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How Ill a Wind? Hurricanes' Impacts on Employment and Earnings

According to the Current Employment Statistics [payroll survey](#), seasonally adjusted nonfarm payroll employment declined 33,000 in September. This decline was the first drop in employment since 2010 and followed a 169,000 gain in August. At the same time, seasonally adjusted average hourly earnings in the private sector increased 2.9 percent year over year in September. This increase in average wages was the largest since the end of the Great Recession in 2009. However, it seems likely that the decline in employment contributed to the rise in average hourly earnings. Why would a decline in employment contribute to an increase in average hourly earnings? We're glad you asked!

As [noted by the U.S. Bureau of Labor Statistics](#), Hurricanes Harvey and Irma reduced employment in the payroll survey, whose reference period is the pay period that includes the 12th of the month. Hurricane Harvey first made landfall in east Texas on August 25 and again in Louisiana on August 30, and Hurricane Irma made landfall in south Florida on September 10. The storms forced large-scale evacuations and severely damaged many homes and businesses. For workers who are not paid when they miss work, being unable to work during the surveyed pay period means they are not counted in September payrolls.

To measure the size of Harvey and Irma's effect on payroll employment, we first looked at data from the Current Population Survey (CPS). We found that the bad weather forced about 1.5 million nonfarm workers who had a job during the September reference week to miss work. Of those, about 1.2 million were wage and salary earners, and about 760,000 of those were unpaid during their absence from work.

Our analysis indicates that September saw a shortfall in seasonally adjusted payroll employment between 200,000 and 300,000 jobs, suggesting that workers returning to work could result in a large rebound in payroll employment. (Not to get too far into the weeds, but our analysis involved regressing payroll employment growth on its lagged values as well as current and lagged seasonally adjusted changes in shares of workers who were not at work because of bad weather.)

What about average hourly earnings? Changes in average hourly earnings over time reflect both the effect of people getting pay raises and changes in who is working this month versus last month or last year. This latter effect can be large during recessions, when workers in lower-wage jobs are disproportionately more likely to be laid off. The absence of these workers from payrolls increases the average wage among the remaining employed workers, even if those remaining workers are not getting much of a pay increase (see [this macroblog post](#) for more discussion).

The September payroll survey depicted a particularly large decline in employment in the leisure and hospitality sector, which is significant because average hourly earnings in that sector are typically about 40 percent lower than overall average hourly earnings. In addition, from the CPS we see that the usual hourly earnings of workers not at work because of bad weather is much lower than for other workers. These data suggest that temporary absences from work because of bad weather likely put upward pressure on average hourly earnings, and some of that upward pressure could reverse itself as these workers return to their jobs. If the pace of average hourly earnings doesn't relax, however, then that would suggest more workers getting larger pay raises due to a tightening labor market.



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