

# **Labor Market Policies during the Great Recession and Recovery**

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## **1. Introduction**

In December 2007, the US economy entered into the deepest recession since the Great Depression. Like other recessions precipitated by financial crises, the Great Recession was accompanied by a substantial contraction in aggregate demand. Following the crisis, there were sharp drops in consumer spending and to a lesser extent in investment. This translated into a sharp drop in output, which hit a low point in the fourth quarter of 2008 with a contraction of GDP of 9%. Figure 1 shows that by the beginning of 2010, the economy had turned around in terms of GDP, consumption and investment, though these remain low by historical standards.

Just as the goods, service, financial, credit, and housing markets were all affected by the Great Recession so was the labor market. The sharp contraction in demand generated massive layoffs and a sharp drop in employment and a rise in unemployment. While employment has been growing steadily by about 150,000 jobs per month since February 2010, driven largely by private sector job creation, the loss of jobs was so great that the economy only recently recovered the private sector jobs it lost during the recession. Overall unemployment reached a peak of 10% in October 2010 and has been declining steadily since. Indeed, the share of the

short-term unemployed has returned to pre-recession levels, so the continued high unemployment reflects the larger share of longer-term unemployed during the recovery. As explained below, the fact that a large share of long-term unemployed has important implications in terms of the speed at which the unemployment rate can continue to fall.

In Section 2, we present additional disaggregated evidence on labor market dynamics during this time period, which sheds light on the underlying causes of unemployment. In Section 3, we present evidence on the extent to which unemployment during the Great Recession and the recovery can be attributed to cyclical or structural factors. This is key in terms of understanding whether the policy tools used during the Great Recession and its aftermath worked effectively. In Section 4, we explain the policy tools used during this period and evidence on their effectiveness. We conclude in Section 5.

## **2. The Labor Market During the Great Recession and Recovery**

As the Great Recession evolved, the unemployment rate rose sharply from 5 percent at the beginning of the recession in December 2007 to 7.2 percent by a year later in December 2008 and it peaked at 10 percent in October 2009. As Figure 2 shows, this rise of 5 percentage points in the unemployment had never been experienced in the U.S. during the post-WWII era. Moreover, this figure shows that the low unemployment during the 1990s, which reached a low of 4 percent in December 2000, and continued to be low during the early 2000's, had also been unprecedented since the late 1960s.

Although, it is argued that this recession has been particularly slow and, some have dubbed it as a job-less recovery, this is not apparent from Figure 2. In fact, the fall in the unemployment rate has been steeper during this recovery than during the early 1970s recovery, the early 1980s recovery, and the early 2000's recovery. Moreover, the time it took for the labor market recovery to get underway was shorter this time around than during any other recovery, with the exceptions of the recoveries in the mid-1970s and mid-1980s. What has been atypical during this recovery, relative to any other recovery going back to the early 1970s, is that government jobs have not contributed to this recovery. In fact, close to 600,000 government jobs have been shed during this recovery contrary to previous recoveries, which had always benefitted from the addition of government jobs.

The current high unemployment also has to be put in the context of an increasingly less dynamic labor market during the past few decades.<sup>1</sup> Figure 3 shows that job losses sharply increased during the Great Recession, while job gains also dropped substantially relative to the recession of the early 2000s. However, while job losses are counter-cyclical and job gains procyclical, job gains and job losses have been steadily falling since the 1960s, with a sharper drop during the 2000s. While job turnover is still high by international standards, turnover has dropped by 25% in the past two decades. This is true also when looking at worker flows. Figure 4 shows that flows into unemployment and out of unemployment are both counter-cyclical as recessions lead people to lose their jobs and looking for work but also to move out of the

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<sup>1</sup> Haltiwanger, Scarpetta and Schweiger (2006) show that while the U.S. has become increasingly less dynamic, job reallocation in the U.S. are still high compared to other European countries and they show that this decline may be explained partly by a change in the sectoral composition of the economy and the firm size distribution of firms.

labor force. There was a sharp increase in flows into unemployment and to a lesser extent in the flows out of unemployment after the Great Recession. Yet, as job flows, worker flows have been declining since the 1980s. The U.S. labor market is generally showing less flexibility. This means that it may be becoming more difficult to adjust and that employers and workers will only adjust under extreme duress, as it is the case during a major crisis, but will not adjust again to hire unless they have much certainty that of large and lasting increases in demand.<sup>2</sup>

Much of the rise in unemployment can be explained by people losing their jobs but also by the inability of people to exit unemployment, as employers were not creating enough new jobs. Figure 5 shows the drastic increase in layoffs during this time, with layoffs increasing by over 50% during the Great Recession. The vast majority of these discharges were the result of mass layoffs of more than 50 individuals. At the height of the recession, up to 90% of all dismissals were due to mass layoffs. Yet, there were also many experiencing individual layoffs during this period. Since then, employers have substantially reduced mass and individual layoffs and these are currently below the pre-recession levels in 2006.

As shown in Figure 6, because there were so many losing their jobs and so few new jobs created, the number of unemployed per every job hit an all-time high of 7 unemployed per vacancy in July 2009. As fewer people entered into unemployment and more jobs got created again, this has now dropped to 3 unemployed per job vacancy. If everyone had the same chances of finding a job today, and if there were no others among the employed and those out

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<sup>2</sup> Faberman (2012), similarly, argues that the sharp decline in job flows since the 1960s means that when firms adjust their responses are larger and more persistent.

of the labor force looking for work, an unemployed person should have a 33% chance of getting a job. Instead, Figure 7 shows that the chances of an individual who has been unemployed for less than 6 months to find a job is over 20 percent and the chances of an individual who has been unemployed for more than 6 months is a little over 10 percent. This is because while job-to-job turnover substantially declined during the recession, there are still many employed looking for work that enter new jobs directly from other employment.<sup>3</sup> In addition, there are about 866,000 individuals among those out of the labor force who report having given up their job search but wanting a job, which means that many entering new jobs may come from the pool of individuals out of the labor force.<sup>4</sup>

It is also clear that the unemployed and employed or even the long- and short-term unemployed are not as likely to fill a vacancy. This can be due to a number of reasons. First, employers may simply take employment status or duration of unemployment as a signal of worker quality. While this is theoretically possible, the extent of mass layoffs suggests that employment status and unemployment duration were probably relatively bad signals of quality during the Great Depression.<sup>5</sup>

An alternative explanation of why the unemployed, and in particular the long-term unemployed, may find it much more difficult to find a job is that individuals may lose their skills

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<sup>3</sup> See Hyatt and McEntarfer (2013).

<sup>4</sup> See BLS's The Employment Situation (September 2013). Also, Hyatt and McEntarfer (2013) report a sizable flow from employment to out of the labor force and back to employment.

