# Yes, We Can Reduce the Unemployment Rate

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RECOMMENDATIONS: Analysis of data on vacancies and unemployment, as well as data on geographic and industry skill mismatch finds no evidence that unemployment is mainly due to a mismatch of jobs and workers. Instead, an increase in demand for goods and services would almost certainly bring down the unemployment rate. This could be accomplished by more aggressive fiscal and monetary policy. Fiscal retrenchment in the short run is likely to increase unemployment even though long term structural deficits must be dealt with in a credible way.

* This policy brief draws on a paper Dickens presented at the October 12, 2010 academic advisory meeting of the Federal Reserve Board of Governors. Copies of an updated version of that paper are available on the Brookings web site at http://www.brookings.edu/papers/2011/0629_reduce_unemployment_dickens.aspx.

# Yes We Can Reduce the Unemployment Rate

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> Mr. Plosser's answer is unequivocal: This mess was caused by over-investment in housing, and bringing down unemployment will be a gradual process. "You can't change the carpenter into a nurse easily, and you can't change the mortgage broker into a computer expert in a manufacturing plant very easily. Eventually that stuff will sort itself out. People will be retrained and they'll find jobs in other industries. But monetary policy can't retrain people. Monetary policy can't fix those problems."
>
> Mary O'Grady *The Wall Street Journal*
> February 14, 2011

> Monetary stimulus has provided conditions so that manufacturing plants want to hire new workers. But the Fed does not have a means to transform construction workers into manufacturing workers. Of course, the key question is: How much of the current unemployment rate is really due to mismatch, as opposed to conditions that the Fed can readily ameliorate? The answer seems to be a lot.... Most of the existing unemployment represents mismatch that is not readily amenable to monetary policy.
>
> Narayana Kocherlakota
> Speech at Northern Michigan University
> Marquette, Michigan
> August 17, 2010

Charles Plosser and Narayana Kocherlakota are Presidents of the Philadelphia and Minnesota Federal Reserve Banks respectively. If they are right then there is certainly no point in continued efforts by the Federal Reserve to increase demand for goods and services by bring down long term interest rates or for the congress to consider additional fiscal stimulus. However, I have recently examined a wide range of data, including that on which President Kocherlakota based his conclusion, and I believe a very different conclusion is warranted. While it is likely that there has been a decline in the efficiency with which the labor market matches jobs and workers, that decline in efficiency explains only a small fraction of the huge increase in unemployment since the onset of our most recent recession. Further, the most likely explanation for that decline in efficiency is the extension of unemployment benefits to the long-term unemployed. What doesn't seem to have played much, if any, role in increasing unemployment is either the geographic or industrial mismatch of workers. Demand for workers is depressed across the board. While there may be very small geographic or occupational niches where workers are in short supply, such bottlenecks always exist in the labor market and data suggest that such bottlenecks are actually at a low ebb.

**Yes, Job Vacancies Have Increased But…**

Figure 1 graphs the unemployment rate versus the fraction of jobs that are vacant. Two things are immediately evident. From the first month of 2000 through the summer of 2009 the monthly values for unemployment and vacancies stuck very close to the lower of the two curves depicted. This relationship is called the Beveridge curve by economists and historic data for the U.S. show the relationship to be very stable for long periods of time. The second thing that is evident is that during the summer of 2009 something changed and vacancies began increasing with little change in the unemployment rate. What are the implications of this?

The position of the Beveridge curve is considered by economists to be a measure of the efficiency of the labor market. The more quickly unemployed workers get matched with available jobs the lower will be the number of unemployed and of available jobs given any rate of job creation. Although this relationship is normally quite constant, figure 1 shows that it isn't always. In the 1970s the vacancy rate that prevailed at any particular rate of unemployment rose. By the early 1980s the efficiency of the labor market had declined substantially so that it took many more available jobs to keep the unemployment rate at any given level. During this time most economists who study inflation and unemployment believe that the level of unemployment that could be sustained without causing inflation (commonly called the NAIRU or the natural rate of unemployment) rose notably.

During the 1990s this situation reversed and by the end of that decade the Beveridge curve seemed to have returned to where it had been in the 1960s. At the same time we saw that it was possible to maintain much lower rates of unemployment without causing inflation. The recent increase in the vacancy rate is therefore a disturbing sign that the minimum sustainable level of unemployment may be rising again.

