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Building a Better Jobs Calculator: Choose Your Own Payroll/Household Employment Ratio

To provide even greater flexibility, the Federal Reserve Bank of Atlanta's Jobs Calculator has been enhanced to allow the user to adjust another statistic used in the calculations. The statistic is the ratio of payroll to household employment and is a necessary component that links the target unemployment rate with the resulting required payroll employment growth.

The fact that estimates of payroll and household employment numbers reported by the U.S. Bureau of Labor Statistics (BLS) differ each month received a lot of attention in the fall of 2012 when, in October, the BLS reported a whopping 0.3 percentage point drop in the unemployment rate, accompanied by a rather tepid growth of 114,000 jobs in payroll employment. The culprit in that apparent incongruity is that the Household Survey (from where we get the unemployment rate) reported a gain of 873,000 jobs. That particular employment report (and its divergent statistics) received extra attention since it was the last employment report before the November 2012 election.

As Atlanta Fed Research Director Dave Altig pointed out at the time (in this blog post) and as others discussed (here and here), the two most important measures of labor market conditions come from two different surveys—the Establishment Survey, which produces the payroll employment number from the Current Employment Statistics (CES) program, and the Household Survey, which produces the unemployment rate from the Current Population Survey (CPS). Both surveys claim to estimate the number of jobs in the economy. However, the employment numbers they produce are different for several reasons, detailed in one of the Jobs Calculator's FAQs.

The good news is that even though there may be wide discrepancy in the *change* in employment reported by the two surveys in any particular month (as we saw in October 2012), any one-month divergence does not persist. In other words, the two employment series closely track each other.

This is good news for the Jobs Calculator, since a conversion needs to be made between the CPS employment implied by the target unemployment rate entered into the Jobs Calculator and the average monthly change in payroll employment (CES) needed to achieve the target unemployment rate. Since the two series closely track each other, wide deviations in month-to-month reported growth numbers will not severely affect the ability of the Jobs Calculator to make longer-term projections (within the limits of the other assumptions of the calculator). (In fact, unanticipated changes in the labor force participation rate are much more potentially problematic in making longer-term projections than are any potential variations in the conversion rate between CPS and CES employment numbers.)

The Jobs Calculator uses the average ratio of CES/CPS employment over the previous 12 months as the default conversion factor and now allows the user to see what happens if that ratio were to be different.

The following example illustrates how innocuous that conversion factor is.

Suppose the goal is to attain a 6.5 percent unemployment rate in two years. Entering 6.5 in the unemployment rate target box and 24 in the box (for the number of months you want to take to get there) yields 164,917 as the average monthly change in payroll employment needed to achieve that goal (holding everything else constant).

Next, go down to the new line showing, "Average monthly CES/CPS employment ratio." You'll see the current default value for the ratio is 0.940. Click on the chart box on the far right of that line. You'll see that since 1980, that ratio has ranged from a low of just under 0.900 in about 1984 to a high of 0.969 just before 2000. Close the box.

Now, enter the low ratio number of 0.900 in the employment ratio box. At that low ratio, only 157,899 payroll jobs are needed to achieve your 6.5 percent unemployment rate in two years.

Next, enter the high ratio number of 0.969 in the employment ratio box. At that high ratio, 170,005 payroll jobs are needed each month to achieve your goal.

The current default CES/CPS ratio provides an estimated number of monthly payroll jobs needed to achieve your specified goal of a 6.5 percent unemployment rate in two years within a 5,000–7,000 job margin, based on the highest and lowest ratio values since 1980.

The bottom line? When it comes to factors that can derail a longer-term projection of the number of jobs needed to attain a specific unemployment rate in a given period of time, the degree to which household employment estimates deviate from payroll employment estimates is just not that important, nor are monthly discrepancies in these series' reported growth, since the discrepancies aren't absorbed into the trends. And there you have the reason we added this flexibility to the Jobs Calculator: to allow users to see this for themselves.

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