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Job availability during a recession: an examination of the number of unemployed persons per job opening

As a labor market contracts, workers experience job loss and can have a difficult time finding a new job. Job availability declines because many establishments are forced to slow or freeze hiring and others have to go out of business. In order to remain in business, many establishments resort to layoffs and discharges to decrease the number of employees on their payrolls. Thus, the number of available job openings decreases and the number of people looking for a job may increase.

When the current recession officially began in December 2007,¹ both the Job Openings and Labor Turnover Survey (JOLTS)² job openings data and Current Population Survey (CPS)³ unemployment levels were already reflecting

the effects of an economic contraction. The job openings level experienced a downward trend, declining from a high of 4.8 million job openings in June 2007 to 2.3 million job openings in July 2009. The job openings level stands at 2.7 million in January 2010. Unemployment levels increased from a low of 6.7 million in March 2007 to 15.6 million in October 2009. The unemployment level stands at 14.8 million in January 2010.

Combining the unemployment level, seasonally adjusted, and total job openings data, seasonally adjusted, produces a ratio between the two series that can serve as an indication of how the number of unemployed persons per job opening changes over time. This number has been used by researchers and the media as

an additional way to analyze the current recession. There are some caveats that accompany using the JOLTS and CPS data sources since they are two distinct surveys that are sampled and designed to collect different types of information. However, this ratio can provide a way to look at the changing composition of labor supply as it relates to labor demand.

With increasing unemployment and a decreasing number of job openings, the ratio of unemployed persons per job opening has increased since 2006 from a series of low ratios ranging between 1.4 and 1.6 unemployed persons per job opening to a high of 6.2 unemployed persons per job opening in November 2009. This is the highest ratio of unemployed persons per

job opening since the JOLTS survey began to track job openings in December 2000. (See table 1.)

The ratio of unemployed persons per job opening from December 2000 to the present is displayed in chart 1. This chart shows the effect of the economic contraction and the onset of the current recession on the unemployed-persons-per-job-opening ratio. Note the increase that has taken place since March 2007. The ratio climbed slowly and then began to rise at an increasing rate around May 2008. There was also an increase in the ratio during the previous recession from March 2001 through November 2001. During that recession, the ratio continued to increase long after the official end of the recession. The ratio

Table 1. Ratios using national unemployment and job openings data, December 2000–January 2010, seasonally adjusted

| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|-----------|------|------|------|------|------|------|------|------|------|------|------|
| January | - | 1.2 | 2.2 | 2.4 | 2.4 | 2.0 | 1.7 | 1.6 | 1.8 | 4.3 | 5.4 |
| February | - | 1.2 | 2.3 | 2.5 | 2.3 | 2.1 | 1.6 | 1.5 | 1.8 | 4.5 | - |
| March | - | 1.2 | 2.3 | 2.7 | 2.4 | 2.0 | 1.5 | 1.4 | 1.9 | 5.0 | - |
| April | - | 1.3 | 2.5 | 2.7 | 2.3 | 1.8 | 1.5 | 1.5 | 1.9 | 5.6 | - |
| May | - | 1.4 | 2.3 | 2.8 | 2.2 | 2.0 | 1.5 | 1.5 | 2.1 | 5.8 | - |
| June | - | 1.4 | 2.4 | 2.8 | 2.4 | 1.8 | 1.6 | 1.5 | 2.2 | 5.8 | - |
| July | - | 1.5 | 2.4 | 2.8 | 2.1 | 1.8 | 1.7 | 1.6 | 2.3 | 6.2 | - |
| August | - | 1.6 | 2.4 | 2.8 | 2.1 | 1.8 | 1.6 | 1.5 | 2.6 | 6.2 | - |
| September | - | 1.7 | 2.4 | 2.8 | 2.1 | 1.8 | 1.5 | 1.6 | 2.9 | 5.8 | - |
| October | - | 2.1 | 2.2 | 2.6 | 2.0 | 1.7 | 1.4 | 1.7 | 3.1 | 6.1 | - |
| November | - | 2.2 | 2.3 | 2.6 | 2.3 | 1.7 | 1.5 | 1.6 | 3.3 | 6.2 | - |
| December | 1.1 | 2.3 | 2.8 | 2.5 | 2.0 | 1.6 | 1.5 | 1.8 | 3.7 | 6.0 | - |

Note: JOLTS data became available in December 2000. Dash indicates data not available.

peaked in 2003, and then started to decline again.

Ratio analysis at the regional level

At the regional level,⁴ job openings and unemployment, seasonally adjusted, have followed a trend similar to the national level. Job openings in all four regions decreased as unemployment increased. Comparing Local Area Unemployment Statistics (LAUS)⁵ Census region unemployment data with JOLTS Census region job openings data, ratios for the number of unemployed persons per job opening were computed.