This is the basis of Kocherlakota's argument, but he misanalyses this change. Using the vacancy data available at the time he gave his speech he did an analysis that can be summarized by considering the following graphic exercise. Take the vacancy rate today and drop a line down to the Beveridge curve that prevailed for most of the previous decade. It suggests that if we had the vacancy rate of March 2011 back in the mid 2000s our unemployment rate would be about 6.8 percent rather 8.8 percent thus 2 percentage points of unemployment are due to a decline in the efficiency of the labor market. Only when Kocherlakota did this exercise unemployment was higher and the vacancy rate had not been corrected for an over estimate of the number of jobs being created by firm births. Thus he concluded that the increase due to the decline in labor market efficiency was 3 percentage points which is most of the increase since the last recession. This was his basis for the conclusion that monetary policy could do little to reduce unemployment.

But this conclusion is clearly wrong. Consider what happened after the summer of 1982 when the Federal Reserve cut interest rates and stimulated aggregate demand. If one had performed a similar exercise to Kocherlakota's in December of 1982, comparing vacancies and unemployment to the 60s, one would conclude that 4 percentage points of the 5 point increase since January of 1980 had been due to the decline in the efficiency of the labor market and presumably Kocherlakota would conclude that unemployment couldn't go lower than 10%. Yet by the fall of 1982, the vacancy rate had begun to increase, and a few months later the unemployment rate began to fall. A year later the unemployment rate had fallen nearly 3 percentage points and the rate of inflation was still declining. The vacancy rate had increased considerably during this time as well. Note that the unemployment rate in the 80s never got as low as it had in the 60s nor as low as it would get in the 90s and 2000s. The decline in labor market efficiency did increase the level of unemployment that could be sustained without creating inflation. But

Kocherlakota's exercise gives us no basis for judging how much we can lower unemployment without increasing inflation.

How can we know what the implications of the outward shift of the Beveridge curve are for how much we can lower unemployment without creating inflation? In a 2009 paper I proposed a way of estimating this by combining data on vacancies, unemployment and inflation. I've re-estimated the model from that paper using updated data to explore this question. Across a wide range of specifications the current data suggest that the unemployment rate could probably be reduced to 5.8 percent or lower without threatening an increase in the rate of inflation. That is an increase of .8 of a percentage point over what it was in the last decade. I turn now to possible explanations for this increase.

**Little Evidence for Skill Mismatch by Industry and Geography**

Let us begin with the contention that our problem is that we need more workers in health and manufacturing but that we have too many construction workers and finance specialists and we need time for the latter to transform themselves into the former. If that were true we would expect the ratio of available jobs (vacancies) to available workers (the unemployed) to be notably higher in health and manufacturing than in construction and finance. Figure 2 does not support this view. What we see instead is that the ratio of available jobs to available workers has declined to extremely low levels across the board. This is true even in health and education and manufacturing.

Are the available workers skilled enough to take jobs? To be classified as unemployed in an industry by the Bureau of Labor Statistics your last job has to have been in that industry. Unless there has been a huge change in the skill requirements of jobs in health care and manufacturing since before the recent recession, it is hard to argue that the unemployed workers in figure 2 are unqualified for the available jobs.

There is another way to measure the mismatch of workers and jobs. We can ask how many unemployed workers we would have to move in order to equalize the fraction of unemployed workers in an industry or area with the fraction of vacant jobs. Figures 3 and 4 present the history of such measures along with the unemployment rate and my estimate of how low the unemployment rate could go without causing inflationary pressures (the non-accelerating inflation rate of unemployment or NAIRU).

Figure 3 shows the value of that index for the eight industries in figure 2 broken down into 13 industry categories. While there was an abrupt increase in the mismatch index at the start of the recession, today the level of the index has dropped back to where it was on average during the 2000s. It is also worth noting that there does not appear to be any relationship between movements in the index and either the level of unemployment or my estimates of the minimum sustainable rate of unemployment.

Figure 4 presents the same data for census regions which are the only level of geographic decomposition available for the BLS vacancy data. Here we see the level of geographic mismatch dropping during the time when unemployment and my estimates of the NAIRU were rising. Again, there is no evidence of mismatch.

