

Aggregate Short-Term Employment Effects of Terminations of Pandemic Unemployment Programs*

Peter Ganong, Pascal Noel, and Joe Vavra

August 26, 2022

The Consolidated Appropriations Act of 2021 provided three mechanisms for the federal government to expand unemployment benefits: (i) Pandemic Unemployment Compensation (PUC) as a \$300 weekly supplement to benefits, (ii) Pandemic Emergency Unemployment Compensation which provided additional weeks of benefits to workers who had exhausted regular benefits and (iii) Pandemic Unemployment Assistance which broadened access to workers traditionally ineligible for benefits. While these three federal pandemic unemployment benefits would automatically expire on September 6, 2021, some states chose early termination. Between May 12, 2021 and July 12, 2021, 26 states announced termination of PUC. 21 of the 26 announced termination of all three federal unemployment benefit expansions. The stated goal of these reductions in benefits was accelerated job growth.

What was the actual effect of terminating pandemic unemployment benefits on employment? We use employment estimates from the BLS State and Metro Area Employment, Hours, & Earnings Program, also known as the SAE estimates, as well as variation in state policies to answer this question. We find that benefit termination had little effect on job growth with an uncertain direction: per person that lost benefits, net employment changed by -0.14 to $+0.11$. This analysis was pre-registered prior to the release of SAE July employment data.¹

Recall that 26 states announced termination of federal unemployment benefits between May

*Corresponding author ganong@uchicago.edu. We thank Nicolas Wuthenow and Michael Meyer for research assistance.

¹<https://osf.io/k95es/>

and July of 2021. Let y_{it} be employment in state i in month t . The percent change in employment for each state over this time period is

$$\Delta y_i = y_{i202105} / y_{i202107}$$

Figure 1 plots Δy_i for every state (and the District of Columbia), color-coded by its policy towards federal pandemic unemployment benefits. There is no obvious correlation between state policy towards expanded federal benefits and subsequent growth in employment.

To measure the average effect of termination, let us define employment in terminating states as

$$y_t^1 \equiv \sum_{i \in \text{terminate all benefits early}} y_{it}$$

and employment in non-terminating states as

$$y_t^0 \equiv \sum_{i \in \text{terminate no benefits early}} y_{it}$$

Note that we omit the five states that terminated only some benefits (we examine these states later in alternative specifications in Figure 4).

Figure 2 shows the ratio of employment at time t to employment in May 2021 both for states that terminate all benefits early $\frac{y_t^1}{y_{1202105}}$ and states that terminate no benefits $\frac{y_t^0}{y_{0202105}}$. Between May 2021 to July 2021 (after 21 states terminate all federal pandemic UI benefits), there is no observable difference in employment growth between groups.

Let us compare states that terminated all benefits early to those that did not terminate benefits using the equation $\hat{E}_t = \Delta y_t^1 - \Delta y_t^0$, where $\Delta y_t^d \equiv (y_t^d - y_{t-2}^d) / y_{t-2}^d$. If the treatment period is the two-month window from May to July 2021, then it follows that our estimate for the employment growth effect of termination is

$$\tau = \hat{E}_{202107} - \hat{E}_{\text{counterfactual}}$$

The standard difference-in-difference assumption is that there would have been parallel trends in treatment and control group in the absence of the treatment. If employment growth would have

been equivalent in the counterfactual world where there had been no early termination of UI, then we would set $\hat{E}_{\text{counterfactual}} = 0$ in the above equation to estimate the treatment effect.

There are a number of reasons to think that the parallel trends assumption does not hold in this context. The decision to terminate federal UI benefits was not exogenous. Suppose states with lagging employment growth were more likely to terminate UI benefits. Then we might expect that their employment growth would have continued to lag behind the control group, even in the absence of termination. Or we might expect that their employment growth would have caught up to the control group in a reversion to the mean.

The data also show differential employment growth trends between treatment and control states in pre-treatment periods. In Figure 2, we can observe that average employment growth from October 2020 to May 2021 is greater in treatment states than control states. However, average employment growth from January to May 2021 is greater in control states than treatment states. We use the average differential growth rates in these two periods to create upper-bound and lower-bound estimates of the treatment effect by plugging

$$\hat{E}_{\text{counterfactual}}^{\text{high}} = \sum_{i \in [202010, 202105]} \hat{E}_t / 8$$

and

$$\hat{E}_{\text{counterfactual}}^{\text{low}} = \sum_{i \in [202101, 202105]} \hat{E}_t / 5$$

into $\hat{E}_{\text{counterfactual}}$ in our equation for τ , where we derive the treatment effect of early termination on subsequent employment growth. Using $\hat{E}_{\text{counterfactual}}^{\text{high}}$ yields a higher estimate for τ and using $\hat{E}_{\text{counterfactual}}^{\text{low}}$ yields a lower estimate for τ .

