

UNEMPLOYMENT BENEFITS

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Expirations of Pandemic Jobless Programs Caused an Unprecedented Drop in Access to Unemployment Insurance

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DECEMBER 2022



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Executive Summary

At the start of the pandemic, Congress temporarily expanded Unemployment Insurance (UI) programs through the federal CARES Act. In this report, we mainly focus on Pandemic Emergency Unemployment Compensation (PEUC), which expanded the weeks of UI eligibility. This and other emergency provisions were set to expire on September 4, 2021, which is commonly referred to as a “benefits cliff.” However, policymakers in some states chose to end these programs before that date. This policy report evaluates the impact the expansion and expiration of these programs had on the US labor market using data from the U.S. Department of Labor, the Current Population Survey, and California’s Employment Development Department.

Using national data, we find the benefits cliff caused a dramatic drop in the proportion of unemployed workers that are covered by UI, which was three times as large as a similar cliff at the end of the Great Recession. To measure coverage, we focus on the UI reciprocity rate, which is the share of jobless workers who received UI benefits. In comparison, gains to employment were modest at most. Our primary measure of employment is the percentage of the adult population that is employed in each month.

Data on the demographics of extension program beneficiaries is only available in California, and it suggests that workers from disadvantaged backgrounds were disproportionately affected by the expirations. In California, UI claimants who were relying on the PEUC extension program when it expired were more likely to identify as Black or women. Older and less educated workers were also more impacted by these programs expiring.

As a whole, our results paint a positive picture of the effects of the federal UI expansions on the U.S. labor market. Our findings of a dramatic decline in UI reciprocity without a meaningful rise in employment imply the pandemic UI expansions increased coverage and bolstered incomes of unemployed workers without a substantial effect on employment. As in many other studies, these results rely on comparisons of changes in outcomes between states over time. The assumptions underlying our research design are discussed in further detail in the report.

KEY TAKE-AWAYS

- **Across all states, the turnoffs of pandemic UI expansions led to a 22 percentage point decline in the fraction of unemployed workers who received unemployment benefits.** Approximately 3.1 million Americans lost access to UI benefits without finding jobs as a result of the turnoffs, according to our difference-in-differences analysis.
- **The 2021 benefit expirations led to much larger reductions in UI coverage in absolute magnitude than the Great Recession cliff.** At the final turnoff of the Great Recession UI extensions, recipiency declined by eight percentage points, compared to the 22 percentage point drop in 2021. This is at least in part because the Great Recession turnoffs began at a time when recipiency was already substantially lower, at only 20%.
- **The expiration of benefits spurred little immediate return to work. Instead, our results suggest the majority of workers who stopped receiving UI benefits did not find jobs in the ensuing months.** Our cross-state analysis of labor supply effects focuses on the share of the adult-age population that is employed. There is little change in employment at the benefit cliff, and we can rule out improvements in the employment rate as large as approximately one half of a percentage point.
- **California's cliff at the termination of PEUC in September 2021 was even more severe, partly because coverage was high.** California saw a 48 percentage point decline in the fraction of unemployed workers who received unemployment benefits. In August of 2021, 74% of unemployed Californians were receiving unemployment benefits. One month after the cliff, this number fell to 26%.

- **In California, Black claimants were disproportionately impacted by the expiration of PEUC.** California is the only state where we are able to provide demographic breakdowns of PEUC claimants. PEUC claimants were 4% more likely to be Black, as compared to regular UI claimants. White, Hispanic, and Asian American claimants were all less likely to be receiving PEUC benefits compared to regular UI.
- **Impacts were also more pronounced in California among women, older and less educated claimants, and retail and food service workers.** PEUC claimants were more likely to hold only a high school diploma compared to regular UI claimants, and PEUC claimants were also less likely to hold a bachelor's or advanced degree. More women than men were receiving PEUC benefits when it ended. Additionally, PEUC claimants were about 34% more likely to be over the age of 64 compared to regular UI claimants.
- **States that opted for early termination of UI expansions lost out on fiscal stimulus.** If these states had not opted out early, we project total government expenditures would have been between \$4.1 billion and \$7.7 billion higher, of which 53% would have come from states and 47% from the federal government. A back-of-the-envelope calculation suggests the additional stimulus could have increased national GDP in the third quarter of 2021 by between 0.11% to 0.25%. This calculation uses prior estimates of consumption effects from the Great Recession and from stimulus checks sent during the pandemic.

1. Introduction

This report examines the impact of the end of pandemic unemployment insurance (UI) expansions on access to unemployment benefits in the U.S. with an additional focus on California. It quantifies how many unemployed workers stopped receiving unemployment benefits once the benefit expansion ended, and it assesses whether any beneficial effects on employment can be detected as a result of this termination. To capture changes in access, we use the UI reciprocity rate, which is defined as the fraction of unemployed workers that are claiming UI benefits and is the canonical measure of access to UI benefits in the U.S.¹ In addition, for California we assess the differential effects of the turnoff of the Pandemic Emergency Unemployment Compensation (PEUC) program by demographic group and industry.

In response to the economic crisis posed by the COVID-19 Pandemic, the U.S. government implemented the PEUC program on March 27, 2020, as part of the federal CARES Act. PEUC took effect after a worker had used up their regular UI benefits by providing them with additional weeks of eligibility for UI. The program originally allowed workers to claim an additional 13 weeks of UI benefits, but this was expanded to 24 weeks in December 2020 and then to 53 weeks in March 2021. PEUC provided a lifeline for millions of workers during the pandemic. In the month prior to turnoff (combining May from early turnoff states and August from normally scheduled turnoff states), about 4.7 million claimants were on the PEUC program, with about 1 million of these claimants coming from early turnoff states and 3.7 million coming from the normally-scheduled turnoff states. The CARES Act also created additional programs for unemployed workers, including the Federal Pandemic Unemployment Compensation (FPUC) program, which granted additional funds to UI claimants, thereby substantially increasing transfers to workers and the stimulus effect of the PEUC program.² In addition, the Pandemic Unemployment Assistance (PUA) program provided insurance for workers that are typically ineligible for UI (such as the self-employed).³ In this policy report, we focus our analysis on the regular UI program due to concerns about fraud in the PUA program and how that could impact the quality of the data and our research.⁴

1 This report defines reciprocity as the percentage of U6 unemployed workers who are receiving unemployment benefits. We view U6 as a more accurate definition of unemployment during the pandemic; more details on the differences are explained in Appendix Section 2.

2 The Federal Pandemic Unemployment Compensation (FPUC) program is also often referred to as the Pandemic Additional Compensation (PAC) program. Both names refer to the same program.

3 In total, the UI expansions during the pandemic were estimated to cost the federal government nearly \$700 billion (Committee for a Responsible Federal Budget published at www.covidmoneytracker.org).

4 California's Employment Development Department has found that, from March 2020 through January 2021, 95% of known Californian fraudulent UI claims were from the PUA program, and the Department of Labor has identified the PUA program as being "particularly susceptible to fraud". See "California Unemployment Fraud by the Numbers" published by the California Employment Development Department: <https://edd.ca.gov/siteassets/files/Unemployment/pdf/fraud-info-sheet.pdf>.

In normal economic times (such as before the pandemic), only a small fraction of unemployed workers receive UI benefits, potentially limiting the impact of the program.⁵ In economic downturns, expansions to UI are typically utilized as policy tools to sustain consumer demand and protect workers from the adverse effects of long-term unemployment. Moreover, UI exhaustion is very costly to workers (e.g., see Rothstein and Valletta 2017) and rises substantially during recessions, suggesting that UI extensions during recessions can substantially improve access to UI benefits (Schmieder, von Wachter, and Bender 2012).

PEUC and the other CARES Act UI expansions ended for all states on September 4, 2021. However, eighteen states chose to turn off these programs early in June 2021.⁶ These states cited labor shortages as being the key motivation for ending PEUC and other pandemic unemployment programs, as they believed discontinuing these programs would incentivize more workers to find employment. For example, Governor Parson of Missouri has called “excessive federal unemployment programs” a key driving force of the state’s “labor shortages” in his announcement on ending PEUC, and Governor McMaster of South Carolina argued that the PEUC benefits incentivize “workers to stay at home rather than applying for one of the over 86,000 open positions in the State of South Carolina.”⁷ Our research design utilizes these staggered turnoff dates in order to implement a “difference-in-differences” model to better isolate the impact of the turnoff.

In [Section 2](#), we analyze the effect of ending the UI expansions on the UI reciprocity rate in California in September 2021. In [Section 3](#), we turn to a national examination of this impact on access through the use of event study and difference-in-differences designs, examining both the states that ended these programs in September and the states that ended them early in June. In [Section 4](#), we apply these research designs to labor-supply outcomes, namely the employment-to-population ratio, the unemployment rate, and the labor participation rate. In [Section 5](#), we compare our results to the reduction in access that occurred at the end of the Great Recession and in [Section 6](#) we examine the demographics of affected Californian claimants. In our [conclusion](#), we perform a back-of-the-envelope calculation on the potential GDP impacts of the turnoffs and provide our arguments why the PEUC program, rather than the PUA or FPUC programs, was mostly responsible for the results found in this report.

