1-26-2012

'True' Unemployment in the United States and the St. Louis Metro Area

Howard J. Wall
Lindenwood University, HWall@lindenwood.edu

'True' Unemployment in the United States and the St. Louis Metro Area

Howard J. Wall

Director, Institute for the Study of
Economics and the Environment

January 26, 2012

ISEE Policy Series
Number 16

INSTITUTE FOR THE STUDY OF ECONOMICS
AND THE ENVIRONMENT

LINDENWOOD

LINDENWOOD UNIVERSITY ST. CHARLES, MISSOURI

The **Institute for the Study of Economics and the Environment (ISEE)** is a center of research and education within Lindenwood University's School of Business and Entrepreneurship. Its mission is to assist policymakers and the public in understanding how the interactions of the government and private sectors affect the economic and natural environment of the St. Louis region and beyond.

ISEE Activities

Analyses of important government data such as local employment and unemployment, provided online at *www.stldata.org*.

Public and invited economic briefings to discuss local national economic conditions and forecasts.

Policy-oriented research on issues affecting the St. Louis region's economic and natural environment.

A speaker series to present and discuss the views of prominent national and regional experts on issues regarding energy, the environment, taxes, education, etc., that affect the St. Louis region's economic and natural environment.

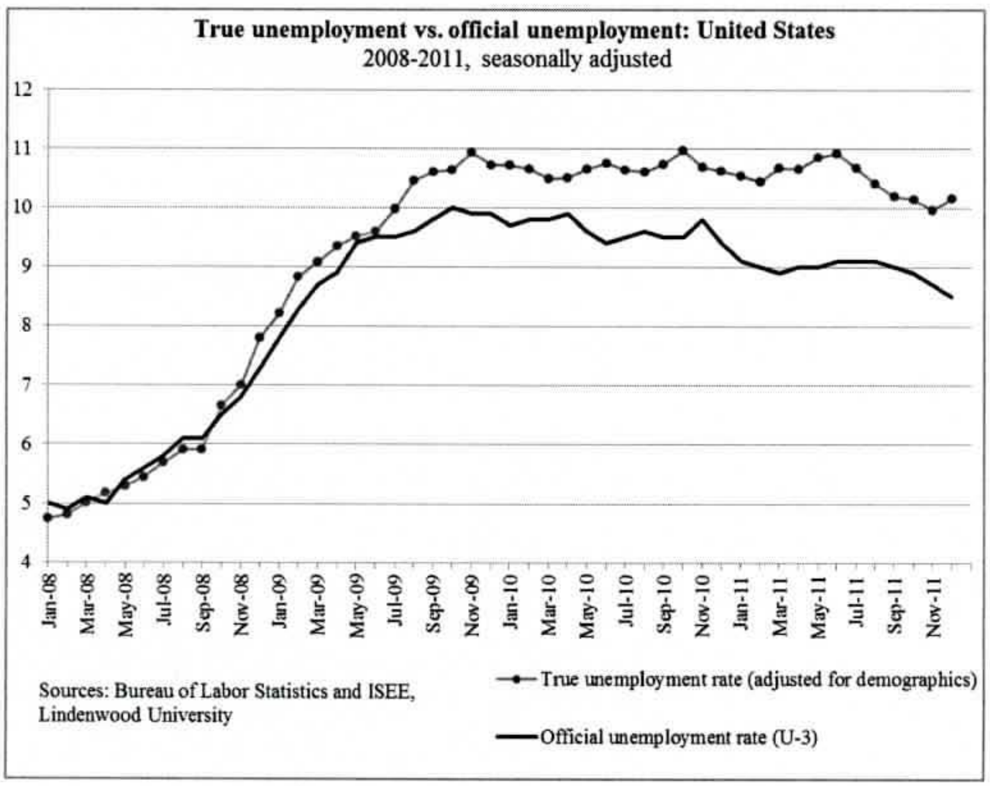
Contact Information

Institute for the Study of Economics and the Environment
School of Business and Entrepreneurship
Lindenwood University
209 South Kingshighway
St. Charles, Missouri 63301
Phone: (636) 949-4742
Fax: (636) 949-4834
web site: www.lindenwood.edu/business/isee.cfm

