MITIGATING LABOR SHORTAGES:

INVESTIGATING THE EFFICACY OF RETURN TO WORK PROGRAMS

by

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ABSTRACT

Are supply-side interventions effective at combating labor shortages? Many state governments faced tight labor markets as their states re-opened in the late spring of 2021. On May 4th, 2021, Montana announced it would be ending COVID-19 era unemployment schemes early. Additionally, they incentivized the unemployed to find work through a Return to Work (RTW) program. The unemployed would receive $1,200 for getting and keeping a job for four weeks. Similar RTW programs were subsequently adopted by several states. The impact of these RTW programs on labor markets has not yet been investigated. Using data on continued unemployment insurance claims I explore the impact of RTW programs on labor markets with a two-way fixed effects model. I find that RTW programs, at best, on average had a marginal negative impact on unemployment. However, I find a large degree of RTW heterogeneity with some states seeing large and statistically significant impacts. Additionally, I present a number of case studies to demonstrate the consequences of outreach and accessibility on RTW programs.

INTRODUCTION

Businesses across America are struggling to find workers. The years 2021 and 2022 witnessed record-breaking quit levels with 47.8 million and 50.5 million voluntarily relinquishing employment in each respective year. For comparison, the pre-pandemic high in 2019 witnessed only 42.1 million quits.[1] Domash and Summers (2022) find that labor markets in 2021 were tighter than what traditional measures indicated. Despite coming on the heels of the fastest federal funds rate hiking cycle in a generation, the ratio of job openings to unemployed persons remained stubbornly high, nearly 2 to 1, in January 2023.[2] States have implemented a variety of policies to introduce slack into their labor markets. The most popular approach, ending pandemic-era unemployment insurance schemes early, sought to push the unemployed back to work by reducing or eliminating their unemployment insurance (UI) income.[3] A second approach, providing one-time payments to the unemployed if they found and held work, was taken by a smaller number of states.[4] I refer to the cash incentive programs of the second approach as "return to work" (RTW) programs.[5] The efficacy of these RTW programs is the main focus of this study.

While no research has been done on the impacts of RTW, there have been empirical investigations of similar financial incentives as well as analysis of the labor market impacts of early unemployment insurance (UI) expiration. Two working papers, Holzer et al. (2021) and

[1] See (Iacurci, 2023) for more information on quit levels.

[2] *Unemployment Level/Job Openings: Total Nonfarm | FRED | St. Louis Fed* (2023)

[3] A total of 26 states moved to cancel pandemic-era UI in some form in 2021. Two states, Maryland and Indiana, were blocked by judge injunction. (Holzer, Hubbard, & Strain, 2021)

[4] Some allege that these programs were a cover for states to end FPUC and other programs early given the low application to accepted application ratio (Matt Darling, 2021).

[5] Ten states introduced RTW policies in 2021 including Arizona, Colorado, Connecticut, Kentucky, Maine, Montana, New Hampshire, New Mexico, Oklahoma, and Virginia instituted return to work programs. Michigan instituted a more limited RTW on top of an already existing program and is not included in the treatment group.

Coombs et al. (2021) both find that ending pandemic-era UI schemes early increased flows into employment. Literature on the Earned Income Tax Credit (EITC), a policy that also provides a financial incentive to work, has found that it has a statistically significant impact on single mothers' decisions to work. The EITC provides a tax credit to individuals with low income that increases in size as income grows. An increase in the EITC benefit corresponds with an increase in the number of single mothers working (Whitmore Schanzenbach & Strain, 2021). Research has also investigated best practices for inducing higher take-up of social programs. Information, assistance, and auto-enrollment are all found to boost take-up (Finkelstein & Notowidigdo, 2019). This implies higher efficacy for RTW programs with these features. This study investigates whether RTW programs have similar impacts.

Offering the unemployed a direct one-time cash transfer contingent on gaining and holding employment is a unique policy in the U.S. context. Determining the efficacy of this incentive-based policy offers information to policymakers regarding an additional tool for use in the management of labor markets.[6] If effective, RTW policies have the potential to mitigate wage-price inflationary spirals. A tight labor market raises worker bargaining power and increases their wages. Employers respond to higher labor costs by raising prices. Workers, who now face higher prices demand higher wages, and the cycle continues. If slack is introduced to the labor market, perhaps through a RTW program, workers would have less leverage to demand a higher wage, and employers would not push prices higher, all else equal. On a similar note, if eligibility was expanded to also include discouraged workers and others not in the labor force, a RTW program might raise the labor force participation rate, which has been on a downtrend for the last two decades and remains well below pre-pandemic levels.[7] In addition to making labor markets tighter, lower labor force participation rates

[6]For example if the labor market is deemed "too tight" legislation could be passed to incentivize individuals to join the labor force and leave the unemployment rolls. Legislation similar to RTW programs was proposed by Rep. Ted Budd (R-NC) at the national level. See his op-ed on the bill here.

[7]See this link to see the Labor Force Participation Rate time series.

slow GDP growth, and place a higher tax burden on the fewer remaining workers (Dotsey, Fujita, & Rudanko, 2017).

I exploit state variation in RTW status to identify the impact of RTW programs on unemployment in the summer of 2021. Using a two-way fixed effects (TWFE) Difference in Differences (DiD) framework, I control for time and unit-invariant confounding variables and capture the impact of RTW programs with an indicator. The indicator turns on the first full week after a RTW program is active, and stays on until the end of the sample or the RTW program ends. For my dependent variable, I use continued unemployment insurance claim rates from the Department of Labor.[8] Unemployment insurance (UI) rate observations are at the state week level. States are placed into one of two samples: "leavers" and "stayers". Leaver states opted to leave Federal Pandemic Unemployment Compensation (FPUC) early while stayers remained on FPUC and similar programs until expiration.[9] Leaver states saw a marked increase of flows into employment compared to stayer states (Coombs et al., 2021) (Holzer et al., 2021). States that chose to leave Federal UI benefits early may have had different labor market conditions that precipitated their choice. Additionally, I separate the two cohorts to allow the stayer sample to continue longer without the contaminating impacts of the leaver states' early expiration of FPUC. In both the leaver and stayer cohorts, states with a RTW program constitute the treated group and states without a RTW program constitute the control group.

I find that RTW programs at best had a small negative effect impact on average on UI rates in both cohorts. Leaver RTW states saw UI rates fall 0.16 percentage points on average compared to control states, while stayer states saw UI rates fall by 0.24 percentage points

[8]Continued unemployment insurance rates are the total number of individuals in a state receiving unemployment insurance claims divided by the total number of people in the state's 2019 labor force. I use the unemployment insurance (UI) rate as my dependent variable because RTW programs required that recipients come off of UI and find work. Additionally, given the short time frame of my sample, more granular data is ideal.

[9]There are a total of 24 states in the leaver sample and 15 weeks for a total of 360 observations. There are a total of 22 states in the stayers sample and 20 weeks for a total of 440 observations.

on average. Point estimates are 9% of the mean in both samples, but are not statistically significant at conventional levels. I leverage a series of case studies to examine potential causes for heterogeneity in RTW efficacy. I find that proper program targeting yields larger impacts on UI. Montana had one of the most effective RTW programs and was the only state to provide outreach and assistance to all eligible individuals. Additionally, states with easier application processes had higher RTW efficacy. Colorado's RTW program was woven seamlessly into its UI web portal while Arizona's had more costs to enroll in the form of more of paperwork (Delaney & Golshan, 2021). Consequently, Arizona's RTW program was less effective at bringing down UI rates compared to Colorado's despite similar histories of fraud. These findings suggest that RTW programs as they took form in 2021 are not a silver bullet for introducing slack into labor markets, a task other policies may be better suited for. However, should similar policies be pursued in the future, policymakers would do well to provide outreach to those eligible and to take into account the impact that high sign up costs may have on said policy.

BACKGROUND

Return to Work (RTW) Programs

On May 4th of 2021, State Governor Greg Gianforte announced that Montana would no longer be participating in federal expansions of unemployment insurance (UI) and, crucially, that workers would be incentivized to find employment through a "Return to Work" (RTW) bonus program. Both measures were put forward to align incentives and help employers who were struggling to find workers. Over the next several weeks, several other states announced similar RTW programs. Some states also left federal UI expansions concurrently while others only announced RTW programs. To be eligible for a RTW payment three general qualifications must be met:

1. Individual must have been previously receiving UI.
2. Individual must find work and discontinue receiving UI.
3. Individual must provide proof of work for a number of weeks.[1]

Cash payment sizes and number of weeks of work required varied from state to state. Arizona had the largest RTW bonus with $2,000 awarded to those eligible while New Mexico had the lowest with $400 awarded to those eligible.[2] States also varied with their sign-up processes. Some created entirely new online portals to submit applications. Others built RTW programs into their already existing UI portals. Montana was the only state to reach out to each individual that was eligible for the RTW bonus; other states simply announced

[1] On the low end, Montana required proof for 4 weeks worked. On the high end, Arizona required proof of 10 weeks worked

[2] New Mexico had a unique RTW payment setup. Those who reported employment during the first week of the program received $1,000. Each subsequent week the bonus fell by $200. Individuals who reported employment in the fourth and final week received $400.

their RTW programs through press releases. See Tables 2.1 and 2.2 for details on payment size, application type, program length, and more.

Three states structured their RTW programs to be employer-facing, meaning that the employer interacted with the state's department of labor to obtain RTW incentives and then passed them on to their new employees.[3] These programs had stipulations that limited their reach. For example, Virginia's employer-facing RTW program limited RTW payments to small businesses paying wages over $15 an hour, making RTW bonuses out of reach for many businesses. In some cases, individuals did not have to be on unemployment insurance to receive the bonus. To provide a straightforward interpretation of the RTW mechanism I drop states with employer-facing RTW from the sample. As several RTW programs were announced in tandem with the state-level expirations of federal pandemic-era UI expansions, I will now provide background on UI, the expansions it saw in the wake of COVID-19, how states responded during the summer of 2021, and my strategy for mitigating related confounding effects on identification.

Unemployment Insurance (UI)

Originally created to provide income replacement to able-bodied individuals unable to find work due to the Great Depression, unemployment insurance (UI) has played an integral role in the United States welfare system since its inception in 1935. Operated at the state level, UI compensation, work search requirements, and management operate differently from state to state. Despite these state-level variations, all states must follow federal UI guidelines (Kagan, 2023). The program has seen several expansions and transformations. Most recently, the CARES Act added several new provisions at the federal level.

Consumption, a driving force of the American economy, was feared to drop sharply

[3]These states were: Virginia, Kentucky, and Maine.

as millions of workers were forced to stay home at the outset of the pandemic. A series of UI expansions were meant to provide additional income to the vast swathes of newly unemployed in order to stabilize demand and avoid a deep economic downturn. Pandemic Unemployment Assistance (PUA) expanded UI eligibility to self-employed workers and contractors. This provided income replacement to Uber drivers, personal trainers, and other self-employed professions during the lockdowns of 2020. Pandemic Emergency Unemployment Compensation (PEUC) extended the number of weeks that the unemployed could collect UI payments. PEUC allowed individuals to collect UI benefits for longer, in the case that their occupation remained too dangerous to return to for a prolonged period. Federal Pandemic Unemployment Compensation (FPUC) first provided an additional $600 a week until its expiration in August 2020. The American Rescue Plan revived FPUC at $300 a week until all federal UI pandemic programs (PUA, PEUC, and FPUC) expired on September 6th, 2021 (Folger, 2021).

