0	-1.7%	-3.6	-6.3%	-12.0
	Finance	-0.2%	-0.6	3.0%	7.0	4.4%	8.3	4.4%	10.2	-1.3%	-3.2	0.1%	0.3
	Prof./Busin. Services	-1.5%	-3.9	0.9%	2.2	-2.6%	-5.2	0.7%	1.7	-2.5%	-6.4	-2.1%	-4.7
	Education/Health	-1.0%	-2.5	2.1%	5.2	-2.6%	-5.3	2.4%	6.0	-0.2%	-0.6	-0.9%	-1.9
	Leisure/Hospitality	-1.0%	-2.5	0.3%	0.7	-10.2%	-20.7	-1.3%	-3.0	-2.4%	-6.2	-2.1%	-4.7
	Other Services	-1.4%	-3.4	1.3%	3.2	-5.1%	-10.0	0.6%	1.4	-0.3%	-0.7	0.7%	1.5
	Public Administration	-0.2%	-0.4	3.5%	8.0	2.9%	5.3	3.3%	7.4	-0.5%	-1.1	1.4%	2.8
Relative to Mngt./Bus./Financial	Professional	-1.1%	-3.6	0.3%	0.8	0.9%	2.5	2.2%	6.8	1.1%	3.6	1.0%	2.7
	Service	-3.8%	-11.5	-2.6%	-7.8	-5.7%	-14.2	-3.2%	-9.1	-0.7%	-2.3	-2.9%	-7.6
	Sales	-1.9%	-5.5	-0.5%	-1.4	-2.6%	-6.1	-1.5%	-4.0	0.1%	0.3	-1.2%	-2.9
	Office/Admin. Support	-1.5%	-4.6	-1.6%	-4.7	-0.3%	-0.8	-0.5%	-1.5	-1.1%	-3.6	0.1%	0.4
	Agricultural	-3.0%	-5.7	-3.8%	-7.0	-9.8%	-13.3	-2.0%	-3.4	-2.3%	-4.2	-6.8%	-10.2
	Construction/Extr.	-4.9%	-11.5	-1.3%	-2.9	-7.8%	-14.9	-2.1%	-4.8	-3.9%	-9.5	-4.0%	-8.3
	Install./Maint./Repair	-1.3%	-3.2	-1.9%	-4.6	-2.5%	-4.8	-1.3%	-3.0	0.3%	0.7	-1.0%	-2.1
	Production	-2.4%	-6.1	-2.9%	-7.2	-4.7%	-9.9	-3.1%	-7.5	-0.3%	-0.7	-1.8%	-3.9
	Transportation	-4.0%	-10.9	-5.7%	-15.1	-9.1%	-20.4	-3.2%	-8.3	-3.2%	-9.1	-4.1%	-10.0
Relative to not MSA	100,000 - 249,999	-0.2%	-0.6	-1.3%	-3.7	-0.3%	-0.8	1.7%	4.5	0.5%	1.6	2.8%	7.2
	250,000 - 499,999	0.8%	2.6	-0.1%	-0.3	-3.0%	-7.5	0.2%	0.5	1.0%	3.3	3.7%	9.7
	500,000 - 999,999	1.6%	5.2	-0.8%	-2.4	-1.2%	-3.1	-1.3%	-4.1	-0.5%	-1.8	2.2%	6.3
	1,000,000 - 2,499,999	1.0%	3.4	-0.3%	-1.1	-2.5%	-6.8	-0.1%	-0.4	0.9%	3.0	3.3%	9.8
	2,500,000 - 4,999,999	2.0%	6.3	-1.3%	-3.9	-4.9%	-12.6	-0.3%	-1.0	0.3%	0.9	2.1%	5.9
	5,000,000+	0.7%	2.5	-0.9%	-2.9	-5.5%	-14.6	-1.5%	-4.6	1.7%	5.8	0.9%	2.6
Age not shown													
Usual Hours Worked not shown													
State of residence not shown													

Figure 35: Labor Force in Second Period of Those NILF Other in First, OLS and Logit Regression Results