Summary

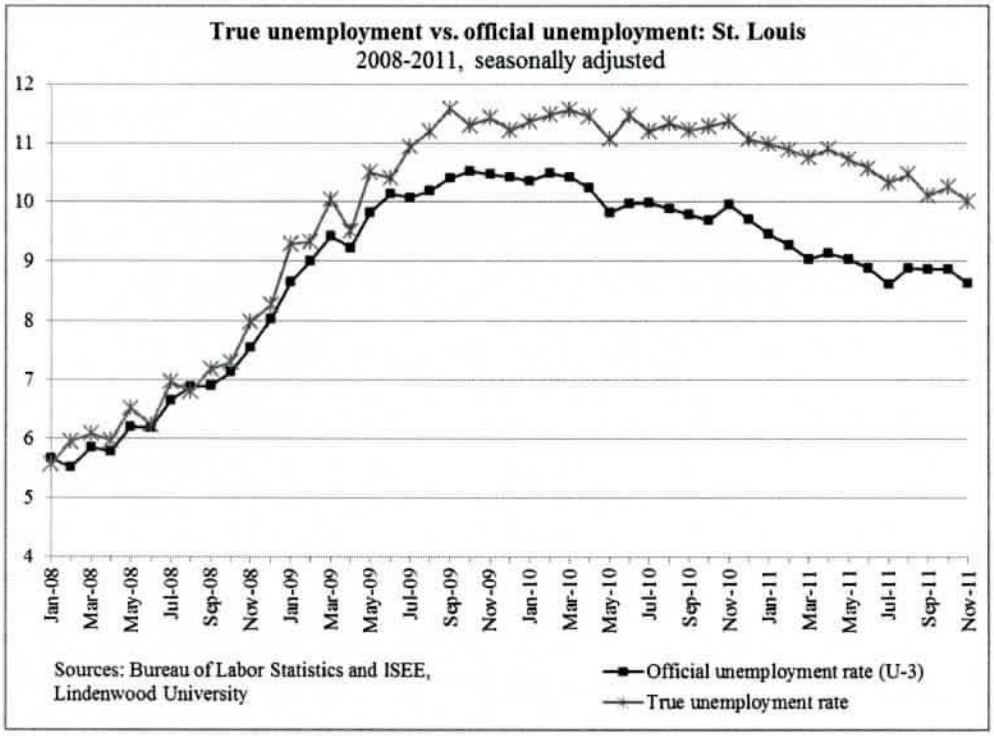
Official unemployment rates produced by the Bureau of Labor Statistics (BLS) are intended to capture the extent to which the economy is generating employment for those adults who want to work. It has been known for some time, however, that, because of the discouraged-worker effect, the official unemployment rates understate the true extent of unemployment. The BLS produces alternative measures that are meant to address this problem, but, because these measures exclude anyone who has been discouraged for more than a year, they are inadequate given the prolonged nature of the current recovery.

To remedy this situation, I use the pre-recession labor-force participation rate (adjusted for demographic changes) to measure the size of the "true" labor force and to obtain the "true" unemployment rate. Thus, rather than asking people about what their preferred alternatives are, as the BLS does, I take their actual choices during normal times to reveal their preferences. The results of this exercise are illustrated in the figure below.



According to the official unemployment rate, the labor-market had been slowly recovering for two years or so from its October 2009 peak of 10.1 percent. Since then, it has fallen in fits and starts, reaching 8.5 percent by the end of 2011, suggesting that almost one-third of the recessionary increase in unemployment had been clawed back. According to the true unemployment rate, however, which peaked at 10.9 percent in November 2009, the labor market did not improve at all through June 2011, when it had returned to its earlier peak. Sustained improvement was only experienced during the second half of 2011, by the end of which the true unemployment rate had fallen to 10.2 percent, which was 1.7 percentage points above the official unemployment rate of 8.5 percent.

Assuming that the relationship between the true and official unemployment rates are similar for St. Louis and the country as a whole, it is possible to obtain a measure of true unemployment for the St. Louis metro area. This is presented in the figure below.