<sup>5</sup> See Kugler and Saint Paul (2004) for a model that shows why employers would want to use employment status as a signal of worker quality. Kugler and Saint Paul (2004) also present evidence that employers in the U.S. prefer hiring out of the pool of the employed, rather than out of the pool of unemployed, when it is costly to hire and dismiss workers.

and motivation as they remain longer in unemployment. This means that they are either less skilled or less desirable for employers as their spells of unemployment prolong. In addition, the unemployed may have less access to information about jobs because those in their networks may also be unemployed and many jobs are filled through informal channels. There is anecdotal evidence that many employers turned to use informal channels during the recovery, as a way to save on recruiting costs given the abundance of potential applicants. In fact, the share of individuals searching for work through family and friends grew from 17.1 percent in 2006 to 28.5 percent in 2012, even though networks are likely less effective in generating job offers on average given the higher unemployment today. Finally, as the financial assets of the unemployed deplete the longer they are unemployed, it becomes harder to pay for transportation and afford looking for jobs.

The four explanations discussed above, imply that duration dependence, which makes it harder to exit unemployment the longer an individual has been unemployed, has contributed to the growth in unemployment. Not surprisingly, the share of the long-term unemployed increased sharply during the Great Recession. While the long-term unemployed comprised less than 15 percent of all the unemployed prior to the recession, by April 2010 44 percent of the unemployed had been unemployed for more than 6 months. Figure 8 shows that this share has been coming down, even if slowly, as the unemployed are coming out unemployment. The share of the long-term unemployed has been dropping in the past two years and now stands at 37 percent.

### **3. Cyclical vs. Structural Unemployment during the Great Recession and Beyond**

The drop in consumption and investment and the subsequent drastic drop in output indicate that the drop in economic activity was widespread and affected all sectors of the economy. The drop in jobs during the Great Recession was, indeed, widespread and affected all industries with the exception of Health and Education and Government. Panel A of Figure 9 shows employment changes from the beginning of the recession in December 2007 until January 2010. This figure shows the magnitude and extent of job losses during this period, with manufacturing shedding close to 2.3 million jobs, construction shedding close to 2 million, professional and business services 1.5 million, and retail 1.2 million. Other sectors such as leisure and hospitality, wholesale trade financial services and transportation each lost close to half a million jobs and other smaller sectors also reduced employment substantially. The important exception was education and health services which actually added close to 790,000 jobs. These sectors are known as recession-proof since households cut health and education expenditures last when faced with financial hardships. Also, the government sector added 82,000 jobs during this period. Thus, the economy was contracting throughout. Similarly, the growth in employment following the trough in February 2010 was widespread. All sectors have been expanding with the exception of information and the government sector. In fact, the contraction in the government sector during a recovery is unprecedented and has not been experienced in any other recovery since the 1970s.

The contraction across the economy has also meant that unemployment has affected workers of all education levels, of all ages, and of all race, ethnic and gender groups. This is

important because it highlights the fact that unemployment rose across the board and reflected cyclical factors.

In spite of the widespread loss of jobs and rise in unemployment throughout all sectors, all regions of the country, and all demographic groups, some argue that the rise in unemployment and the continued high unemployment is a structural phenomenon reflecting mismatches in terms of skills, sectoral mismatches and geographical mismatches. While it is difficult to explain these stylized fact as been driven purely by mismatches, it is possible that some of the initially high unemployment generated by cyclical factors may turn into a structural phenomenon such as skill mismatches due to the depreciation of skills of the unemployed.

In this section, we explore how much of the unemployment during the Great Recession and beyond was cyclical and how much reflected mismatches and other structural challenges faced by the economy. Below, we present five different pieces of evidence that point to the unemployment problem being largely driven by cyclical factors during this period.<sup>6</sup> Yet, the evidence also indicates that some new problems have emerged in the labor market, which could potentially turn into structural factors if they persist over the years to come.

#### **A. Employers' Reports**

During the Great Recession and even today, employers continue to report poor sales as one of their top concerns. In 2012 about 21 percent of employers reported poor sales as their most important challenge and even 17 percent of employers continue to report poor sales as a

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<sup>6</sup> Elsby, Hobijn, Shahin and Valletta (2011) assessment also points to aggregate demand as the main underlying factor contributing to unemployment during this period.

major challenge in 2013. By contrast, only 6 percent of employers in 2012 and only 5 percent of employers in 2013 reported that quality of labor as a major concern for their businesses. Moreover, finding qualified applicants is less of a concern today than it was before the recession. Today, 36 percent of employers report that there are too few or no qualified applicants, compared to 41 percent in 2012 and 48 percent in 2007.<sup>7</sup> This suggests, that aggregate demand problems are more prominent in employers' decisions than skill gaps problems. It also suggests that skill gaps were there before the recession and after the recession, but do not appear to have become more pronounced in the view of employers.

## **B. Okun's Law**

Okun's Law estimates show how much of the change in unemployment is due to changes in GDP. Arteta, Fischer and Klein (2010) show that the vast majority of movements in unemployment since the Great Recession were due to changes in output. According to this study, the drop in GDP can explain 63 percent of the rise in unemployment during the recession. Similarly, about 57 percent of the drop in unemployment during the recovery can be explained by the rise in GDP. This indicates that both during the recession and during the recovery cyclical factors were key in explaining changes in unemployment, but it also indicates that cyclical factors have remained as important during the recovery. Ball, Leigh and Loungani (2012) similarly find that the relation between the change in unemployment and the change in GDP holds up as well during recessions as during expansions and that it has been stable over

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<sup>7</sup> Various reports from the National Federation of Independent Businesses.

the periods 1990-91, 2001, and 2007-09. Rather, they conclude that the strength of economic growth relative to trend is what has differed during these periods.

In Okun's law, the rest of the changes in unemployment are considered as unexplained or explained by factors not included in the regression. These could be factors such as skill, sectoral or regional mismatches. Thus, an extension of Okun's Law would include measures of mismatches in the regression. Estevao and Tsounta (2011) estimate a relation of changes in unemployment at the state level on changes in gross state product (GSP), a measure of skill mismatches in the state, and a measure of geographical immobility. This study finds that much of the change in state unemployment can be explained by GSP and that only about 0.5 percentage points of the increase in the NAIRU can be explained by skill gaps.

### **C. Matching Functions**

Instead of estimating the relation between the unemployment rate and measures of mismatches, another approach is to directly estimate the efficiency of matching in the economy. Estimating matching functions of employment on the number of unemployed and the number of vacancies allows estimating the parameters of the matching function and the efficiency of matching parameter. Sahin et al. (2011) estimate matching functions using recent data and find that mismatches can only explain between 0.8 and 1.4 percentage points of the recent rise in unemployment. Given the recent rise in unemployment of 5 percentage points since the beginning of the Great Recession, mismatches explain between 16 and 28 percent of the rise in unemployment during this period. This is consistent with Okun's Law estimates

suggesting that about 60 percent of the rise in unemployment can be explained by aggregate demand factors and 40 percent by other factors including mismatches.