Expanded benefits in the wake of the pandemic-induced recession were different from prior benefit expansions in their magnitude. These benefits were meant to replace the consumer spending that would be lost given the shutdown of the economy and the resulting ubiquity of unemployment in certain sectors. Concerns regarding moral hazard were limited given the assumption that the economy would return to normal after the virus had been quashed. Given all this, the new unemployment insurance payments were substantially larger than normal unemployment insurance payments. Using banking micro data Ganong, Greig, Liebeskind, et al. (2021) find that the payments replaced 145% of lost income of workers.[4,5] Due to this large infusion of cash, spending counter-intuitively rose when

[4]Checking account data from 44 million accounts was provided by the JPMorganChase Institute (JPMCI) from January 2019 through November 2020.

[5]This was due to the fact that the benefits were calibrated to replace the wage of the mean worker. The median worker's wage is below the mean worker's wage as the mean is dragged higher due to outliers. For more on this, see Ganong, Noel, and Vavra (2020).

individuals became unemployed.[6] This initial analysis found that job search is negatively impacted by benefit payments, but the effect is an order of magnitude smaller than model predictions using pre-pandemic data. In a follow-up, Ganong, Greig, Noel, Sullivan, and Vavra (2021) use difference-in-differences and interrupted time series research designs to identify causal relationships between unemployment and benefit payments between April 2020 and April 2021. They find precise micro and macro disincentive effects.[7] However, the effect is small. Getting rid of the supplements would have only restored a small fraction of employment losses, leading the authors to conclude that the policy was successful. Incomes were supplemented with minimal impacts on employment. Michaillat (2012) arrive at a similar conclusion looking at the Great Recession economy.[8]

As COVID-19 became increasingly endemic, these pandemic-era programs were accused of incentivizing individuals to remain unemployed. Several states moved to cease participation in these Federal UI expansions in the hopes that their labor shortages would be remedied. Two working papers, Holzer et al. (2021) and Coombs et al. (2021), have explored the impacts of these withdrawals on employment.

Impacts of Early Federal UI Expiration

Through FPUC, PUA, and PEUC, more individuals were eligible to receive higher UI payments for longer periods (Folger, 2021). The combination of these three UI expansions, therefore, made conditions more amenable for individuals to extend the duration of their unemployment. After several states moved to expire Federal UI early, many wondered how

[6] In normal times, unemployment is associated with a fall in spending.

[7] "Micro" refers to the effect of expanded benefits on one worker, "macro" refers to the effect of expanded benefits on all workers.

[8] Michaillat (2012) found that job search agencies were not effective in the Great Recession economy due to the scarcity of jobs, not matching frictions. UI, therefore, smooths consumption at a time when job search efforts are not as effective. Rothstein (2011) also substantiates the claim that given recession-induced job shortages, UI is less distortionary than it appears.

much of an impact said expirations would have on labor markets.

Holzer et al. (2021) and Coombs et al. (2021) leverage difference-in-differences designs to analyze the impacts of the withdrawal. Coombs et al. (2021) use bank transaction data provided by Earnin, a fintech company providing banking services to mostly low-income workers. They find that the early withdrawal led to a $145 fall in consumer spending on average, a decrease in UI rolls of 35 percentage points, and a 4.4 percentage point increase in employment. Using Current Population Survey and Household Pulse Survey data, Holzer et al. (2021) limit their treatment group to states who terminated PUA and FPUC in June and find that flows into employment increased by two-thirds. Extrapolating, if all states had ended FPUC and PUA the national unemployment rate would be 0.3 percentage points lower and the employment-population ratio would have been 0.1-0.2 percentage points higher. Additionally, the number of households able to meet their expenses fell by 5%. Households with confidence they could meet their bills were less sensitive to the expanded UI terminations. Given that the expiration of these novel UI programs had measurable impacts on labor markets, including them in my time frame could bias my estimates. To avoid the confounding impacts that expiration may have on my estimates I limit my sample to only include the weeks before a state loses Federal UI participation.

A third paper, Dube (2021), uses the August 2020 expiration of expanded unemployment to pursue an event study design to evaluate the impact on employment. PULSE survey micro-data is used from IPUMS from March through November 2020. Despite a 98% drop in the average replacement rate, re-employment among low income and high school educated individuals is small despite them making up the majority of UI recipients. The data window may contribute to this finding. Individuals who accumulated savings while on expanded benefits may have a higher replacement rate. A longer window of analysis may be needed to allow said savings to fall.

The Earned Income Tax Credit

While no research has looked at the impacts of RTW programs on labor markets, there are many studies investigating the impacts of cash incentives tied to work. The Earned Income Tax Credit (EITC) provides a tax credit for working low-income individuals. As an individual's earnings grow, so does the credit they receive, but only up to a point. Once a certain threshold is reached the credit begins to phase out. EITC is the largest federal cash transfer to low-income working Americans. Whitmore Schanzenbach and Strain (2021) look at all expansions of EITC and their labor market effects. Altogether, an EITC expansion of $1,000 is associated with a 3.2-3.7 percentage point rise in employment of single mothers with lower levels of education. Bastian (2020) find that the 1975 EITC expansion led to a 6% increase in maternal employment.

The cost efficacy of RTW programs is of interest to policymakers, and research has found that the net cost of EITC is lower than the amount paid out in tax credits. Bastian and Jones (2021) find that EITC pays for itself in large part through two channels. The first is through pushing individuals to work and therefore raising payroll tax revenues. The second is by decreasing the amount of government benefits paid as households with higher incomes are eligible for a lower level of government benefits. The researchers find that over a one-year period, EITC costs 17% of its annual budget. If positive spillover effects over the long term are accounted for, the cost may be even lower. RTW programs could potentially pay for themselves through these same channels, thereby making them more attractive to policymakers.

The Canadian Negative Income Tax Experiments

In the 1990s, Canada had a number of negative income tax experiments, one of which was similar to the RTW programs of 2021. Individuals receiving Income Assistance

(IA), the Canadian equivalent to welfare, were randomly selected to be able to participate in the Self Sufficiency Project (SSP). SSP paid individuals more than IA if they found employment. Robins, Michalopoulos, and Foley (2008) find that the program doubled full-time employment, providing evidence that a sufficient financial payment could incentivize work. In contrast, Table 2.3 illustrates that RTW benefits were smaller than UI payments with FPUC attached. Therefore, we can expect the impacts of RTW to be smaller in magnitude compared to SSP.

Another notable finding from the SSP experiment was that despite the initial sharp increase in full-time employment, the employment expansion did not last after the program ended. Ideally, program participants would have continued working after the program's expiration instead of returning to unemployment. One possible explanation is that many of the participants found low-paying and precarious work. Individuals may not have found jobs that they could turn into careers. Instead, they may have found whatever job was most readily available in order to receive the SSP payment (Robins et al., 2008). This could also be an issue for RTW programs, where individuals might take on less sustainable work leading to only a temporary fall in unemployment insurance rates. A spin-off of SSP, SSP+, paired the SSP program with career services. Participants of SSP+ found higher-quality and higher-paying work, enabling the impacts of SSP+ to be more long-lasting than those of SSP (Robins et al., 2008). RTW programs were much shorter than SSP, spanning weeks and not years. Additionally, RTW programs did not include dedicated career services for those eligible for the program. We can expect the impacts of RTW programs to be further dampened by these limitations.

Table 2.1: RTW Payment Size and Application Requirements

State	Payment	Weeks	Application	Outreach	Max/Min Wage
AZ	**$2000**	**10**	**Yes**	**No**	**$37.02/NA**
CO	$1600/$1200[1]	8[2]	No[3]	No	NA/NA
CT	$1000	8	Yes	No	NA/NA
MT	**$1200**	**4**	**Yes**	**Yes**	**NA/NA**
NH	**$1000/$500[4]**	**8**	**Yes**	**No**	**$25/NA**
NM	$1000/$800/$600/$400[5]	9	No	No	NA/NA
OK	**$1200**	**6**	**Yes**	**No**	**NA/NA**

[1] $1,600 if work began in May, 2021. $1,200 if work began in June, 2021.
[2] First half of RTW payment is made after 4 weeks; second half of RTW payment is made after the subsequent 4 weeks.
[3] UI recipients must re-affirm their UI benefits weekly. If in this weekly affirmation, they state they are no longer receiving benefits because they are working, they are asked if they would like the payment. After opting in, they will receive the payment.
[4] $1,000 for full time, $500 for part time.
[5] $1,000 for those beginning work the week of July 4th, $800 for those who begin work during the week of July 11th, $600 for those who begin work on the week of July 18th, $400 for those who begin work on the week of July 25th

Notes: Leaver states in bold, defined as states that left Federal Pandemic Unemployment Compensation (FPUC) early. All amounts in 2021 dollars. Payment refers to the size of the RTW payment. Weeks refers to the number of weeks an individual must work for RTW eligibility. Application refers to whether or not the RTW application was separate from the unemployment insurance web portal. Outreach denotes whether or not a state contacted individuals eligible for RTW. Max/Min wage refers to the maximum or minimum wage individuals can receive while still being eligible for RTW.

Table 2.2: RTW Program length

State	Length Active (Weeks)	Start Date	End Date
AZ	**16**	**5/15/2021**	**9/6/2021**
CO	5	5/19/21	6/26/2021
CT	17	5/31/2021	10/1/2021
MT	**25**	**5/4/2021**	**10/31/2021**
NH	**31**	**5/18/2021**	**12/31/2021**
NM	4	7/4/2021	7/31/2021
OK	**16**	**5/16/2021**	**9/4/2021**

Notes: Above are the RTW timing details for states with employee-facing programs. Leaver states in bold, defined as states that left Federal Pandemic Unemployment Compensation (FPUC) early. All amounts in 2021 dollars. Length Active refers to how many weeks a state's RTW program was active. If individuals began employment when a RTW program was active, they were eligible for a RTW payment as long as they completed the minimum number of weeks required and met the state's UI requirements. Columns 3 and 4 refer to RTW start and end dates respectively.

Table 2.3: RTW vs UI

State	RTW Bonus	Max RTW COLA	Average UI	UI w/ FPUC
AZ	**$2,000**	**$1,870.91**	**$946.52**	**$2,146.52**
CO	$1,600/$1,200	$1,522.36	$1,547.00	$2,747.00
CT	$1,000	$1,167	$856.90	$2,577.28
MT	**$1,200**	**$1,145.02**	**$1,784.12**	**$2,984.12**
NH	**$1,000/$500**	**$883.39**	**$1,179.12**	**$2,379.12**
NM	$1,000/$800/$600/$400	$1,068.38	$1,068.38	$2,582.20
OK	**$1,200**	**$1400.23**	**$1,230.16**	**$2,430.16**

Notes: Leaver states in bold, defined as states that left Federal Pandemic Unemployment Compensation (FPUC) early. All amounts in 2021 dollars. "RTW Bonus" refers to the one-time cash transfer individuals received. The second column contains each state's maximum RTW payment cost of living adjusted. I use 2022 cost of living data from the Missouri Economic Research Center. The third column denotes the size of each state's RTW bonus. The fourth column is the average monthly UI payment without accounting for FPUC. The fifth column refers to the average monthly UI payment individuals received when accounting for the additional weekly $300 FPUC payment. RTW bonuses are in all cases smaller than average UI+FPUC payments, and in most cases smaller than just UI payments. This dampens the potential efficacy of RTW programs for those who are still eligible for future UI payments.

DATA SUMMARY

State-level unemployment insurance (UI) rate data for my analysis comes from Economic Tracker[1] who in turn source the data from the U.S. Department of Labor. The UI rate is defined as the number of individuals receiving unemployment insurance payments divided by the number of individuals in the labor force.[2] The sample contains state-by-week observations for the weeks immediately before and after RTW policies were implemented to avoid potential confounding from the spikes in UI during the early days of the pandemic and from the removal of FPUC, PUA, and PEUC later in the pandemic. The UI rate's weekly nature makes it uniquely suited for identifying if RTW programs were effective in the short time before states left FPUC and other federal unemployment programs. Figure 3.1 shows the national UI rate over time; UI peaked at over 12% nationally during the outset of the pandemic. UI remained elevated at the beginning of 2021 but fell to pre-pandemic levels by the end of the year.