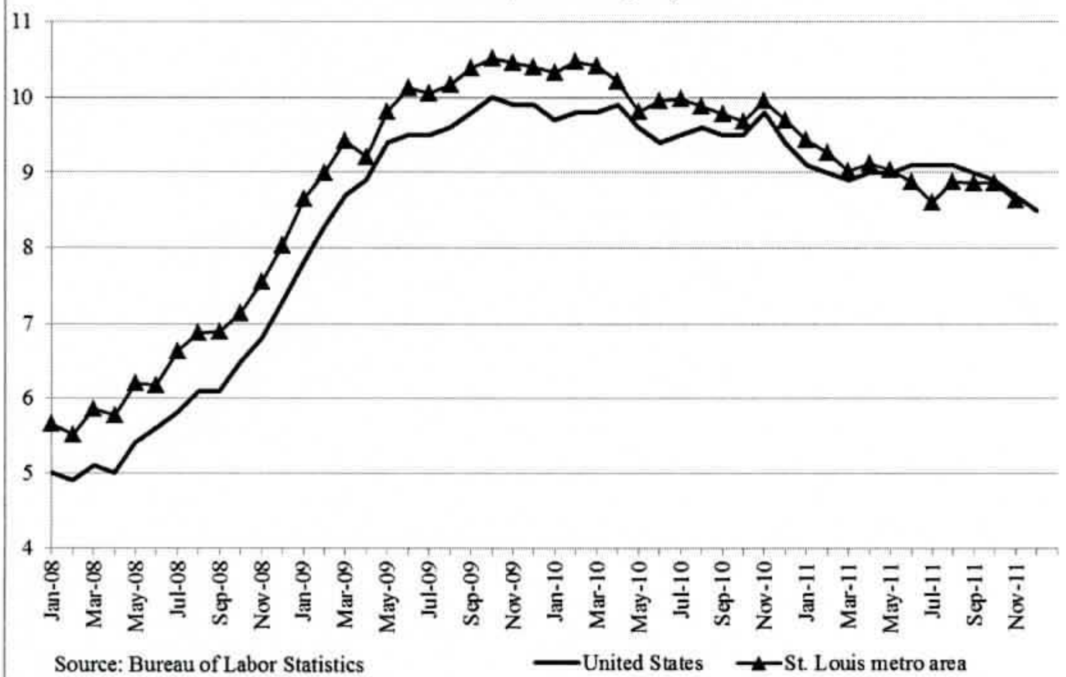
The St. Louis version of the recession and recovery story is that true unemployment rose in lockstep with official unemployment during most of the recession before discouraged workers became prominent in mid 2009. The true unemployment rate peaked in September 2009 at 11.6 percent, which was 1.2 percentage points higher than the official unemployment rate. It remained above 11 percent until February 2011 and has declined slowly since, reaching 10 percent in November 2011, 1.4 percentage points above the official unemployment rate.

'True' Unemployment in the United States and the St. Louis Metro Area

I. Introduction

The official unemployment rate for the United States is one of the most-watched data series produced by the Bureau of Labor Statistics (BLS). Its monthly release is announced on the front page of almost every newspaper in the country, particularly when the economy has been as weak as it has been for several years. As shown in Figure 1, the recession of 2008-09 meant a sharp increase in the rate of unemployment, which rose from 5 percent to 10.1 percent between January 2008 and October 2009. Since then, it has fallen in fits and starts, reaching 8.5 percent by the end of 2011, suggesting that almost one-third of the recessionary increase in unemployment had been clawed back.

Figure 1. Official U.S. and St. Louis metro unemployment rates
2008-2011, seasonally adjusted



Source: Bureau of Labor Statistics

For the St. Louis metro area the official picture looks somewhat better considering that St. Louis's pre-recession unemployment rate was higher than for the rest of the country. The St. Louis unemployment rate rose from 5.7 percent in the first month of recession to 10.5 percent in October 2009, where it lingered until March 2010. After that, it fell slowly, although faster than for the country as a whole, and stood at 8.6 percent in November 2011. In short, the recession had much the same effect on the U.S. and St. Louis unemployment rates, but has subsequently fallen somewhat faster during the recovery in St. Louis.

