

Unemployment¹

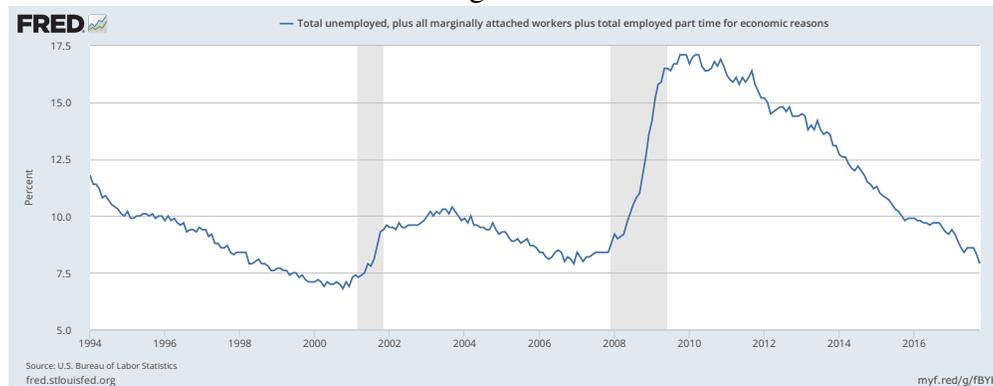
We now turn our attention to the aftermath of the recession. These notes focus on one disappointing aspect of the recovery, the persistence of low employment (in contrast to unemployment). We first examine the data. We then examine alternate theories for why employment remains disappointingly low.

The Current Composition of Unemployment

The Bureau of Labor Statistics reports the monthly unemployment rate. As of October 2017, the baseline unemployment rate (known as U-3) was 4.1%, the lowest in 17 years and well below estimates of the natural rate (4.7%). During the downturn, unemployment peaked at 10.0% in October of 2009.² That was the highest level since November and December of 1982, when unemployment reached 10.8%. By comparison, during the Great Depression, unemployment neared 25%.

It is well known that U-3 underrepresents the misery caused by the business cycle. One omission is discouraged workers, those who have given up looking for employment. U-4 adds these to the unemployment rate. As of October 2017, U-4 stood at 4.4%. U-6 also includes the underemployed. U-6 stood at 7.9%. Its peak was 17.2% in October 2009. Prior to the recession, U-6 was about 8%. The recovery in U-6 is thus less robust than that of U-3.

Figure 1:



A relatively underreported aspect of the recovery has been the slow recovery of employment. The following figure shows the labor force participation rate:

¹These are undergraduate lecture notes. They do not represent academic work. Expect typos, sloppy formatting, and occasional (possibly stupefying) errors.

²The peak of U-3 has previously been reported as 10.6%. This figure has since been revised downward.

Figure 2:



This figure has decreased from about 66% to 62.7% in the aftermath of the recession. This is still very and has shown little sign of recovery. Some of this is due to an aging population causing more retirees. Increases in people on disability and people in school account for some of the decline as well.

Related to this result is the status of the long-term unemployed. The Great Recession has resulted in extremely high levels of people who have been unemployed for at least 27 weeks, as shown in the following chart:³

Figure 3:



This figure has recovered, it peaked at over 44% in June 2010. But unlike U-3, it remains well above its pre-recession levels.

The Great Recession seems have created a wedge between low employment and high unemployment. A first glance at the unemployment data suggests a relatively strong recovery. The employment

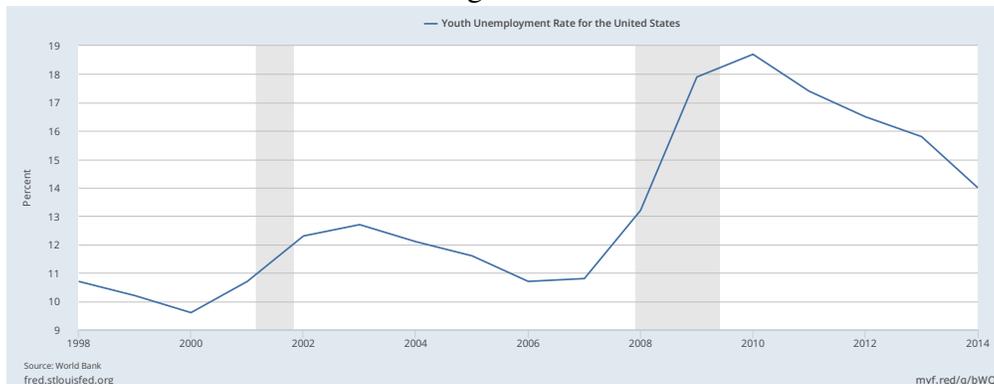
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data, however, suggest a distressingly poor recovery where a share of the workforce has been pushed into a very long spell of non-employment.