#### **D. Wage Pressures**

If mismatches or gaps in the needs of employed and the skills, location, and sectors of workers was a reason behind the high unemployment, then we should expect employers to bid up wages to be able to attract enough qualified workers. Table 1 shows that the relation between wage growth in an industry and the changes in the unemployment rate during the Great Recession and the recovery. Column (1) shows that the change in the unemployment rate in 3-digit industries was unrelated to wage changes during the recession. However, Column (2) does show a positive, though weak, relation between changes in unemployment and wage growth during the recovery period. However, this positive relation is working to reduce wage pressures at a time when unemployment is falling and not the other way around, as would be expected if skill gaps were creating wage pressures. For example, the 15 percent reduction in the unemployment rate in the construction sector since February 2010 until today has reduced wages by \$2.55 in this sector. Thus, there is little evidence that skill mismatches are pushing employers to offer better conditions to attract the right types of workers.

#### **E. Beveridge Curve**

The Beveridge Curve, which establishes the relation between the job openings rate and the unemployment rate, is yet another way to disentangle how much of the change in unemployment is due to cyclical factors and how much due to other factors. Figure 10 shows

the Beveridge Curve over the period from December 2000 to June 2013. The relation shows that during the early 2000s, unemployment increased and the job openings declined indicating a rise in unemployment due to cyclical factors as employers are closing jobs and people are entering unemployment. In November 2001, the economy started to back track until around November 2007, with drops in unemployment and increases in the job openings rate although the unemployment rate never dropped back again to the pre-recession levels of the 1990s.

Figure 10 shows that in December 2007, the unemployment rate increase rapidly together with much slower drops in the job openings rate. In October 2009, the unemployment rate starts dropping accompanied by a rise in the job openings rate. The backward movement to the Northwest points to a decline in cyclical unemployment. Yet, the rise in unemployment has not been fast enough to match the rise in the job openings rate, which indicates that for a given unemployment rate the job opening rate is now faster than it used to be.

There are three interpretations to this. First, there are mismatches that are greater now than there used to be prior to the recessions. Employer interviews, evidence from Okun's law, mismatch function estimates and wage growth estimates suggest that this may be only a small part of the reason why it may be becoming harder to reduce unemployment even though there are many more jobs being created. Second, Diamond (2012) explains that the Beveridge Curve may be using proxies rather than the correct measures of those searching for work and the right measure of job openings. Indeed, the unemployment rate may not capture everyone looking for work. As discussed above, the pool of employed searching for work has changed over the business cycle, as has the share of non-employed who would like to have a job. In

addition, Haltiwanger et al. (2013) have found that the composition of job openings has been changing over time with many fewer job openings in construction, which have short durations, and many more job openings in health and education, which have longer durations. Given that long durations imply low closing rates of vacancies or high job opening rates, then one may worry about that changes in the composition may be accounting for the high opening rate associated with the same unemployment rate as before. Third, it may be that the duration dependence among the long-term unemployed is accounting for this shift in the Beveridge Curve. The long-term unemployed may not only be facing depreciation of their technical and motivational skills and networks, but also depletion of their financial assets. We estimate a variant of the Beveridge Curve using only the unemployment rate for the short-term unemployed. Figure 11 shows that the Beveridge Curve for the short-term unemployed during the recovery indeed moves back along the Beveridge Curve during the Great Recession. This suggests that the long-term unemployed are accounting for the shift observed in the Beveridge curve, as they are less likely to be placed in the new jobs being created. Whether this becomes a structural problem will depend on how permanent the problems of the long-term unemployed become.

#### **4. Policies to Address the Unemployment Problem**

There were three different factors contributing to unemployment that needed to be addressed during the recession and recovery. The most important challenge facing employers and workers during the Great Recession and, even through the recovery, is slack demand. In addition, mismatches predating the great recession, and which contribute to slow job and

worker mobility, likely exacerbated the labor market response during the recession, but have slowed down the response during the recovery. Finally, the labor markets are now facing new problems during the recovery, which were not present prior to the Great Recession. In particular the large fraction of long-term unemployed and the high unemployment rates among young people are making it more difficult to bring down the unemployment rate.

## **A. Policies to Address Cyclical Unemployment**

### **Fiscal Spending: the American Recovery and Reinvestment Act**

In 2009, the American Recovery and Reinvestment Act (ARRA) generated a large fiscal stimulus. The Recovery Act introduced \$787 billion in government spending directed towards Federal contracts, grants, and loans; tax cuts and income support programs. The idea behind the stimulus was that public spending would spurt private spending. This was based on evidence on fiscal multipliers. The implications for the labor market was that government spending would create new jobs, but that private spending would spurt economic activity and hiring in the private sector as well. In December 2010, the government again passed the Middle Class Act, introducing another large packet of fiscal spending of close to \$700 billion that

The time-series evidence suggests that the fiscal spending was effective. As shown in Figure 1, employment losses quickly lessened after the passing for the recovery act and employment growth started a year later. In fact, employment reignited again 7 months after GDP picked up. Indeed, this is in line with the usual lag between GDP and employment growth. Likewise, employment appears to have grown at a faster pace after the additional fiscal

stimulus after December 2010. A problem with this evidence is that it is not possible to distinguish if that employment growth we observe would have happened even without the stimulus. In this sense, evidence from panel data is more useful to disentangle the causal effect of the stimulus. Feyrer and Sacerdote (2011) indeed present evidence from panel data that exploits the fact that different states and localities received different amount of stimulus funds over that time period. Their study finds a broad range of fiscal multipliers from 0 for expenditures on education to 2 for support programs for low-income households and infrastructure. More importantly, Feyrer and Sacerdote (2011) find that regions of the country, which received more recovery, funds experienced faster employment growth during the recession and recovery. Another study by Chodorow-Reich et al. (2012) finds that recovery fund outlays in Medicaid expenditures had substantial impacts on job creation. By focusing in Medicaid outlays, they are able to address the endogeneity of state receipt by instrumenting the recovery act funds for Medicaid with previous expenditures in Medicaid in the state. They find that a state's receipt of a marginal \$100,000 in Medicaid outlays generates 3.8 additional job-years, with 84% of those new job-years created outside of government, health and education.

### **Tax Credits and Subsidies for Employers: Work Opportunity Tax Credits and the HIRE Act**

While part of the recovery funds were aimed at getting the government to directly spend resources in various regions, another portion of the Recovery Act put tax credits in place to introduce incentives for employers to hire. The Work Opportunity Tax Credits (WOTC) provided tax credits to employers hiring workers in specific target groups, including:

Supplemental Nutrition Assistance Program (SNAP) recipients, disabled workers, veterans, long-term unemployed, Temporary Aid to Needy Family (TANF) recipients, and ex-felons. The credits for hiring veterans were extended later in November 2011 under the Returning Heroes and Wounded Warriors Tax Credits, which included credits for up to \$5,600 for returning veterans and of up to \$9,600 for veterans with war-related disabilities. There has been no evaluation of these credits. It is difficult to evaluate these credits, in part, because there could be selection into some of the treatment groups (e.g., SNAP and TANF recipients and long-term unemployment) and it is difficult to find good control groups for some of the other treatment groups (e.g., disabled workers and veterans).

