

Employment and Unemployment across Counties in Wisconsin

The ability of an economy to recover from an adverse shock to employment is critical for its development. A new CROWE policy brief, “[Economic Performance in Wisconsin since the Great Recession: A County-Level Analysis](#),” finds that, among other things, the unemployment rate has declined in all counties in Wisconsin after the initial rise during the Great Recession of 2007-2009. In addition, there is significant convergence, in the sense that counties that suffered the most during the recession have had the largest gains during the recovery, and counties with a high initial unemployment rate in 2007 experienced larger declines over the following ten years. Here we relate the unemployment dynamics to the evolution of employment, labor force and population to provide a better understanding of how the recovery and convergence occurred.¹

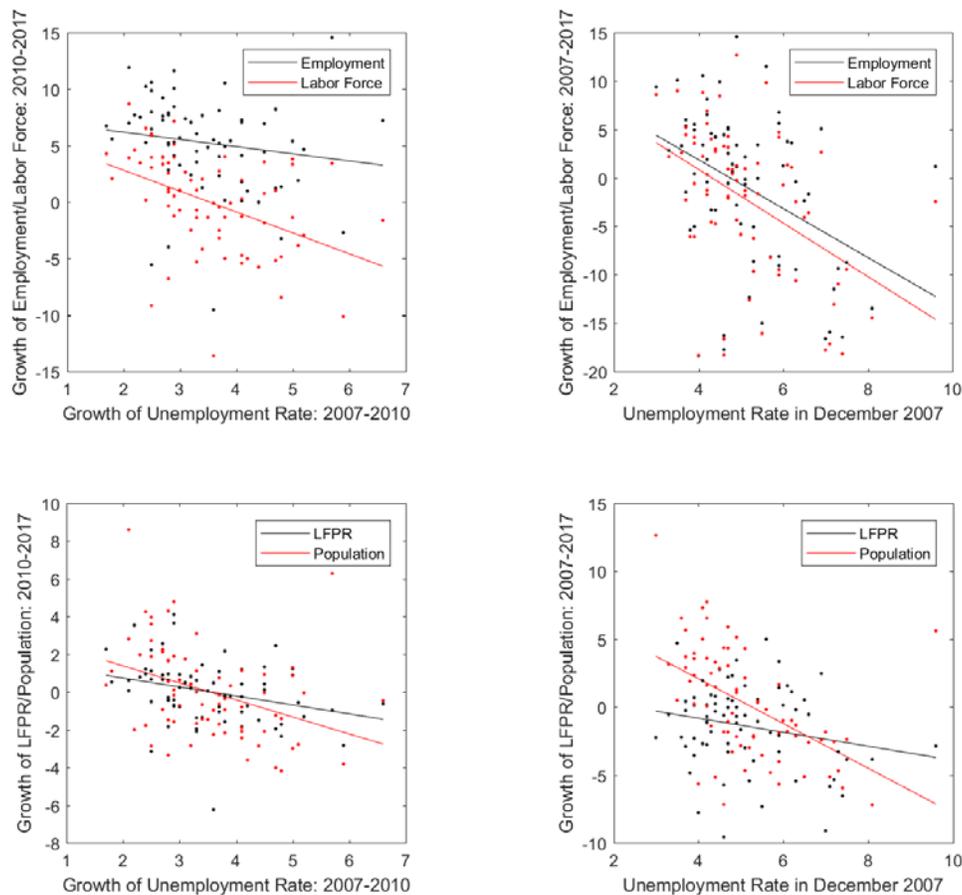


Figure 1: Relationship among Employment, Labor Force, Participation, Population and Unemployment for Counties in Wisconsin

¹ We exclude a few counties that are outliers. For example, a county is excluded if its population in 2017 is more than twice or less than 50% of its population in 2007.

Since the unemployment rate is calculated as the percentage of the labor force which is not employed, reductions in the unemployment rate can come from either increases in employment or reductions in the labor force. In Figure 1, the top left panel plots the growth rate of (private) employment and the labor force between 2010 and 2017 against the change in the unemployment rate between 2007 and 2010. On average, counties in Wisconsin experienced 5% employment growth between 2010 and 2017. The average growth rate of the labor force, on the other hand, is close to zero. On average, employment growth thus has been the main contributor to the decline in the unemployment rate during the recovery.

However when looking at differences across counties, there is a small negative correlation between employment growth during the recovery and the unemployment increase during the recession: counties that were hit the hardest during the recession actually experienced a smaller increase in employment during the recovery. However, this correlation is not statistically significant. But there is also a negative, and this time statistically significant, correlation between labor force growth during the recovery and the unemployment increase during the recession. Counties that were hit the hardest during the recession on average experienced a decline in their labor force of 5% or more. This substantial decline in the labor force more than compensates for the slower growth of employment, resulting in a larger drop in unemployment for those counties.

Moving on to the top right panel of Figure 1. We find that counties in Wisconsin on average experienced a 1% decline in employment and 2% decline in the labor force between 2007 and 2017. Note that these are unweighted county averages – statewide employment did increase over the period because (as we showed in the CROWE report) the gains were larger in larger counties. Moreover, there is a negative and statistically significant relation between the initial unemployment rate in December 2007 and the growth of both employment and the labor force in the following ten years. Counties with a high initial unemployment rate experienced a larger decline in both employment and the labor force. The gap between the two fitted lines is increasing, leading to a larger decline in the unemployment rate for counties with a higher initial level, as documented in CROWE report.