5 See <https://oui.doleta.gov/unemploy/chartbook.asp> by section 13) Reciprocity Rate. For example, in 2016, only 25% of unemployed workers on average across all states were receiving UI benefits.

6 Section 1 of the Appendix lists all 18 states. An additional 4 states (Alaska, Arizona, Florida, and Ohio) chose to have PEUC and PUA remain intact but ended the Federal Pandemic Unemployment Compensation (FPUC) program in June and July 2021. In this report, we classify these states as normally-scheduled turnoff states. See Appendix Section 17 for our justification for this classification.

7 For Governor Parson’s statement, see: <https://governor.mo.gov/press-releases/archive/governor-parson-announces-missouri-end-all-federal-pandemic-related#:~:text=Jefferson%20City%20%E2%80%94%20In%20order%20to,pandemic%2Drelated%20unemployment%20insurance%20programs> and for Governor McMaster’s statement, see: <https://governor.sc.gov/index.php/news/2021-08/statement-gov-henry-mcmaster-dismissal-lawsuit-challenging-return-pre-pandemic>

2. UI Access in California Dropped by 48 Percentage-Points

In California, the PEUC program, which provided additional weeks of UI benefits, ended on the national turnoff date of September 4, 2021. [Figure 1](#) shows the substantial impact this turnoff had on jobless workers' access to UI benefits. The most common measure of UI access is the proportion of unemployed workers receiving UI benefits (the UI reciprocity rate). If the benefits cliff caused many workers to exhaust benefits without finding employment, one would expect the UI reciprocity rate to fall. Conversely, this rate at which jobless workers received UI could hypothetically remain constant through the cliff if all claimants who exhausted transitioned seamlessly to employment. Put differently, by analyzing the reciprocity rate rather than just the number of claimants on PEUC when the program expired, we partly incorporate the notion that some UI claimants whose benefits are terminated find employment, potentially lessening the impact of the expirations.

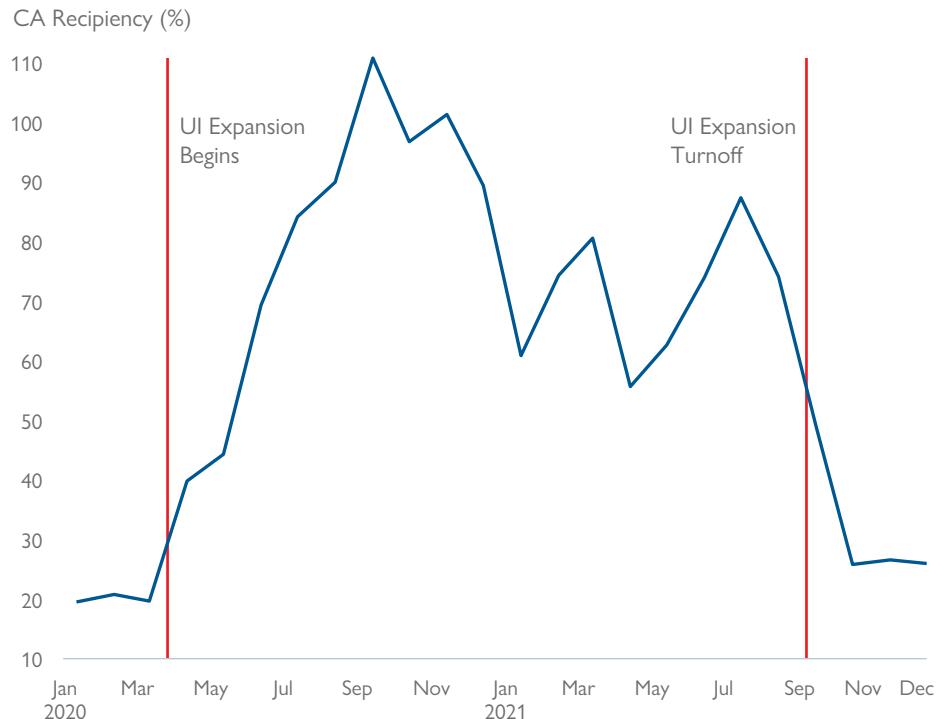
[Figure 1](#) shows the program expiration in early September 2021 caused a massive drop in UI reciprocity over the following several months, meaning that many jobless Californians lost coverage without finding employment. Prior to the turnoff, 74% of unemployed Californians were receiving UI benefits. This rate declined by 48 percentage points to 26% of unemployed workers just one month after the turnoff, representing a 65% decline in access.^{8,9} In the second quarter of 2021, California's UI recipients received on average \$316.90 in regular benefits per week, implying that California's workers collectively lost about \$380,000,000 a week in regular UI benefits.¹⁰ If one adds the weekly \$300 supplement provided by FPUC, the average benefit nearly doubles to \$616.90, and the claimants removed from the UI program collectively lost about \$725,000,000 per week in total benefits. If we further include the claimants that remained on the UI program but also lost FPUC benefits, total UI disbursement declined by about \$889,000,000 per week.

8 Section 8 of the Appendix provides California regression results, comparing the three months before and after the turnoff date.

9 This amount, and all unemployment numbers in this report unless otherwise stated, use the U6 definition of unemployment which includes discouraged workers. An explanation of this choice and the data used can be found in Section 2 of the Appendix.

10 See https://oui.doleta.gov/unemploy/data_summary/DataSum.asp.

FIGURE 1: UI Reciprocity Rate in California around Federal Expiration of UI Expansion



Notes: This figure shows the UI reciprocity rate in California. The vertical red line on March 27th represents when the UI expansions began, and the vertical red line on September 4th represents when the UI expansion programs ended in California. Reciprocity rates are defined as the percentage of unemployed (U6) workers that are receiving UI.

The descriptive analysis of California provides an important case study of the potential effect of benefit turnoffs on UI reciprocity. However, because the economy was generally recovering at this time, a simple comparison of outcomes before and after the turn-off may not fully capture the impact of the benefit turnoffs.¹¹ The remainder of this brief leverages the staggered turn-off across states to better account for changes over time that occurred nationally across the U.S.

11 In practice, we find that reciprocity rates were only slightly declining in the months prior to the turnoff. However, the fact that the unemployment rate was steadily improving underscores the need for a research design.

3. UI Expirations Caused a National 43-45% Drop in Access

To analyze the effect of the turnoff of expansion programs at the national level, we group states according to whether they terminated benefits in June 2021 or kept the federal expiration date in September.¹²

As a benchmark, one can examine the mechanical change in claimants that resulted from the turnoff of the PEUC program. As the PEUC program was discontinued following the turnoffs and workers can only claim PEUC benefits once they have exhausted all of their regular UI benefits, we expect all PEUC claimants to be removed from the UI program following the turnoff. As there were 4.7 million PEUC claimants in the months directly before the turnoff dates (combining May PEUC claimants in early turnoff states, July PEUC claimants in Louisiana, and August PEUC claimants in normally-scheduled turnoff states), mechanically 4.7 million claimants lost benefits as a result of the turnoffs.¹³ However, this amount may overstate the actual impact of the turnoff on UI access. It does not take into account that state labor markets were improving at this time, causing the number of jobless workers to decrease independently of the turnoffs. In addition, it does not factor in that the turnoffs may have caused some of these claimants to return to work.

Our first approach to assessing the impact of the UI expansion turnoffs on the reciprocity rate is an event study. An event study framework functions by comparing an outcome before and after an event, with the change in this outcome inferred to have been caused by this event. This event study approach can yield precise and credible estimates when the timing of a policy change occurs as good as randomly and for outcomes that can move sharply, such as the number of UI beneficiaries or the reciprocity rate. In such cases, no further assumptions or a control group are required because such sudden movements are unlikely to have occurred in the absence of a major policy change. We implement this approach by simply comparing the outcomes shortly before and after the UI expansion turnoff.

