

# Employment Patterns and Structural Unemployment

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**T**he recent recession has raised the question of structural unemployment's contribution to the stubbornly high unemployment rates that have thus far typified the recovery period. Structural change—the permanent relocation of workers from some industries to others<sup>1</sup>, is a dynamic process that occurs throughout business cycles.

Many pinpoint decreases in consumer demand as the principal cause of the sluggish recovery. This demand-deficit unemployment is proposed as being a cyclical consequence of this particularly steep recession. Others argue that there has been a systemic shift in the economy, and high unemployment is a result of structural change. Regardless of which side of the debate is more correct, this paper examines historical evidence of structural change using various methodologies to help contextualize the current economic environment.

Principal influences of this article include *Has Structural Change Contributed to a Jobless Recovery?* Therein industry employment change is examined over recessions and recoveries.<sup>1</sup> *Has the Beveridge Curve Shifted?*<sup>2</sup> and *The Next Recovery*<sup>3</sup> also contributed greatly to

the research presented in this article.

## Beveridge Curve

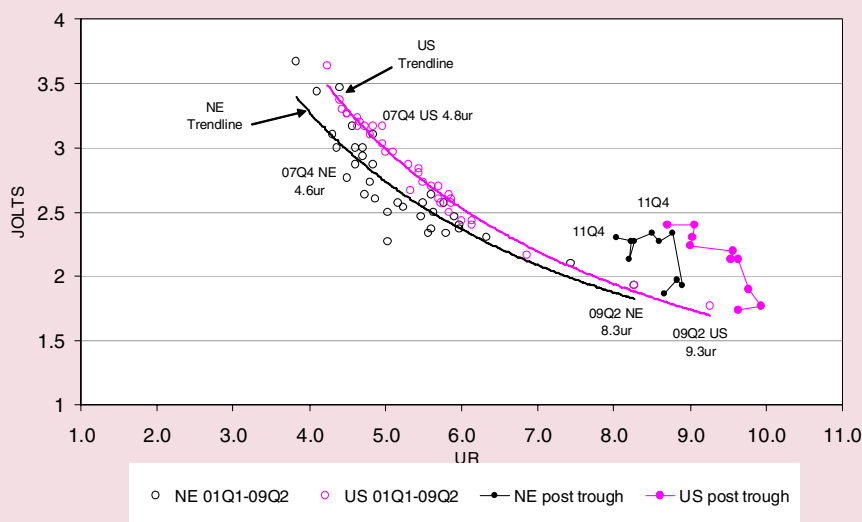
The Beveridge curve illustrates the negative relationship between job vacancies and unemployment. Movement along the curve represents cyclical unemployment change. An outward shift indicates an increase in structural labor market issues. Reasons for this outward shift can include decreased matching efficiency and/or an increase in job destruction rates.<sup>4</sup> During the 2001 recession and the following recovery, both the U.S. and northeast region of the country exhibited movement along the curve.<sup>5</sup> Relatively slight outward expansion was followed by a trajectory back up the curve, illustrating a cyclical pattern to the movement.<sup>6</sup>

During the 2007-09 recession and the current recovery period there have been some marked differences in the relationship between cyclical and structural unemployment. A recent International Monetary Fund report notes that the cyclical component of unemployment is less prominent now than it was during recessions in the 1980s and early 1990s. It also

notes that cyclical factors are more relevant to short-term unemployment and that structural factors contribute more to long-term unemployment.<sup>7</sup> Table 1 shows the outward expansion of the curve following the 2<sup>nd</sup> quarter 2009 trough. High unemployment has been met with rising rates of job vacancies. This “worker mismatch” of decreased matching efficiency has been covered extensively in recent months. Recent declines in unemployment rates portend steps in the right direction, as Ledder and Goshen (2003) illustrated a common recovery trajectory that corresponds with contemporary data.