The failure to find mismatch in these data does not mean that there is no structural mismatch. It is possible that a finer level of industry, occupation or geographic detail would find evidence contradictory to what we see here at high levels of aggregation. However, a working paper from the New York Federal Reserve's research department uses the Conference Board's new help wanted online data to examine geographic mismatch at a much finer level of detail than here and also to explore occupational mismatch. Their results on geographic mismatch are very similar to my more aggregate analysis and they conclude that geographic mismatch is not contributing to the increase in unemployment. Their analysis of

occupational data reaches a different conclusion. They argue that unemployment has increased about 1.3 percentage points due to occupational mismatch, but these changes start in 2006 and the extent of mismatch is already declining by early 2009 around the same time the large outward shift in the Beveridge curve began. It is entirely possible that there was an increase in mismatch during the recession, but that it would have no effect on unemployment if occupational reallocation was relatively easy. While it may not be easy to turn a stock broker into a computer programmer, it might be easy for one to slip into the job of financial officer for a manufacturing firm. Construction workers may not be able to become nurses overnight, but that doesn't mean they could not find work as orderlies or in maintenance departments of hospitals. Overall there is little evidence that mismatch can explain the increase in vacancies relative to unemployment over the last two years.

**If it is Not Mismatch what is the Source of the Decline in Efficiency?**

Lawrence Ball has shown that around the world there is a strong tendency for the minimum sustainable rate of unemployment to increase with recessions. The one exception to this general rule seems to be the United States. Ball has argued that this is because in the past the U.S. has responded swiftly and decisively to increases in unemployment with monetary and fiscal policy and reduced unemployment before it damaged the skills and morale of workers. If he is right then the extended high and long term unemployment could be damaging workers productive skills and willingness to search for work and that, in turn, could be the cause of the decline in labor market efficiency.

There is a large literature showing that people find it harder to find a job the longer they are unemployed. This could be because long term unemployment makes it hard to find jobs or it could be that people who find it hard to find a job are the only ones still unemployed after long periods of time. Both reasons probably matter, but there is evidence that at least some of the reason for the lower job finding rate of the long term unemployed is the destructive effects of long term unemployment. However, nearly all this evidence is for other countries – particularly England. Again, the U.S. seems to be an exception where long term unemployment affects wages but not the ability to find a job. Of course this too could be due to the fact that we haven't had the experience that other countries have had with large numbers of very long term unemployed. In considering a range of evidence on Ball's hypothesis I have been unable to verify it or reject it. It remains a worrisome possibility.

However, there is another explanation that is well documented and can explain the entire increase in the NAIRU. One of the most consistent findings in the literature on the efficiency of labor markets is that increases in the duration of unemployment benefits result in higher unemployment rates. It is important to note that this is not necessarily a bad thing. One of the justifications for paying unemployment benefits is to allow people more time to search for the most appropriate job possible given their skills. Very short durations of unemployment benefits may force people to take jobs that don't make full use of their skills in addition to causing large drops in income for their families. However, a number of estimates of the magnitude of the effect of the duration of unemployment benefits on unemployment suggest that the extended unemployment benefits program adopted by the Federal Government in response to recent high unemployment has increased the unemployment rate by somewhere between .4 and 1.8 percentage points. A criticism common to all these studies but one is that they are based on data from normal periods of time when jobs are much easier to find than they are right now. The one study that looks at current data on the difference in behavior between those who are and aren't eligible for extended unemployment benefits concludes that the extended benefits program has increased the unemployment rate by .8 of a percentage point – exactly the amount I estimate the NAIRU has increased. If this is right