The highest ratio of unemployed persons per job opening as of January 2010 was in the West at 6.6 to 1 or between 6 and 7 unemployed persons for every job opening. The ratio in the Midwest was 6.2 to 1 in January 2010. The ratios for the Northeast and South were between 5.5 to 1 and 5.6 to 1. All four regions show an increasing trend in the ratio around the beginning of 2007.

Of the four regions, the West showed the largest fluctuation in the ratio of unemployed persons per job opening. The ratio ranged from lows of 1.3 and 1.4 to 1 in late 2006 to a high of 8.0 to 1 in July 2009. In the Midwest, the ratio

climbed after a period of lows around 1.8 to 2.0 unemployed persons per job opening in 2006 and 2007 to a high of 7.3 unemployed persons per job opening in July 2009. The South region reached a ratio of 6.2 to 1 in July 2009 after it experienced lows of 1.2 to 1 in March through May 2007. The region showing the least amount of fluctuation is the Northeast, although this region has still experienced an increase from a low of 1.3 unemployed persons per job opening in late 2006 to a high of 5.5 unemployed persons per job opening in January 2010. Chart 2 shows that all four regions exhibit a similar pattern from December 2000 to the present: trending upward during and after the 2001 recession, reaching a period of low ratios during 2006 and 2007, and then increasing rapidly after that point.

Ratio analysis by selected industries

It is also possible to create ratios of unemployed persons per job opening by selected industries, although, again, there are some caveats. The CPS produces data (not seasonally adjusted) on unemployed persons by industry.⁶ The survey collects industry or occupational information on those individuals who lost

their job, left their job, or had been employed at some point in the past and are now reentering the labor market. Information on new entrants into the labor market, however, is not available by industry or occupation of last job; therefore, these data only include the “experienced unemployed.”

With this caveat in mind, ratios of unemployed persons per job opening were computed using CPS data on unemployed persons by industry and JOLTS job openings data by industry using the 20 broad NAICS industry classifications at comparable levels of industry classification. (See chart 3.)

Construction has shown the most dramatic increase in the ratio of unemployed persons per job opening. From a period of low ratios during the summer of 2007, including a low of 3 unemployed persons per job opening in July 2007, the ratio climbed to a high of 56 unemployed persons per job opening in April 2009. The unemployed-persons-per-job-opening ratio stood at 37.2 to 1 in January 2010. Manufacturing also showed a large increase in the ratio of unemployed persons per job opening, climbing from a low of 2 persons per job opening for most of 2006 and early 2007 to a high of 19.1 persons per job opening

in May 2009. In contrast, education and health services and government had slightly increasing ratios.

In summary, during the current recession, the ratio of unemployed persons per job opening has climbed from a low period in 2006 and 2007 to high rates at the national level and at all four regional levels. The recession has also affected some industries, including construction and manufacturing, more heavily than others. It is important to note that although this information could be useful, it may not reflect the experience of all individuals in the labor market. There are some people who will have more difficulty finding a job than this ratio indicates, and there are others who will have less difficulty.

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Notes

¹ See *Determination of the December 2007 Peak in Economic Activity* by the National Bureau of Economic Research, published on December 1, 2008. Available on the Internet at <http://www.nber.org/cycles/dec2008.html>. (Accessed Dec. 11, 2008.)

² To qualify as a job opening as measured by the Job Openings and Labor Turnover Survey (JOLTS), the following conditions are required: 1) A job opening exists and work is available for that position. 2) Work could start within 30 days regardless of whether a suitable candidate is found. 3) The employer is actively recruiting from outside the establishment to fill

the position.

³ The Current Population Survey (CPS) produces measures of unemployment. For individuals to be considered unemployed they must meet the following criteria: 1) They had no employment during the 4-week period ending with the reference week. 2) They were available for work at that time. 3) They made specific efforts to find employment sometime during the 4-week period ending with the reference week. 4) Workers expecting to be recalled from layoff are counted as unemployed whether or not they have engaged in a specific jobseeking activity.

