

laid off workers to remain in the labor force during a recession works to increase the cyclical volatility of unemployment. When layoffs increase by a certain amount in a recession, flows into unemployment rise even more due to the increased propensity of laid off workers to stay in the labor force.

A practical alternative to the unemployment. The cyclical changes in the labor supply of laid-off workers increases the cyclical variability of unemployment in a statistical sense. If the decision to report being unemployed versus a non-participant is superficial or has little meaning for actual job search efforts, than the series of unemployment is more volatile than the series of slack labor supply. After all, the majority of hires from non-employment come from non-participation and so unemployment is hardly fully encompassing of the pool of potential workers. In this case, one might want to track an unemployment rate that holds fixed the labor supply decisions of laid-off workers, This is at least useful to get a better idea of fluctuating labor demand without including the influence of fluctuating labor supply. The CPS offers a great dataset in which to produce this alternative because it is nearly real-time and little revised compared to the heavily revised JOLTS or smaller surveys like the PSID which are released with at least a year’s lag.

We construct an alternative measure of unemployment from layoff and job finding rates but that holds fixed the share of laid-off workers leaving the labor force to be constant over time.¹² We will do this in two ways to create a range. The first we will call a lower bound and assumes that the newly classified unemployed workers have the same job finding rate as actual unemployed workers. The second we will call an upper bound and assumes that the newly classified unemployed workers have the same job finding rate as the non-participants. The following formalizes the first series for concreteness, and the second is constructed analogously. Let the constructed series be denoted as \hat{u} , the fixed share of laid off workers entering unemployment as \bar{s} , the actual series without hats, and the actual flow rates by $\lambda^{source,destination}$ and $\lambda^{source,reason,destination}$ for quits and layoffs. The series is then constructed as:

$$\begin{aligned}\hat{u}_{t+1} &= \hat{u}_{t-1}(1 - \lambda_{t-1}^{ue} - \lambda_{t-1}^{en}) + e_{t-1}(\lambda_{t-1}^{equ} + \bar{s}(\lambda_{t-1}^{elu} + \lambda_{t-1}^{eln})) + n_{t-1}\lambda_{t-1}^{nu} \\ \hat{u}_0 &= u_0\end{aligned}$$

The correlations between the two constructed series and the actual unemployment series are high at 0.980 and 0.914 for the lower and upper bounds, respectively, but the cyclical variances over the entire time period are 39-43% lower and closer to 30% lower when excluding the pandemic recession. Table 9 displays this calculation for all the recessions in our data. To illustrate this point: the unemployment rate increased 4.63 percentage points in the Great Recession but would have increased only 3.4-3.6 percentage points if the share of laid off workers exiting the labor force would have been held constant. That’s a decrease of roughly 25%.

¹²This constant share is chosen to maximize the correlation between the alternative series and the true measured CPS unemployment.

Increase in Unemployment during Recessions					
	1980 & 1981-82	1990-91	2001	2007-09	2020
Actual	4.9	1.6	1.6	4.8	11.3
Fixed Share Layoffs to U	3.0-3.5	1.1-1.2	0.9-1.0	3.4-3.6	4.5-5.1
Percent difference	29-38	29-31	36-42	25-29	55-60

Table 9: Second rows: range of hypothetical unemployment rate if the share of laid-off workers is time invariant. Percent difference: how much of the increase in unemployment is from more laid off workers going to unemployment

A complete "participation neutral" series of unemployment holds constant the flow rates between unemployment and non-participation as well as the share of workers laid off from employment who exit the labor force. To construct this series, we take the entirety of flows for prime age workers from the data: quits from E to NE; layoffs from E to NE; other from E to NE; UE finding rate; NE finding rate; NU; UN; and the shares of all separations that end up in N. We then construct a series of employment-population ratio, unemployment-population ratio, and non-participation-population ratio with the share of layoffs to N, NU, and UN fixed each at a constant rate. We solve for these shares to maximize the correlation between our participation neutral series of unemployment and the actual series of unemployment.