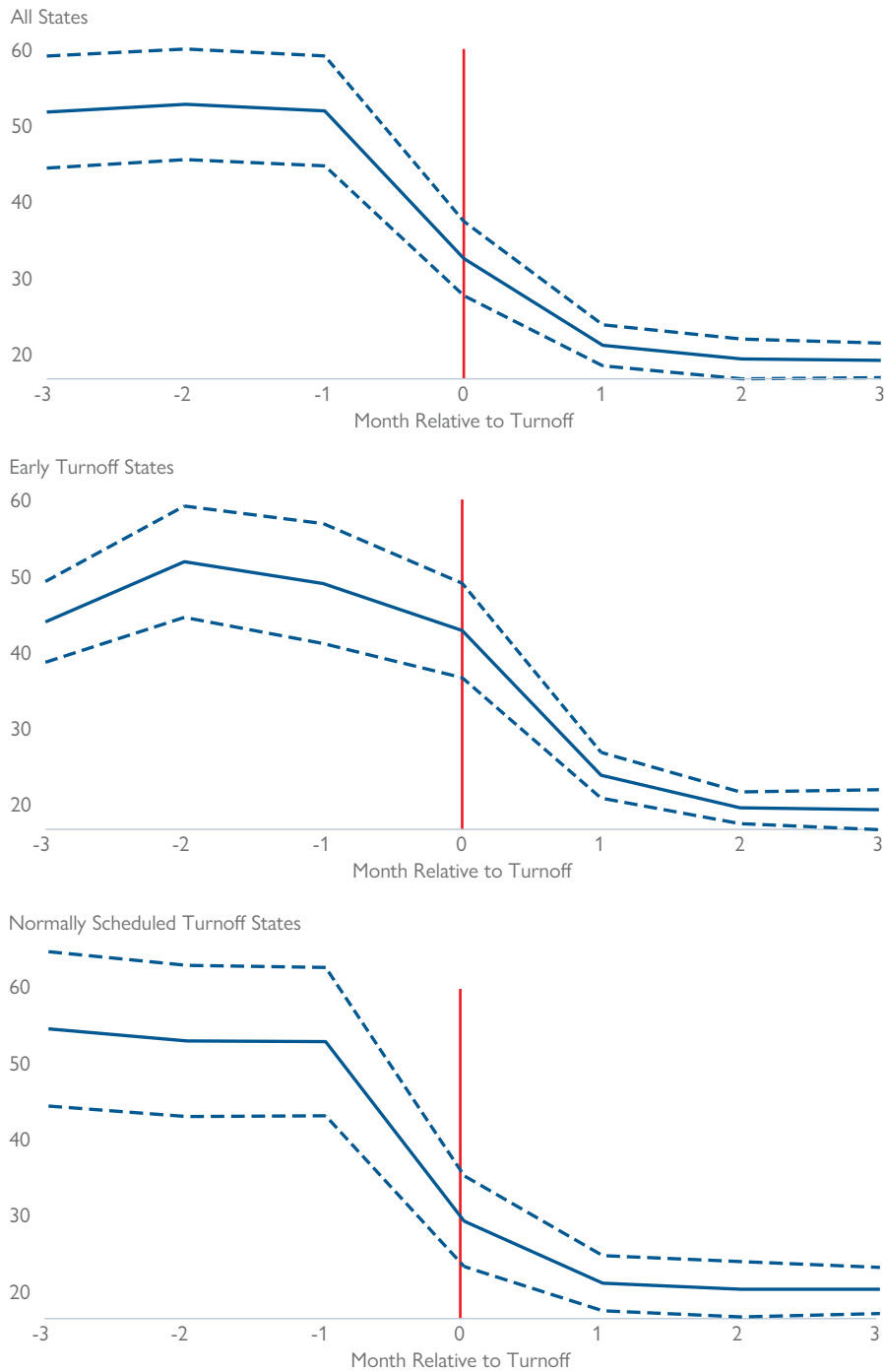
¹² We omit from our analysis one state (Louisiana) that terminated the benefits in late July.

¹³ A table displaying these mechanical changes in claimants around the time of the turnoffs can be found in Section 13 of the Appendix.

To allow for a simultaneous examination of all states despite the differences in when these states ended the UI expansion programs, we perform our event study relative to each state's individual turnoff date. We normalize the month of UI expansion expiration for each state (either June or September 2021) to month 0. The first panel of [Figure 2](#) displays the population-weighted mean reciprocity rate across all states using this pooling method.

The figure illustrates that UI expansion turnoffs represented a dramatic decrease (of about 30 percentage points) in the share of unemployed workers who receive UI benefits. Prior to the turnoffs, about 50% of unemployed workers nationally were receiving UI benefits, but this rate declined to an average of around 20% two months after states' turnoff dates. The remaining two panels show the population-weighted reciprocity for the early and regular turnoff states separately. In both groups of states, we see sharp declines in the UI reciprocity rate of a similar order of magnitude before and after the month of UI turnoff, despite these turnoffs occurring on different dates.

FIGURE 2: Event Study of Reciprocity Rates Around UI Expansion Expiration¹⁴



Notes: This figure presents event studies of the reciprocity rate around the time of withdrawal from UI expansions. The top panel displays the population-weighted mean reciprocity rate for all states (excluding Louisiana) combined. The middle panel displays this outcome for just the states that turned off UI expansion programs early in June 2021. The bottom panel displays this outcome for just the states that turned off the UI expansion programs on September 4, 2021. In the top panel, the reciprocity rates are combined relative to each state's turnoff, meaning that -1 on the x-axis is averaging May reciprocity rates from early turnoff states and August reciprocity rates from normally scheduled turnoff states. Louisiana is excluded from all panels. The dotted lines represent the upper and lower bounds for the 95% confidence interval.

¹⁴ As shown in this figure, the month of the turnoff was a transitory month where the number of PEUC claimants was rapidly declining. In this report, we classify the turnoff month as being in the pre-turnoff period. A discussion of this decision as well as regressions that drop the turnoff month can be found in Section 12 of the Appendix. Similar results hold in these alternate specifications.

Table 1 presents the results of the event study analysis in regression form pooling the early cutoff and September cutoff states.¹⁵ Here, the coefficient on the variable *Post Turnoff* represents the impact of UI expansion turnoffs on the reciprocity rate. *Post Turnoff* is an indicator variable equal to 1 when the observation occurs in a month post-turnoff (it is not equal to 1 during the month of the turnoff). Column 1 does not include any controls, while Column 2 includes a linear time control which is intended to capture changes that happen smoothly over time such as a gradual reopening of the economy. Consistent with the graphical analysis, regression results are similar with or without the linear time control, though the slightly smaller coefficient when the time trend is included is suggestive that the simple event study slightly overstates the impact.¹⁶

TABLE 1: Impact of UI Expansion Turnoffs on UI Reciprocity through Event Study, Pooling Early Cutoff and September Cutoff States

OUTCOME: RECIPIENCY RATE		
	Event Study (1)	Event Study with Linear Trend (2)
Post Turnoff Period	-27.543 *** (3.62)	-22.438 *** (6.05)
Month		-1.459 (0.94)
Constant	47.265 *** (4.97)	57.031 *** (4.96)
N	343	343
R2	0.313	0.323
Mean Reciprocity in Month Before Turnoff	52.0	52.0

Notes: Standard errors in parentheses. Standard errors clustered at the state level, and results are weighted by state populations in 2021. Data is restricted to three months before and after each state's turnoff. Excludes Louisiana.

* p<0.05 ** p<0.01 *** p<0.001

15 Mathematically, this event study regression (Table 2, Column 1) can be represented by the equation $Outcome_{it} = Post\ Turnoff_{it} + Constant_{it}$ and with linear controls (Table 2, Column 2) can be written as $Outcome_{it} = Post\ Turnoff_{it} + Month_t + Constant_{it}$, where *Outcome* is the outcome variable of interest (such as the reciprocity or unemployment rate), *Post Turnoff* is an indicator variable equal to 1 if the observation occurs after the state has had PEUC extensions turned off, and *Month* is the month of the observation (equal to 3 through 12). The subscript *i* refers to the state and *t* refers to the date of the observation. Alternate specifications that use fixed effects models can be found in Section 10 of the appendix. These alternate specifications produce similar results.

16 Regressions with time and state fixed effects are not shown here for brevity and can be found in Section 10 of the Appendix (the results still hold but are slightly less precise).

Both specifications support the conclusion that benefits turnoffs resulted in large declines in access to UI. While the coefficient of the linear trend is not significantly different from zero, the estimate in Column 2 provides an indication of the potential role of improving economic conditions. The event study regression in Column 2 suggests that the turnoffs caused a 22.4 percentage-point decline in the reciprocity rate. Put differently, reciprocity fell by 43% from an average pre-turnoff rate of 52%, resulting in an average post-expiration reciprocity rate of about 30%. Given the 14.2 million unemployed aggregated across all states one month prior to turnoff, these results suggest that the turnoff led to 3.1 million unemployed workers losing access to UI. This result is smaller than the 4.7 million PEUC claimants benefiting from the program when it turned off, possibly because some PEUC claimants returned to work around this time, either due to gradual improvements in the economy or the effect of not being covered by UI.¹⁷

To obtain a more accurate representation of the reduction in coverage that would have happened in the absence of the PEUC turnoff, we next compare the changes in outcomes of early turnoff (“treatment”) states during the summer of 2021 to changes in outcomes of normal turnoff (“control”) states that had not yet turned off benefits but were slated to do so that fall. We limit our analysis to the period from May to August of 2021, meaning that the control states never turn off the expansion programs during the timeframe of this analysis.¹⁸