⁴ The States (including the

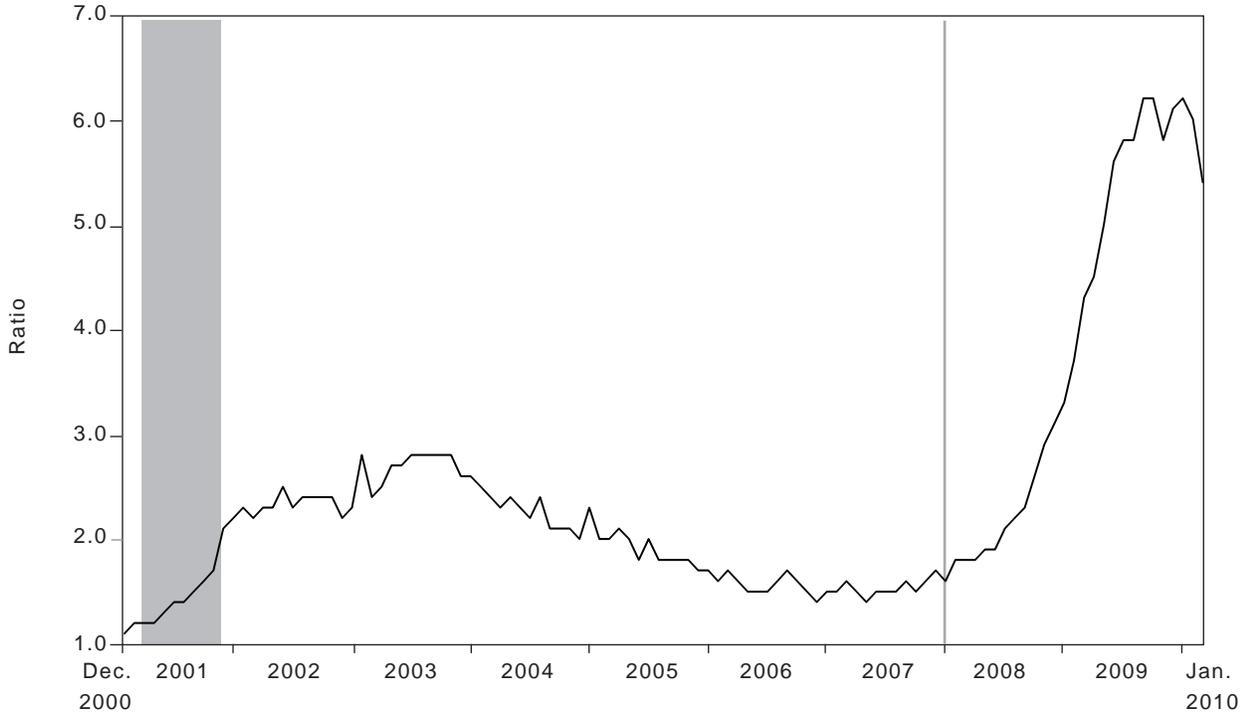
District of Columbia) that make up the regions are as follows: *Northeast*: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont; *South*: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia; *Midwest*: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; *West*: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah,

Washington, and Wyoming.

⁵ The Local Area Unemployment Survey (LAUS) produces measures of unemployment at the State and area level. Unemployed persons are those who were not employed during the reference week (based on the definition in endnote 3), had actively looked for a job sometime in the 4-week period ending with the reference week, and were currently available for work; persons on layoff expecting recall need not be looking for work to be counted as unemployed.

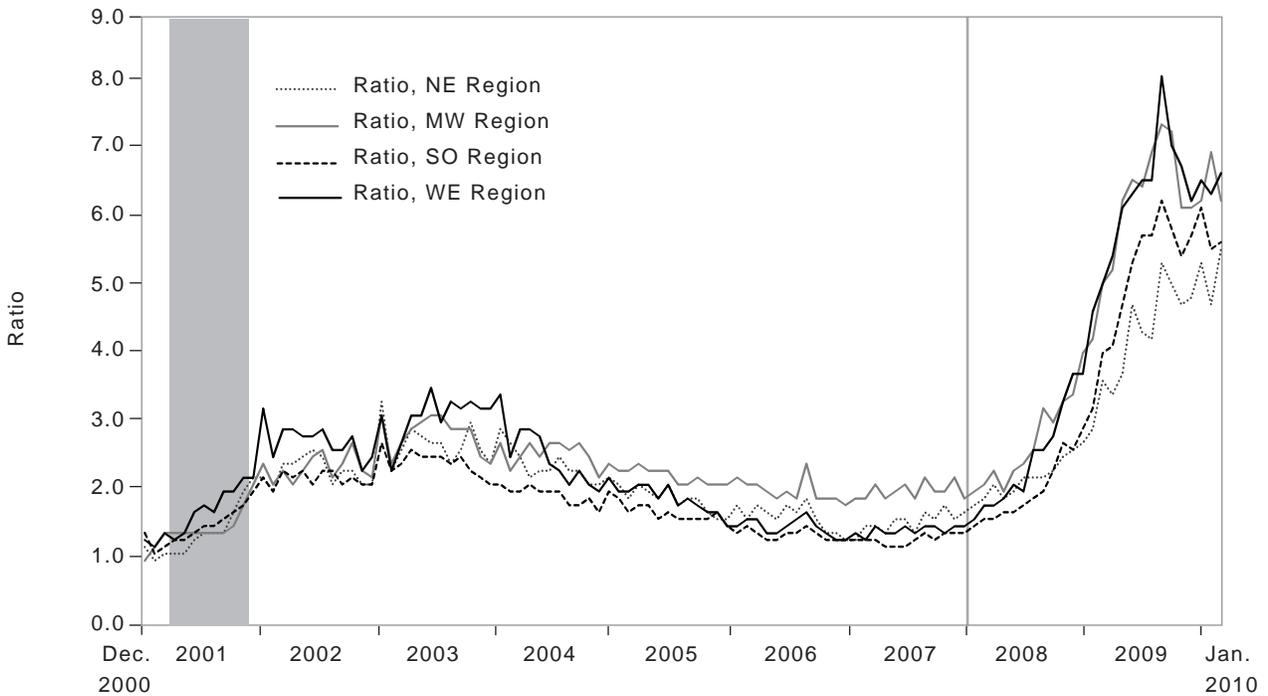
⁶ For individuals to be considered unemployed, the Current Population Survey requires that they meet the specific criteria. See endnote 3.

