



Initial Claims and Employment Growth: Are We at the Threshold?

Kevin L. Kliesen, *Economist*

Michael W. McCracken, *Research Officer and Economist*

Linpeng Zheng, *Research Associate*

Economists and other analysts regularly follow several indicators to track developments in the U.S. economy; and for many, employment conditions are one of the most important indicators of the economy's strength or weakness. One closely tracked statistic is initial claims for state unemployment insurance benefits (weekly claims). Several economic studies have determined that the information found in the weekly claims numbers can be used to better predict monthly changes in payroll employment or the unemployment rate.¹

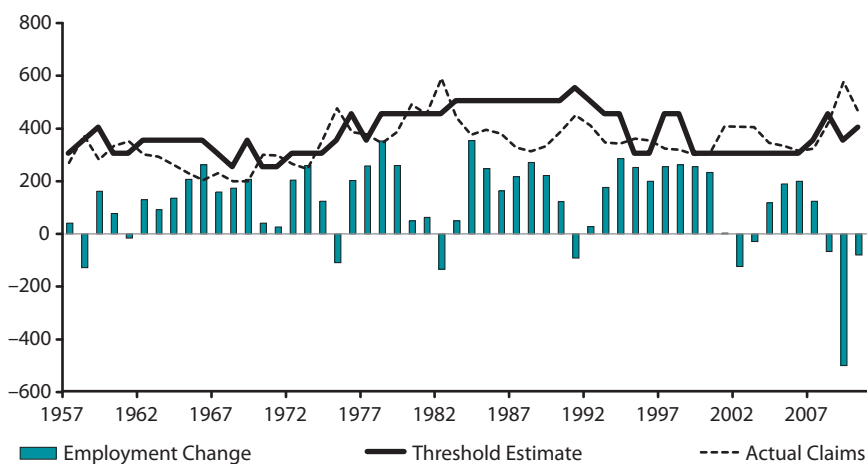
In a similar vein, it might also be useful to know whether a particular level of claims is associated with an improving labor market (faster job growth and falling unemployment) or a faltering labor market (declining job growth and rising unemployment). This level is often called a threshold. One common threshold used by business economists and other analysts is that labor market conditions are improving when weekly claims fall below 400,000 and consistently remain below that level. The opposite conclusion holds when claims rise above 400,000 and consistently remain there. Thus, with weekly initially claims finally trending below 400,000 in early December, this might signal that employment growth is poised to accelerate.

Here, we attempt to assess whether a true threshold exists and, if so, what its value might be currently. We do so by using a threshold regression model that is designed to determine the effect that movements in initial claims have on one month-ahead employment growth. The model also allows that effect to change depending on whether initial claims is

above or below some level, such as 400,000. What makes this a "threshold" regression is that the value of the threshold is not known ahead of time: It could be 400,000, but it could be higher or lower—we just don't know. So we must use a model to estimate it.

Complicating the problem is that the threshold may have changed over time as the population has grown and the structure of the economy has evolved. So, we estimate our threshold sequentially across time using 10-year rolling windows. Specifically, we first estimate our model using data from 1948 through 1957. We then move ahead one year and repeat the estimation with data from 1949 through 1958. We repeat the procedure using every possible 10-year window up through the period 2001-10. In total, we obtain 54 varying estimates over this span of time.

Actual Initial Claims, Estimated Claims Threshold, and Average Change in Payroll Employment (Thousands)



NOTE: Data through 2010.

SOURCE: Authors' calculations, the Bureau of Labor Statistics, and the Employment Training Administration.

The chart plots our estimated threshold level of claims (solid line), the actual level of claims (dashed line), and the average monthly change in nonfarm payroll employment (bars). The claims data are average weekly values, and the change in employment data are average monthly values.

One common threshold is that labor market conditions are improving when weekly unemployment claims fall below 400,000.

We observe three key findings: First, the model estimates the current threshold (the 10-year window ending Dec. 2010) as 400,000. As noted above, this is consistent with the current rule-of-thumb estimate. Second, the claims threshold varies significantly over time, which seems consistent with the dynamics of the labor market, given that the underlying trend in real GDP growth (potential output), population growth, and labor force participation rates tend to vary over time. For example, from 1957 to 1975, the threshold averaged about 318,000. A similar average prevailed over the period from 1995 to 2006 (325,000). By contrast, the intervening period, which generally saw high and rising inflation and unemployment rates and relatively slow growth of labor productivity and potential output, generally experienced a much higher average threshold for weekly claims (474,000).

Finally, as we had hoped, there is a fairly robust negative correlation between monthly employment changes and the difference between the actual level of initial claims and the threshold estimate. (Over the entire sample period, the correlation is -0.68 .²) Thus, when actual claims rise above the threshold, employment growth tends to weaken or employment levels decline. Employment growth is also the strongest when actual claims fell below the threshold. Finally, the model indicates that the threshold value rose sharply in the aftermath of the financial crisis. In 2006, the threshold estimate was 300,000, but by 2008 it had risen to 450,000. However, it is not clear whether this recent increase is significant, since similar-sized increases have occurred over two-year periods in the past. ■

¹ See Gavin and Kliesen (2002) for an example of this analysis and a description of the initial claims data.

² We estimated an alternative version of the threshold model by adding the employment-to-population ratio as an explanatory (independent) variable. Although a similar threshold pattern resulted, the correlation between excess claims (actual weekly claims less the threshold value) and the employment change was smaller (-0.58).

Gavin, William T. and Kliesen, Kevin L. "Unemployment Insurance Claims and Economic Activity," *Federal Reserve Bank of St. Louis Review*, May/June 2002, 84(3), pp. 15-28.