The Fed regularly forecasts GDP growth and inflation. Its September 2017 forecasts suggest weak growth with the median forecast growth rate through 2020 being between 1.8% and 2.0%. This is probably not high enough to significantly increase labor force participation. Core inflation is expected to rise from 1.4% in 2017 to 2.0% (its target) by 2020.

Finally, to put you in a cheery mood, we can see that youth unemployment (U-3), defined as 16-24 year olds, is especially high, peaking at 18.4% in 2010. This series was recently discontinued.

Figure 4:



We now consider several explanations for why unemployment remained high long after the recession ended in 2009 and for why labor force participation has remained low..

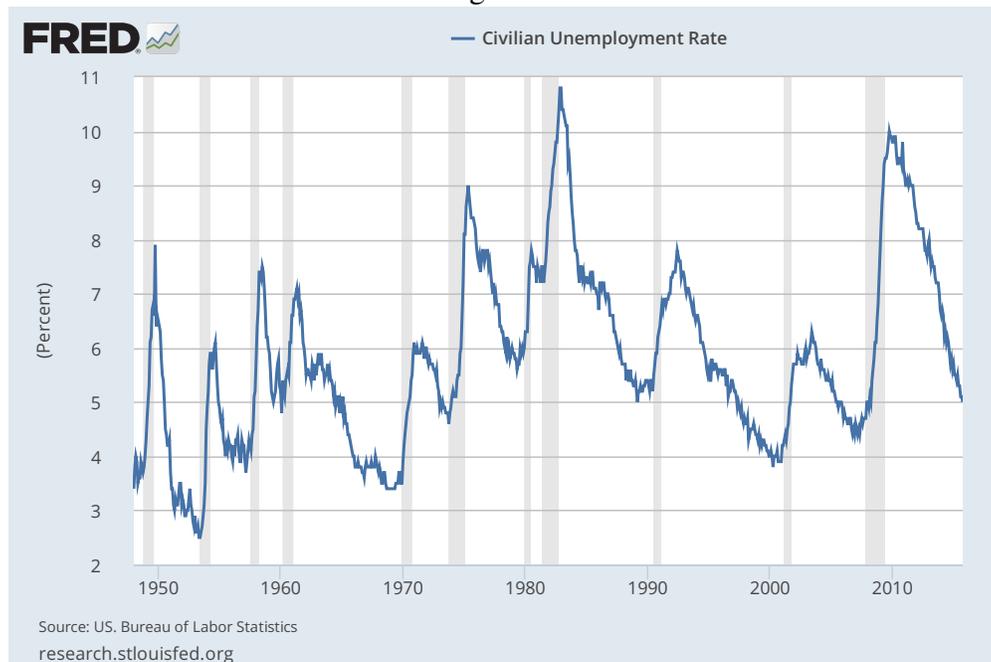
1: Is Unemployment a lagging variable?

Although the NBER dates the end of the recession at June 2009, unemployment remains high. It is often said that unemployment is a “lagging variable.” The following chart, from the St. Louis Fed, displays the unemployment rate, with recession dates in gray:

This graph shows two interesting results:

1. Unemployment does seem to peak either near the end, or after the end of the recession. The description of unemployment as a lagging variable thus seems fair.
2. The delay between the end of the recession and a significant decline in unemployment seems to be trending upward (although with so few recessions to examine, it is hard to reach any firm conclusions). This result has led to the term “jobless recovery” being applied to recent recoveries.

Figure 5:



Several, often interrelated, explanations exist for the first result:

i. Uncertainty. The exact end of the recession is known only in hindsight. In June 2009, employers did not know that the formal recession was about to end. Searching for workers, and training new employers is costly and it may be rational for firms to wait until the economy is clearly recovering to begin adding payroll.

ii. No recession \neq strong growth. The end of the recession does not imply that the economy is growing rapidly. Growth since June 2009 has been erratic. Unless production is actually significantly increasing, firms have little need to add labor.

iii. Substitution toward other inputs. During a recession, utilization of inputs besides labor (land, capital, etc.) also decreases. Usage of these factors may be more flexible than labor and it may be rational for firms to increase their utilization before adding workers.

iv. Inertia. Some firms do not hire continuously and it may thus take time for them to respond to changing macroeconomic conditions.

v. Underemployment/Overtime. During the recession many workers remained employed, but were not able to supply as many hours as they would like. In the early stages of a recovery, firms may prefer to convert the underemployed to fully employed or have existing employees work overtime.

vi. Erosion of skills. Beyond not earning income, unemployment harms households because it reduces their real or perceived abilities. An employee who was attractive to potential employers before the recession may be less desirable after a spell of unemployment, especially if he works in a rapidly evolving field.