Previous analyses of tax credits suggest mixed results on the effectiveness of these tax credits. Katz (1998) finds that the Targeted Jobs Tax Credit, a major wage subsidy program for the economically disadvantaged introduced between 1979 and 1991, had modest but positive employment effects. However, a concern with these credits is that by attaching them to workers, they could be less effective as workers become stigmatized and are not hired as a result. In fact, Burtless' (1985) analysis of a randomized targeted wage subsidy program in Dayton, Ohio suggests that vouchers may have had a stigmatizing effect.

An alternative to tax credits attached to individual groups are tax credits provided to employers hiring any workers, which would avoid the problem of stigmatization. In March 2010 the Hiring Incentives to Restore Employment (HIRE) Act was passed, which instead gave a direct payroll tax exemption of 6.2% to employers hiring unemployed or part-time workers. While has been no evaluation of this program, it was found that 3.2 million jobs were created for

employers that qualified for these credits. Also, evaluations of similar tax credits in other countries suggest that these credits have been effective in encouraging hiring. Kugler (2011) presents an extensive literature review with evidence on the effectiveness of payroll tax cuts for employers from a number of natural experiments around the world as well as from cross-country panel data studies.

### **Tax Holidays for Workers**

As an alternative to tax credits for employers, in December of 2010, the Tax Relief, Unemployment Insurance and Reauthorization and Job Creation Act introduced a payroll tax holiday, which reduced payroll taxes for employees from 6.2% to 4.2%. These payroll tax cuts were extended again in February under the Middle Class Tax Relief and Job Creation Act of 2012. These tax holidays provided tax cuts to households with incomes below \$120,000, who would benefit most from these tax cuts and who also have the highest marginal propensity to consume. The rationale behind these tax cuts was that they would translate into increased spending and increased demand and, in turn, increase hiring and employment. Moreover, this increased spending by households benefitting from the tax cuts is likely to ripple through the economy generating even more spending. Indeed, Zandi (2012) finds that a payroll tax cut for employees is more effective than a payroll tax cut for employers in terms of fiscal effects: the multiplier of a payroll tax holiday for employees is of 1.3 compared to a multiplier of 1.1 for a payroll tax holiday for employers.

## **B. Policies to Address Structural Factors**

### **Policies to help Displaced Workers**

Worker displacement as a result of international competition, technological change or sectoral shifts has generated permanent scars for many workers over the past several decades. A pioneering study by Jacobson, LaLonde and Sullivan (1992) studied workers displaced in Pennsylvania and found that on average displaced workers experienced a drop of 25% over a ten-year period, with workers in manufacturing experiencing even bigger losses of 40%. More recent work by Jacobson, LaLonde and Sullivan (2005) for Washington State also finds that large losses by displaced workers. Moreover, this work highlights the fact that wage losses increase with job tenure. They find that the drop in earnings for displaced workers with less than 3 years of tenure was of 23% after four years, while the wage losses increased to 23% and 30% for those with 3 to 6 years of tenure and with more than 6 years of tenure. More recent work by Von Wachter and Davis (2011) also find substantial wage losses during the most recent recession.

There are currently two programs that provide services and assistance to displaced workers. The first of these programs is the Workforce Investment Act (WIA) Displaced Worker program, which provides job search and training assistance to displaced workers. The WIA displaced worker program is targeted to workers who have lost their jobs due to mass layoffs. The program provides basic assistance, deeper job search assistance involving skills assessments and job search strategies and limited training for those needing reskilling. A non-

experimental evaluation of WIA dislocated by Benus et al. (2008) finds that this program is only moderately effective in helping dislocated find jobs. However, a study by Jacobson, LaLonde and Sullivan (2005) in Washington state, suggests that the returns to training for displaced workers is substantial when training is technical in nature and when training is provided by Community Colleges. In addition, Jacobson, LaLonde and Sullivan (2011) suggest that the limited resources available through the WIA dislocated worker program only cover about a tenth of the training that would be required to recover the earnings losses for the average displaced worker.

The second government program offering services to displaced workers is the Trade Adjustment Assistance (TAA) program. TAA is much more comprehensive than the WIA Dislocated worker program, but it focuses exclusively on workers who have been laid-off by employers who can trace their losses to international competition. TAA offers training, trade adjustment allowances, job-search allowances, and relocation allowances. In addition, recognizing that retraining may be difficult for older workers at the end of their careers, the program offers alternative trade adjustment assistance to workers over 50 years of age who earn less than \$50,000 and have to take a pay cut in a new job. In the early years, TAA offered much less training and it was in 1981 and 19988 when TAA substantially expanded funds for training of displaced workers. A study Decker and Corson (1995) examines the effectiveness of TAA after this change. While they find that TAA was well targeted they also find little evidence that TAA training had much of an effect of earnings three years after the change. A more recent evaluation of TAA, which relies on matching, indicates that those who participated in TAA did

worse than those who did not benefit from TAA. There are, however, two problems with this evaluation. The comparison group entered the labor market in 2006 (prior to the Great recession) while the TAA participants finished training and entered the labor market well into the Great Recession. In addition, TAA participants came from industries that suffered much bigger displacements than those in the comparison group. The results also suggest that participants are moving into a positive earnings trajectory relative to the comparison group and that younger and middle age workers show bigger benefits from TAA. Importantly, while TAA no longer offers widespread waivers from training, during the time the evaluation was done, older workers who were about to retired could receive allowances while being waved from training.

### **Skill Gap Policies**

While skill gaps exist and are as much of an issue today as they were pre-recession, they are a long-term problem that needs to be addressed. Sahin et al. (2011) estimate matching functions and find that mismatches are not problematic in all sectors. In particular, they find that health and education, information and durable manufacturing face strong mismatches while other sectors face issues with gaps to a much lesser extent.

There is little empirical work on the effectiveness of measures to try to reduce skill gaps. However, evidence showing that apprenticeships and on-the-job training is particularly effective does suggests that work-based training may provide skills better suited to the needs

of the employers. Yet, on-the-job training is only available for those already employed and will not be helpful to currently unemployed workers.

In an attempt to address these issues, the U.S. Department of Labor introduced the Trade Adjustment Assistance Community College Training Program (TAACCT) in an attempt to provide training better suited to the needs of employers. TAACCT supported training through community colleges to those displaced due to trade, but required community colleges to engage in partnerships with employers at the local level. The program has not yet been evaluated, but is showing promise. Moreover, programs providing links between training providers and employers have been evaluated in other countries and have shown to be effective. Attanasio, Kugler and Meghir (2011) find that partnerships between training providers and employers were effective in placing disadvantaged youth into employment and raising earnings, especially of women.