The official unemployment rate (the percentage of the labor force that is unemployed) is intended to capture an extremely important feature of a labor market—the extent to which the economy is generating employment for those adults who want to work. A minimum expectation of an unemployment rate statistic is that is has a reasonably straightforward and consistent interpretation. That is, we should be pretty certain that an increase in the unemployment rate is bad and that a decrease in the unemployment rate is good. In addition, we should expect that the size of such an increase or decrease to at least roughly correspond with the magnitude of the worsening or improvement of the labor market. It is becoming increasingly obvious, however, that the official unemployment rate does not satisfy these minimum requirements and should be replaced with something better.

Consider the following report from CNBC following the release of the official U.S. unemployment rate for December 2011:[1]

> The U.S. unemployment rate unexpectedly fell to 8.5 percent last month as job creation was more robust than expected, providing continued signs that the nation's labor market is improving gradually.
>
> The unemployment rate— a hotly contested number because of the rise in potential workers who have quit looking for jobs — has fallen 0.6 percentage points since August.

[1] http://www.cnbc.com/id/45898349

> However, an alternative measure of unemployment that counts discouraged workers also dropped sharply. The so-called U-6 number, more encompassing than the headline number the government publicizes, dropped to 15.2 percent from 15.6 percent in November.
>
> The labor-force participation rate, considered another key metric regarding optimism in the workforce, was unchanged at 64 percent. The average duration of unemployment remains near a record high at just under 41 weeks, though the number of those unemployed for 27 weeks or longer fell by 92,000.
>
> Those not in the workforce at all finished 2011 at an annualized record high, but even that measure fell in December to 2.54 million, a drop of about half a million.

This is a reporter who is fully aware of the inadequacies of the official unemployment rate, which leads him to wrestle with several data series in an ultimately unsatisfying attempt to figure out if drop in the unemployment rate is good news or bad news. The confusion is not the fault of this, or any other, reporter, but of our outdated and inadequate labor-market statistics.

II. "True" Unemployment

It has been known for some time that the official unemployment rate undercounts the number of people who are not employed during recessions who would be employed under normal economic conditions. The source of this undercount is the discouraged-worker effect. That is, during a recession there will be a number of people who are not employed but who have given up looking for work. As such, they are not among the officially unemployed, which includes only those who say that they are actively looking for a job. Nor, therefore, are they in the official labor force, which includes only those who are employed or unemployed. Nevertheless, they are part of the "true" labor force and are truly unemployed in the sense that they would be willing to work or look for work under normal labor-market conditions.

The BLS is fully aware of the discouraged-worker effect and has addressed it by making finer distinctions among those who are out of the labor force (Haugen, 2009). Specifically, when surveying households about their employment status, the BLS tries to divine a person's actual desires toward work by asking a series of questions. Those who say that they are available to work and have looked for a job within the previous year, but are not working or currently looking for work, are said by the BLS to be marginally attached to the labor force. Discouraged workers are a subset of the marginally attached and are those who have stated that their decision to not look for work is related to conditions in the job market. The BLS constructs two alternative rates of underutilization from these survey results: U-4, which is includes those who are officially unemployed plus those who are officially discouraged workers, and U-5, which includes the officially unemployed plus all who are marginally attached. For November 2011, the official unemployment rate for the United States was 8.6 percent, U-4 was 9.3 percent, and U-5 was 10.2 percent.[2]

These alternative measures are interesting, but do not solve the problem with the official unemployment rate (U-3), especially under the current situation in which the economy has been in either recession or a torpid recovery for about four years. When a labor-market recovery is as weak and prolonged as the one the United States has been experiencing, there are significant numbers of people who have not looked for work in over a year and who are not, therefore, counted as discouraged workers. An additional problem with these measures is their reliance on survey responses, which are probably biased because respondents are more likely to give answers that paint themselves in a favorable light. For example, a person who has been out of work is probably reluctant to say that he or she has given up looking for a job, even though there is nothing at stake financially either way.

[2] The broadest measure of underutilization, U-6, attempts to count the underemployed, that is, those who have part-time jobs but would be in full-time jobs if it weren't for economic conditions.

