



Identifying Structural and Cyclical Shocks Across U.S. Regions

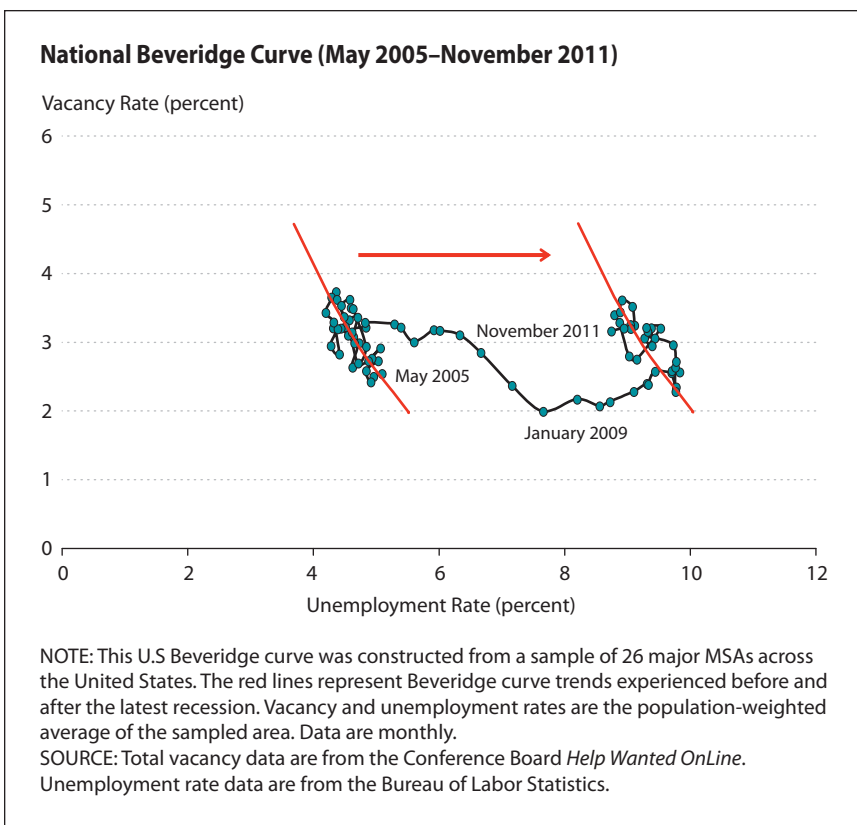
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It is well known that unemployment and job vacancy rates tend to move in opposite directions over the business cycle. This famous statistical relationship is called the *Beveridge curve*. The mechanism generating this relationship is intuitive enough: During a cyclical upturn, businesses are motivated to create and/or reopen job positions. An increase in the job vacancy rate makes it easier for unemployed workers to find jobs. The unemployment rate falls.

The statistical relationship between vacancies and unemployment, however, is not always a stable one. The first chart shows that the same level of recruiting intensity before the financial crisis, as measured by the job vacancy rate, is now associated with a *higher* unemployment rate. Some economists have speculated that this shift is possibly due to a *structural shock* that now makes it more difficult for employers to find the right kind of worker for a different kind of job (in contrast to a *cyclical shock* that simply makes it less profitable to find the same kind of worker for the same kind of job).

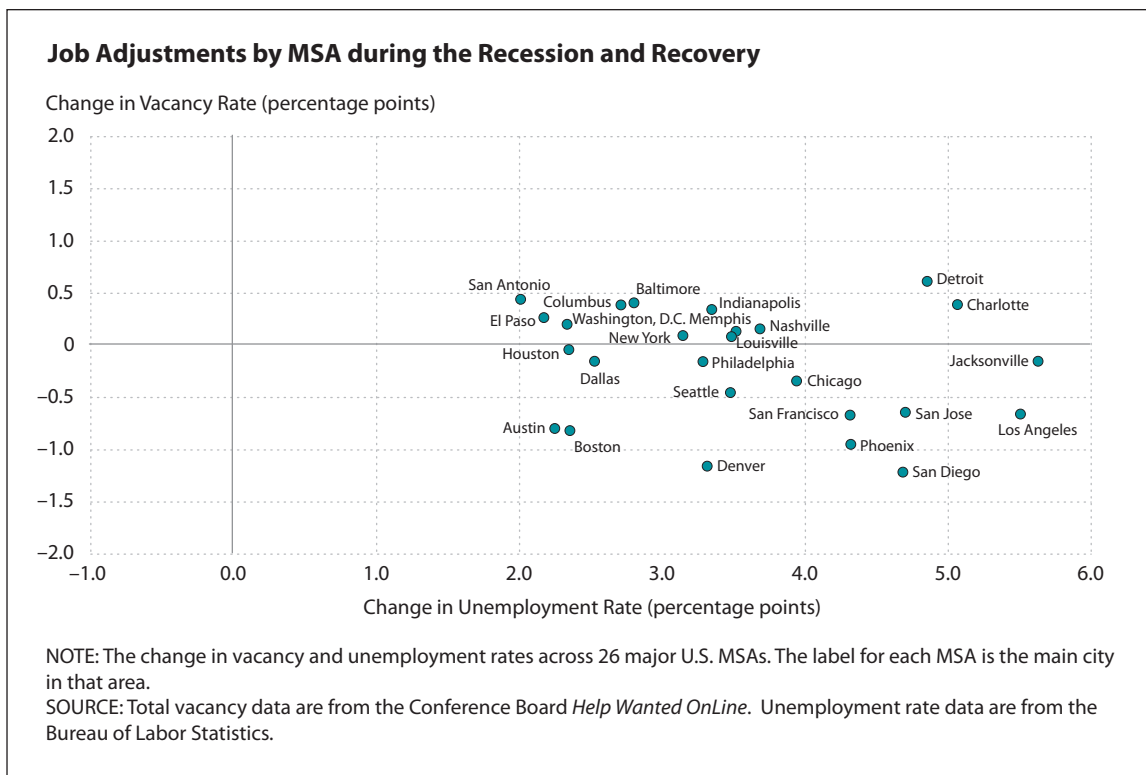
Jobs can differ along many dimensions, including occupation, skill level, industry, and location. This essay reports how (i) job availability varies across major U.S. metropolitan statistical areas (MSAs) and (ii) job vacancy rates correlate with regional unemployment rates before and after the peak of the most recent recession.