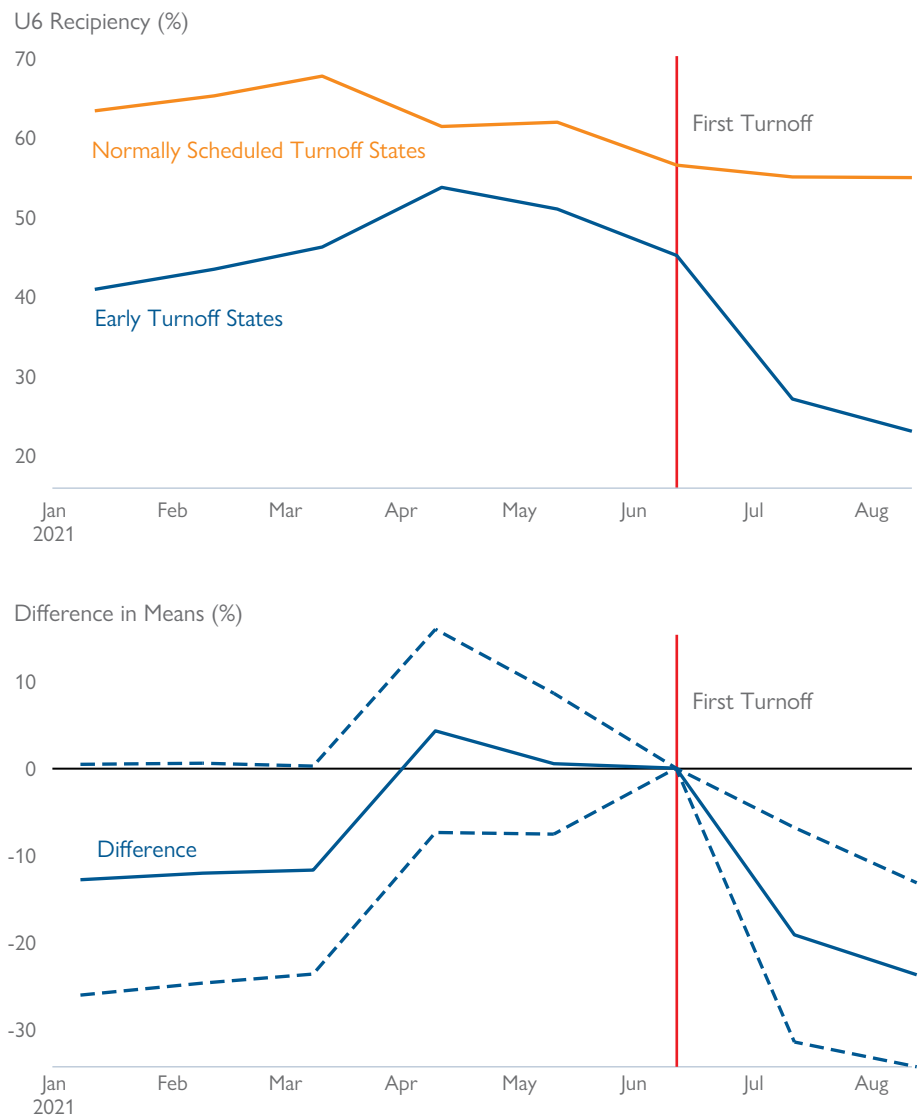
The key assumption of this difference-in-differences analysis is that the treatment and control states would have experienced the same trends in UI access had the treatment not occurred. This assumption allows us to interpret any resulting change in the gap between the two groups to have been caused by the UI expansion expiration. To assess the validity of this so-called “parallel trends” assumption, we examine the months prior to the turnoff to determine if the control and treatment groups were trending in parallel, at least prior to the policy changes. The top panel of Figure 3 depicts the population-weighted average reciprocity rates for early and normally scheduled turnoff states. This figure provides visual evidence that the two groups of states trended in parallel prior to the turnoff. Before the turnoff, the gap between the two groups remained relatively constant, with both groups experiencing a rise in reciprocity rates from January through April and then a slight decline prior to the first turnoff.

17 See Section 13 of the Appendix for a more detailed accounting of the number of claimants on regular UI and PEUC for both groups of states. Table A22 contains exact estimates: The point-estimate from our difference-in-difference framework implies 3,136,902 workers lost access to benefits without finding jobs, with a statistical lower bound of 1,215,462 and an upper bound of 5,058,342.

18 Our difference-in-differences regression can also be expressed mathematically as $Outcome_{it} = Post\ Turnoff_{it} + Early\ Turnoff_{it} + (Post\ Turnoff \times Early\ Turnoff)_{it}$, where *Outcome* is the outcome variable of interest (such as the reciprocity or unemployment rate), *Post Turnoff* is an indicator variable equal to 1 if the observation occurs after the state has had expansions turn off, *Early Turnoff* is an indicator variable equal to 1 if the state withdrew in June, and *Post Turnoff X Early Turnoff* is an interaction term equal to 1 if the observation is both from a state that withdrew early and the observation occurs post turnoff. The subscript *i* refers to the state and *t* refers to the date of the observation. Alternate specifications are in Section 10 of the Appendix (the same results hold but are less precise).

The bottom panel of [Figure 3](#) provides a more statistically rigorous examination of these trends. This panel displays the difference between the averages of the two groups, normalized so that this difference is 0 at the time of the first turnoff in June. The dotted lines represent a 95% confidence interval for this difference. Before the first June expirations, the difference between these averages remained indistinguishable from 0. These results are consistent with our assumption that the two groups would have continued to trend in parallel had the early turnoffs not occurred.

FIGURE 3: Trends in Reciprocity Rates



Notes: In the first panel, the population-weighted average reciprocity for early and normally scheduled turnoff states is shown. In the second panel, the difference between these two trends (early minus normally scheduled turnoff) is shown relative to the difference in June, with the dashed lines representing the 95% confidence interval for this difference. Excludes Louisiana.

The results of our difference-in-difference analysis for reciprocity rates are displayed in [Table 2](#). The coefficient on the variable Early Turnoff State X Post Turnoff represents the impact of the expansion turnoff on reciprocity.

TABLE 2: UI Expansion Turnoff’s Impact on Reciprocity through Difference-in-Differences

OUTCOME: RECIPIENCY RATE	
	Difference-in-Differences
Post Turnoff Period	-5.459 (4.51)
Early Turnoff State	-11.020 (9.08)
Early Turnoff State X Post Turnoff Period	-22.015 ** (6.88)
Constant	58.633 *** (7.15)
N	245
R-sqr	0.162
Mean Reciprocity in May	57.586

Notes: Standard errors in parentheses. Standard errors clustered at the state level, and results are weighted by state populations in 2021. Data covers April through August of 2021. “Mean Reciprocity in May” refers to the combined population-weighted average of early and normal turnoff states. Excludes Louisiana.

* p<0.05 ** p<0.01 *** p<0.001

These findings indicate that reciprocity fell by 22 percentage points among early turnoff states (relative to the control states) due to the termination of PEUC benefits. This represents a 45% decline from an average pre-turnoff rate of 49% among these early turnoff states, resulting in an average post-expiration reciprocity of 27%. This implies that had the early turnoff states maintained the UI expansion programs until the national September cutoff, about 730,000 fewer claimants would have lost access to benefits prior to September 4th (see Table A22 in Appendix Section 13). Consistent with the findings from the event study, the results imply about 3.1 million unemployed workers lost access to UI benefits as a result of the two benefit turnoffs.

A flipped version of this analysis, in which the early turnoff states are treated as the control and the normally scheduled turnoff states as the treatment group, can be found in section 6 of the appendix. Consistent with our event study analysis, we find similar results from that alternative specification. However, it is less clear-cut whether this alternative specification satisfies the parallel trends assumption, possibly because the early-turnoff states are still being impacted by the June turnoffs.