I use regular UI continued claim rates because of questionable patterns in PUA and PEUC. Figure 3.2 shows the national PEUC UI trends over 2020 and 2021. The irregular shape in the first half of 2021, possibly indicates unreliable reporting of this novel UI program by state agencies. Figure 3.3 reports a time series of national PUA UI claims rates. The time series is riddled with large discontinuous jumps from 2020 through early 2021. A case study for shoddy PUA reporting is showcased in Figure 3.4 where Arizona's PUA claims rate is reported. In the figure, one can observe that in one week of 2020, over 60% of individuals in Arizona were reportedly receiving PUA, but just a couple of weeks later 0% of Arizonans were receiving PUA. These inconsistencies in the documentation of novel pandemic-era federal UI

[1]Economic Tracker is a repository for public and anonymized private pandemic recovery-related data maintained by Opportunity Insights (Chetty, Friedman, Hendren, Stepner, & Team, 2020).

[2]The 2019 labor force is used as the denominator of the equation due to pandemic-related irregularities. Current Population Survey estimates during the pandemic were biased due to rotation group bias and difficult-to-reach bias (Heffetz & Reeves, 2020).

expansions are why I employ regular UI claims alone as my dependent variable.[3]

I break the data up into two samples, stayers and leavers. The leavers sample contains states who left FPUC early. The stayers sample contains states who stayed on federal UI programs until their expiration in early September. Both samples include states with and without RTW programs. Looking at Figure 3.5 we can observe the geographic characteristics of leavers. Most southern states are leavers as are most western mountainous states. New Hampshire is the only leaver state in all of New England. By contrast, Figure 3.6 shows that most stayer states are concentrated on the west coast, in the Midwest, and in New England. Treated states in the stayer group are concentrated in the American West with both Colorado and New Mexico being treated. Connecticut is the only treated state in New England. Note that Indiana and Maryland are excluded from the sample as they both moved to end FPUC but were blocked by their respective court systems. As such, they do not fit cleanly into either the leaver or stayer samples. Virginia, Kentucky, and Maine all had employer-facing RTW programs where businesses served as middlemen between their state's labor department and their employees. Given the different incentive structure in these states, I exclude them from the sample.

The leaver sample begins with the week ending on 2021/03/06 and ends with the week that ends on 2021/06/12.[4] The stayer sample begins with the week ending on 2021-03-06 and ends on the week ending on 2021-07-31.[5] Figures 3.7 and 3.8 visualize the sample windows used for leavers and stayers respectively. Figures 3.9 and 3.10 visualize the treatment timing of the leaver and stayer groups. In the leavers sample, there are 4 treated states and 20

[3]See this article from the New York Times for more information on the unreliable nature of PUA and PEUC data (Casselman, Cohen, Dougherty, & Schwartz, 2020). `https://www.nytimes.com/2020/09/11/business/economy/pandemic-unemployment-assistance-fraud.html`

[4]2021/03/06 is approximately 10 weeks before the first RTW program becomes active in Montana. 2021/06/12 is the week before New Hampshire withdraws from FPUC, and therefore the last date I can use without possible confounding.

[5]2021/03/20 is approximately 10 weeks before the first RTW program became active in Colorado. 2021/07/31 is the last active week of New Mexico's RTW.

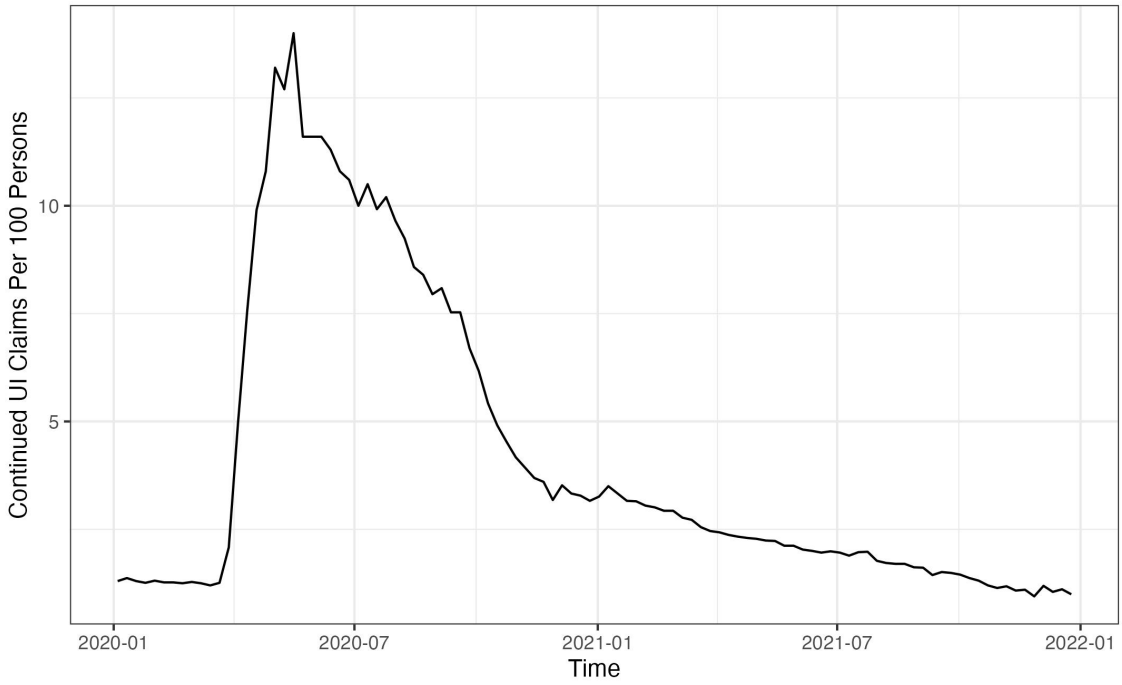
control states. Treated states have a higher average UI rate compared to the control states, 2.02 and 1.69 respectively. In the stayers sample, there are 3 treated states and 19 control states. In the stayers sample, the treated states have a lower mean UI rate compared to the control states, 2.4 and 2.65 respectively. See Table 3.1 for more details. Note that Washington D.C. is a control "state" in the stayers sample. I present my methodology for what role state RTW programs played in that process in the following section.

Table 3.1: Unemployment Insurance Rate Summary Statistics by Sub-sample

Subsample	Number of States	N	Mean	Std. Dev.	Min	Max
Left: Control	20	300	1.69	0.8	0.34	4.78
Left: Treated	4	60	2.02	0.53	1.31	2.24
Stayed: Control	19	380	2.65	1.02	0.3	5.41
Stayed: Treated	3	60	2.4	0.98	1.12	4.31

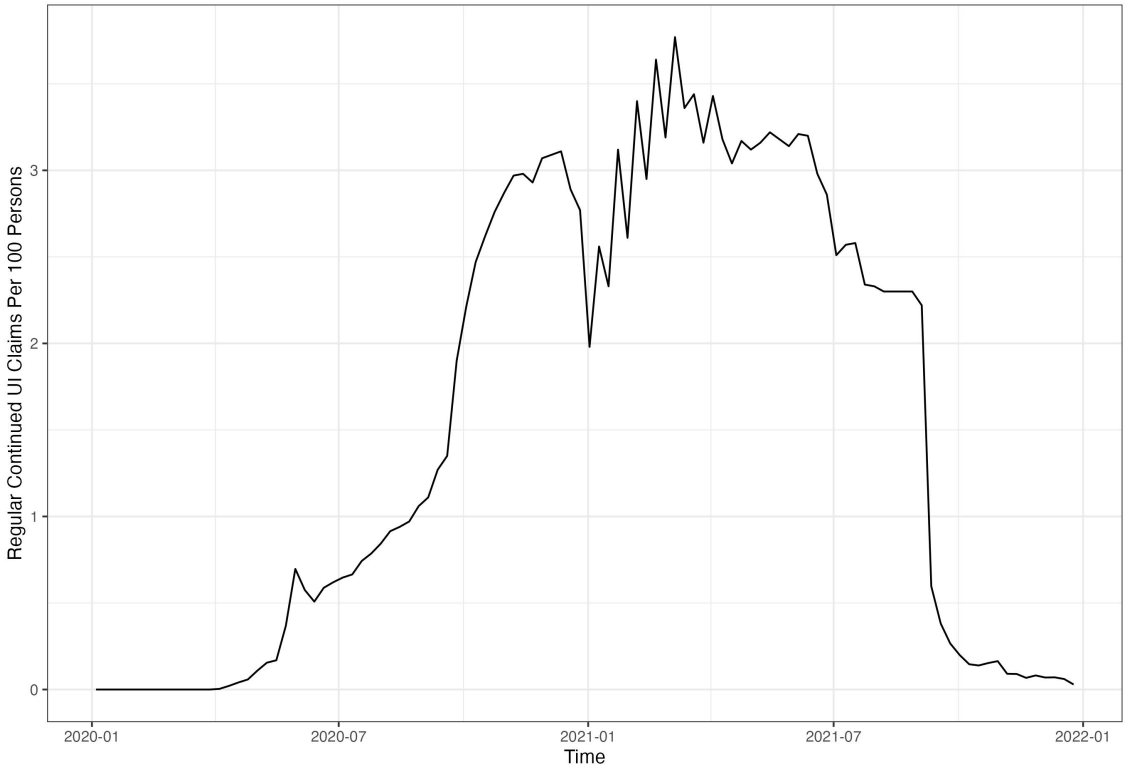
Notes: Above are descriptive statistics of UI for each of the sub-samples in my analysis. UI is at the state week level. The unemployment insurance (UI) rate is a percentage calculated as follows: total # collecting UI / total # in the labor force. "Left: Control" refers to states that left FPUC earlier and did not have a RTW program. "Left: Treated" refers to states that left FPUC early and did have a RTW program. "Stayed: Control" refers to those states that remained on FPUC and did not have a RTW program. "Stayed: Treated" refers to those states who remained on FPUC and did have a RTW program. "Number of States" refers to the number of states in each respective group. D.C. is included as a state in the stayers sample. Indiana and Maryland are dropped for having their federal UI expirations blocked by judges. Virginia, Kentucky, and Maine are dropped for having employer-facing RTW programs.