Overall the Beveridge curve analysis shows the relationship between job vacancies and unemployment. The post-trough period illustrates a rise in vacancies coupled with a trend of decreasing unemployment rates. Regionally, the Northeast Division appears to be doing much better than the U.S. curve. This is because the Western Census Division of the U.S. experienced much higher unemployment than the rest of the country, pushing the U.S. average outward.<sup>8</sup> Though macroeconomic risks to the recovery persist, the recent rise in vacancies is slowly being met with decreased unemployment rates. Table 1 shows this promising U-turn movement towards pre-recession levels currently underway.

**Table 1: Beveridge Curve  
US and Northeast 01Q1-11Q4**



## Connecticut Industry Analysis

Methodology similar to that of Groshen and Potter (2003) was enacted using employment levels in Connecticut by 2-digit NAICS sectors. Employment peak-to-peak analysis was used to indicate long-term trends within the state during the first two recessions of the post-Cold War period, illustrated in Tables 2 and 3. The Y-axis contains employment data during economic recoveries until one month prior to U.S. declared recessions, and the X-axis contains employment data from the first month of U.S. recession to its trough. The circle size illustrates the total change in employment level over the term. The quadrant labels indicate the type of employment

Table 2: July 1990- March 2001

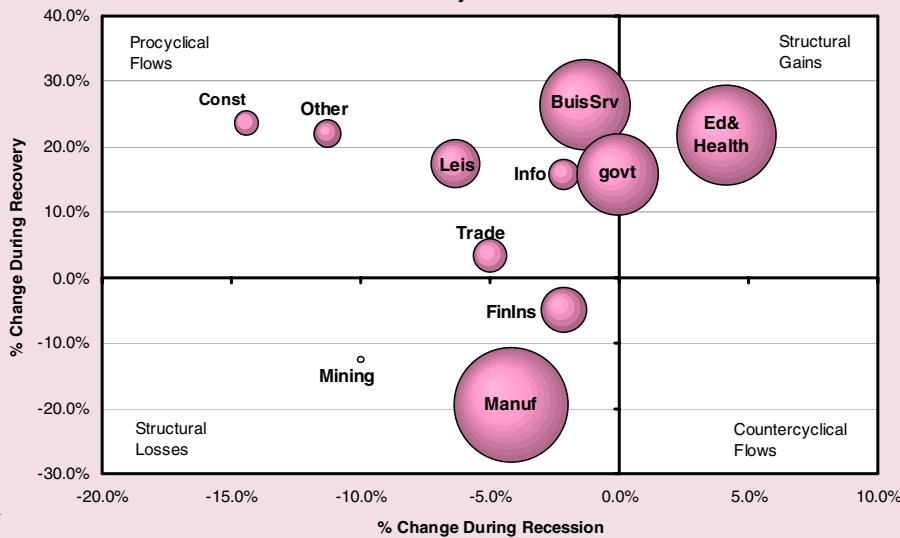
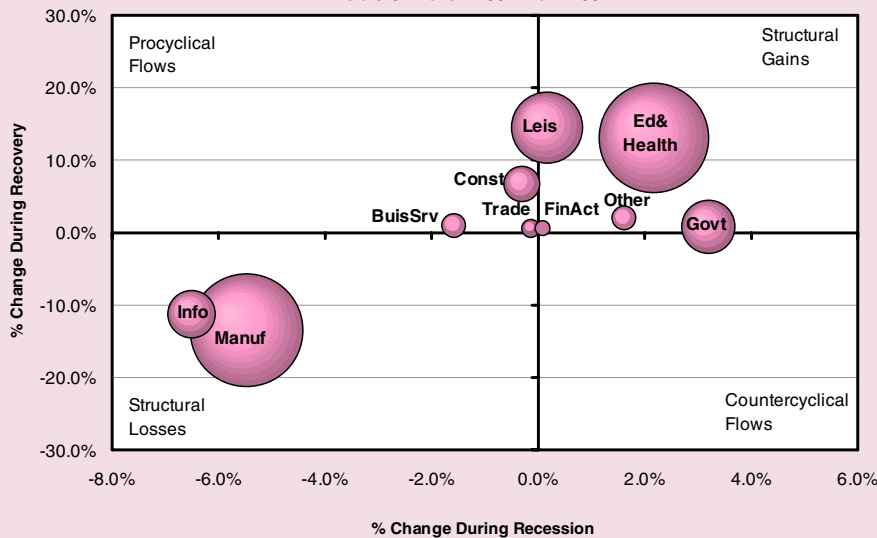


Table 3: March 2001-Nov. 2007



change each represents.