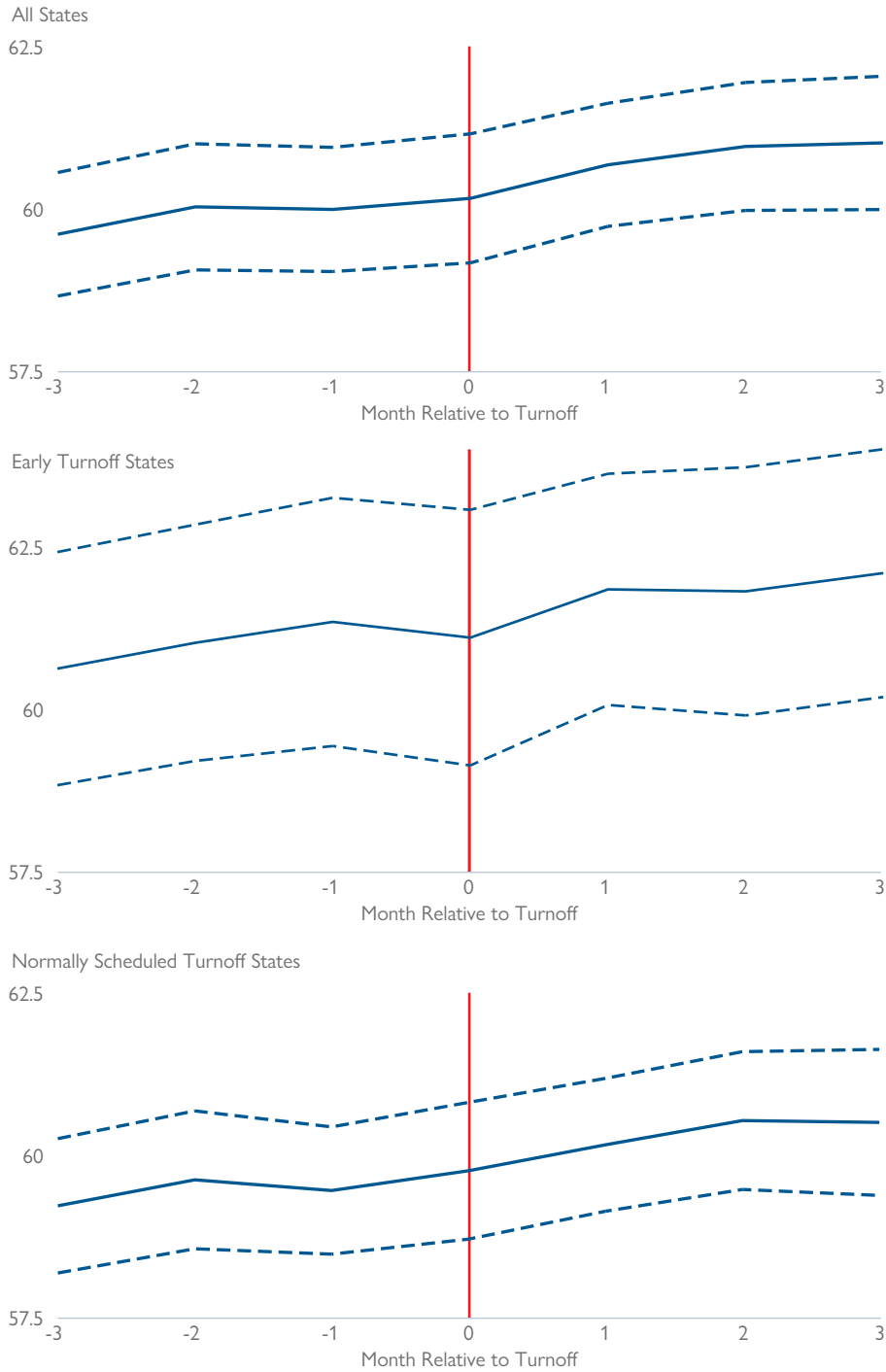
4. Benefits to Employment were Small at Best

Next, we ask whether the end of UI expansions spurred a return to work. We extend our difference-in-differences design to three standard metrics of the state of the labor market: the unemployment rate, the labor force participation rate, and the employment-population ratio. The unemployment rate concept we use (U6) measures the percent of workers who are willing to work but are unable to find employment, have become discouraged from searching for employment, or are only employed part-time but wish to be employed full time.¹⁹ The labor force participation rate also uses the U6 unemployment definition, meaning it measures the percent of adults who are either employed or fit the previous broad definition of unemployed. The employment-to-population ratio measures the percent of adults who are employed divided by each state's 2019 adult population, and hence is unaffected by the exact definition of unemployment, which may be influenced by worker reporting behavior.

Figure 4 shows graphically that we find no strong effect of the termination of pandemic UI expansions on employment levels. In neither early nor regularly scheduled turnoff states does a visual break in trend emerge around the time of turnoffs. The other two labor outcomes we examined (unemployment and labor participation) exhibit similar patterns, and those results are shown in Appendix Section 9.

¹⁹ Results using U3 rate and comparison to results found by Coombs et al. can be found in Section 11 of the Appendix.

FIGURE 4: Event Study of Employment-Population Ratios around UI Expansion Expiration, all States²⁰



Notes: This figure presents event studies of the EPOP rate around the time of withdrawal from UI expansions. The top panel displays the population-weighted mean EPOP rate for all states (excluding Louisiana) combined. The middle panel displays this outcome for just the states that turned off expansion programs early in June 2021. The bottom panel displays this outcome for just the states that turned off expansion programs on September 4, 2021. In the top panel, the EPOP rates are combined relative to each state's turnoff, meaning that -1 on the x-axis is averaging May EPOP rates from early turnoff states and August reciprocity rates from normally scheduled turnoff states (excludes Louisiana). The dotted lines represent the upper and lower bounds for the 95% confidence interval.

²⁰ As shown in this figure, the month of the turnoff was a transitory month where the number of PEUC claimants was rapidly declining. In this report, we classify the turnoff month as being in the pre-turnoff period. A discussion of this decision as well as regressions that drop the turnoff month can be found in Section 12 of the Appendix. Similar results hold in these alternate specifications.

Table 3 displays difference-in-difference estimates of the impact of turnoffs on these three variables, with Column 1 using the employment-to-population ratio as the outcome, Column 2 using the unemployment rate as the outcome, and Column 3 using the labor force participation rate as the outcome. The coefficient on the variable “Early Turnoff State X Post Turnoff Period” represents the impact of turnoffs on the outcome variables. For none of our outcomes do we find impacts of the expansion program expirations that are statistically different from zero at conventional levels. In other words, we do not find statistical evidence that terminating these programs early led to an increase in employment, reduction in the unemployment rate, or a change in the labor force participation rate.²¹

TABLE 3: UI Expansion Turnoff’s Impact on the Labor Outcomes

	LABOR OUTCOMES		
	Employment to Population Ratio	Unemployment Rate (U6)	Labor Force Participation Rate
Post Turnoff Period	0.636 *** (0.14)	-0.621 ** (0.22)	0.503 ** (0.14)
Early Turnoff State	2.113 * (1.03)	-2.070 * (0.84)	1.246 (1.06)
Early Turnoff State X Post Turnoff Period	0.053 (0.30)	-0.292 (0.29)	-0.253 (0.33)
Constant	59.001 *** (0.65)	10.167 *** (0.63)	63.382 *** (0.55)
N	245	245	245
R-sqr	0.080	0.194	0.028
Mean of Outcome Variable in Month Before Turnoff	59.6	9.4	63.6

Notes: Standard errors in parentheses. Standard errors are clustered at the state level, and results are weighted by state populations in 2021. Data covers April through August of 2021. The employment-to-population ratio is derived by dividing each state’s total number of employed individuals by each state’s total 2019 adult population. Excludes Louisiana.

* p<0.05 ** p<0.01 *** p<0.001

21 Although we hesitate to infer much from imprecise results, a channel by which unemployment might be reduced is through reductions in labor force participation as long-term unemployed workers leave the workforce at the expiration of the UI expansion programs. In fact, one can show that the majority of the (insignificant) reduction in the unemployment rate shown in Table 3 is likely driven by the reduction in labor force participation, not by an increase in employment. Given a combined 150,000,000 employed workers and 162,000,000 workers in the U6 labor force in the month directly prior to each state’s turnoff, Column 2 implies the turnoffs led to 490,000 workers no longer being unemployed, whereas Column 1 implies that the turnoffs led to 80,000 workers gaining employment and Column 3 implies the turnoffs caused 410,000 workers to leave the labor force. Therefore, these results imply that the reduction in unemployment was overwhelmingly driven by workers leaving the labor force rather than gaining employment.

Two ways to assess the magnitude of the bounds on our result are either to compare them to changes in the labor market at the start of the pandemic or to the number of claimants who lost benefits. In either case, we interpret the magnitude of the possible labor supply effects as small. Using two standard errors to obtain upper bounds of our results, we determine that the impact on the employment-population rate could have been as large as a 0.64 percentage point increase, the impact to the unemployment rate could have been as large as a 0.86 percentage point decrease, and the impact to the labor force participation rate could have been as large as 0.90 percentage point increase.

Our first comparison to put these bounds into perspective relates to changes in the labor market at the pandemic's onset. Even the upper bounds of our labor results are an order of magnitude smaller than the magnitude of the labor crisis posed by the pandemic. Our metric of the employment-population ratio fell by nearly ten percentage points at the start of the pandemic, which dwarfs our upper bound impact of 0.64. The U6 unemployment rate rose by fourteen percentage points, again dwarfing our upper bound of 0.86 (in either case, if taken at face value, much of this reduction would have likely resulted from a reduction in the labor force).

Another way to see that the magnitude of this labor supply effect is small is to relate it to the relative loss in claimants, which shows that the vast majority of claimants who lost access to benefits did not actually find work. In other words, we relate the positive impacts of the policy change (the gains in employment) to the costs of the policy change (the number of workers that lose UI coverage) to see if the positive impacts are greatly outweighed by the negative consequences.²² Combining early and normally-scheduled turnoff states, there were 4.7 million workers on the PEUC program in the months directly preceding the turnoffs. The adult population of the United States, as measured in 2019 and used in our EPOP calculations, was 251 million, meaning that using our (insignificant) point estimate of 0.053% increase in the proportion of adults that are employed would translate to about an additional 133,000 employed workers. Relating these employment impacts to the 4.7 million workers that were on PEUC when it turned off would imply that roughly 4.3% of workers that lost UI as a result of the turnoff found employment. Although this figure is not very precisely estimated, available data suggest that even if the expirations spurred some people to return to work, the vast majority of workers affected simply exhausted their benefits without finding work.²³

22 Note that there are additional pros and cons that are not included in this simple comparison, such as the financial cost of the program, its value as a fiscal stimulus, and potential impacts to inflation.