Figure 3.1: National UI Trend



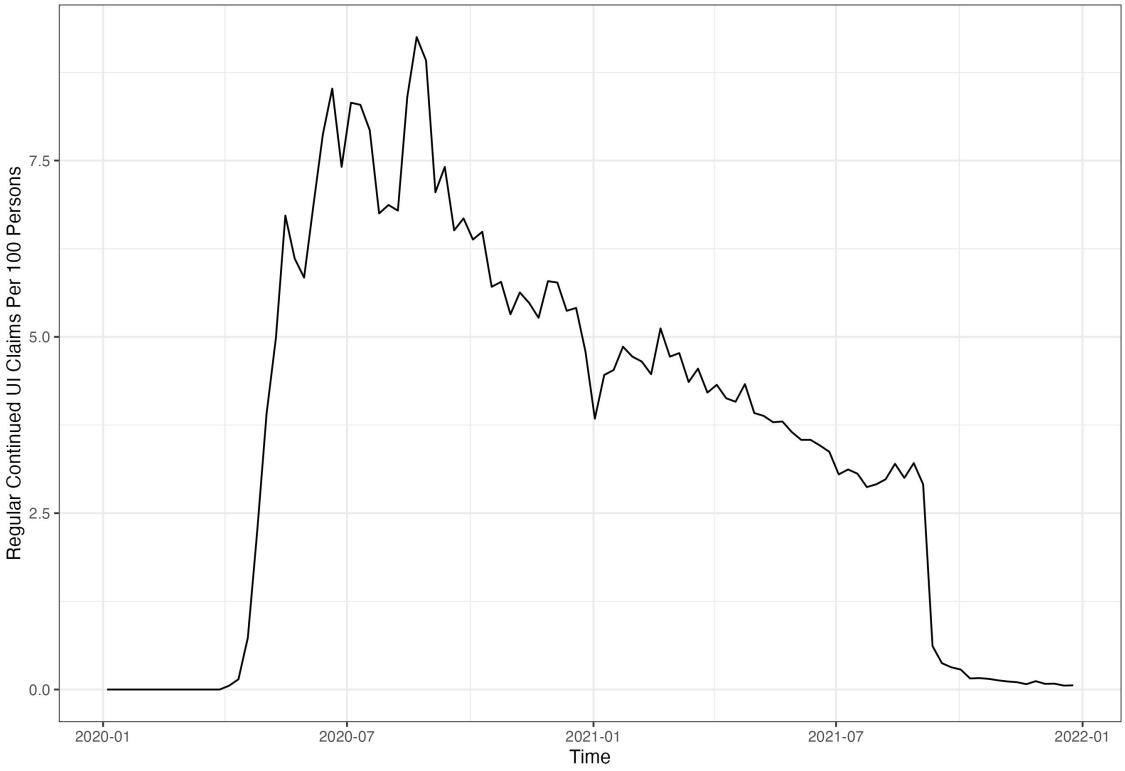
Notes: Above is the national average UI claims rate from 2020 onwards.

Figure 3.2: UI Irregularities: PEUC



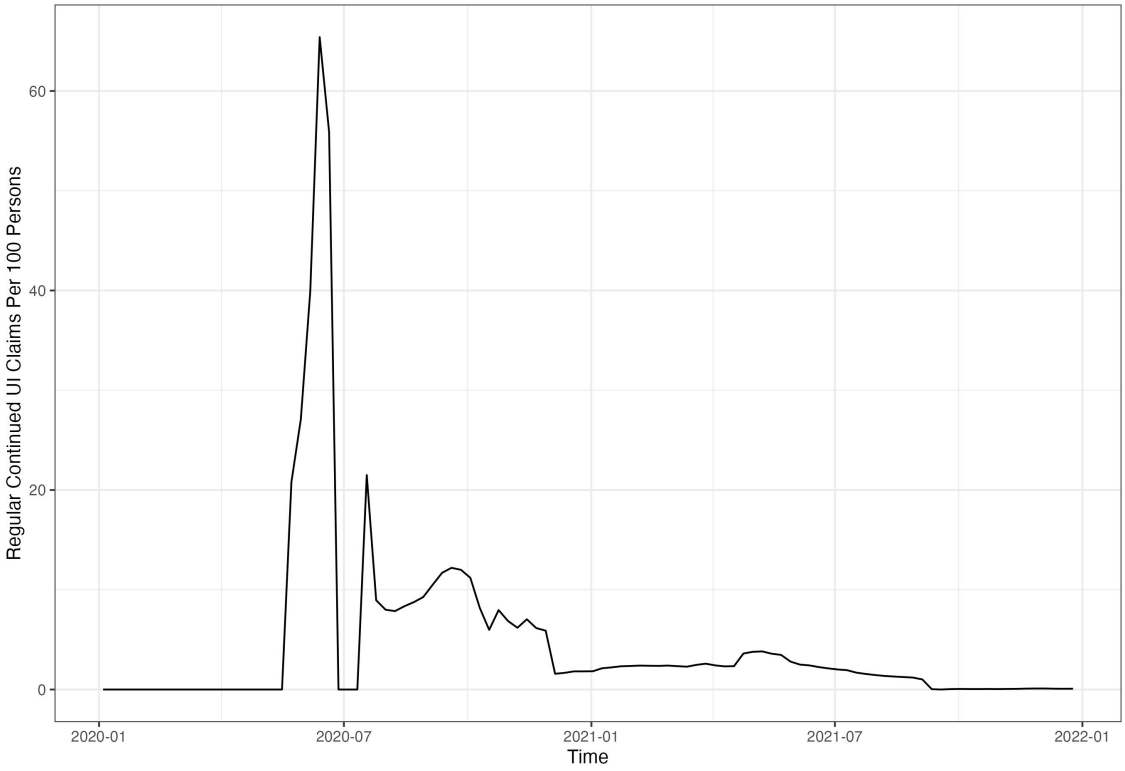
Notes: Above is the national average PEUC UI claims rate from 2020 onwards.

Figure 3.3: UI Irregularities: PUA



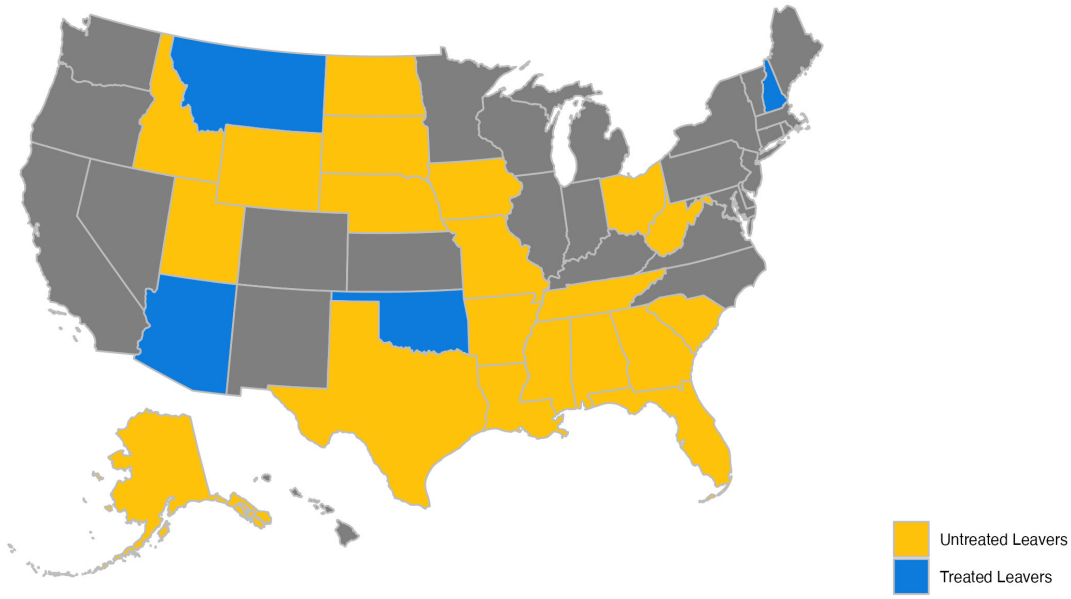
Notes: Above is the national average PUA UI claims rate from 2020 onwards.

Figure 3.4: UI Irregularities: PUA Arizona



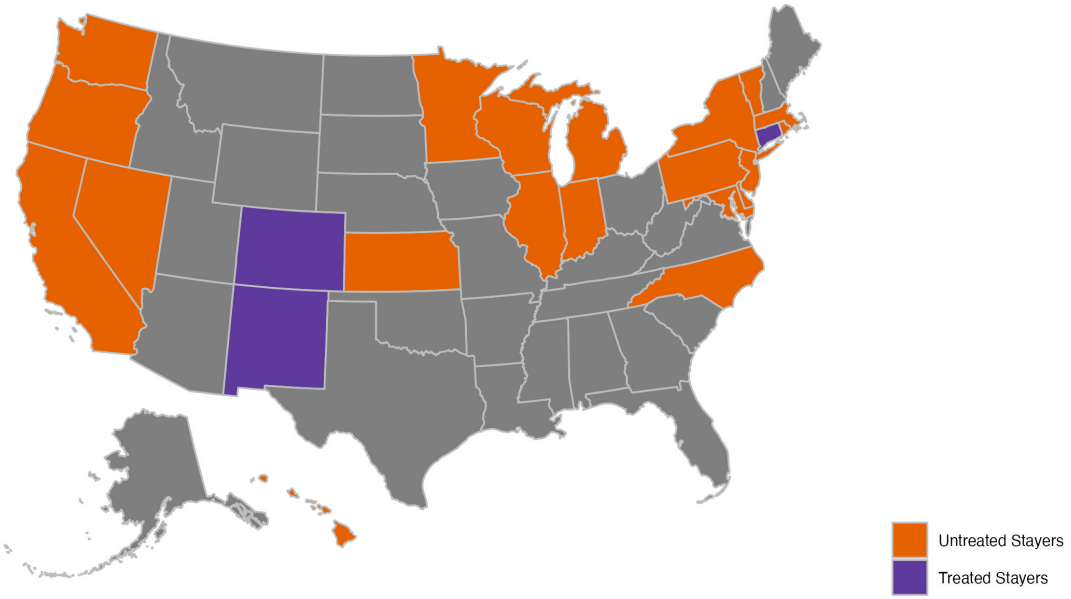
Notes: Above is Arizona's PUA UI claims rate from 2020 onwards.

Figure 3.5: Policy Variation: Leavers



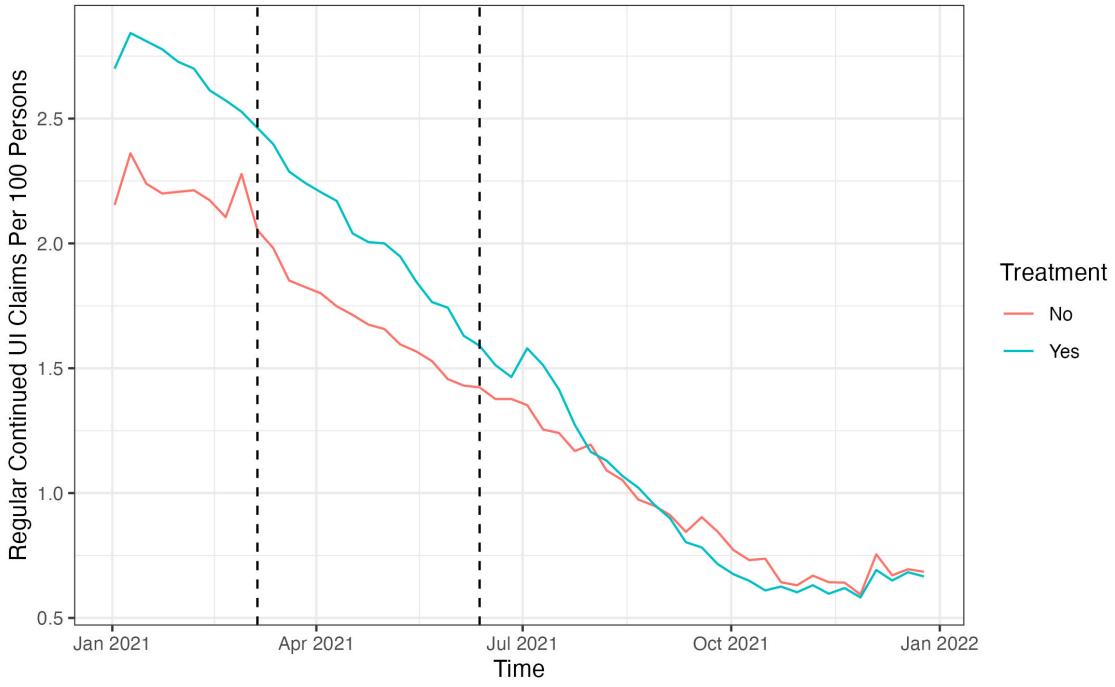
Notes: Policy variation for the leavers sample is displayed above. Blue denotes a state that had a RTW program and yellow denotes a state without RTW. All states left at least FPUC. Some also left PUA and/or PEUC. Maryland and Indiana initially left FPUC but were blocked by judge injunction. These two states are excluded from the sample.