Table 2 analyzes employment change from 1990-2001 in Connecticut and illustrates the structural gains, losses and the procyclical flows experienced in the state during the period. Manufacturing experienced significant employment decline during both the recession and the recovery, a facet of structural loss. Construction had prominent employment loss during the 1991 recession and saw employment levels increase by more than 20% over the recovery, indicating cyclical change has prominent influence over that sector. Education and health services experienced employment increases during both the recession and the subsequent recovery, a trend that has continued since.

Table 3 examines the 2001 recession and recovery period. The industry employment change yields

some interesting evidence of how the Connecticut economy changed during the bursting of the 'Tech Bubble'. Information services had significant structural loss during the period while manufacturing continued to shed jobs. Construction percent job loss during the recession was much less pronounced than it was in the 1990s, a harbinger of the brewing housing bubble that played a prominent role in the December 2007-June 2009 recession. Education and health services continued its trend of job growth.

The above peak-to-peak modeling cannot yet be applied to the current recession because we have yet to reach the end of the recovery phase. However, examination of employment levels by industry given the aforementioned long-term trends shows that Connecticut's total nonfarm employment level as of

December 2011 is 4.5 percent below its December 2007 peak, up from a maximum gap of -6.5 percent in January 2010. Some sectors with employment levels above December 2007 levels include leisure and hospitality as well as educational and health services, the latter continuing its 20 year trend. Over the past year, from January 2011 to January 2012, nearly all employment sectors in Connecticut added jobs.<sup>9</sup> Financial activities and government employment are the only two sectors down year-over-year. Total Connecticut nonfarm employment is up 11,900 jobs and the state's unemployment rate has fallen from 9.3 to 8.0 percent year-over-year.

### Conclusions

The above analysis examines long-term labor market flows to visualize previous evidence of structural employment change in Connecticut. Though this research identifies past instances of structural unemployment, both cyclical and structural change contribute to the dynamism of labor markets. Recent unemployment rate declines to below 9 percent, coupled with leftward bound movement on the Beveridge curve and prolific year-over-year Connecticut industry growth in nearly all sectors are all bright spots for the state. This current recovery has been sluggish, but employment growth amid significant unemployment rate decline illustrates that it is well underway. ■

<sup>1</sup> Groshen, Erica and Potter, Simon. "Has Structural Change Contributed to a Jobless Recovery?" New York Federal Reserve Bank. 2003.

<sup>2</sup> Tasci, Murat and Lindner, John. "Has the Beveridge Curve Shifted?" Cleveland Federal Reserve Bank. 2010.

<sup>3</sup> Flaherty, Patrick. "The Next Recovery: Perhaps Not Quite So Jobless." *The Connecticut Economic Digest* 10 (2009): 1-5.

<sup>4</sup> Economic Sciences Nobel Prize Committee. "Markets With Search Frictions" The Royal Swedish Academy of Sciences. October 2003.

<sup>5</sup> Northeast Census Division encompasses New England, New York, New Jersey, and Pennsylvania.

<sup>6</sup> Katz, Lawrence. "Long-Term Unemployment in the Great Recession April 29, 2010." U.S. Congress Testimony. April 29, 2012.

<sup>7</sup> Chen, Jinzhu. "New Evidence on Cyclical and Structural Sources of Unemployment" International Monetary Fund. 2011.

<sup>8</sup> As of January 2012, California and Nevada had Unemployment rates respectively of 10.9% and 12.7%.

<sup>9</sup> Dyer, Lincoln and Joo, Jungmin Charles. "Connecticut Continues on a Path to Recovery" *The Connecticut Economic Digest* 3 (2012); 1-5.