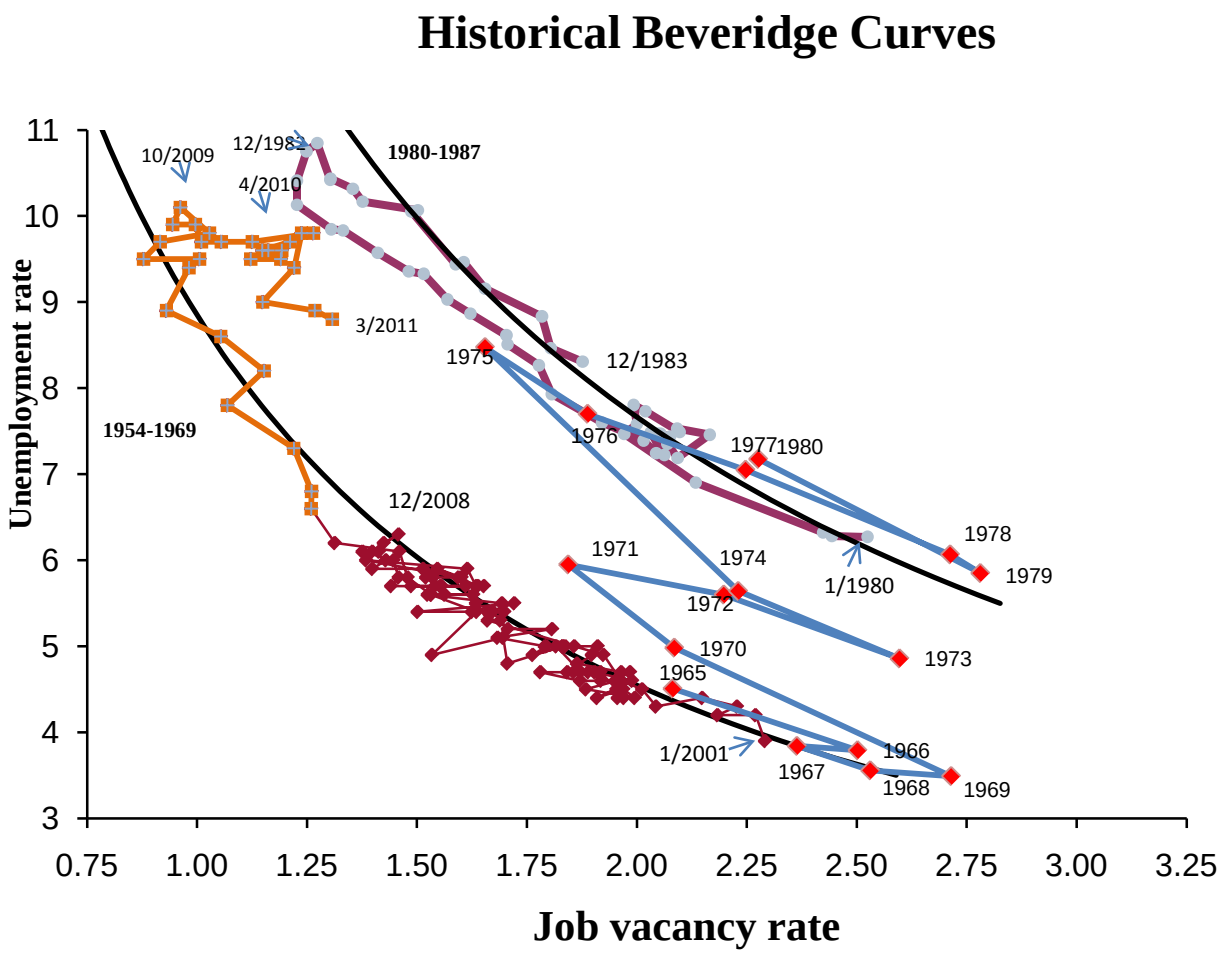
this is good news because it means that as unemployment comes down and the extended benefits programs are cut back, the labor market should return to the level of efficiency that it had before.

**Conclusion**

Despite the rise in vacancies there is no reason to believe that we cannot substantially reduce the rate of unemployment by increasing the demand for goods and services. The question is how. With short term interest rates essentially at zero the Federal Reserve's main policy instrument can do no more. However, the high rate of unemployment and the lack of any signs of wage inflation are good reasons not to prematurely raise interest rates. Beyond that, the Federal Reserve does have other tools at its disposal. Purchases of longer term bonds (often called quantitative easing) can be expected to have some impact on long term interest rates. The Fed could also announce a slightly higher target for inflation than its implicit 2% target. Increasing inflationary expectations in this way would effectively lower long-term real interest rates. Such an increase could be justified as being necessary to fulfill both of the Fed's dual mandates of stable prices and full employment. Not only could it bring down unemployment, but raising inflation slightly at a time when the economy is depressed could help keep the economy from succumbing to deflation should it be subject to further negative demand shocks. Increasing inflation would also reduce some of the problems in the housing market as housing prices and wages rose while mortgage payments remained constant. Finally, the Federal Reserve could stop paying interest on bank reserves or even charge banks a fee for holding reserves. This would give banks more incentive to create loans so as to create more demand for business investment and household purchases of durable goods.