Both panels show a declining labor force for many counties in Wisconsin, especially for those with a high unemployment rate in 2007 and those suffered the most during the recession. The labor force could decline either due to a decline in population or to workers dropping out of the labor force, which would show up as a reduction in the labor force participation rate (LFPR). The bottom left panel of Figure 1 shows that counties that were hit the hardest during the recession on average experienced a decline in both population and LFPR since 2010. Thus while both factors mattered, the slope of the fitted line in red is more negative, suggesting that population growth is the more important contributor to the variation in labor force growth across counties in Wisconsin during the recovery.

Finally, the bottom right panel shows that the LFPR declined for most counties between 2007 and 2017, while the population increased (decreased) in counties with a low (high) initial unemployment rate on average. Again, the slope of the fitted line in red is more negative,

suggesting that population growth is the more important contributor to the variation in labor force growth across counties in Wisconsin since 2007.

In summary, while employment growth contributes to the recovery of most counties in Wisconsin, the differences across counties are driven more by labor force dynamics. A shrinking labor force is more important both for the recovery of counties that suffered the most during the recession and for the convergence of the unemployment rate across counties since 2007. Additionally, both the population and the LFPR declined and contributed to the declining labor force in the counties that fared the worst, with population being more important in accounting for the cross-county variation in labor force growth.

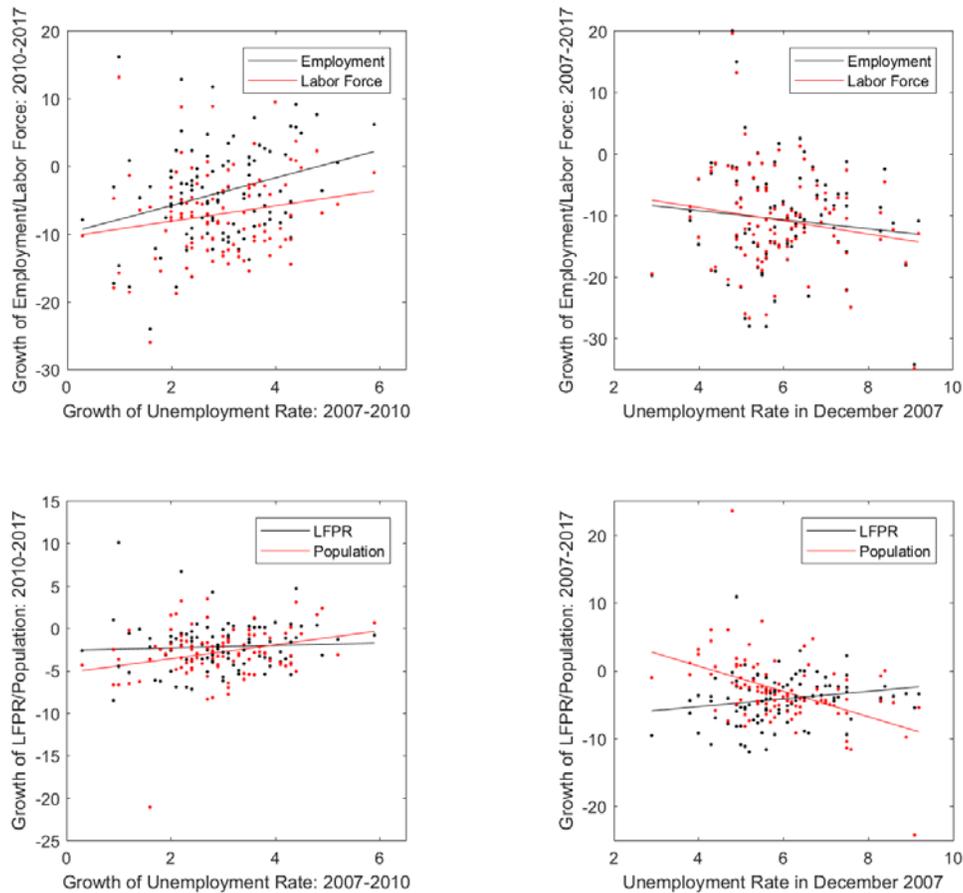


Figure 2: Relationship between Employment, Labor Force, Population and Unemployment: Counties in Illinois

Some of these dynamics are not unique to Wisconsin. Figure 2 shows the same results as in Figure 1 but for Illinois. (We have also looked at all counties around the nation, which tells a similar story but with substantially more dispersion.) The declines in the labor force and population in Illinois are much larger than in Wisconsin, but the relative patterns of the panels in the right column are similar to those in Figure 1. As in Wisconsin, counties in Illinois which initially had higher unemployment rates have had larger reductions in employment and the labor

force. In addition, the decline in population was more of a factor than changes in labor force participation.

However the left column tells a different story, with counties that had the largest gains increase in unemployment gaining the most employment and the labor force (top panel). In addition, the bottom panel shows that the relative gains in the labor force that counties experienced came through population growth, as there was no trend in labor force participation across states. We have also analyzed the same dynamics for all counties in the United States, finding broadly similar results.

The decline in the labor force participation is not unique to Wisconsin. At the national level, it is well documented that the LFPR has been declining since early 2000, although it has recovered some both nationally and the state since the end of the recession. Moreover the labor force participation rate is substantially higher in Wisconsin than it nationwide. The decline in population, on the other hand, may be a bigger concern for the economy going forward. One key component in population dynamics is migration. [Previously](#) we have shown that Wisconsin as a whole has experienced a net out-migration recently. The bottom panels of Figure 1 suggest that out-migration may be a bigger issue for counties with high unemployment rate. While some people from those counties may end up in other, potentially more productive, counties in Wisconsin, many might have moved to other states. As new initiatives are put forward to recruit workers to the state, taking the internal migration within the state into consideration and designing policies to relocate workers from less to more productive counties may also be helpful.