23 Even using our maximum upper-bound estimate of the benefits to EPOP of 0.64 ($0.053 + 1.96 * 0.30$), this would still imply that at best employment increased by 1.6 million, so no more than a third of those 4.7 million workers pushed off benefits could have found employment.

Our findings on impacts to the labor market are consistent with the results found in other research. A study by Holzer et al. (2021) found decreases in unemployment on the order of 0.3 percentage points for early turnoff states, which is very similar to our (imprecise) point estimate reported in [Table 3](#) for U6 unemployment of 0.3 percentage points using all states. However, part of a change in the unemployment rate could be driven by workers exiting the labor force rather than returning to employment. Coombs et al. (2020) examined data on UI claimants and found that 1 in 8 workers subsequently found employment after their UI benefits were turned off because of the early turnoffs in the Summer of 2021. Although their point estimate on this is larger than ours of 4.3%, ours is imprecise and includes their point estimate in its confidence interval.²⁴ Work prior to the pandemic found that the UI extensions during the Great Recession caused at most a 0.3 percentage point increase in the unemployment rate, which is also consistent with our imprecisely estimated effects from the pandemic expansions (Chodorow-Reich, Coglianesi, Karabarbounis 2019). More generally, studies from Austria (Card, Chetty, and Weber 2007) and Germany (Schmieder, von Wachter, and Bender 2012) using more granular data suggest that only on the order of 10% of claimants exhausting benefits find work in the ensuing months.²⁵

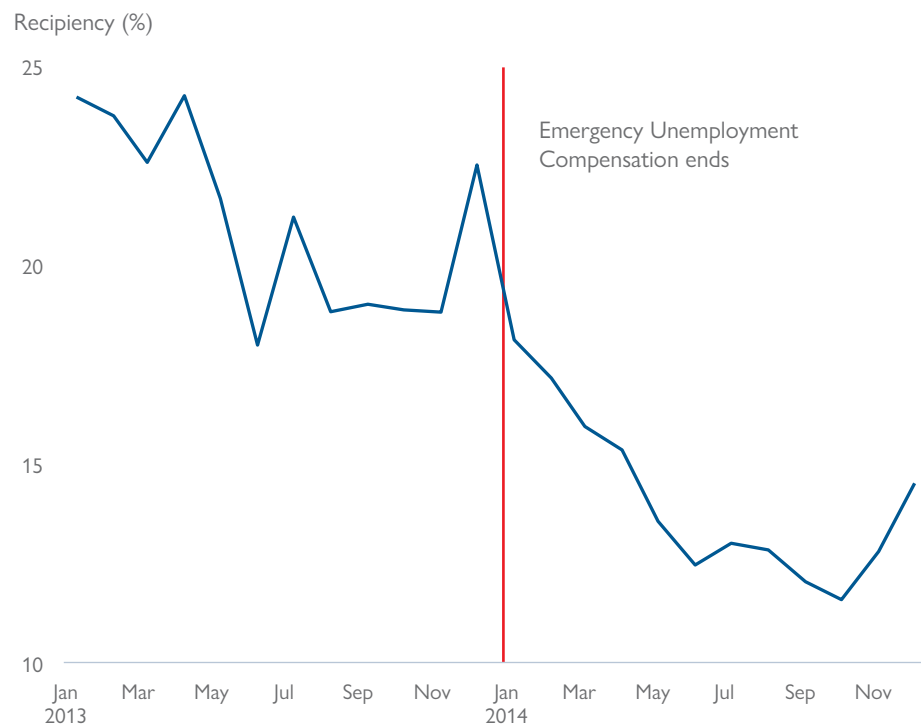
²⁴ See Appendix Section 3 for a discussion of these two papers specifically.

²⁵ Card, Chetty, and Weber (2007) estimate about 20% leave “registered unemployment” at time of exhaustion, but a much smaller increase in the rate of actual re-employment.

5. Benefits Cliff was Larger than During the Great Recession

How did the recent benefits cliff compare to the end of emergency benefits during the Great Recession? Figure 5 shows how UI reciprocity changed in the aftermath of the Great Recession as a result of the set of extensions that expired in January of 2014.²⁶ (To facilitate comparisons to the pandemic, we continue to use the U6 definition of reciprocity.)

FIGURE 5: UI Reciprocity around Great Recession Extensions Cutoffs, Jan. 2013–Dec. 2014



Notes: This figure displays the nation-wide reciprocity rate from January 2013 through December 2014. Emergency Unemployment Compensation, which extended UI benefits at the onset of the Great Recession, ended on January 1, 2014.

Prior to the January 2014 cutoff, UI reciprocity was steady at about 20%. After the cutoff, reciprocity fell to a low of about 12%, representing a 40% overall decline. This *relative decline* of 40% is similar to the relative loss in access from the recent pandemic-related UI expansion turnoffs. However, the absolute magnitude of these declines is very different. At the time of the recent turnoffs, average reciprocity was about 50%, which was more than double the 20% rate just prior to the turnoff of the Great Recession extensions. The recent turnoffs are thus unprecedented in recent memory in terms of the share of unemployed workers who lost access to UI.

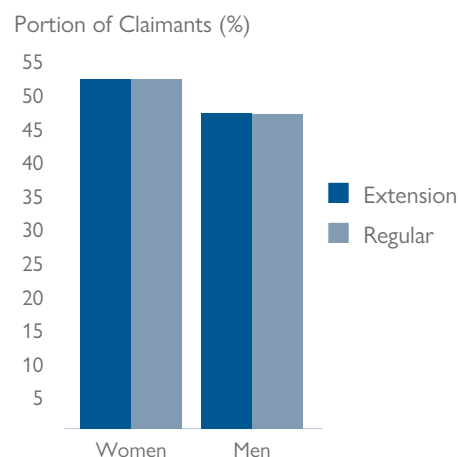
²⁶ See: Congress.gov. "H.R.8 - 112th Congress (2011–2012): American Taxpayer Relief Act of 2012." January 2, 2013. Title V. <https://www.congress.gov/bill/112th-congress/house-bill/8>

6. Disparate Impacts of Expansion Turnoffs in California

Because the federal government does not publish information on which workers receive extension payments, it is hard to assess the effect of the PEUC turnoffs on equitable access to UI benefits. Using claims data from California’s Employment Development Department, our analysis suggests the extension was disproportionately a lifeline for less-educated workers, Black workers, and workers over the age of 64 compared to regular UI claimants. Both regular and extension claimants during the pandemic were more likely to be women than men.

Figure 6 reports the distribution of claimants by gender in the week of the PEUC turnoff. During the pandemic extensions, there were no large differences in the gender distribution between PEUC and regular claimants, with both groups seeing about 52% of claimants being women and 47% being men. Since more women than men were on PEUC when the program ended, women claimants were more affected by the turnoff. The higher proportion of women claimants is not typically seen in UI claims and is likely indicative of the unique economic impacts of the pandemic such as its effect on women-dominated industries and unequal burdens of childcare. For contrast, in December 2019, shortly before the pandemic began, 61% of total U.S. UI claimants were men.²⁷

FIGURE 6: California Extension and Regular UI Claimants by Gender Separated by Claimant Type in the Week Ending September 4, 2021

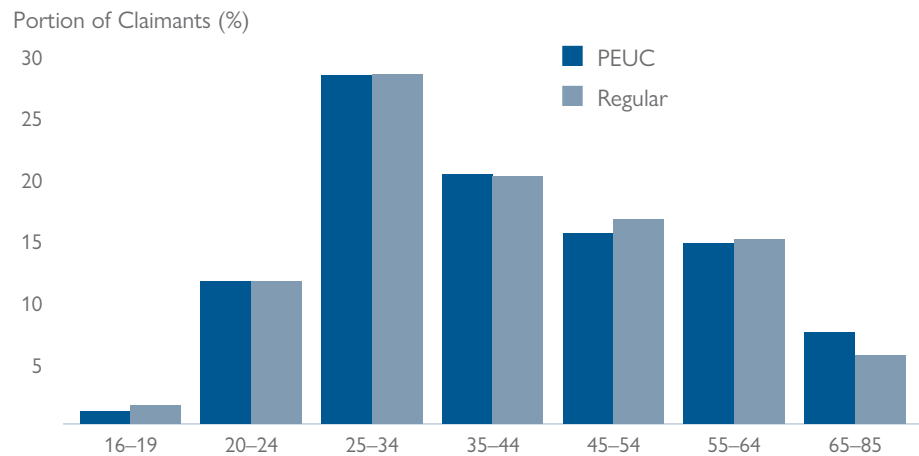


Notes: This figure displays the proportion of claimants that identify as male or female by claimant type. The bars add up to slightly less than 100% (>99%) for each claimant type due to missing or unreported data. Gender data is collected by the Employment Development Department and is self-reported.