In Figure 3 we plot the differential trend in two-month employment growth between treatment and control states. If we assume parallel trends ($\hat{E}_{\text{counterfactual}} = 0$), then the trend depicted by the solid black line between May and July 2021 represents the effect of terminating federal benefits on employment growth. To account for sampling error in \hat{E}_t , we compute the $\text{Var}(\hat{E}_t)$ using the state-level standard errors produced by the SAE. The figure also illustrates the lower-bound and upper-bound estimates of the treatment effect τ using dotted black lines. Taken together, the effect

of termination on employment growth is tiny and the direction uncertain.

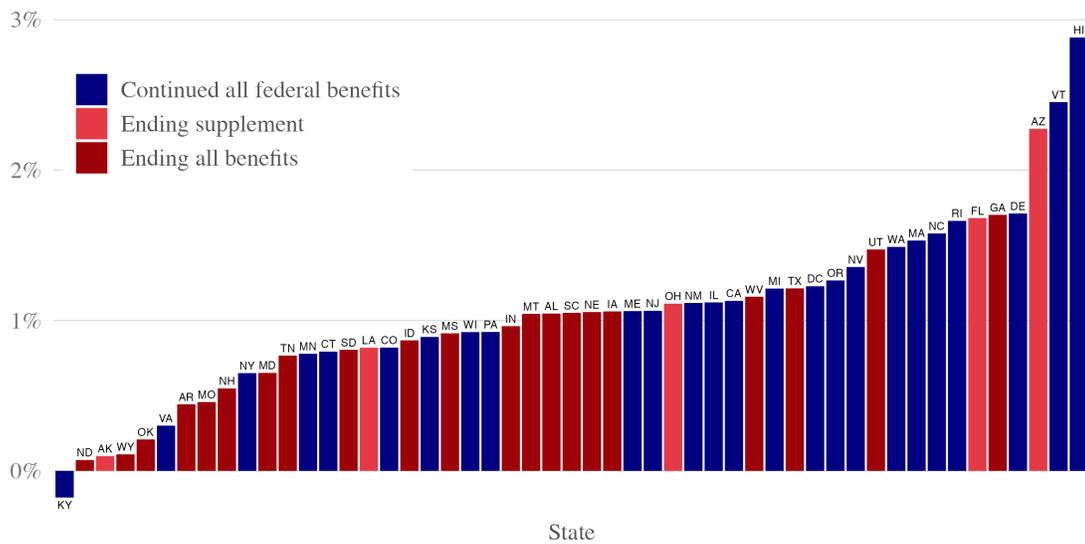
We can also look at the employment effect of termination per worker whose benefits are terminated. In Figure 4, we calculate employment growth per lost UI beneficiary across several specifications: (1) using both lower-bound and upper-bound estimates for counterfactual differential growth in the treatment period, (2) defining the treatment group as the 21 states that announced termination of all pandemic benefits or the 26 states that announced termination of any pandemic benefit, and (3) dividing τ by the number of workers receiving all pandemic benefits or the number of workers receiving just the \$300 supplement as of the week before expiration in terminating states.

The figure suggests that the lowest possible estimate for employment growth per lost beneficiary is -0.14 and the highest possible estimate is 0.11. Other estimates for this treatment effect are closer to zero or negative effects of a similar magnitude. From this evidence, there is no indication that early termination of federal pandemic unemployment benefits had any substantial effect on labor market recovery from May to July of 2021.

In future work, it would be valuable repeat this analysis using the BLS Quarterly Census of Employment and Wages which captures the near-universe of firms and to incorporate employment data through August 2021.