### **C. Policies to Get the Long-term Unemployed Back to Work**

As shown in Figure 7, those unemployed for more than six months are about half as likely to find a job as those who have been unemployed for less than six months. Yet, the share of long-term unemployed increased sharply during the Great Recession and remains twice as high as before the recession.

Yet, under most state unemployment systems individuals are entitled to unemployment benefits for up to 26 weeks and the replacement rate is close to 50%. Given that long-term unemployment rises during recession, over the past several decades, emergency

unemployment compensation has been extended 8 times to provide additional unemployment benefits to the long-term unemployed.

Under this last recession, emergency unemployment compensation was first introduced in June 2008, then extended in February and November of 2009, and once again in December 2010 and in February 2012 and January 2013. The initial program introduced two 'tiers' of additional weeks of benefits. In November of 2009 the program was expanded to include two additional tiers. While the exact weeks and qualification for each tier has changed with each new extension, the four tiers have been in place since 2009. The first tier currently provides 14 additional weeks of benefits to all states. The second tier provides 14 additional weeks for states with unemployment with unemployment rates over 6%. Tier 3 provides 9 additional weeks if the unemployment is above 7% and tier 4 provides 10 additional weeks if the unemployment rate is above 9%. The rationale in providing more weeks of benefits in those states with higher unemployment is that those are precisely the places where the long-term unemployed will be facing the biggest hurdles in getting jobs. In addition to emergency unemployment compensation, extended benefits trigger on for up to 20 weeks in states where the unemployment rate is above 6% and remains above what it was in the past three years.

Aside from providing income support to close to 25 million workers and their families since the beginning of the recession and averting many of these families from falling into poverty, there are a number of reasons why extending unemployment benefits may be beneficial on economic grounds. First, unemployment benefits are an automatic stabilizer and avoid big consumption drops by households facing unemployment. Gruber (1997) finds that consumption

drops by 22% for those without unemployment benefits while only dropping by 7% among those receiving unemployment benefits. Also, Vroman (2010) finds a multiplier of 2 for unemployment insurance, which is even higher than the multiplier for payroll tax cuts mentioned above. This means that the economies of entire regions and states where the long-term unemployed received benefits grew by twice as much as the benefits received in those states. Second, Krueger and Mueller (in progress) find that unemployment benefits help the unemployed stay attached to the labor force rather than going into disability insurance. Farber and Valletta (2013) find that the unemployment insurance extensions contributed modestly to reduce exits from unemployment, but that this was largely due to reductions in exits from the labor force rather than a decrease in exits to employment. This is particularly important given the decline in labor force participation which started in 2000 and which has continued during the recession and also given the rise in disability insurance enrollments since the 1980s. Thus, while the UI extensions may prolong unemployment, this is not because the unemployed are turning down job offers but because they are staying attached to the labor force rather than going into disability or stopping their job searches. Finally, Farooq and Kugler (2013) find that public insurance programs increase labor mobility by increasing, occupational and industry mobility but also mobility into self-employment and wage employment.

In addition to extending the period of time for which individuals can receive unemployment benefits, the Middle Class Tax Relief and Job Creation Act of 2012 introduced important changes to help the long-term unemployed become reemployed. First, we proposed eligibility assessments and reemployment assistance (REA's), which provide in-person check ins

in UI offices and provide skill assessments and job search counseling. This proposal was based on a number of studies based on randomized trials in Nevada, Minnesota, Illinois and Florida showing substantial reemployment effects. Michaelides, Poe-Yamagata, Benus and Tirumalasetti (2012) showed that UI recipients who were randomly assigned to REA's were 15% less likely to exhaust benefits, reduced the period for which they received benefits by 3 weeks and increased their earnings by 18% in the 6 quarters following participation in REAs. Second, the reform introduced a self-employment assistance program, which allows the long-term unemployed to continue using UI benefits while setting up their own business. Previous randomized trials showed positive impacts of similar programs. For example, Benus' (2010) evaluation of the Growing America through Entrepreneurship (GATE) program introduced in Pennsylvania, Minnesota, and Maine, and which randomly assigned half of the people to training and business counseling and assistance in applying for business financing found that those assigned to the program were 6% more likely to own a business and that they were likely to start their business sooner and their businesses had greater longevity, and that the program was most effective among those receiving UI. Moreover, over the 60 months following the program, there was not impact on UI receipt or weeks of UI receipt. Finally, the Middle Class Tax Relief and Job Creation Act of 2012 introduced the possibility of introducing demonstrations proposed by different states.

## **5. Conclusion**

This paper presents evidence showing that the substantial labor market changes experienced since 2007 have been largely driven by aggregate demand factors. At the same

time, on-going structural factors, which have made the labor market less mobile for several decades, have exacerbated the labor market response to aggregate shocks during the downturn and slowed down the labor market recovery even after GDP started to grow again. Moreover, the labor market now faces new problems with long-term and youth unemployment, which it did not experience prior to the recession.

Given the unprecedented nature of this recession, many different policies were introduced to help address the cyclical unemployment problem. The tools included direct fiscal spending, broad and targeted hiring tax credits, and tax cuts for workers to stimulate consumer expenditures. In addition, programs, which were already in place to address structural unemployment, were enhanced during this period to help displaced workers and to reduce skill, sectoral and regional mismatches. Finally, policies introduced to address long-term unemployment have been key to ensure this will not turn into structural problem in years to come.