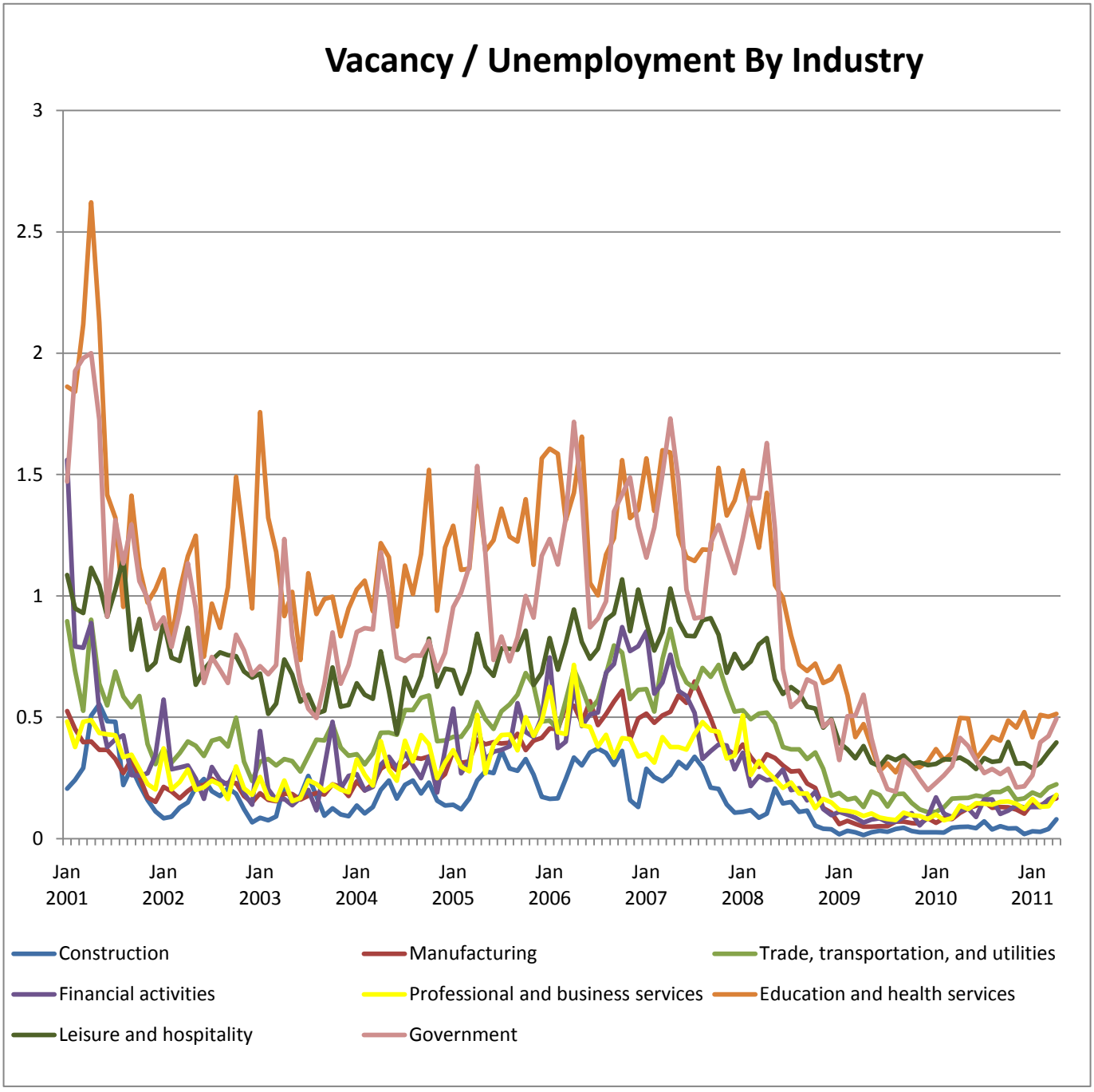
What would most likely be helpful would be additional fiscal stimulus. In particular, Federal aid to state and local governments would be fast acting as states would anticipate the increased revenue in their planning even before the money started coming in. This could prevent further layoffs of teachers, firefighters and other public workers and have an immediate positive effect on employment. A major objection to expansionary fiscal policy is that it might adversely affect the perceived credit worthiness of the U.S. Government. There certainly are serious concerns about the long term fiscal position of the U.S., and it would be best if additional short term spending was coupled with credible plans to deal with long term structural imbalances – particularly those resulting from rising medical costs. Any short term cuts in Federal spending are likely to worsen our unemployment problems.