27 See “Characteristics of Unemployment Insurance Claimants U.S. Totals”: <https://oui.doleta.gov/unemploy/content/chariu2019/2019Dec.html>

Figure 7 shows demographic breakdowns by age of claimants. People aged 25 to 34 represented the largest age group of beneficiaries during the pandemic. But PEUC claimants were about 34% more likely to be over the age of 64 compared to regular claimants, reflecting that PEUC provided additional support for older workers. As claimants must first exhaust their regular UI benefits before moving on to PEUC, this result aligns with other findings that older workers are more vulnerable to experiencing long-term unemployment spells.²⁸

FIGURE 7: California Extension and Regular UI Claimants by Age Separated by Claimant Type in the Week Ending September 4th 2021

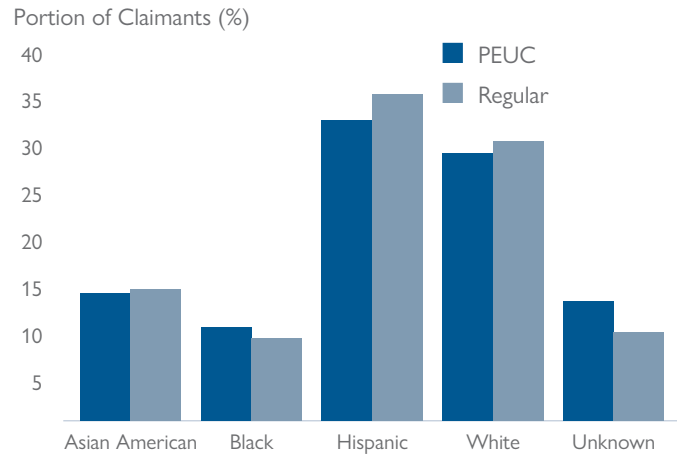


Notes: This figure displays the proportion of claimants by age group by claimant type. Age data is collected by the Employment Development Department, and bars add up to 100% for each category.

Figure 8 performs this analysis by race and ethnicity. These results suggest that PEUC claimants were more likely to identify as Black and less likely to identify as White relative to non-extension claimants at the time of the September 2021 turnoff, suggesting that the turnoff of PEUC disproportionately impacted Black workers. Hispanic and White claimants were more likely to be enrolled in regular UI benefits than PEUC benefits, yet both groups represented roughly a third of PEUC claimants and were also highly impacted by the PEUC turnoff. However, among both regular and extension claimants, a sizable portion do not disclose their race or ethnicity, meaning these results should be interpreted with a degree of caution pending uncertainty of how these claimants would identify.

28 For example, see Table 10 in CPL's report on Californian UI claimants during the pandemic, which displays how Baby Boomer claimants were a plurality of long-term claimants: <https://www.capolicylab.org/wp-content/uploads/2022/08/March-18th-Analysis-of-CA-UI-Claims-during-the-COVID-19-Pandemic-1.pdf>

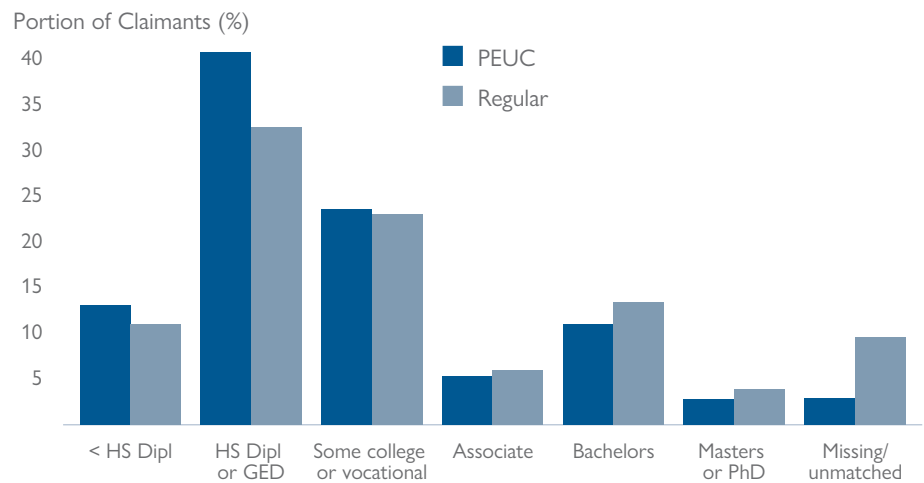
FIGURE 8: California Extension and Regular UI Claimants by Race and Ethnicity Separated by Claimant Type in the Week Ending September 4, 2021



Notes: This figure displays the proportion of claimants that are of each race and ethnicity by claimant type. Claimants that identified as Native American or Alaskan are not shown. This group composed 0.71% of PEUC claimants and 0.69% of regular claimants. For this reason, the bars add up to slightly less than 100% for each claimant type (regular and PEUC). Race and ethnic demographic data is collected by the Employment Development Department and is self-reported.

Figure 9 performs a similar analysis of the educational attainment of California’s claimants. Of PEUC claimants, 54% had only a high school degree or less, while only 43.7% of regular claimants fit this description. This suggests that the turnoff of PEUC disproportionately impacted claimants with less education.

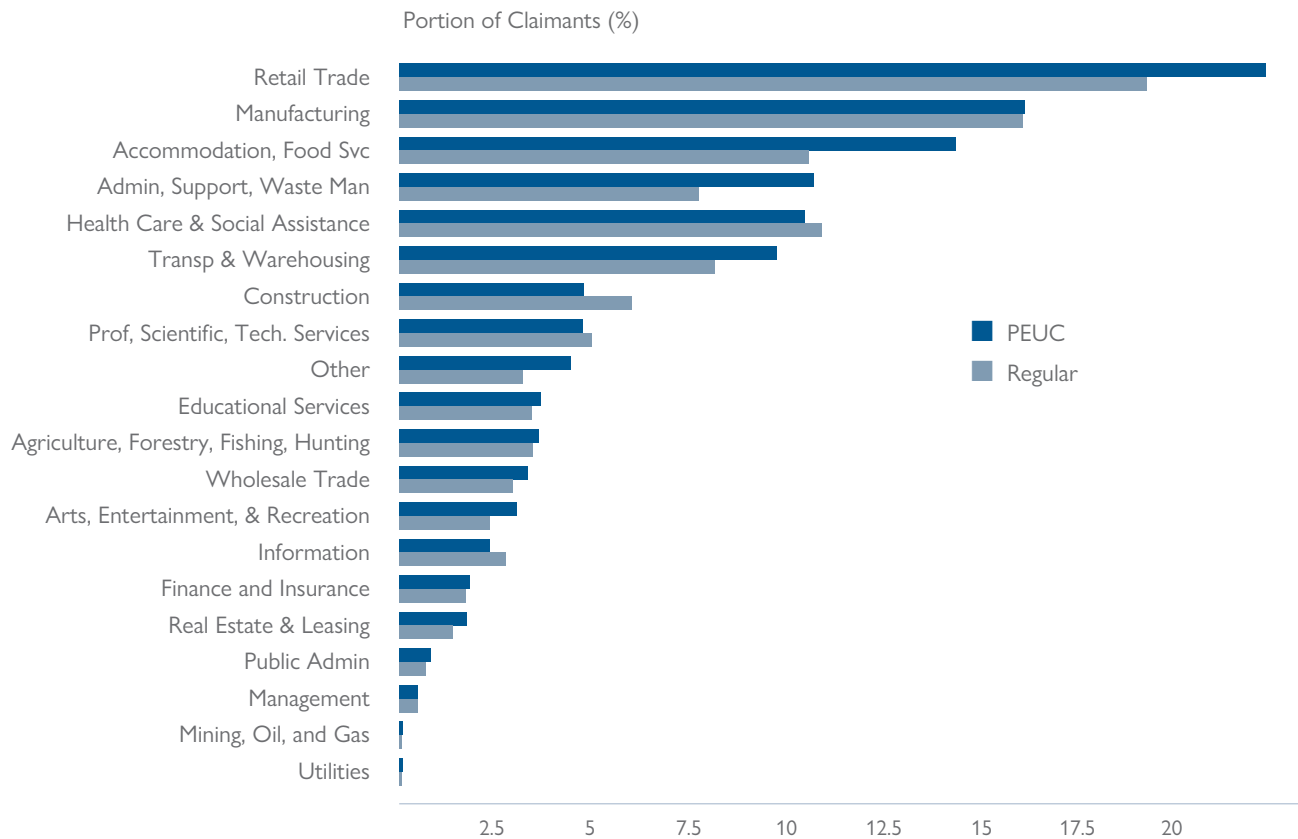
FIGURE 9: California Extension and Regular UI Claimants by Educational Attainment Separated by Claimant Type in the Week Ending September 4, 2021



Notes: Displays the proportion of claimants by highest degree obtained by claimant type. The bars add up to 100% for each claimant type. Educational data is collected by the Employment Development Department and is self-reported.