Figure 3.6: Policy Variation: Stayers



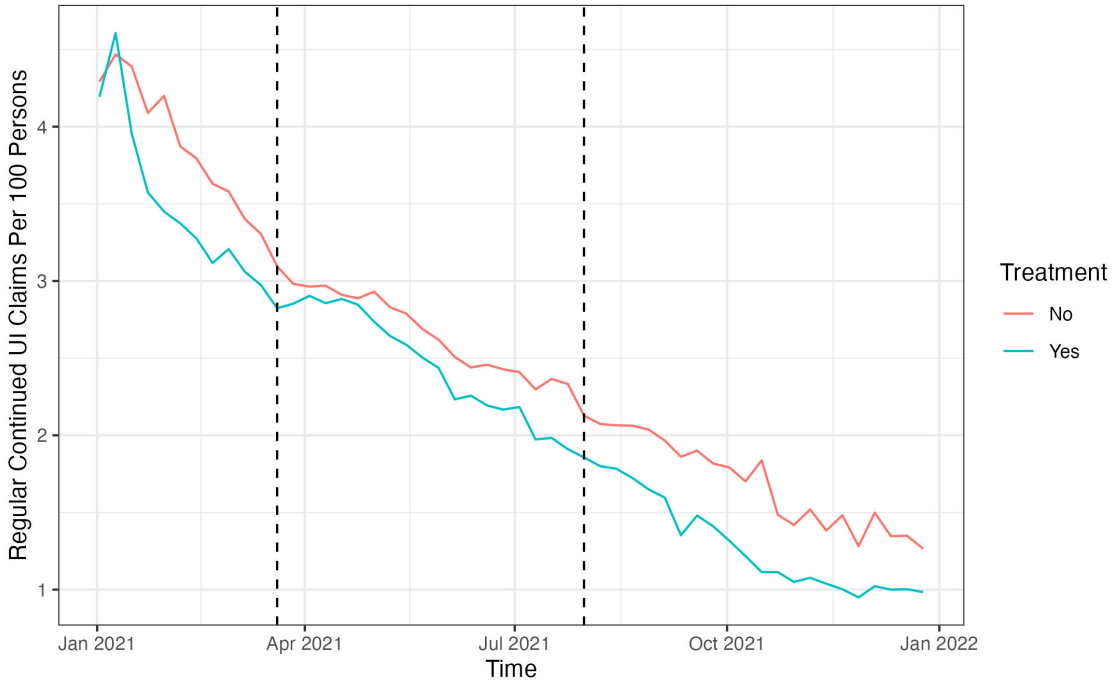
Notes: Policy variation for the stayers sample is displayed above. Blue denotes a state that had a RTW program, and yellow denotes a state without a RTW program. All orange and purple states stayed on FPUC, PUA, and PEUC. Virginia, Maine, and Kentucky all had employer facing programs and are therefore excluded from the sample despite keeping FPUC, PUA, and PEUC.

Figure 3.7: States that Left Federal UI



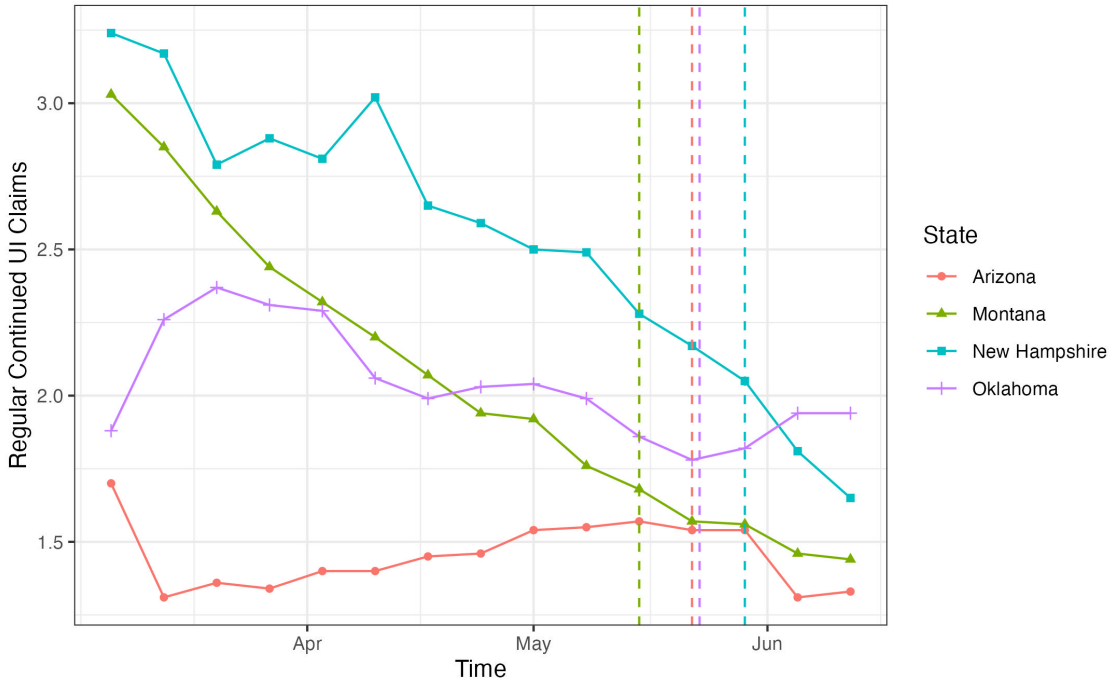
Notes: The blue line represents the average UI rate for treated states and the red line represents the average UI for control states. The sample only includes states that left FPUC early. The first vertical line denotes the beginning of the sample and the second denotes the end of the sample. The sample begins on 2021/03/06, 10 weeks before the first active RTW program in the sample. The sample ends on 2021/06/12, the week before New Hampshire expired FPUC. The sample for the leaver states is 4 weeks instead of 8 to avoid the confounding impacts of their withdrawal from FPUC in mid to late June.

Figure 3.8: States that Stayed on Federal UI Until Expiration



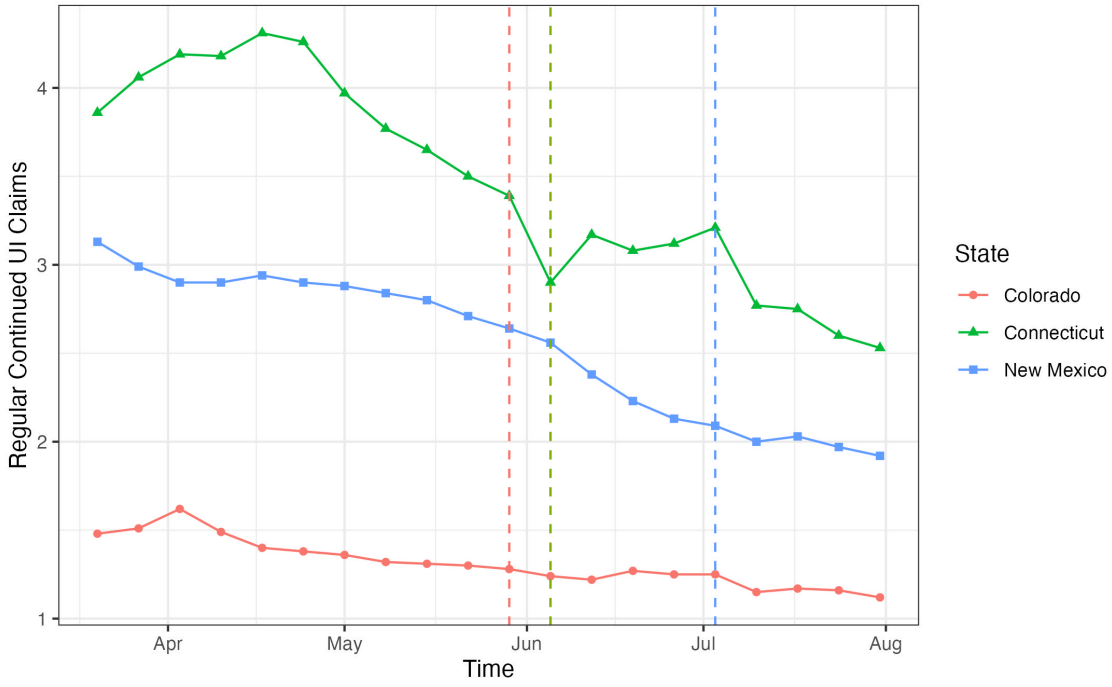
Notes: The blue line represents the average UI rate for treated states and the red line represents control states. The sample only includes states that remained on FPUC until its expiration. The first vertical line denotes the beginning of the sample and the second denotes the end of the sample. The sample begins on 2021/03/20, 10 weeks before the first active RTW program in the sample. The sample ends on 2021/07/31, the final week of New Mexico's program, the last in the cohort.

Figure 3.9: Treatment Timing: Leavers



Notes: Dotted lines denote the first full week a RTW was active. Montana is treated first on the week ending on 05/15/2021. Oklahoma and Arizona are treated simultaneously on the week ending 5/22/2021. New Hampshire is treated last on the week ending on 5/29/2021.

Figure 3.10: Treatment Timing: Stayers



Notes: Dotted lines denote the first full week a RTW is active. Colorado is treated first on the week ending 5/29/2021. Connecticut is treated next on the week ending on 6/5/2021. New Mexico is treated last on the week ending on 7/10/2021.

EMPIRICAL STRATEGY

Overview of Empirical Strategy

I use two empirical approaches to understand the efficacy of RTW: A two-way fixed effects (TWFE) model and an event study. I use the TWFE model to find the average treatment effect of RTW programs while accounting for time and state-invariant factors. The event study is used to identify whether the parallel trends assumption is supported and to capture the dynamic impacts of RTW programs.

Two-Way Fixed Effects Model

For the TWFE specification, I estimate:

$$U_{st} = \alpha + \sigma_s + \omega_t + \beta RTW_{st} + \epsilon_{st} \tag{4.1}$$

where s indexes states and t indexes weeks. The response variable U_{st} is the UI rate at the state-week level for either the stayer or leaver sub-sample. RTW is an indicator variable that denotes whether or not a state has an active RTW program in a given week. The coefficient β captures the causal impact of RTW programs under standard DiD assumptions. RTW programs could have impacted UI rates by providing a cash payment conditional on employment, thereby incentivizing the unemployed to find work. Significant and negative values of β would support this hypothesis. σ_s denotes state fixed effects and ω_t denotes week fixed effects. State fixed effects control for time-invariant state-level UI insurance rate determinants, such as industry characteristics and attitudes towards unemployment. ω_t controls for common shocks to the UI rate at the weekly level, such as COVID-19 waves and the downward trend in the UI rate. Standard errors are clustered at the state level.

For the regression to be a valid DiD TWFE the parallel trends assumption must hold. That is to say, absent treatment, the control and treatment groups would have evolved in

parallel in the post period. Figures 4.1 and 4.2 show the trends of UI for the leaver and stayer groups respectively. In the leaver group, both treated and control states have a downward UI trend. The leaver UI trend is a bit steeper than the control state's UI trend. In the stayer group, there is convergence in the first half of the pre-period, with trends becoming more parallel in the second half of the pre-period. The convergence is driven by a slowing of the control states downward trend and a reversal of the treated states downward trend. Given the timing of the convergence, early March through late April, it is possible that the vaccine roll-out played a part. Perhaps the marginal unemployed person opted to remain unemployed until they were fully vaccinated as vaccines became available to the general public around this time. The second DiD assumption is that there are no spillovers. RTW eligibility hinges on receiving UI in a given state, so one would be unable to get RTW if they were not in the correct geography. The third DiD assumption is that there are no simultaneous policies. This simultaneity bias is why I end the leavers sample the week before New Hampshire leaves FPUC. The other main source of simultaneity bias would come from the reinstatement of pre-COVID-19 work search requirements for UI recipients. Figure 4.1 contains the dates that the RTW indicator becomes active in my sample, and when work search requirements were reinstated. Arizona, Connecticut, and New Hampshire have work search requirements reinstated when the RTW indicator is equal to one. This may lead to an upward bias in the size of my RTW coefficients.