Figure 1



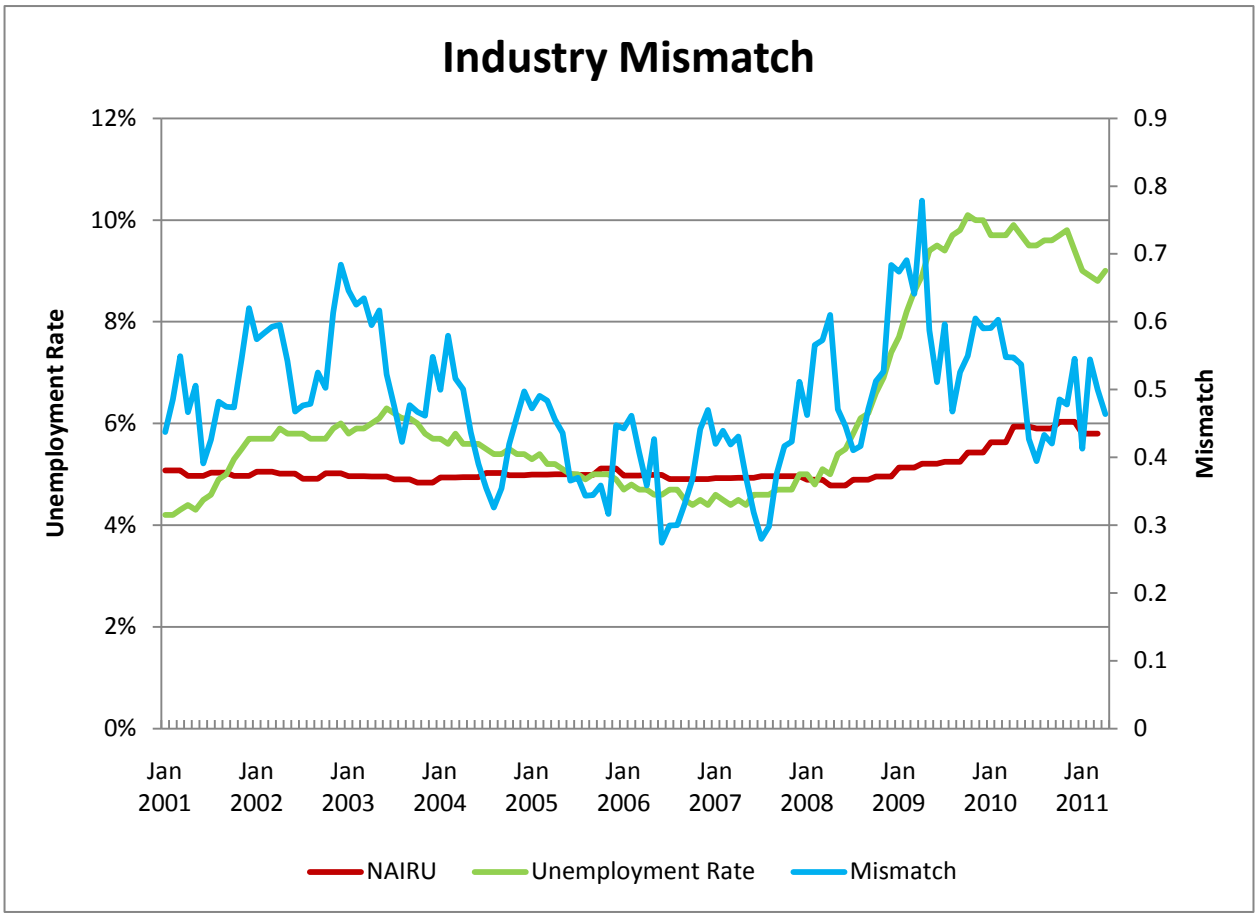

Monthly data January 2001-March 2011 and January 1980 through December 1983. Annual data from 1965 through 1980. Unemployment data are from the Bureau of Labor Statistics (BLS). Vacancy rates from before 2000 were constructed using the Conference Board's Help Wanted advertising series and data on employment from the BLS. After 2000 vacancy rates are constructed using the BLS's Job Openings and Labor Turnover Survey. The two measures are harmonized using a method described in Dickens (2009).