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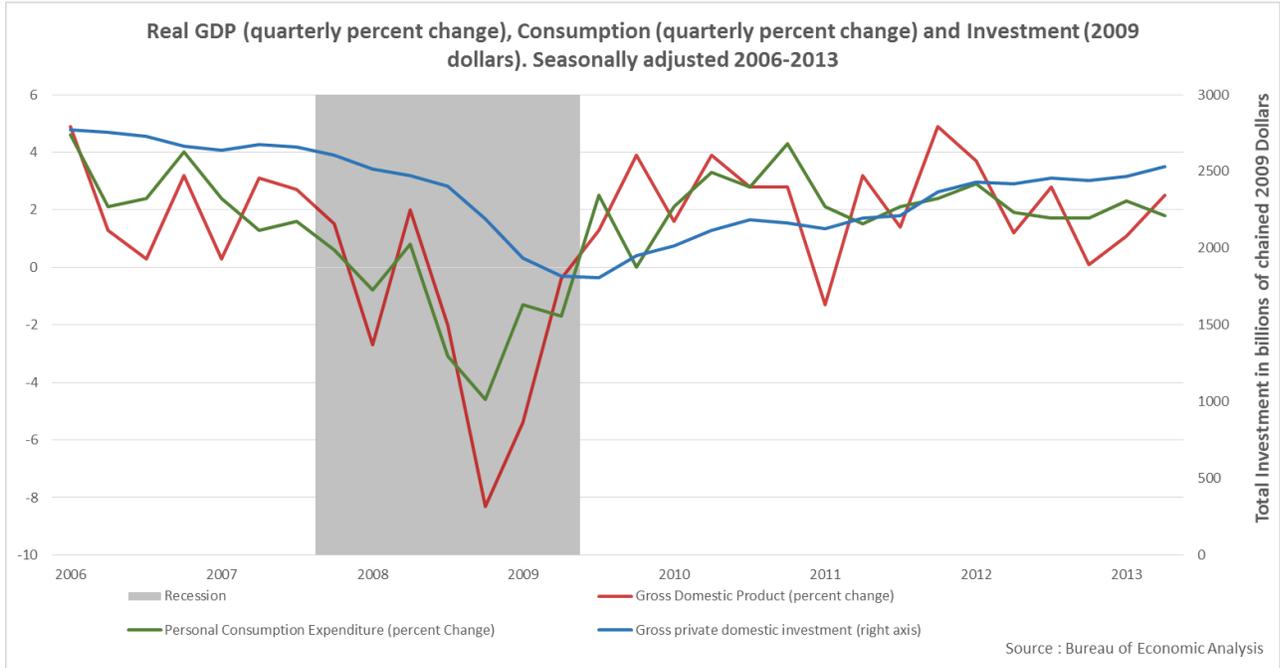
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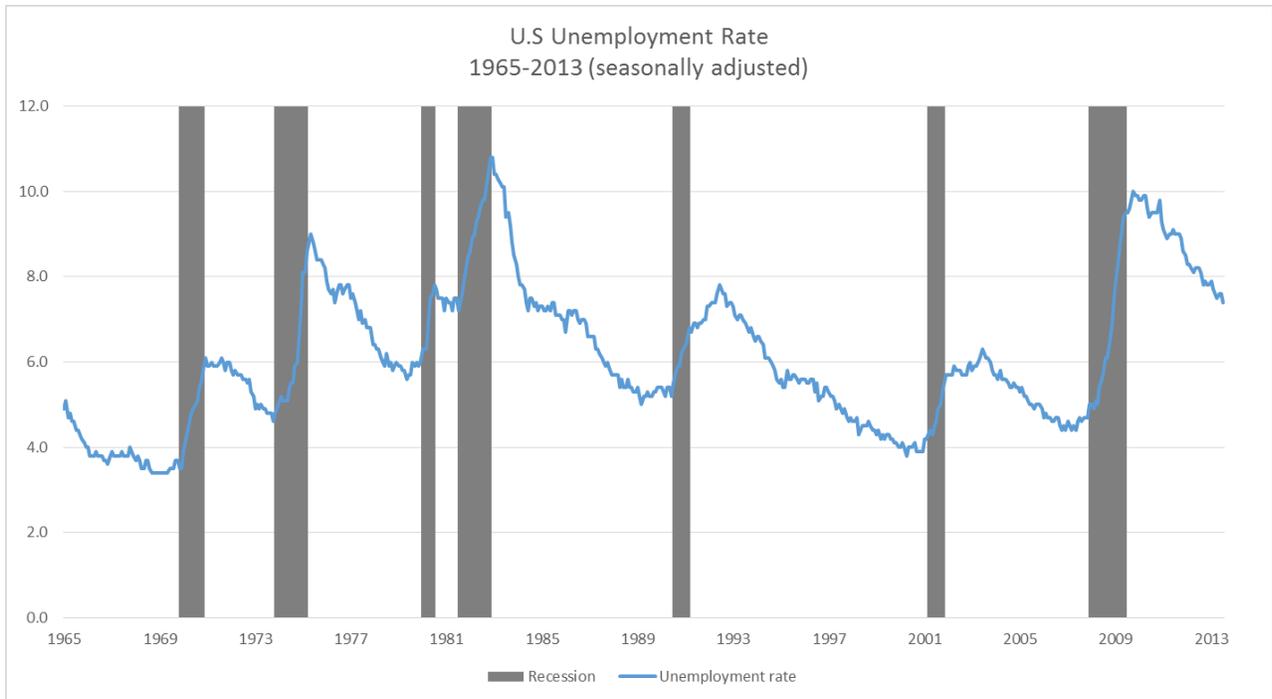
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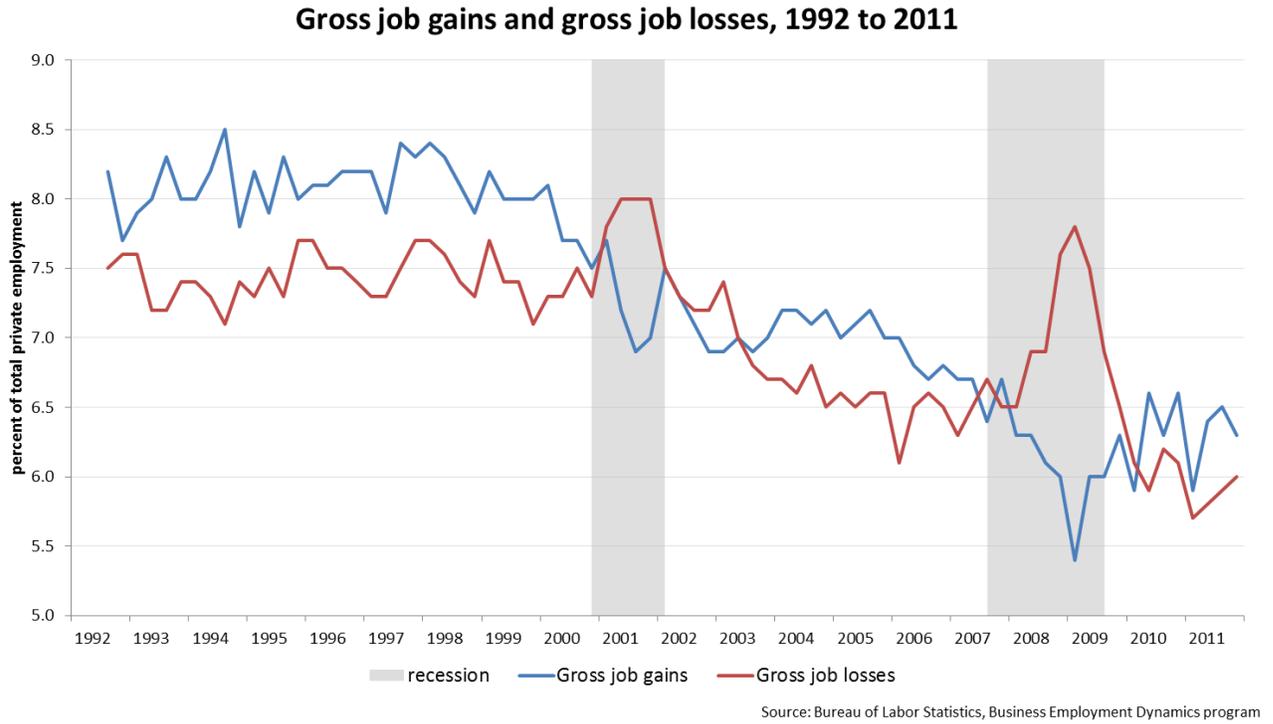
**Figure 1: Real GDP, Consumption and Investment**