The second result is tougher to explain. One popular theory claims that unemployment in recessions prior to 1990 was typically cyclical. Firms reduced payroll during a recession, but as the economy recovered, those same firms (or at least similar firms) hired these workers back. The duration of unemployment was thus relatively short. In recent recessions, however, more unemployment may be structural. The set of firms that exist after the recession is fundamentally different than those that entered the recession. The common claim is that manufacturing jobs are replaced with service or other white collar jobs during a recession. Some unemployed workers thus lack the skills to be hired back once the recession ends. This argument remains controversial.

2: Financial Crises are Different

It is useful to compare the Great Recession with that of 1980. These are the two most severe recessions since the Great Depression. Note that unemployment recovered after the former recession than the latter. So while unemployment is a lagging variable, there may be something else going on as well.

Kenneth Rogoff and Carmen Reinhart have published very influential work helping to explain persistent unemployment. This work includes the popular book, *This Time Is Different: Eight Centuries of Financial Folly*.⁴ The authors empirically examine 224 financial crises prior to 2007. They reach the following conclusions:

i. Recessions caused by financial crises (debt crises, speculative bubbles, etc.) are fundamentally different than most other recessions. The Great Recession is an example of the former. The recession of 1980 (*aka.* Volker Recession) is an example of the latter. It was primarily caused by a tightening of monetary policy in order to reduce chronically high levels of inflation.

2. Recessions that arise from financial crises take much longer for unemployment and GDP to recover to their pre-crisis levels. In a related op-ed, the authors write:⁵

⁴See Reinhart, C. and K., Rogoff. 2009. *This Time Is Different: Eight Centuries of Financial Folly*. Princeton University Press.

⁵See Reinhart, C. and K. Rogoff. 10/15/12. "Sorry U.S. Recoveries Really Aren't That Different." *Bloomberg.com*

So how many years did it take for per-capita GDP to return to its peak at the onset of the crisis? For the 1873 and 1893 (peak is 1892) crises, it was five years; for the Panic of 1907 (peak is 1906), it was six years; for the Depression, it took 11 years.

iii. Following financial crises, both firms and households seek to de-leverage by reducing their debt. This acts as a drag on aggregate demand and slows recovery. We have seen data that support this hypothesis. Household debt has fallen, as has firm debt as measured by outstanding commercial paper.

iv. Although policy matters, it is very difficult for policy to fundamentally change the nature of the slow recovery.

v. An inflationary policy, such as a period of greater than 5% annual inflation, might seriously improve the pace of recovery by reducing the real value of debt. Central banks have generally been averse to such a prescription. In late 2008, Rogoff wrote:⁶

Moderate inflation in the short run say, 6% for two years would not clear the books. But it would significantly ameliorate the problems, making other steps less costly and more effective.

True, once the inflation genie is let out of the bottle, it could take several years to put it back in. No one wants to relive the anti-inflation fights of the 1980s and 1990s. But right now, the global economy is teetering on the precipice of disaster. We already have a full-blown global recession. Unless governments get ahead of the problem, we risk a severe worldwide downturn unlike anything we have seen since the 1930s.

3 *Hysteresis*

Many macroeconomic models predict that unemployment has a natural rate, a level of unemployment that the economy will return to in the long run. *Hysteresis* refers to the idea that an economy may have more than one natural rate of unemployment and which level it converges to depends on the history of the economy. Consider the following two assumptions:

1. Search costs. In the labor market, employees must pay costs to match with an employer. These may include traveling for interviews, sending resumes, etc. Employers must also pay similar costs. During a recession, there are more unemployed workers for each job opening. It is thus harder to find

⁶See Rogoff, K. 12/2/08. "Inflation is Now the Lesser Evil."

a job. The marginal benefit (in terms of probability of finding a job) is less. Workers thus pay fewer search costs. This results in fewer matches, amplifying the recession's impact on unemployment.

2. Workers skills deteriorate as they are unemployed. As skills erode, it is harder for employees to find a suitable employee. their marginal benefit of searching is thus reduced. they search less, further increasing unemployment.

Now suppose that the economy is initially at a low natural rate of unemployment. As workers cycle through jobs, the following occurs:

i. Because unemployment is low, the unemployed invest in labor search and are usually able to quickly find jobs.

ii. Because spells of unemployment are brief, there is little skill erosion. Firms thus continue to search, helping keep unemployment low.