In **Figure 10**, we analyze the industries that claimants worked in prior to claiming UI benefits. Claimants during the pandemic extensions were more likely to work in retail trade and accommodation and food services, likely due to the public health implications of the pandemic. PEUC claimants were even more likely to have worked in these industries compared with regular claimants, suggesting that these workers were hit hardest by the PEUC turnoffs. These hardest-hit industries were also staffed by higher proportions of workers from historically disadvantaged backgrounds, especially Hispanic workers, which in turn helps contribute to the racial and ethnic disparities in claims data we have seen.²⁹

FIGURE 10: California Extension and Regular UI Claimants by Industry Separated by Claimant Type in the Week Ending September 4, 2021



Notes: Displays the proportion of claimants that worked in each industry prior to claiming UI benefits by claimant type. The bars add up to less than 100% for each claimant type (regular and PEUC) due to the omission of missing industry types. 8.3% of PEUC claimants and 18.1% of regular claimants had missing industries. Industry is found by matching each claimant's previous employer to the Quarterly Census of Employment and Wages to find the employer's corresponding NAICS code.

²⁹ See the following report published by the Brookings Institution on the connection between industries impacted by the pandemic and race and ethnicity: <https://www.brookings.edu/research/explaining-the-economic-impact-of-covid-19-core-industries-and-the-hispanic-workforce/>

Conclusion

We find that ending pandemic UI expansions caused an unprecedented drop in access to UI. Roughly one in two jobless workers who would have collected benefits had the expansion continued stopped receiving benefits. However, we do not find evidence that ending UI expansions spurred a meaningful return to work. Additionally, we find that equity suffered when the UI expansions ended, at least in California where such data is available. The data suggest that segments of society that were already most economically vulnerable were also most impacted by the termination of the UI extensions; we find the most pronounced impacts among workers that are Black, elderly, less educated, or women.

Existing research shows that exhaustion of UI benefits leads to economic hardship for affected workers. Exhaustion of UI benefits in the aftermath of the Great Recession led to substantial reductions in income and spending and increases in the incidence of poverty, among others (e.g., Rothstein and Valletta 2017, Ganong and Noel 2019). Our results suggest it is likely that many workers exhausting PEUC benefits in the early turnoff states in June and in the remaining states in September experienced significant economic hardship. Applying existing estimates of the effects of UI exhaustions on poverty rates during the Great Recession, one would expect that on the order of 700,000 American families might have been pushed into poverty when UI expansions ended.³⁰ More research is needed to learn about the effects of UI exhaustions on poverty during the pandemic.

What impact may these early turnoffs have on the economy? During economic downturns, UI serves not only to insure workers against job loss, but also to provide a fiscal stimulus that can lessen consumption slowdowns. We leverage pre-existing estimates of the fiscal stimulus value of UI, as well as more recent estimates of this value for stimulus spending during the pandemic, to provide a back-of-the-envelope calculation of the magnitude of economic growth that could have been gained if the early turnoffs did not occur.³¹ We find that, had the early turnoff states maintained the UI expansion programs until the national September cutoff, between 300,000 to 1.25 million fewer claimants would have lost access to benefits prior to September 4, 2021. This increase in claimants would have resulted in estimated government expenditures increasing by between \$2.3 billion and \$9.5 billion, of which 53% would have come from state governments and 47% from the federal government. As a result of the increased income received by these claimants, we estimate that GDP in the third quarter of 2021 would have increased by between 0.06% to 0.31%.

³⁰ Rothstein and Valletta (2017) estimate that poverty rates among claimants increased by 15 percentage points at the time of exhaustion. We thus apply their estimate to the 4.7 million total PEUC claimants at time of state-specific turnoffs.

³¹ See Appendix Section 15 for our methodology for calculating these aggregate impacts.

While we have largely interpreted the effects of the benefits cliff as being driven by PEUC extensions, two other key provisions of the expansion also turned off at the same time in most states. As highlighted in the introduction, FPUC increased benefit amounts and PUA expanded eligibility to UI for those without sufficient wage history. Of these, we find it likely that PEUC was the most significant driver of our findings on the impacts of the UI expansion. PUA claimants were excluded from the analysis of UI reciprocity conducted in this report, meaning that the decline in reciprocity we report was driven by PEUC rather than PUA expirations (and would have been larger if one also included those affected by PUA expirations). Our estimates on labor supply—though they are not statistically different from zero—in principle may have been impacted also by the PUA program’s expiration and so our estimates are larger than what would have occurred with just the PEUC expiration. Nationally, DOL reports about as many claims were paid to PUA as to PEUC at the time of the expirations, though fraud was thought to be more severe among PUA. The FPUC program, by increasing the value of benefits, potentially contributed to the results of this report through encouraging the takeup of UI among unemployed workers, but this relationship among benefit amount and UI takeup during the pandemic is not yet well understood.³² Four states (Alaska, Arizona, Florida, and Ohio) ended FPUC early in June and July of 2021 but kept PEUC and PUA intact. Section 17 of the Appendix performs an analysis of these four states and finds that the FPUC cutoff did not significantly alter reciprocity rates, suggesting that the other UI expansion programs played relatively larger roles during the time period we study.

These findings bear significance for policy. The reciprocity rate, which is typically relatively low, rose to levels never before seen.³³ At the start of the pandemic, this rise was likely due to the increased benefit amounts, but once workers began exhausting regular UI the PEUC extension helped sustain this high reciprocity rate throughout the pandemic. Expansions in UI generosity, either through increasing benefit amounts or durations, can be an effective policy tool to encourage unemployed workers to utilize the UI program. Evidence from California also suggests that UI extensions were more utilized by vulnerable workers and these extensions can be implemented as a means to help address societal and economic inequities.³⁴

32 Earlier work prior to the pandemic has identified substantial impacts of benefit generosity on take-up (Blank & Card 1991; Anderson and Meyer 1997).

33 For historic reciprocity rates, see <https://oui.doleta.gov/unemploy/chartbook.asp> by section 13) Reciprocity Rate. For example, in 2016, only 25% of unemployed workers on average across all states were receiving UI benefits. Note that this rate does not include claimants on extensions.

34 See Appendix Section 14 on our demographic comparisons to the Great Recession. For some demographics, similar results hold for the Great Recession extensions, but more research should be conducted to identify how generalizable these results are across all states and economic conditions.

Several open questions remain for future research. The economic conditions created by the pandemic were extremely novel, and thus some caution should be exercised in applying our results to normal economic circumstances. Other benefit programs, such as the child tax credit expansion, were implemented concurrently with the UI extensions, and increased liquidity from other government spending could partly explain low labor supply effects. In addition to extending the longevity of UI benefits at the start of the pandemic, many states also suspended job-search requirements to receive these benefits. These requirements typically stipulated that all UI claimants, in order to receive their benefits, must be actively applying to new jobs. Most states reinstated these requirements in the summer of 2021, around the time of the first PEUC turnoffs.³⁵ The reinstatement of these requirements, if they had an effect, likely lowered the number of claimants and either encouraged these former claimants to find employment or to leave the labor force. We do not account for these job-search requirements in this paper, and accounting for these differences can represent a fruitful avenue for future research. Additionally, our demographic analysis was limited to California, and examinations of these trends at a national level can potentially strengthen our results and reveal new insights.

BACKGROUND ON THE DATA IN THIS REPORT

The California Policy Lab has produced the California-based tabulations in this report through an ongoing partnership with the Labor Market Information Division of the California Employment Development Department. Any statements should only be attributed to the California Policy Lab, and do not reflect the views of the Labor Market Information Division of the California Employment Development Department. The calculations were performed solely by California Policy Lab. Any errors or omissions are the responsibility of California Policy Lab, not of the Labor Market Information Division of the California Employment Development Department. For inquiries about the definitions, methodology, and findings of this report, please contact Till von Wachter. Email: tvwachter@econ.ucla.edu.

To obtain the data tabulations used in this policy report, please contact: Dr. Muhammad Akhtar, Chief, Labor Market Information Division, California Employment Development Department. Email: Muhammad.Akhtar@edd.ca.gov.

³⁵ See "Work Search Requirements by State": <https://www.ziprecruiter.com/blog/unemployment-insurance-job-search-requirements-explained/>

ACKNOWLEDGMENTS

This research was made possible through support from Arnold Ventures, The James Irvine Foundation, the Smith Richardson Foundation, the Russell Sage Foundation, the University of California Office of the President Multicampus Research Programs and Initiatives, MRP-19-600774 and M21PR3278 and the Bylo Chacon Foundation. We also thank the UCLA Social Science Division, the UCLA Vice Chancellor for Research and Creative Activities, the Luskin School of Public Affairs and the California Center for Population Research for their support. The views expressed are those of the authors and do not necessarily reflect the views of our funders. All errors should be attributed to the authors.

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