An alternative to U-4 and U-5 is to take the pre-recession labor-force participation rate (the percent of the population 16 or older that is unemployed or employed) as an indicator of people would wish to do under normal circumstances and apply it to the current population. This would yield an estimate of the number of people in the true labor force and its accuracy depends on whether labor-force participation would have been the same as before the recession if the recession had not occurred. Obviously, it's not possible to verify this and, because of dramatic changes in labor-force participation over the last three or more decades (see DiCecio, et al, 2008), the assumption is potentially problematic. Two studies, however, show that labor force participation had largely stabilized since the early 2000s through 2007 (Lee and Mowry, 2008; Hartley and Zenker, 2011).

This alternative is fairly straightforward to implement because the BLS releases monthly estimates of the population along with its estimates of employment and unemployment. It is too simplistic, however, because changes in the demographic composition of the population can affect the labor-force participation rate. Therefore, I calculated two estimates of "true" unemployment: one that accounts for demographic changes and a naïve one that does not. These estimates are discussed in the next section.

III. True unemployment estimates for the United States

Prior to the recession, about 66 percent of the adult population was in the official labor force. By October 2009, when the unemployment rate was at its peak, labor-force participation had fallen to 65 percent and by the end of 2011 it had fallen to 64 percent. The two factors that contributed to this decline were an increase in the average age of the adult population (which would tend to decrease aggregate participation) and an increase in the number of discouraged workers.

To separate the two effects, I controlled for demographic changes by fixing the labor-force participation rates of 13 age categories at their pre-recession levels.[3] Using these and the monthly populations of the age groups through December 2011, I calculated the true labor force for each group (i.e., the number who would have been in the labor force if economic conditions had been normal). Summing across the age groups yields the true total labor force. From this I subtracted the number of people who were employed and divided by the true labor force to obtain the true unemployment rate. For sake of comparison, I also calculated a naïve true unemployment rate that does not account for changes in demographics. These two true unemployment rates are illustrated in Figure 2 along with the official unemployment rate.

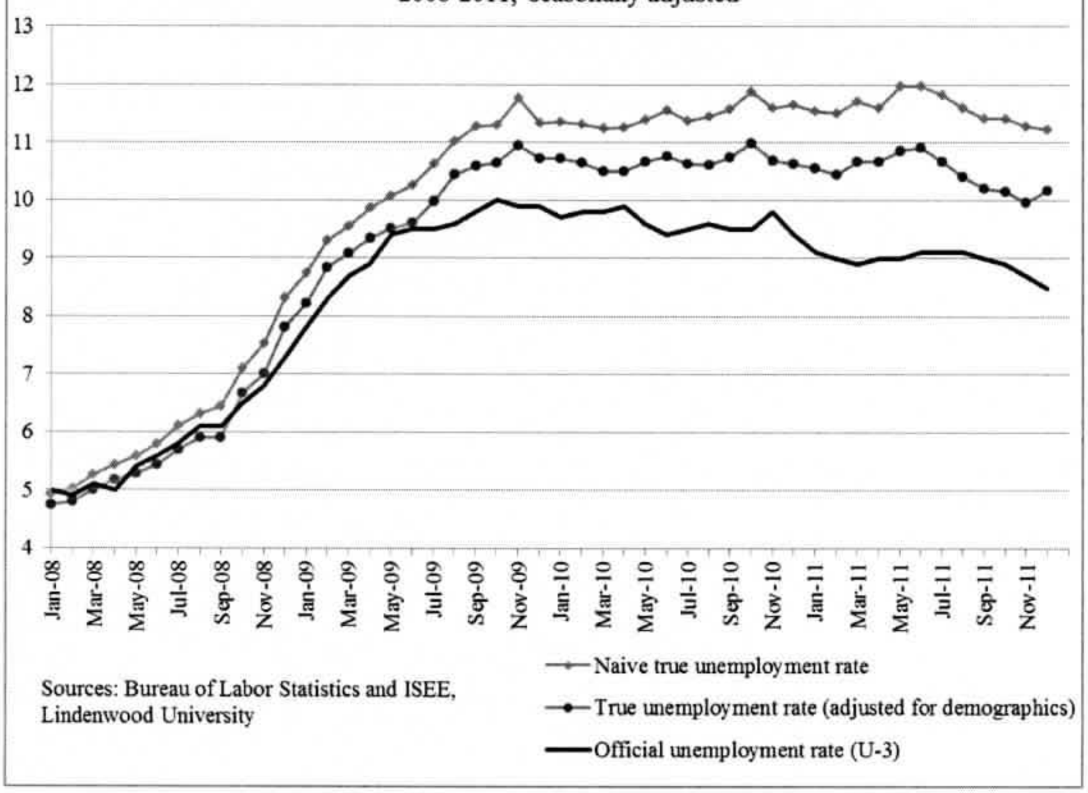


Figure 2. True unemployment vs. official unemployment: United States
2008-2011, seasonally adjusted