In alternative specifications, I replace the RTW indicator with the cost of living adjusted dollar amount that individuals received if a RTW program's qualifications were met. This way, I can estimate the marginal effect of $1,000 on UI rates. These values range between $750 and $2000 and are discussed more in the background section.[1] Table 2.3 contains the cost of living adjusted dollar amounts I use in my regressions.

[1]New Hampshire's RTW had a payment of $1000 for full-time workers and $500 for part-time workers. I use the average, $750 for their unadjusted dollar amount.

Event Study

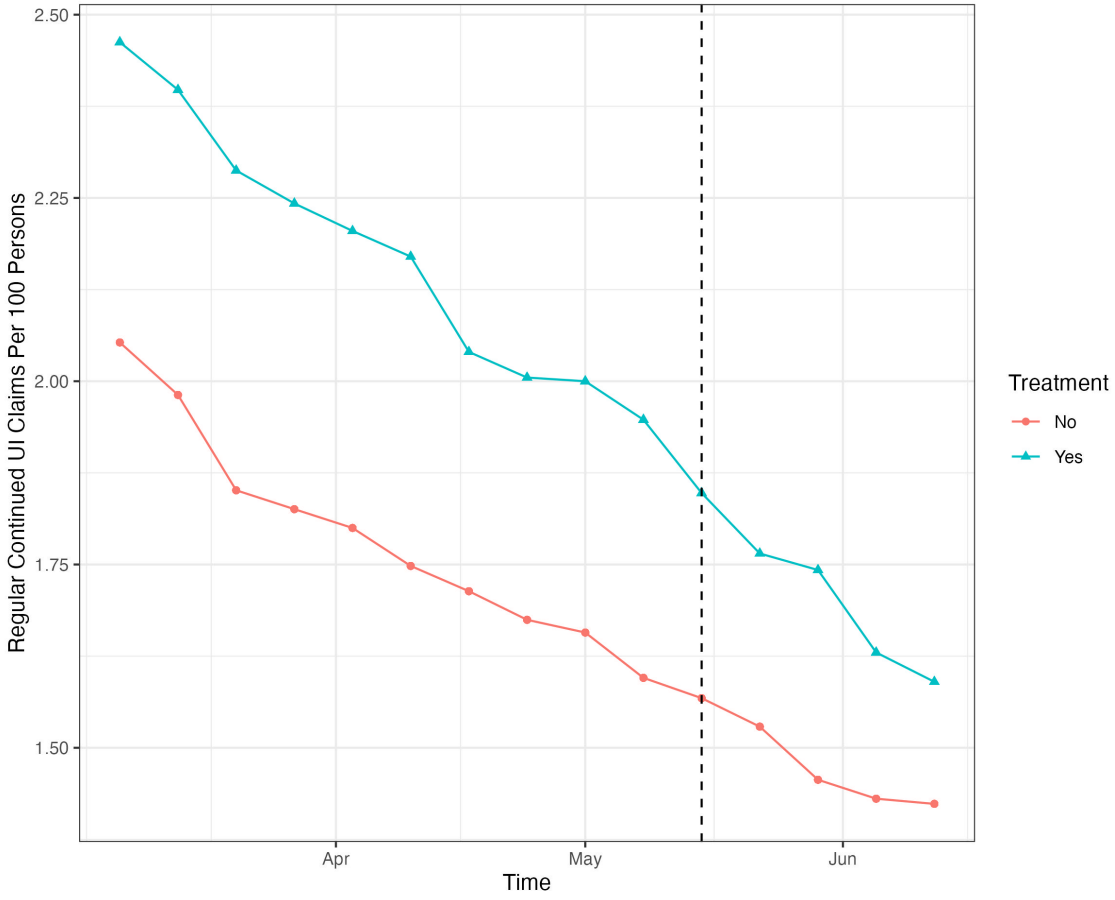
In addition to TWFE, I estimate an event study for both leavers and stayers to test whether the treatment and control groups in each sample exhibit parallel trends and to capture the timing of RTW effects. I use the following event study equations for the leavers and stayers specifications respectively:

$$U_{s,t} = \sum_{\substack{t=-7 \\ t\neq -1}}^{3} \eta_{t,i} * (RTW_s * \tau_t) + \sigma_s + \omega_t + \epsilon_{s,t} \tag{4.2}$$

$$U_{s,t} = \sum_{\substack{t=-7 \\ t\neq -1}}^{4} \eta_{t,s} * (RTW_s * \tau_t) + \sigma_s + \omega_t + \epsilon_{s,t} \tag{4.3}$$

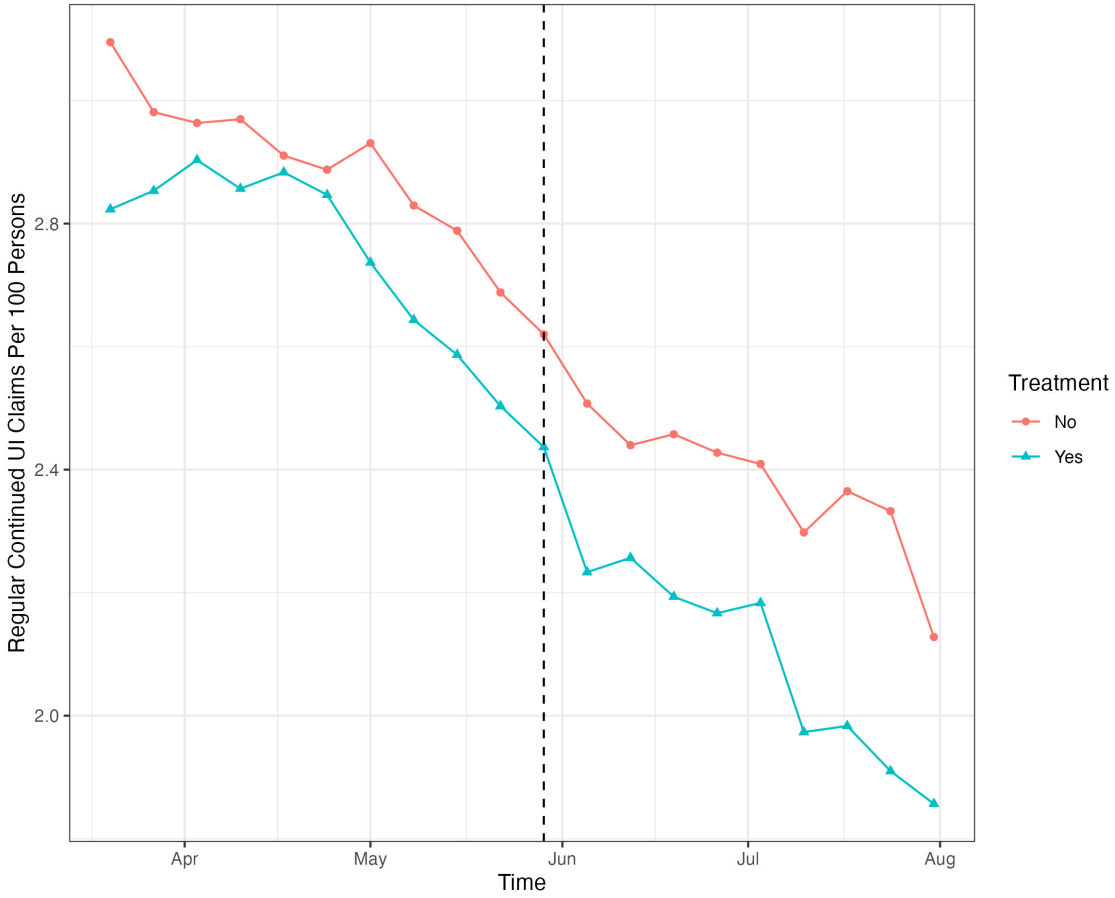
where η captures the dynamic effect of RTW policies. τ is an indicator for each week in the sample. The period before treatment begins, -1, is omitted. The leaver sample contains time periods with values of -7 to 3 while the stayer sample contains time periods from -7 to 4. Other variables are defined as they were in equation 4.1.

Figure 4.1: States that Left Federal UI



Notes: The sample includes states that left FPUC early. The dashed line indicates when the first RTW program became active.

Figure 4.2: States that Left Federal UI



Notes: The sample includes states that stayed on FPUC until its expiration. The dashed line indicates when the first RTW program became active.

Table 4.1: RTW Announcement and Work Search Requirement Dates

State	RTW Start	Work Search Start	Expanded UI End
AZ	**5/22/2021**	**05/23/2021**	**7/10/21**
CO	5/29/2021	02/01/2021	9/6/21
CT	6/5/2021	05/30/2021	9/6/21
MT	**5/15/2021**	**06/27/2021**	**6/27/21**
NH	**5/29/2021**	**05/23/2021**	**6/19/21**
NM	7/10/2021	05-09-2021	9/6/21
OK	**5/22/2021**	**10/25/2020**	**6/26/21**

Notes: Above are the dates that RTW programs become active in my sample and when work search requirements were reinstated.

RESULTS

Baseline Results

In the following, I explore the sign, magnitude, and significance of my baseline TWFE specification results. Additionally, I investigate the plausibility of the parallel trends assumption by examining pre-trends with an event study. Time-varying impacts are also explored in the event study section.

Tables 5.1 and 5.2 detail the point estimates of the TWFE model for the leavers and stayers samples. The first column of each table contains the point estimate for the RTW indicator. The second column contains a point estimate of the marginal impact of a thousand dollars in RTW payments.[1] While coefficients for the RTW indicator and dollar amount coefficients are negative, they are statistically indistinguishable from zero. These estimates imply that RTW programs are associated with a 0.158 percentage point decrease in state-level unemployment for leavers, or 9% of the sample's mean UI rate. For the stayers sample, having a RTW program is associated with a 0.24 percentage point decrease in unemployment insurance rate, or 9% of the sample's mean unemployment insurance rate.

It is possible that treated states selected into having RTW programs because they had UI rate trajectories that were structurally different from states without RTW. In an effort to scrutinize the possibility of selection bias stemming from different UI rate trajectories, Figures 5.1 and 5.2 detail the time varying impacts of RTW with an event study. For both stayer and leaver groups, point estimates are not statistically different from 0 before treatment, providing support for the parallel trends assumption. Post-treatment, the point estimates of the leavers sample are mostly negative, however, they are not significant at the 5% level. Aside from the first point estimate, most of the post-treatment point estimates in

[1] RTW payment size is cost of living adjusted using the Missouri Economic and Information Research Center's 2022 COLA state level index.

the stayers event study graph are near zero or positive. All point estimates are statistically indistinguishable from zero. I only include the first 4 point estimates of the post period because the shortest stayer RTW program was 4 weeks long. Later point estimates of the longer RTW programs are negative, leading to the negative coefficient we see in the TWFE results table. All in all, the small and statistically insignificant estimates in the post-treatment period for both the leaver and stayer samples provides further evidence that RTW efficacy for lowering UI rates was limited at best.