Figure 2



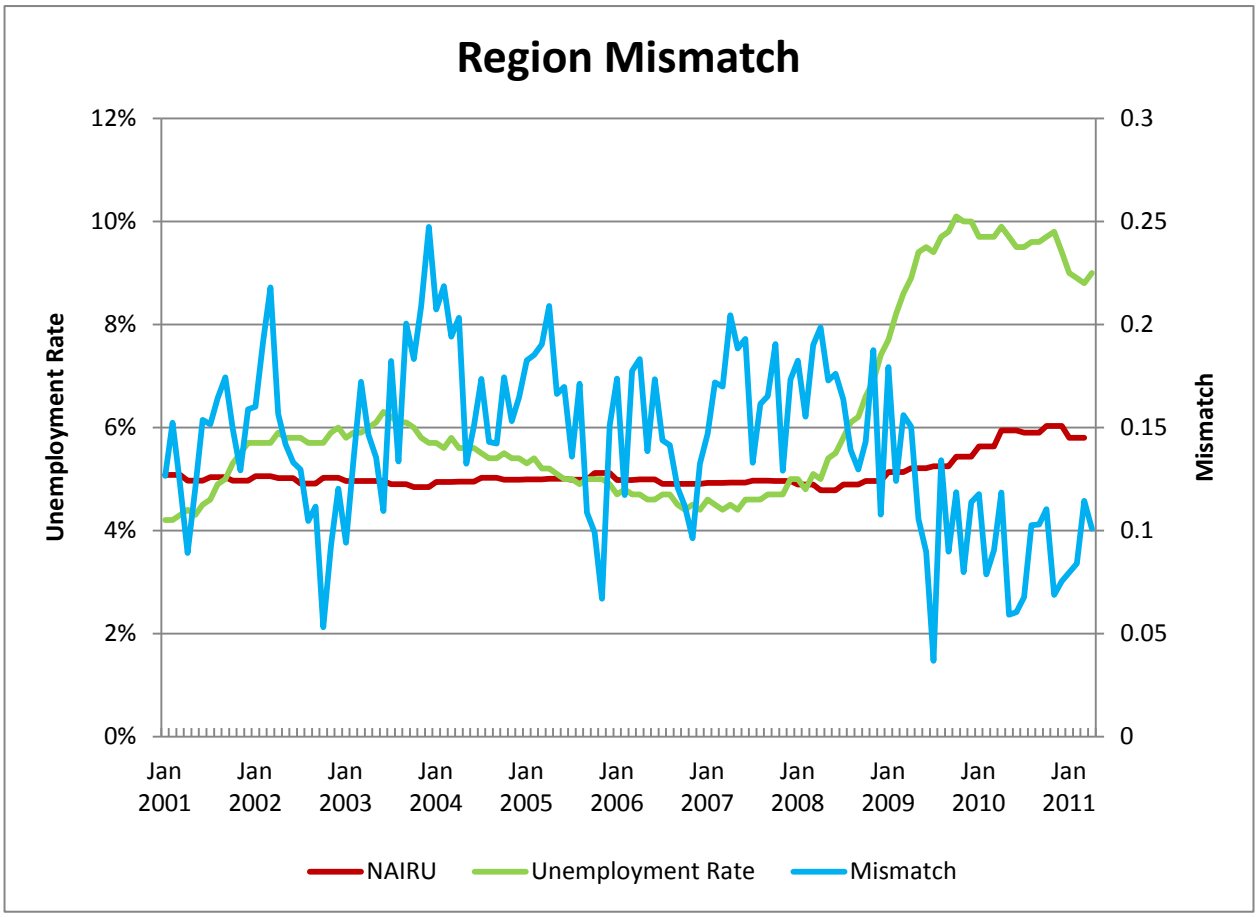

Data on vacancies from the Department of Labor's Job Openings and Labor Turnover Survey. Data on unemployment by industry from analysis of the Current Population Survey.

Figure 3




Mismatch index and NAIRU computed by author. Unemployment rates from the Bureau of Labor Statistics.

Figure 4

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