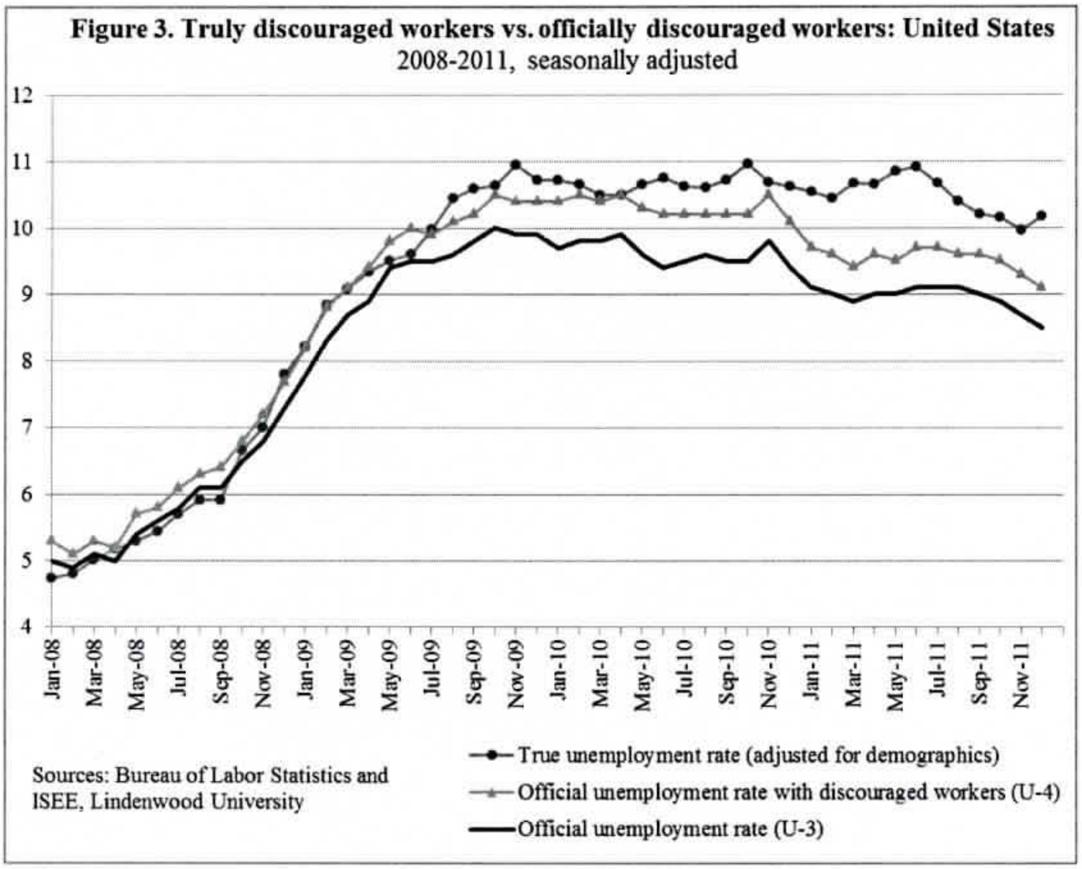
[3] The age groups are 16-19 years, 75 and older, and the 11 5-year groups in between.

According to the official unemployment rate, the labor-market had been slowly recovering for two years or so from its October 2009 peak of 10.1 percent. According to the true unemployment rate, however, which peaked at 10.9 percent in November 2009, the labor market did not improve through June 2011, when it had returned to its earlier peak. Sustained improvement was only experienced during the second half of 2011, by the end of which the true unemployment rate had fallen to 10.2 percent, which was 1.7 percentage points above the official unemployment rate. Note the importance of demographic changes: The naïve true unemployment rate was consistently higher than the true unemployment rate, and the gap grew over time. If I had not accounted for demographic changes, therefore, I would have overestimated the true unemployment rate for December 2011 by a full percentage point.