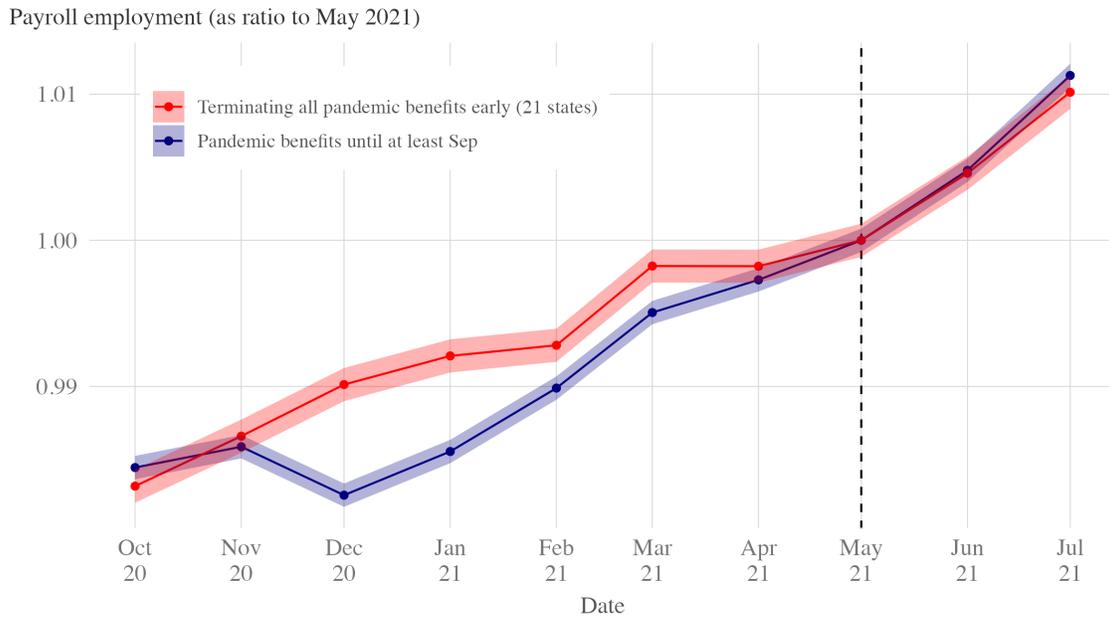
Figure 1: Employment Growth between May and July 2021 by State

2-Month Employment Growth between May 21 and July 21



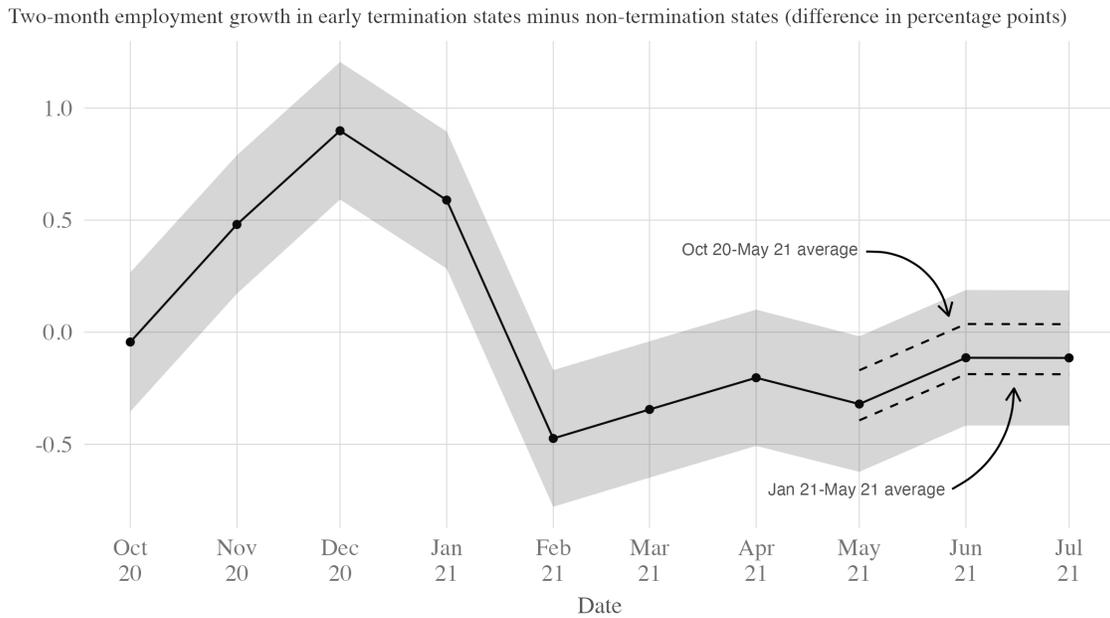
Notes: This figure shows employment growth in percent terms by state from May 2021 to July 2021, the period in which 26 states announced that the termination of either some or all federal unemployment benefits prior to expiration. Bars are color-coded by state policy. There is no obvious correlation between termination of benefits and employment growth.