Robustness Checks and Case Studies

To analyze heterogeneity in RTW program impact, I inspect the effect of dropping states from their respective treatment group on the sign and magnitude of the coefficient of interest. I then explore what determines RTW efficacy by examining specific state outcomes.

Dropping RTW States from Sample

One possible explanation for the seeming inefficacy of RTW programs is heterogeneity in RTW designs. Some states may have had more effective program designs than others due to differences in outreach or limitations on eligibility.[2] To provide insights into this possibility, I drop states from the treatment group one at a time to observe the resulting RTW coefficient. Tables 5.3 and 5.4 contain the results for leaver and stayer samples respectively.

For the leavers sample, dropping Montana or New Hampshire leads to a large decrease in the magnitude of the RTW coefficient. Dropping Arizona leads to a sizable increase in magnitude. This indicates that Montana and New Hampshire's RTW programs were more effective at lowering UI rates while Arizona's was less effective. Omitting Oklahoma leads to a small increase in magnitude compared to the baseline specification in Table 5.1. For the stayers sample, omitting Colorado from the treatment group leads to an increase

[2]Some states limited eligibility with maximum and minimum wages.

in magnitude and significance for the RTW coefficient while omitting Connecticut leads to a sharp decrease in magnitude of the RTW coefficient. This implies that Colorado's RTW program was substantially less effective than Connecticut's. Omitting New Mexico has virtually no impact on the coefficient relative to the baseline specification in Table 5.1. In the following section, I explore what program-level characteristics could be driving these results.

Case Studies: What makes a good RTW program?

Montana: Direct Outreach Montana was the first state to announce a RTW program on May 4th, 2021. Unlike other states who solely communicated the inception of RTWs through press briefings, the Montana Department of Labor mailed RTW program details and instructions to every eligible individual in the state. Previous empirical research has found that providing information and outreach increases take-up of social programs. In Finkelstein and Notowidigdo (2019), a randomized control trial, the authors find that providing information to those eligible for SNAP leads to a 5 percentage point increase in take-up, while providing information and assistance leads to a 12 percentage point increase in take-up. The importance of information outreach and assistance may lead one to expect Montana's RTW to be more effective relative to its peers.[3].

Using Wyoming, Idaho, North Dakota, and South Dakota as controls, I investigate this claim. After accounting for state and week fixed effects, Montana had a UI rate 0.236 percentage points lower on average after the RTW policy, or 18% of the sample's mean. This case study's point estimate is statistically significant at the 10% level, and is reported in first column of Table 5.5. I run a similar case study with Oklahoma, which also left federal UI programs early but did not perform an outreach effort like Montana. Using Arkansas

[3]See the following url: `https://news.mt.gov/Governors-Office/montana-to-launch-return-to-work-bonuses-return-to-pre-pandemic-unemployment-program-to-address-workforce-shortage`

as a counterfactual, Oklahoma's RTW program led to a 0.147 percentage point decrease in the UI rate. This point estimate is significant at the 1% level. This is about 0.08% of the sample mean. The larger absolute and relative impact of Montana's RTW estimate provides suggestive evidence that outreach to eligible individuals increases RTW program efficacy.

Colorado and Arizona: Fraud, Accessibility, and RTW In 2022, Arizona began clawing back previously paid-out claims deemed as fraudulent or non-fraudulent over-payments.[4] Colorado had a similar experience with fraud.[5] Subsequently, both states introduced a new biometric verification system, IDme, to replace their old UI frameworks.[6] Colorado's RTW program was run as an extension of IDme; when individuals reported that they had found work during their weekly IDme check-in, they were prompted to either accept or reject Colorado Jumpstart, Colorado's RTW program.[7] Looking at Figure 5.3, one can observe a sharp drop in Colorado's UI claims in January of 2021.[8] Arizona saw a similar drop in fraud after implementing IDme. However, Arizona's RTW program was not as well integrated into the unemployment system as Colorado's was. According to Delaney and Golshan (2021), Arizona had nearly 20,000 RTW applications that were started and not completed. I investigate how differences in accessibility may impact RTW program efficacy.

For Colorado's case study, I use Kansas, an untreated state that stayed on Federal UI

[4]See Cunningham (2022) for more details on claw-backs. According to a story in the Associated Press, nearly 30% of UI payments made in Arizona during the pandemic were collected by scammers. See Christie (2021) for more information.

[5]According to this Colorado Public Radio (CPR) article, 10% of Federal UI funds from the CARES Act were collected by fraudulent claimers, making Arizona's fraud almost triple the national average (Kenney, 2021). Colorado's new fraud software flagged 20% of claims as fraudulent after its installation in January of 2021.

[6]Idme used video selfies and other bio-metric methods to verify the identities of UI recipients. Read Kenney (2021) for more information.

[7]Individuals receiving UI must check in weekly to confirm that they continue to look for work and are therefore eligible for UI payments.

[8]According to this article by Colorado Public Radio (CPR), potentially fraudulent accounts were frozen during the week ending on January 16th, 2021. According to the article, nationwide about 10% of federal unemployment money distributed through the Cares Act was fraudulently claimed.

benefits until their expiration, as the control. The results of this case study are reported in column 1 of Table 5.6. RTW is associated with a 0.143 percentage point drop in UI claims or 15% of the sample mean. This estimate is statistically significant at the 1% level. In Arizona's case study, Utah, an untreated leaver, is used as a control. Column two of Table 5.6 reports Arizona's results. A RTW program is associated with a 0.09 percentage point increase in the UI rate; 8% of the sample mean. The point estimate is statistically significant at the 1% level. Given the positive sign of Arizona's coefficient, we can infer that its lower level of accessibility hampered RTW efficacy.

Table 5.1: RTW Impact on UI (Leavers Sample)

	(1) UI Rate	(2) UI Rate
RTW	-0.158	
	(0.192)	
RTW Dollars (Thousands)		-0.0376
		(0.139)
Constant	1.750***	1.745***
	(0.00855)	(0.00828)
State and Week FE	Yes	Yes
Observations	360	360
Mean of Dep. Variable	1.743	1.743

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Column (1) shows the results of the baseline specification with continued unemployment insurance claims as the outcome variable. Leaver states with RTW programs experienced a decline in continued unemployment insurance claims of 0.16 percentage points, about 9% of the sample mean. Column (2) replaces the RTW indicator variable with the dollar amount of a state's RTW payment, cost of living adjusted. Continued unemployment insurance claims remains the outcome variable. One thousand dollars in RTW payment is associated with a 0.04 percentage point reduction in continued unemployment insurance claims. Neither estimate is statistically significant at conventional levels.

Table 5.2: RTW Impact on UI (Stayers Sample)

	(1) UI Rate	(2) UI Rate
RTW	-0.238	
	(0.182)	
RTW Dollars (Thousands)		-0.195
		(0.209)
Constant	2.633***	2.630***
	(0.00743)	(0.00798)
State and Week FE	Yes	Yes
Observations	440	440
Mean of Dep. Variable	2.623	2.623

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Column (1) shows the results of the baseline specification with continued unemployment insurance claims as the outcome variable. Stayer states with RTW programs experienced a decline in continued unemployment insurance claims of 0.24 percentage points, about 9% of the sample mean. Column (2) replaces the RTW indicator variable with the dollar amount of a state's RTW payment (cost of living adjusted). The continued unemployment insurance claims rate remains the outcome variable. One thousand dollars in RTW payment is associated with a 0.2 percentage point reduction in continued unemployment insurance claims. Neither estimate is statistically significant at conventional levels.

Table 5.3: Dropping States from Treatment Group (Leavers Sample)

	(1) UI Rate	(2) UI Rate	(3) UI Rate	(4) UI Rate
RTW	-0.304	-0.0329	-0.0571	-0.238
	(0.180)	(0.212)	(0.209)	(0.232)
Constant	1.766***	1.730***	1.710***	1.738***
	(0.00627)	(0.00676)	(0.00786)	(0.00807)
State and Week FE	Yes	Yes	Yes	Yes
State Omitted	Arizona	Montana	New Hampshire	Oklahoma
Observations	345	345	345	345
Mean of Dep. Variable	1.756	1.729	1.708	1.730

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Column (1) shows the results of the baseline leavers specification after dropping Arizona from the treatment group. Having a RTW program is associated with a decline in continued unemployment insurance of 0.3 percentage points. This estimate is larger in magnitude compared to the baseline point estimate, 0.16. Column (2) drops Montana from the leavers treatment group. Afterwards, RTW's magnitude falls. Having a RTW program is associated with a 0.03 percentage point reduction in continued unemployment insurance rates. Column (3) drops New Hampshire from the treatment group and RTW's coefficient shrinks relative to the baseline specification. RTW is associated with a 0.06 percentage point reduction in continued unemployment insurance rates. Column (4) drops Oklahoma from the sample and the RTW coeficient grows in magnitude relative to the baseline specification. Having a RTW program is associated with a 0.24 percentage point reduction in continued unemployment insurance claim rates. No estimate is statistically significant at conventional levels.

Table 5.4: Dropping States from Treatment Group (Stayers Sample)

	(1) UI Rate	(2) UI Rate	(3) UI Rate
RTW	-0.402***	-0.0471	-0.244
	(0.140)	(0.149)	(0.245)
Constant	2.698***	2.584***	2.635***
	(0.00432)	(0.00319)	(0.00815)
State and Week FE	Yes	Yes	Yes
State Omitted	Colorado	Connecticut	New Mexico
Observations	420	420	420
Mean of Dep. Variable	2.685	2.583	2.626

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Column (1) shows the results of the baseline stayers specification after dropping Colorado from the treatment group. Having a RTW program is associated with a decline in continued unemployment insurance of 0.4 percentage points, larger in magnitude than the coefficient of the baseline regression, 0.23. Column (2) drops Connecticut from the leavers treatment group. Afterward, RTW's magnitude falls. Having a RTW program is associated with a 0.05 percentage point reduction in continued unemployment insurance rates. Column (3) drops New Mexico from the treatment group and RTW's coefficient stays about the same as in the baseline regression. RTW is associated with a 0.24 percentage point reduction in continued unemployment insurance rates. Column 1 contains the only statistically significant point estimate.

Table 5.5: Case Studies: Outreach

	(1) UI Rate	(2) UI Rate
RTW	-0.236*	-0.147***
	(0.108)	(1.89e-17)
Constant	1.340***	1.802***
	(0.00717)	(1.55e-16)
State and Week FE	Yes	Yes
Treated State	Montana	Oklahoma
Control(s)	ID, ND, SD, WY	AR
Observations	75	30
Mean of Dep. Variable	1.324	1.782

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Montana was the only state to reach out to every RTW payment eligible individual. Given research on take-up, I expect Montana's RTW program to be more effective than others all else equal (Finkelstein & Notowidigdo, 2019). I run two case study regressions, one with Montana and its leaver neighbors and the other with Oklahoma and its single leaver neighbor. Column (1) shows the results Montana's case study. RTW is associated with a 0.24 percentage point reduction of continued unemployment insurance claims. The point estimate is significant at the 10% level. Column (2) reports the results of Oklahoma's case study. A RTW program is associated with a 0.15 percentage point reduction in continued unemployment insurance claims. The point estimate is significant at the 1%.