As noted earlier, the fall in the official unemployment rate since its October 2009 peak suggests that close to one-third of the effect of the recession on unemployment has been closed. According to the true unemployment rate, however, only about one-eighth of the increase in unemployment above its pre-recession level has been closed, and all of that occurred in the second half of 2011. This difference has obvious implications for the analysis of economic policy. For instance, note that the sustained downward drift in true unemployment did not begin until long after the President's fiscal stimulus had run its course and at about the same time that the federal government became paralyzed by partisan rancor.

It's also worth comparing my estimates of true unemployment with the BLS's analogous series U-4, which is designed to include discouraged workers.[4] As shown in Figure 3, the two series ran together very closely until July 2009, but diverged afterward. This is what would be expected given that discouraged workers who have not looked for a job in more than a year are dropped from the U-5 definition of the labor force.

[4] Note that, roughly speaking, the U-5 series runs parallel to the U-4 series.



IV. True unemployment estimates for St. Louis

Because of inadequate data on population, it is not possible to construct a measure of true unemployment for metro areas using the same techniques as for the country as a whole.[5] We can, however, obtain an estimate of St. Louis's true unemployment rate if we assume that the relationship between the true and official unemployment rates are the same for St. Louis and the country as a whole. This assumption depends on the behavioral determinants of discouragement being sufficiently similar between the unemployed in St. Louis and the unemployed in the rest of the country. Put another way, faced with the same weak labor-market conditions for an extended

[5] For metro areas, the BLS provides population data for every July, and the most recent estimates are for July 2010.

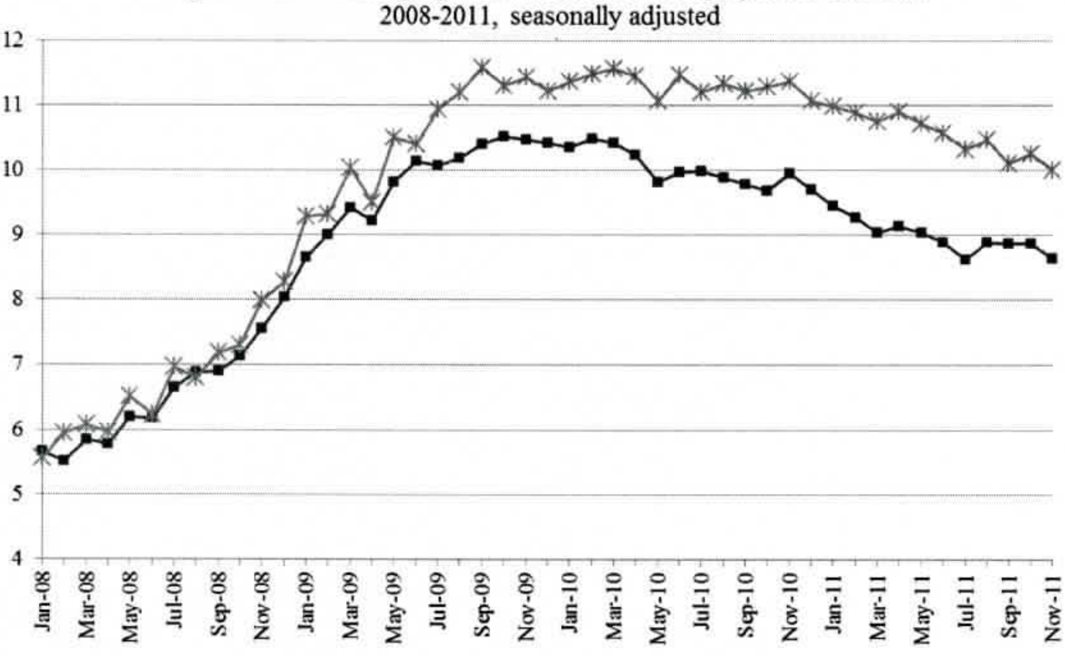
period, the average unemployed worker in St. Louis and the average unemployed worker in the country as a whole will become discouraged after the same length of time in unemployment.