OLS		2017		2018		2019		2020		2021		2022	
		Coeff.	t	Coeff.	t	Coeff.	t	Coeff.	t	Coeff.	t	Coeff.	t
	Disability	-7.3%	-7.4	-7.8%	-7.6	-5.2%	-5.0	-10.8%	-9.1	-6.2%	-5.5	-6.0%	-4.4
	Female	-8.3%	-16.0	-8.0%	-14.9	-9.1%	-16.3	-10.7%	-16.8	-9.4%	-15.1	-6.8%	-9.0
Relative to White NH	Black NH	4.8%	5.8	5.7%	7.0	3.5%	3.9	3.6%	3.6	6.5%	6.5	2.3%	1.9
	Hispanic	3.8%	5.5	5.4%	7.8	2.5%	3.4	1.1%	1.3	2.8%	3.4	1.1%	1.1
	Asian NH	-1.7%	-1.8	-4.3%	-4.3	-4.5%	-4.5	-5.9%	-5.2	-1.6%	-1.4	-4.5%	-3.1
	AIAN NH	-3.7%	-1.5	-6.6%	-2.7	-5.1%	-2.0	-3.6%	-1.0	-2.5%	-0.9	-4.9%	-1.1
	NHOPI NH	0.9%	0.3	22.6%	5.5	-2.3%	-0.6	25.0%	3.8	4.6%	1.1	-9.2%	-1.2
	Multiple NH	6.0%	3.4	6.7%	4.0	6.4%	3.6	1.2%	0.6	1.9%	0.9	5.2%	2.3
Relative to Non-Naturaliz. Citizen	Naturalized Citizen	-3.0%	-3.1	-0.1%	-0.2	-0.3%	-0.3	0.2%	0.1	1.5%	1.3	2.0%	1.4
	Non-Citizen	-1.8%	-2.3	-3.3%	-3.9	-2.4%	-2.7	-3.4%	-3.3	-1.9%	-2.0	0.1%	0.1
Relative to Less Than High School	High School	5.6%	7.9	6.1%	8.1	4.4%	5.6	4.2%	4.7	8.5%	9.7	7.5%	7.2
	Some College	7.2%	10.2	7.4%	10.0	6.0%	7.8	6.1%	6.6	8.8%	9.8	9.0%	8.4
	Bachelor's	8.3%	9.2	9.4%	10.0	7.9%	8.3	6.4%	5.7	8.8%	8.0	14.4%	10.9
	Post-Graduate	13.4%	10.7	14.4%	10.9	15.8%	12.0	9.1%	6.1	11.5%	7.9	18.7%	10.5
Relative to not MSA	100,000 - 249,999	0.9%	0.8	-1.2%	-1.0	2.6%	2.0	3.6%	2.4	1.1%	0.8	-7.3%	-4.2
	250,000 - 499,999	-0.8%	-0.7	-1.8%	-1.7	-0.5%	-0.5	1.4%	1.0	-2.1%	-1.6	0.2%	0.1
	500,000 - 999,999	-3.1%	-3.3	-1.8%	-1.8	2.3%	2.3	0.3%	0.3	1.4%	1.2	-3.3%	-2.4
	1,000,000 - 2,499,999	-3.6%	-4.0	-3.1%	-3.3	1.0%	1.1	1.4%	1.2	-0.9%	-0.8	-5.7%	-4.3
	2,500,000 - 4,999,999	-4.1%	-4.1	-1.3%	-1.3	-3.4%	-3.1	-1.2%	-0.9	-3.9%	-3.3	-5.4%	-3.6
	5,000,000+	-2.8%	-3.1	-0.6%	-0.7	-1.9%	-1.9	-1.3%	-1.2	0.1%	0.1	-4.0%	-2.9
Age not shown													
State of residence not shown													

Logit		2017		2018		2019		2020		2021		2022	
		Adj. Coef.	t	Adj. Coef.	t	Adj. Coef.	t	Adj. Coef.	t	Adj. Coef.	t	Adj. Coef.	t
	Disability	-8.7%	-5.5	-8.5%	-6.1	-9.0%	-5.0	-7.8%	-2.4	-3.7%	-3.9	-6.0%	-4.6
	Female	-8.2%	-5.6	-8.0%	-6.0	-8.3%	-3.9	-5.6%	-7.4	-10.7%	-4.3	-5.9%	-4.0
Relative to White NH	Black NH	-8.1%	-8.2	-8.0%	-7.8	-7.3%	-8.7	-8.6%	-9.4	-9.2%	-8.4	-8.2%	-5.6
	Hispanic	4.7%	3.8	4.6%	4.6	5.3%	2.7	3.4%	2.6	3.2%	4.6	5.7%	1.5
	Asian NH	3.7%	3.3	3.7%	4.6	4.9%	2.1	2.4%	0.8	0.9%	2.1	2.4%	0.8
	AIAN NH	-2.0%	-1.4	-1.9%	-3.4	-4.5%	-3.4	-4.8%	-4.1	-5.6%	-1.1	-1.4%	-2.8
	NHOPI NH	-3.7%	-1.7	-3.6%	-3.3	-7.0%	-2.4	-5.4%	-1.5	-3.4%	-1.1	-2.3%	-1.8
	Multiple NH	1.1%	0.4	1.0%	7.5	18.5%	-1.0	-2.6%	6.4	19.3%	1.5	3.8%	-2.7
Relative to Non-Naturaliz. Citizen	Naturalized Citizen	5.6%	3.2	5.5%	3.6	5.9%	3.2	5.6%	0.5	0.9%	0.9	1.6%	2.4
	Non-Citizen	-3.5%	-2.5	-3.5%	-0.1	-0.1%	-0.4	-0.6%	0.1	0.1%	1.0	1.4%	1.2
Relative to Less Than High School	High School	-2.0%	-1.6	-1.9%	-2.7	-3.2%	-2.3	-3.0%	-2.7	-3.5%	-1.5	-1.8%	-0.1
	Some College	6.0%	5.1	5.9%	5.3	6.0%	4.0	4.8%	3.3	4.0%	6.7	7.8%	5.7
	Bachelor's	7.6%	6.5	7.4%	6.4	7.2%	5.2	6.3%	4.6	5.5%	6.8	8.1%	6.7
	Post-Graduate	8.8%	6.6	8.6%	7.3	9.3%	6.4	8.5%	4.5	5.9%	6.2	8.2%	9.5
Relative to not MSA	100,000 - 249,999	13.9%	9.0	13.7%	9.4	13.9%	10.7	16.4%	5.6	8.5%	7.1	10.7%	10.7
	250,000 - 499,999	0.9%	0.6	0.8%	-0.8	-1.1%	1.7	2.5%	2.0	3.0%	0.7	1.0%	-4.1
	500,000 - 999,999	-0.8%	-0.6	-0.8%	-1.2	-1.6%	-0.4	-0.6%	0.8	1.2%	-1.4	-1.9%	0.1
	1,000,000 - 2,499,999	-3.2%	-2.4	-3.2%	-1.3	-1.7%	1.6	2.2%	0.2	0.3%	0.9	1.2%	-2.1
	2,500,000 - 4,999,999	-3.7%	-2.8	-3.6%	-2.3	-2.8%	0.8	1.0%	0.9	1.2%	-0.7	-0.9%	-3.7
	5,000,000+	-4.1%	-3.0	-4.1%	-0.9	-1.1%	-2.4	-3.4%	-0.7	-1.1%	-2.5	-3.4%	-3.3
Age not shown													
State of residence not shown													