Chart 1. Ratio of CPS unemployment levels to JOLTS job openings, December 2000 to January 2010, seasonally adjusted



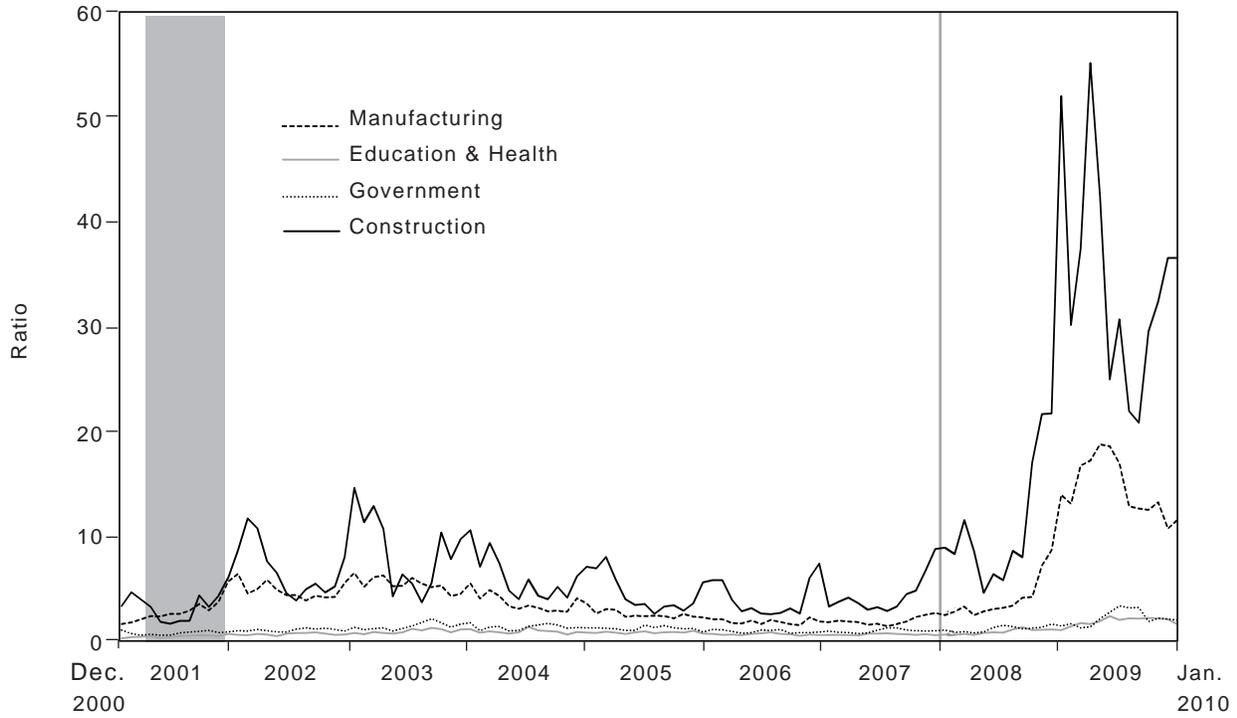
NOTE: The shaded area represents a recession as designated by the National Bureau of Economic Research (NBER). The vertical line represents the beginning of the current recession for which NBER has not, at this time, determined an end point.

Chart 2. Unemployed persons per job opening ratio by region, December 2000 to January 2010, seasonally adjusted



NOTE: The shaded area represents a recession as designated by the National Bureau of Economic Research (NBER). The vertical line represents the beginning of the current recession for which NBER has not, at this time, determined an end point.

Chart 3. Unemployed persons per job opening, by selected industry, December 2000 to January 2010, not seasonally adjusted



NOTE: The shaded area represents a recession as designated by the National Bureau of Economic Research (NBER). The vertical line represents the beginning of the current recession for which NBER has not, at this time, determined an end point.