I specified the rate of discouragement (the difference between the true and official rates) as an AR(1) process that is affected by the official unemployment rates for the previous 12 months:

$$Discouragement_t = \alpha + \beta \times Discouragement_{t-1} + \sum_{i=1}^{12} \gamma_i \times Unemployment_{t-i} + \varepsilon_t ,$$

and estimated the model using national data for 2007-2011.[6] I then applied these estimates to the official unemployment rate in St. Louis to obtain my estimate of the metro area's rate of discouragement. This plus the official unemployment rate is my estimate of the true unemployment rate for St. Louis, which is illustrated in Figure 4.

Figure 4. True unemployment vs. official unemployment: St. Louis
2008-2011, seasonally adjusted



Sources: Bureau of Labor Statistics and ISEE, Lindenwood University

[6] This specification fits the data very closely: The R^2 for the estimation was 0.92, meaning that the model explains 92 percent of the variation in the rate of discouragement.

According to Figure 4, the St. Louis version of the recession and recovery story is that true unemployment rose in lockstep with official unemployment during most of the recession before discouraged workers became prominent in mid 2009. The true unemployment rate peaked in September 2009 at 11.6 percent, which was 1.2 percentage points higher than the official unemployment rate. It remained above 11 percent until February 2011 and has declined slowly since, reaching 10 percent in November 2011, 1.4 percentage points above the official unemployment rate. Note also that the rate of discouragement (the difference between the true and official unemployment rates) peaked at 1.8 in April 2011.

References

DiCecio, Riccardo; Engelmann, Kristie M.; Owyang, Michael T.; and Wheeler, Christopher H. "Changing Trends in the Labor Force: A Survey," Federal Reserve Bank of St. Louis *Review*, January/February 2008, 90, 1, 47-62.

Hartley, Daniel and Zenker, Mary. "Who Is Driving the Decline in the Labor Force Participation Rate?" Federal Reserve Bank of Cleveland *Economic Trends*, February 7, 2011.

Haugen, Steven E. "Measures of Labor Underutilization from the Current Population Survey," Bureau of Labor Statistics, Office of Employment and Unemployment Statistics, Working paper 424, March 2009.

Lee, Yoonsoo and Mowry, Beth. "Aggregate Labor Force Participation," Federal Reserve Bank of Cleveland *Economic Trends*, August 14, 2008.

About the Author

Howard J. Wall is the director of the Institute for the Study of Economics and the Environment at Lindenwood University and a research fellow at the Show-Me Institute. His most-recent previous experience was as vice president and regional economics adviser at the Federal Reserve Bank of St. Louis. Prior to joining the St. Louis Fed in 1998, he spent eleven years as an academic in the economics departments at West Virginia University and Birkbeck College, University of London. Wall received his Ph.D. in economics from the State University of New York at Buffalo in 1989 and his B.A. in economics from the State University of New York at Binghamton in 1984.

While at the St. Louis Fed, Wall established and directed the Center for Regional Economics-8th District (CRE8) to provide economic analysis of issues affecting state and local economies. His research record includes nearly 50 research papers in academic journals, including the *Review of Economics and Statistics*, *Journal of Urban Economics*, *Economic Journal*, *International Economics Review*, and *Regional Science and Urban Economics*.

About Lindenwood University

Founded in 1827, Lindenwood is a dynamic four-year liberal arts institution dedicated to excellence in higher education. Nestled amid the beautiful linden trees, our historic 500-acre campus is situated in the heart of St. Charles, Mo., a growing community of 62,000 just west of St. Louis.

We offer more than 120 undergraduate and graduate degree programs to approximately 16,000 students through values-centered programs that lead to development of the whole person. Our faculty, staff and administration are committed to an integrative liberal arts curriculum that focuses on the talents, interests and future of our students. Lindenwood is accredited by the Higher Learning Commission of the North Central Association of Colleges and Schools.

Lindenwood is an independent institution firmly rooted in Judeo-Christian values. Those values include belief in an ordered, purposeful universe, the dignity of work, the worth and integrity of the individual, the obligations and privileges of citizenship and the primacy of truth.