Conclusion

The COVID-19 pandemic and its social and economic repercussions have had manifold ramifications, one of which seems to be a considerable improvement in employment for people with disabilities relative to those without, ameliorating a large chronic disparity. The Current Population Survey (CPS) is the primary source of data on these employment issues, and the COVID-19 supplemental questions to the CPS provide interesting information for the period from May 2020 through September 2022, but ultimately are limited in what they can answer given the COVID-specific nature of the questions and the limited timeframe that lacks a pre-COVID reference. Although people with disabilities seemingly took less advantage of telework opportunities enabled by the COVID-19 pandemic, this disparity is more than entirely explained by the characteristics of these individuals and their employment, meaning that conditional on these characteristics people with disabilities were more likely to pursue telework due to COVID-19 than people without disabilities. Considering that many people with disabilities have confronted longstanding difficulties with transportation affecting their ability to be employed and also that many people with disabilities have been at higher risk from COVID-19, this suggests that the potential for telework empowered some people with disabilities to evade longstanding transportation difficulties or to avoid greater hazard from contracting COVID-19 from the normal in-person workspace.

The characteristics of the disabled population are not necessarily stable over time and may have experienced greater flux in the pandemic and post-pandemic environment. From the CPS, it becomes apparent that not only is the relative improvement in employment for people with disabilities real but it occurred already in 2020, once various relevant demographic characteristics are controlled for, with still further relative improvement in 2022 and again in 2023; this is a substantial difference in the timing of the improvement than in the basic employment data. Disparities in the initial employment decline caused by COVID-19 and the measures adopted to mitigate it were driven largely by two characteristics

of employment: contact intensity, which affects ease of social distancing, and possibility for telework, which eliminates entirely the need to be physically proximate to coworkers and customers. The immediate COVID environment of 2020 seems to have been more greatly affected by contact intensity in explaining differences in employment change, but, as the economy emerged from the COVID environment into a post-COVID era, the teleworkability of occupations became more important.

The increased allowance of employers for telework may have particularly benefited people with disabilities, who tend to face greater barriers to employment from transportation difficulties. Supplemental questions to the CPS on the topic of telework were added in October 2022, with one question referencing February 2020, permitting analysis of the period just before COVID-19 impacted employment in the United States versus the most recent post-COVID period. Results from this source lend support to people with disabilities utilizing telework more frequently than people without disabilities even before COVID-19 and becoming relatively even more likely to telework after COVID-19. This view is only partly corroborated by the CPS Disability Supplements from July 2019 and July 2021, though there might be some limitations from a low sample size. Similarly, the American Community Survey (ACS) from 2019 to 2022 shows an increasing relative propensity for workers with disabilities to telecommute, but much smaller than that found from the CPS telework supplemental questions. The American Time Use Survey (ATUS) in conjunction with the CPS can also be employed to investigate telework, but it does not seem to indicate any statistically significant results for disability status, though this analysis is hampered by the even lower sample sizes from this source than in the CPS Disability Supplements.

The semi-panel nature of the CPS renders it possible to track individuals across the eight months in which each household is included in this survey, with certain limitations. Matrices displaying all possible transitions between labor market statuses, from an initial month to a second month one year later, are informative as to differences between people with and without disabilities, showing that

transition rates into employment or into the labor force are lower for people with disabilities across all initial labor market statuses. These longitudinal comparisons also allow for an examination of disability subgroups, depending on whether this status changed between periods, and for comparing different years pre-, during, and post-pandemic. This enables a better understanding of this population and how circumstances have changed over the last several years. Finally, regression analysis on specific transitions generates some interesting results concerning contact intensity and telework in regard to the probability of remaining employed, while others suggest amelioration in pre-pandemic disparities regarding entry or re-entry into the labor force.