The low rate of unemployment is thus sustainable.

Now suppose a temporary shock (*e.g.* the recent financial crisis) results in very high levels of unemployment. It is not obvious that the economy will eventually return to the previous low natural rate of unemployment. It may instead converge to a higher natural rate.

i. The unemployed must compete with many other unemployed workers for positions. They thus invest little in search resulting in fewer matches.

ii. Episodes of unemployment are now longer. Skills erode substantially. It is harder for firms to find suitable workers. They thus invest less in search resulting in fewer matches.

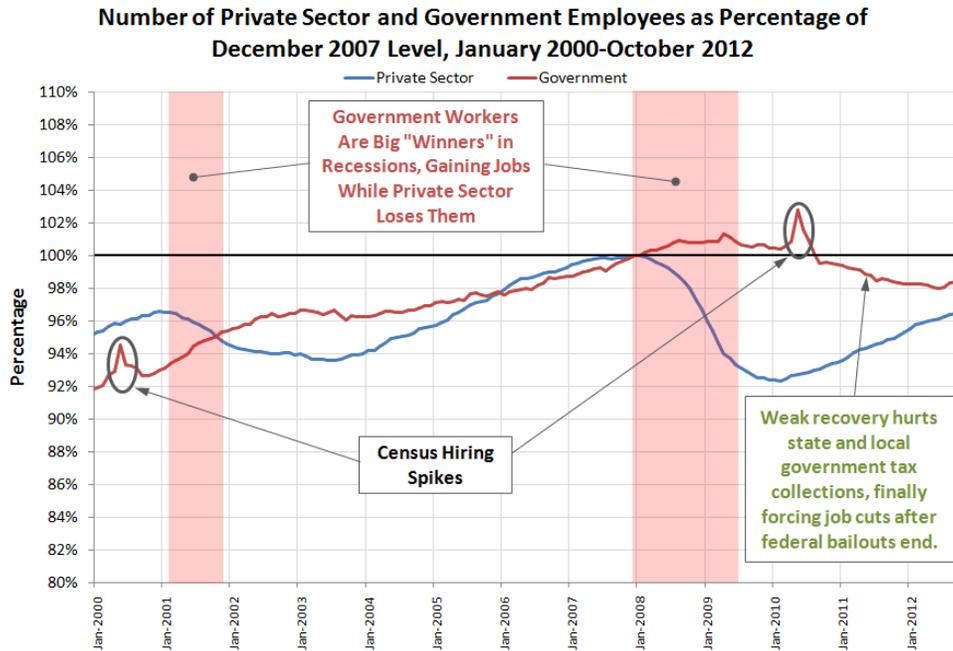
The high rate of unemployment is thus sustainable. If unemployment starts low, it stays low. If it starts high, however, it remains high.

Hysteresis has been used to help explain persistently high levels of unemployment in Western Europe. There is some concern that it could affect the United States in the aftermath of the recent recession. This is a gloomy prognosis, more so than that of Reinhart and Rogoff. It predicts that unemployment may remain very high indefinitely.

#4 Private vs. Public Employment

The following graph, taken from politicalcalculation.com, shows the changes in public (Federal, State, and Local) employment and private sector employment. It shows that private sector employment has recovered much better than total employment. Public employment, however, has declined since the worst of the recession. This change has mostly resulted from state and local governments reducing their employment once stimulus aid expired.

Figure 6: Public vs. Private Sector Employment



What About Labor Force Participation?

Even using U-6, it is clear that unemployment has mostly recovered. But it is less clear why labor force participation remains so low. Some explanations:

- i. It is clear that an aging workforce initiated a downward trend in labor force participation that began well before the Great Recession. But examining the data, there seems to be an inflection point right around 2008 that suggests there could be a “labor force participation gap.” This trend, however, is expected to continue with labor force participation eventually falling below 60%.
- ii. Another factor is the expansion of disability programs. Since 2002, the number of Americans collecting disability has risen from 5.5 million to 8.8 million. Many of them are thus able to leave the labor force.

Figure 7: Collecting Disability, Not in the Labor Force



The U.S. labor force is 163 million. 3 million workers leaving the workforce due to expanded disability benefits would then cause a 1.8% decline in labor force participation.

iii. Structural change. Technological and structural change have shifted the U.S. economy away from unskilled labor towards skilled labor and capital. This may help push some low skilled workers out of the labor force.

iv. Princeton economist Alan Krueger has suggested that the opiate epidemic is a major cause:⁷

In fact, Krueger suggests that the increase in opioid prescriptions from 1999 to 2015 could account for about 20 percent of the observed decline in men’s labor force participation during that same period, and 25 percent of the observed decline in women’s labor force participation.