Table 5.6: Case Studies: Accessibility

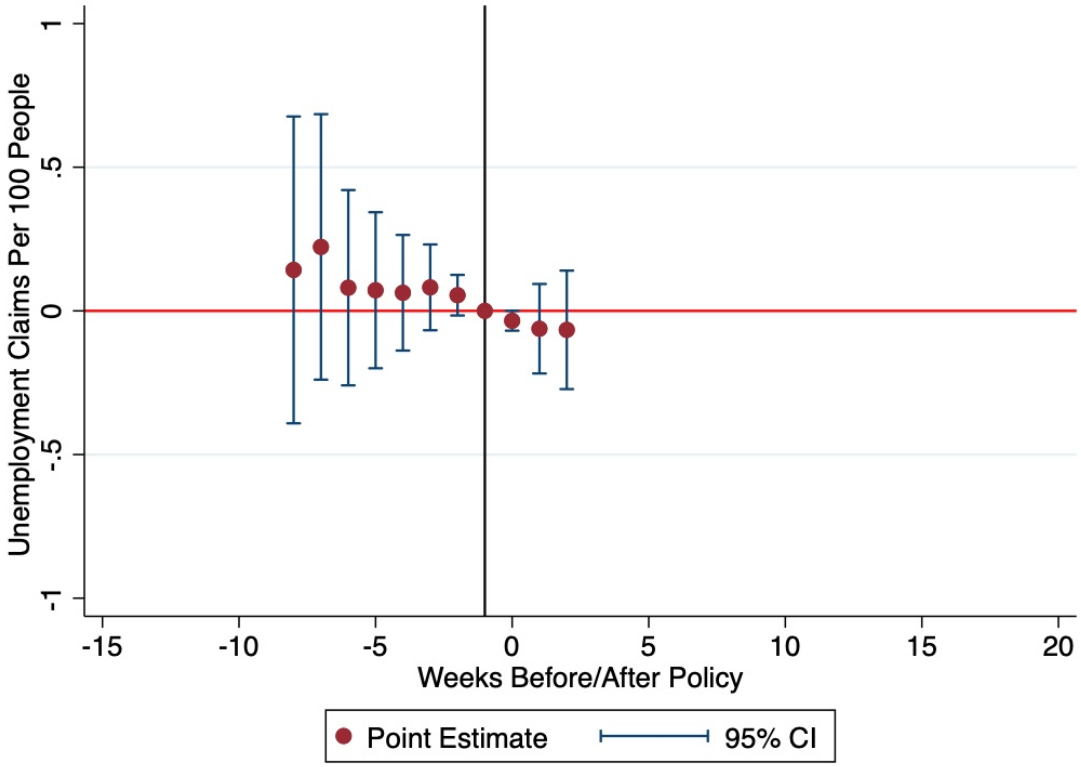
	(1) UI Rate	(2) UI Rate
RTW	-0.143***	0.0922***
	(2.79e-16)	(1.99e-16)
Constant	0.994***	1.110***
	(4.32e-17)	(1.90e-17)
State and Week FE	Yes	Yes
Treated State	Colorado	Arizona
Control(s)	KS	UT
Observations	40	30
Mean of Dep. Variable	0.976	1.122

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

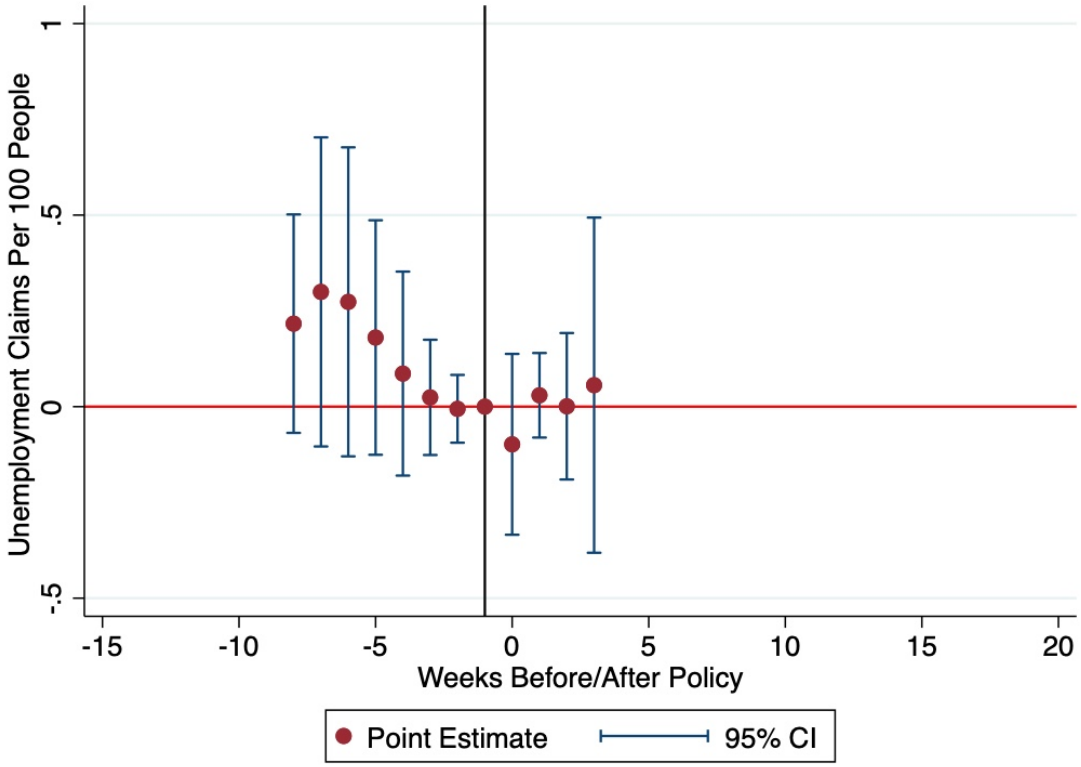
Notes: Colorado and Arizona both had high rates of UI fraud early on in the pandemic. In January of 2021, Colorado re-vamped its UI system requiring additional verification. Figure 5.3 shows the sharp drop in continued unemployment insurance rates after the institution of the revamped UI system. Colorado's RTW program was woven in seamlessly into its revamped UI system, while Arizona's included more barriers. Given this, we can expect Colorado to have a more effective RTW program relative to Arizona. I run two case study regressions, one with Colorado and Kansas and the other with Arizona and Utah. Column (1) shows the results of Colorado's case study. RTW is associated with a 0.14 percentage point reduction in continued unemployment insurance claims. The point estimate is significant at the 1% level. Column (2) reports the results of Arizona's case study. A RTW program is associated with a 0.09 percentage point increase in continued unemployment insurance claims. The point estimate is significant at the 1%.

Figure 5.1: Event Study: Leavers



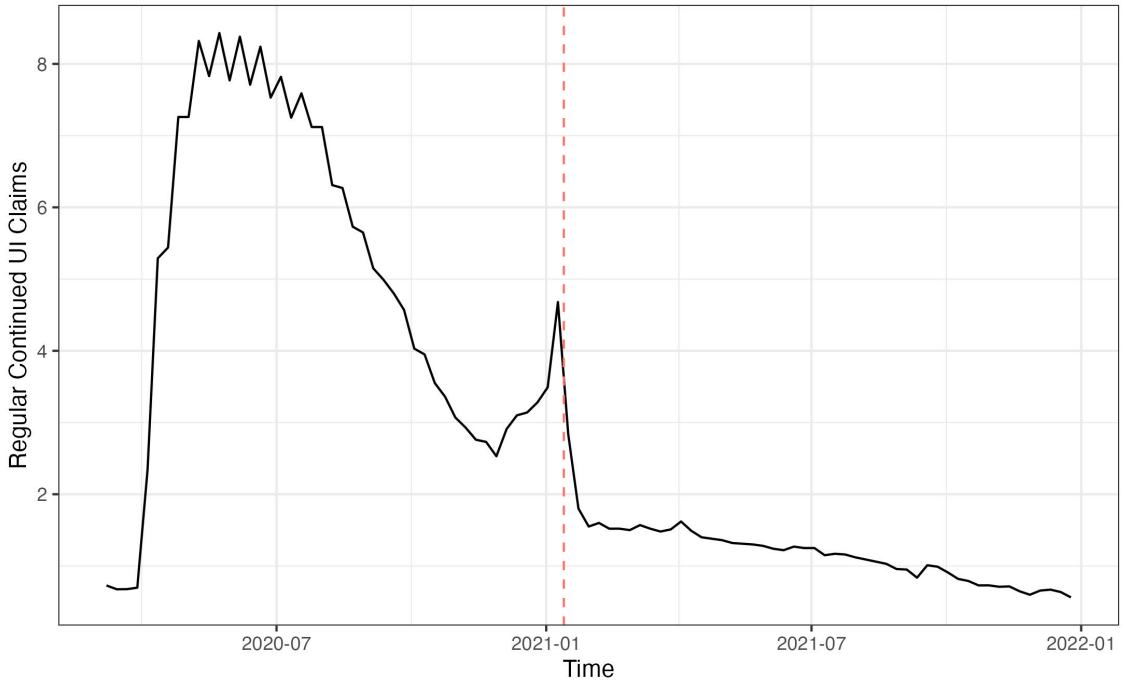
Notes: Event study coefficient estimates are reported with their 95% confidence intervals. This specification only includes states in the leavers sample, states that left Federal Pandemic Unemployment Compensation (FPUC) early. The week before treatment is omitted. The dependent variable is continued unemployment insurance claims rates in state s at week t. Controls include state and week fixed effects. Standard errors are clustered at the state level.

Figure 5.2: Event Study: Stayers



Notes: Event study coefficient estimates are reported with their 95% confidence intervals. This specification only includes states in the stayers sample, states that stayed on Federal Pandemic Unemployment Compensation (FPUC) until its expiration. The week before treatment is omitted. The dependent variable is continued unemployment insurance claims rates in state s at week t. Controls include state and week fixed effects. Standard errors are clustered at the state level.

Figure 5.3: Colorado's UI Rate and IDme



Note: Here Colorado's UI rate is depicted. The vertical dashed line indicates the date this article by Colorado Public Radio (CPR) was published, detailing that the IDme roll-out was imminent.

CONCLUSION

A historically tight labor market has increased interest in methods for increasing labor market slack outside of interest rate hikes (Pollard & Dilts Stedman, 2023). Little causal work has been done on the effectiveness of direct cash incentives to expand the workforce. To explore the impacts cash incentives can have on work, I exploit the RTW policies active during the summer of 2021. Specifically, using unemployment insurance (UI) data from the Department of Labor, I look at how state-level variation in "return to work" (RTW) programs impacted unemployment insurance (UI) rates.

My baseline TWFE model suggests that on average RTW programs at best have a small and negative impact on UI rates. This holds for both the leaver and stayer cohorts. In my event studies, the same pattern holds. When dropping states from their respective treatment groups, the RTW coefficients changed drastically indicating heterogeneity in the efficacy of RTW programs. I investigate possible mechanisms for this heterogeneity in a series of case studies: Montana, Oklahoma, Colorado, and Arizona.

The first two case studies compare and contrast the impacts of outreach in Montana and Oklahoma. Both were leaver states, however, Montana contacted every individual eligible for the RTW program while Oklahoma did not. The absolute and relative magnitudes of Montana's RTW were larger than Oklahoma's, indicating the positive take-up effects of outreach. The next two case studies, Colorado and Arizona, focused on the impacts RTW program accessibility had on program take-up. Colorado's RTW application was integrated into its online UI portal while Arizona's was not. Colorado's RTW coefficient followed economic theory and was negative, indicating that providing a financial incentive to those claiming UI benefits moves some individuals into active employment. It is likely that the higher transaction costs limited Arizona's RTW program, explaining the small but positive coefficient in Arizona's case study.

From a policy standpoint, my results highlight the limited efficacy of the 2021 RTW policy experiments. Additionally, I provide suggestive evidence for increasing RTW programs efficacy in the future. Policymakers would do well to provide information and assistance to all eligible individuals and make accessing the program as easy as possible. Future studies should leverage individual-level data to learn more about what characteristics and mechanisms drive RTW participation, providing further guidance to policymakers. Future research can also look more thoroughly into the impacts of biometric verification systems like IDme.

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