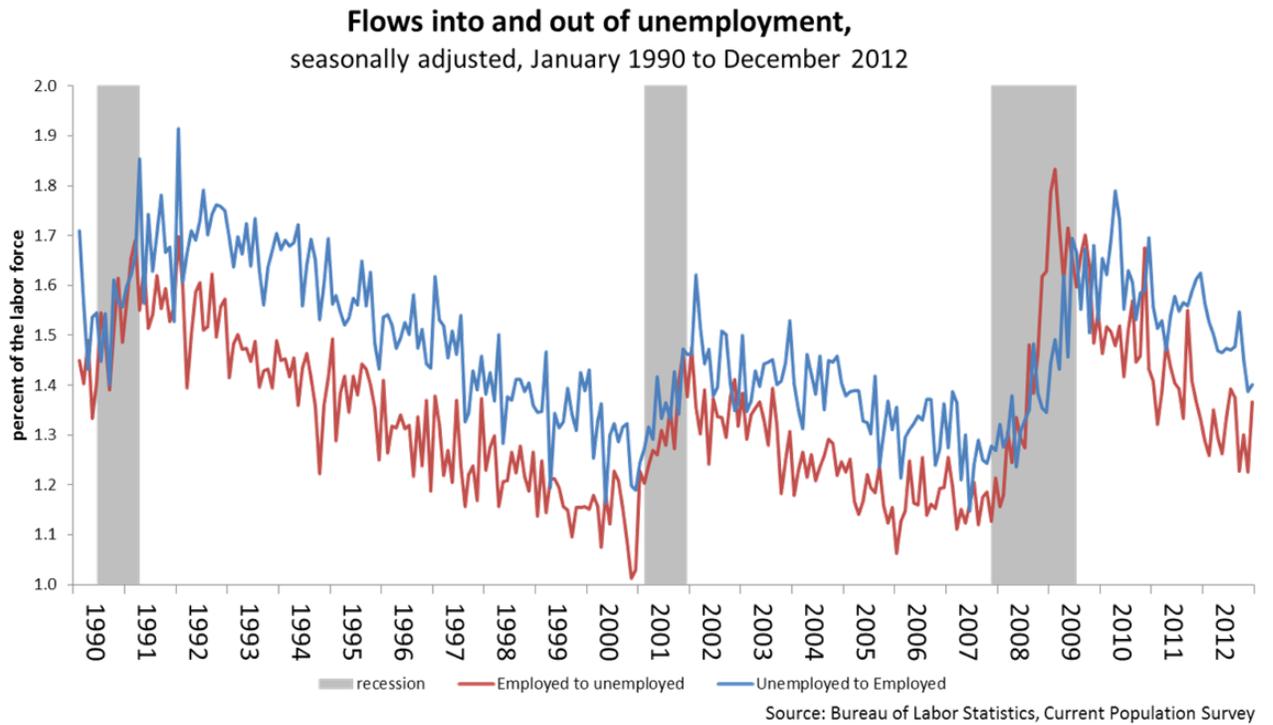
**Figure 2: U.S Unemployment rate**



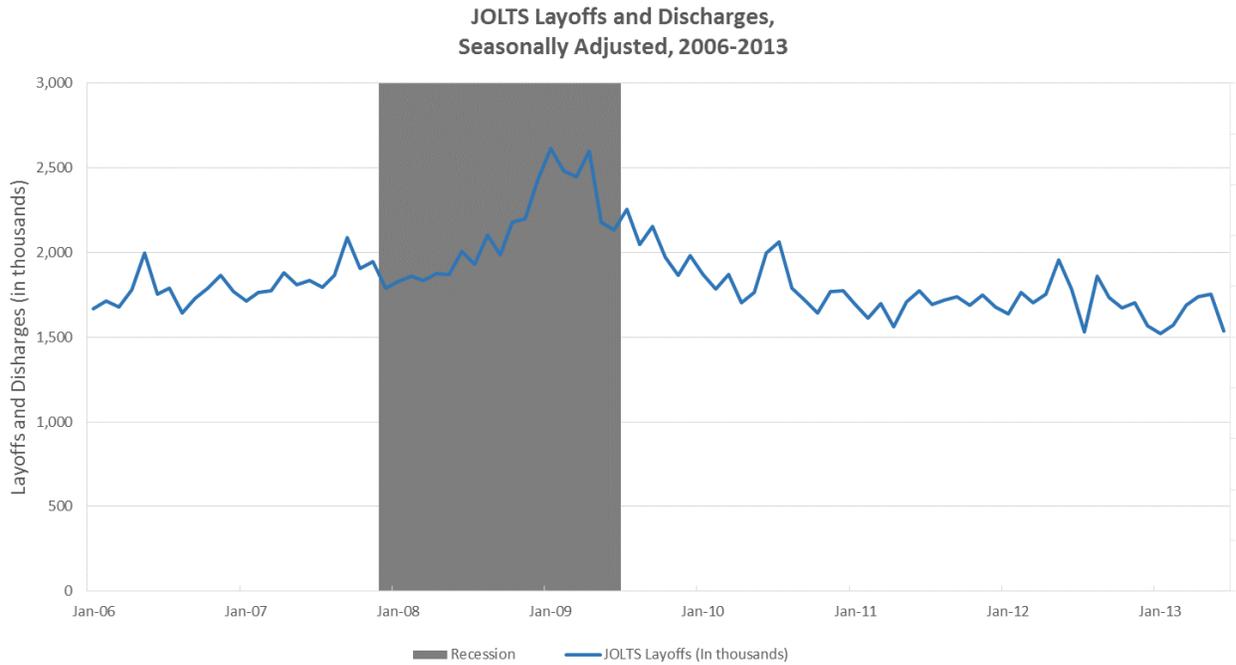
**Figure 3: Gross Job Gains and Losses**