Specifically, this exercise is performed as follows. Consider a major U.S. metropolitan area. Compute the average job vacancy rate and unemployment rate for this area over the May 2005–November 2007 period that preceded the December 2007 National Bureau of Economic Research (NBER) business cycle peak marking the beginning of the Great Recession and the period thereafter (December 2007–



November 2011).¹ Next, compute the change in the vacancy rate and unemployment rate across these periods. Perform this exercise for a set of the largest MSAs in the United States. The results are displayed in the second chart.²

What does the second chart show? First, it is generally believed that unemployment rates across all major U.S. population centers increased during and since the past recession, and the chart corroborates this impression. It is also generally presumed that vacancy rates decline during an economic downturn, but the chart shows this is not necessarily the case. Roughly half of the sampled MSAs show the classic Beveridge relationship but the remainder do not. In this latter group, an increase in the unemploy-



ment rate is associated with an *increase* in the job vacancy rate. One inference that could be made here is that for this latter group, local unemployment rates are more the product of structural, rather than cyclical, factors.

It is not clear how monetary policy might be used to reduce local unemployment rates where recruiting intensity is high but the right kind of worker is hard to find.

The differences across MSAs in the second chart may be explained in part by differences in industrial composition across locations. It is known that some industries are more or less sensitive to the business cycle. For example, manufacturing and construction are highly cyclical, whereas healthcare and education are not.³ It is also known that the latter two sectors continued to grow throughout the recent recession. Consequently, to the extent that industries are distributed unevenly across the country, regional differences in job creation and destruction patterns might be expected.

Whether a recession is the product of cyclical or structural factors has some bearing on the optimal policy response. Monetary policy, in particular, is relatively well equipped to deal with an *aggregate* cyclical downturn. But it is not clear how monetary policy might be used to reduce local unemployment rates where recruiting intensity is high but the right kind of worker is hard to find. In these latter locations, localized fiscal policies may prove a direct and useful tool.⁴ ■

¹ According to the NBER, the latest recession's business cycle peak and trough occurred in December 2007 and June 2009, respectively. The period that preceded the last recession was chosen to begin in May 2005 because of the availability of vacancy rate data.

² Vacancy rates are calculated using the Conference Board *Help Wanted OnLine*, a monthly measure of labor demand constructed by counting the number of online job advertisements. Total ads are all unduplicated job advertising ads, excluding military and armed forces occupations. Metropolitan areas are defined under the 2005 Office of Management and Budget county-based MSA definitions. Vacancy rates for each MSA are here constructed by dividing total job advertisements by the sum of the total number of employed persons and the total job advertisements.

³ For more information on this topic, see Berman, Jay and Pflieger, Janet. "Which Industries Are Sensitive to Business Cycles?" *Monthly Labor Review*, February 1997, 120(2), pp. 19-25; www.bls.gov/mlr/1997/02/art2full.pdf.

⁴ For an explanation on the roles of fiscal and monetary policy during a recession, see Liborio, Constanza. "Fiscal and Monetary Policy in Times of Crisis." Federal Reserve Bank of St. Louis *Liber8 Newsletter*, March 2011; <http://liber8.stlouisfed.org/newsletter/2011/201103.pdf>.

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Views expressed do not necessarily reflect official positions of the Federal Reserve System.