The Debate over Unemployment Compensation

The government offers unemployment benefits to workers who have lost their jobs (excluding those fired for various types of misconduct). Normally, benefits last for 26 weeks and provide a fraction of the employee’s prior income (the exact rate depends on income and the state among other factors). During recessions, however, Congress typically extends unemployment benefits. A series of extensions resulted in unemployment compensation lasting up to 99 weeks during the worst of the recession. No state still offers 99 weeks, 28 weeks in now the max.⁸

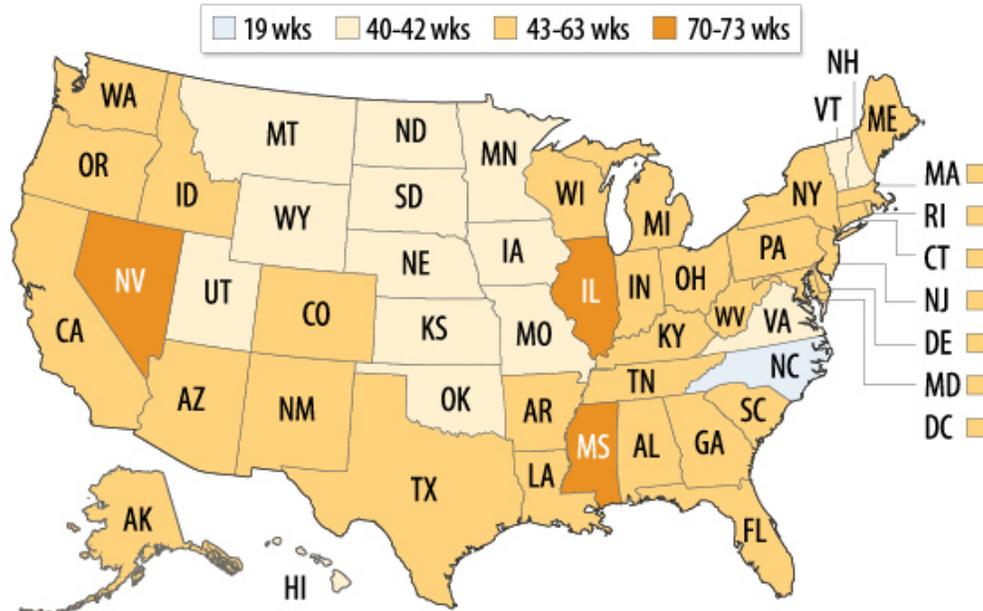
Unemployment benefits present a tradeoff. Consider two effects:

⁷Dews, Fred. 2017. “How the opioid epidemic has affected the U.S. labor force, county-by-county” *Brookings Now*

⁸Source: Center for Budget and Policy Priorities.

Figure 8:

Maximum Duration of Unemployment Insurance by State



Note: Map includes regular benefits, all tiers of EUC, and EB, assuming extension of EUC beyond 2013.

The Virgin Islands has 63 weeks of UI and Puerto Rico has 73 weeks.

States with fewer than 26 weeks of regular benefits have proportionally fewer weeks of federal benefits available for those who file for UI after the reduction took effect. Please see the table on page 3 for a fuller explanation of the benefits available in each state.

Source: CBPP analysis of Department of Labor Employment and Training Administration data. Data effective August 18, 2013.

Center on Budget and Policy Priorities | cbpp.org

1. In the short run, unemployment compensation boosts aggregate demand and acts to stimulate the economy. because the recipients have a high marginal propensity to consume, many economists see unemployment benefits as an especially effective source of fiscal stimulus.

2. In both the short and the long run, unemployment benefits reduce the incentive to search for work, and may make the unemployed less willing to accept positions which pay less than their old job. The St. Louis fed reports a range of estimates for how the extension of benefits beyond 26 increased unemployment. this range is 0.4% to 2.7%.⁹

It is important to keep in mind, however, that the primary motivation behind unemployment compensation is not its effects on GDP and long term unemployment which are negative). The main motivation is to share risk so that few households are adversely affected by economic downturns. Most people would choose the reduction in uncertainty caused by unemployment insurance, even though they do have some effect on long term unemployment.

Whether to continue extending unemployment compensation beyond 26 weeks has been a heated

⁹See November 2010. "The Ins and Outs of Unemployment Compensation." *St. Louis Fed Newsletter*.

debate throughout the recession and its aftermath.