Figure 2: State-Level Employment Growth Relative to May 2021



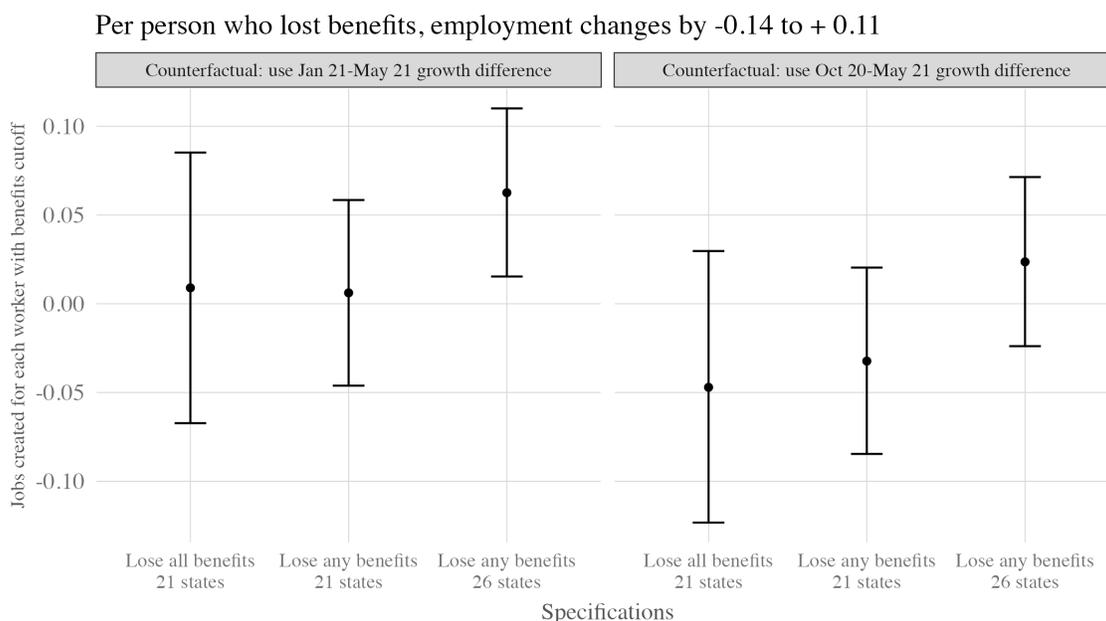
Notes: This figure compares the evolution of payroll employment in states that terminated all federal pandemic unemployment benefits prior to their legislated expiration on September 6, 2021 and states that did not. The y-axis is the ratio of payroll employment on a given month to payroll employment in May 2021 (prior to any benefit termination), as estimated by the BLS State and Metro Area Employment, Hours, & Earnings Program (SAE). The shaded region represents a 95% confidence interval constructed using the state-level standard errors provided by the SAE. The 21 states that ended pandemic benefits early all implemented this policy in the time period between May 2021 and July 2021. In this two-month treatment period, there is no statistically significant difference in payroll employment growth between groups.

Figure 3: Difference in Employment Growth



Notes: This figure shows the difference in two-month percent employment growth between states that terminated all federal pandemic unemployment benefits prior to expiration and those that did not. If we assume that, in the absence of termination, there would have been no difference in employment growth from May 2021 to July 2021 between the two groups, then the solid black line represents the impact of termination on employment. The grey shaded region represents a 95% confidence interval constructed using the state-level standard errors provided by the SAE. The dotted black lines represent the impact of termination on employment if we assume that growth would have been higher in termination states (consistent with the October 2020 to May 2021 average) or that growth would have been lower in termination states (consistent with the January 2021 to May 2021 average).

Figure 4: Employment Growth per Person who Lost Benefits



Notes: This figure shows a range of estimates across specifications for the effect of termination on employment growth per person who lost benefits. If we assume the counterfactual that in the absence of termination that the difference in growth from May 2021 to July 2021 between the two groups of states would have been equivalent to the difference in growth from January 2021 to May 2021, and we compare the 26 states that terminated any benefits to states that terminated zero benefits, then our estimate of the employment change per person who lost benefits is at its highest, with a 95% confidence interval including a gain of .11 jobs per lost beneficiary. If we instead assume the counterfactual that in the absence of termination that the difference in growth from May 2021 to July 2021 between the two groups of states would have been equivalent to the difference in growth from October 2020 to May 2021, and we compare the 21 states that terminated all benefits to states that terminated zero benefits, then the our estimate of the employment change per person who lost benefits is at its lowest, with a 95% confidence interval including a loss of .14 jobs per lost beneficiary.