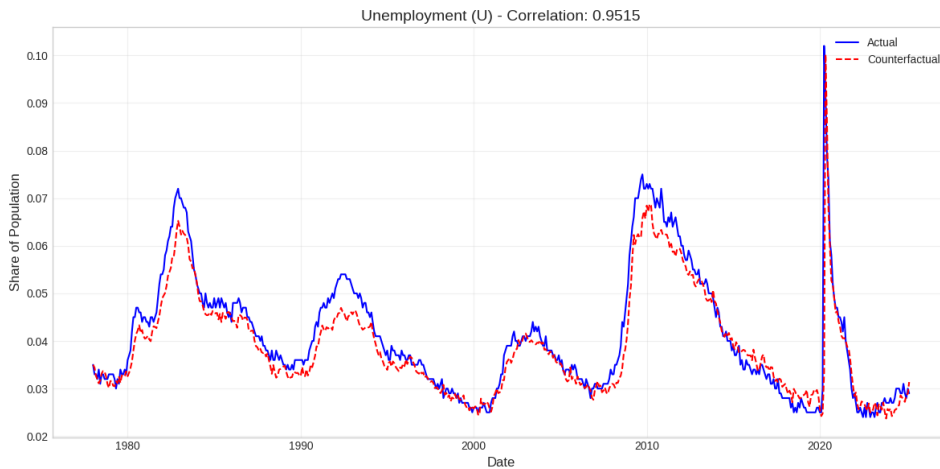


Figure 6: Counterfactual: Impact of Participation Flows on the dynamics of unemployment.

The results are shown in Figure 6. The blue line is the actual series and the red-dashed line is the participation neutral series. The higher volatility of the actual series implies that participation decisions amplify the cyclical volatility of unemployment. When they are removed, we get the less volatile red-dashed line. The contribution of participation decisions to unemployment volatilities varies across recessions. The 2000 and COVID recessions show little difference between the two series, while the 1990's recession shows an unemployment rate almost a full percentage point lower when participation decisions are held fixed. This colors how we compare volatility across recessions. For example, the height of the 2000 recession unemployment rate

becomes close to the early 1990s one suggesting more similar dynamics in labor demand (layoff rates and job finding rates).

Another interesting feature is that the actual unemployment series often leads our counterfactual series. This suggests that participation decisions shift in anticipation of the cycle. The very recent movements from 2023-current show a more stark example of this lagged relationship. The actual rise in unemployment is first driven by a rise in labor force participation and then, a year later, demand factors start to slow down and contribute to lower slack and higher unemployment. We will show this feature makes the quit and layoff timeseries useful for predict future unemployment dynamics in Section 8.

5 Differences and Similarities Across Recessions.

Our sample covers six NBER dated recessions starting with the one in 1980 up until the pandemic recession of 2020. Although recessions differ in their cause, length, severity and their impact on the labor market, we will show in this section that they are remarkably similar with regards to dynamics of quits, layoffs, and total separations into non-employment. Thus, we do not think that our empirical findings are the result of specific recessions having a dominating effect on the overall timeseries.

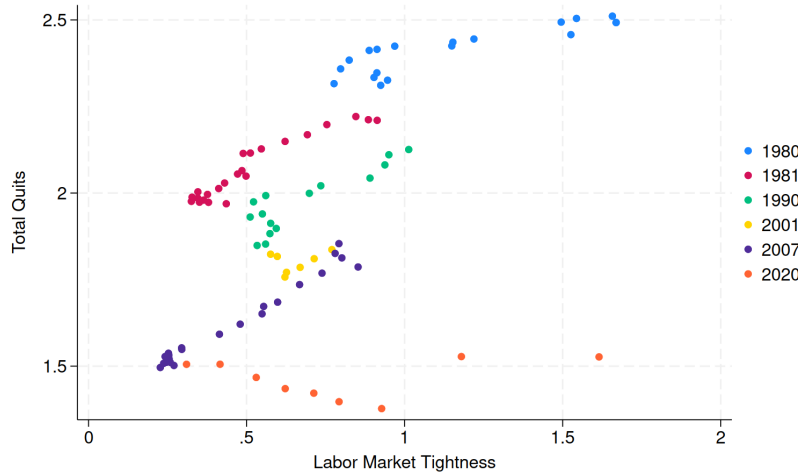


Figure 7: Total quits into non-employment is positively correlated with labor market tightness

We use labor market tightness as a measure of the state of the economy to compare recessions.¹³ Analyzing our timeseries in relation to market tightness allows for a more equal comparison among very different recessionary periods. Figure 7 shows the relationship between labor market tightness and our quit series for each recession plus six months of recovery. Each set of colored dots represents one of the six recessions. The slope of the lines are generally positive: quits are low if labor market tightness is low and quits increase when the labor market becomes tighter. This observation is true for all recessions except the 2020 COVID-19 episode.

¹³Labor market tightness is defined as the vacancies relative to unemployed.