**Figure 4: Flows Into and Out of Unemployment**

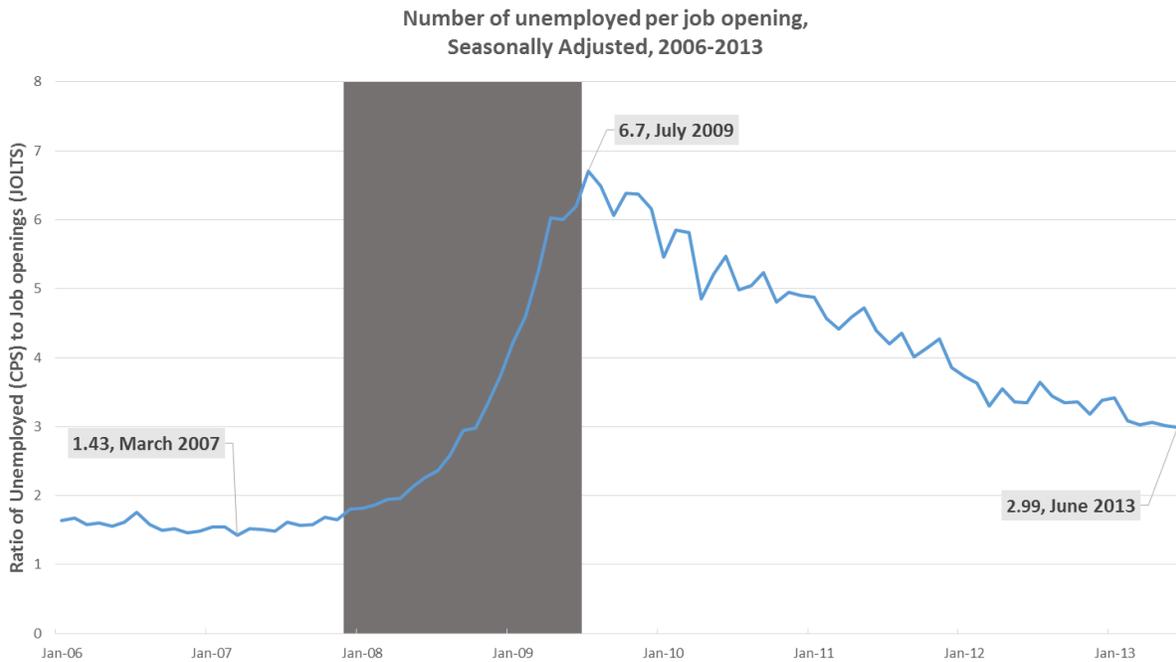


**Figure 5: JOLTS Layoffs and Discharges**



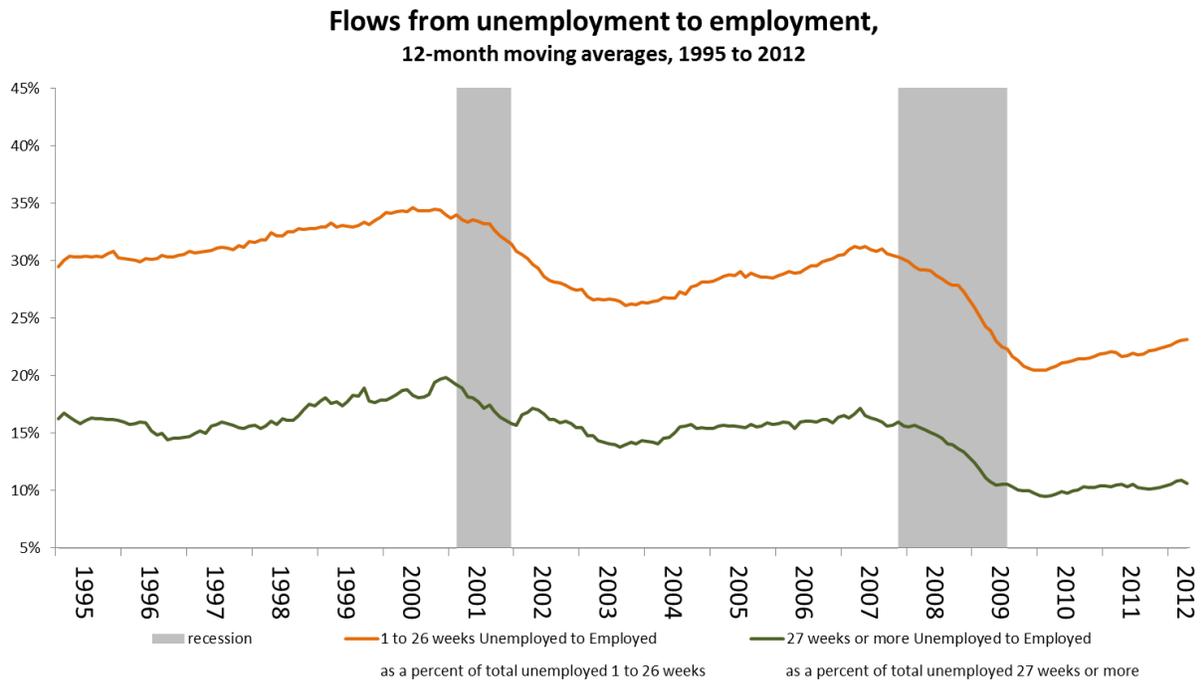
Source : Bureau of Labor Statistics, Job openings Layoffs and Turnover Survey

**Figure 6: Number of Unemployed per Job Opening**

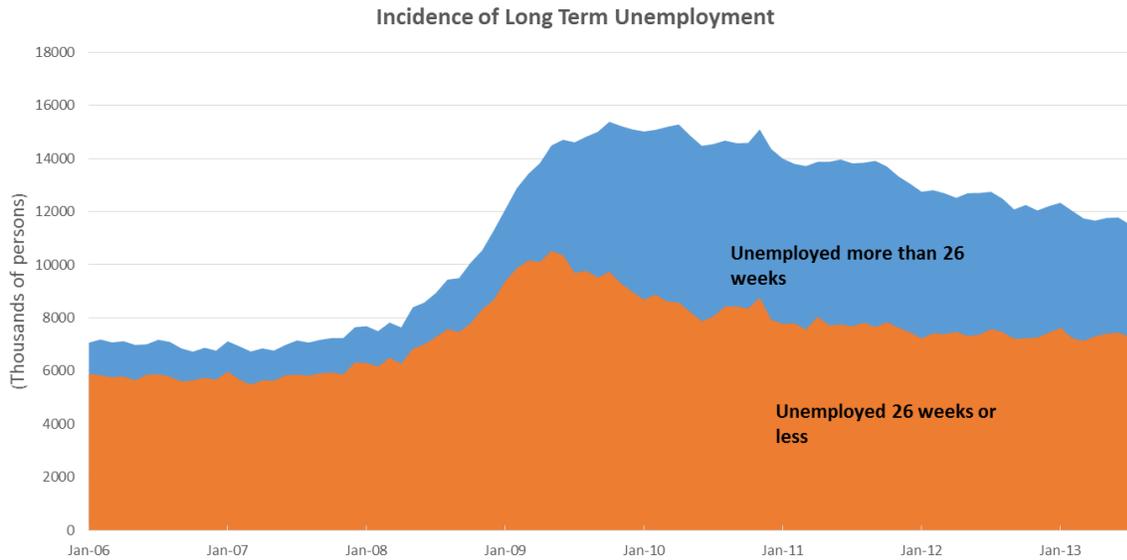


Source : Bureau of Labor Statistics, Job Openings and Layoffs and Turnover Survey & Current population statistics

**Figure 7: Flows from Unemployment to Employment for the Short- and Long-term Unemployed**

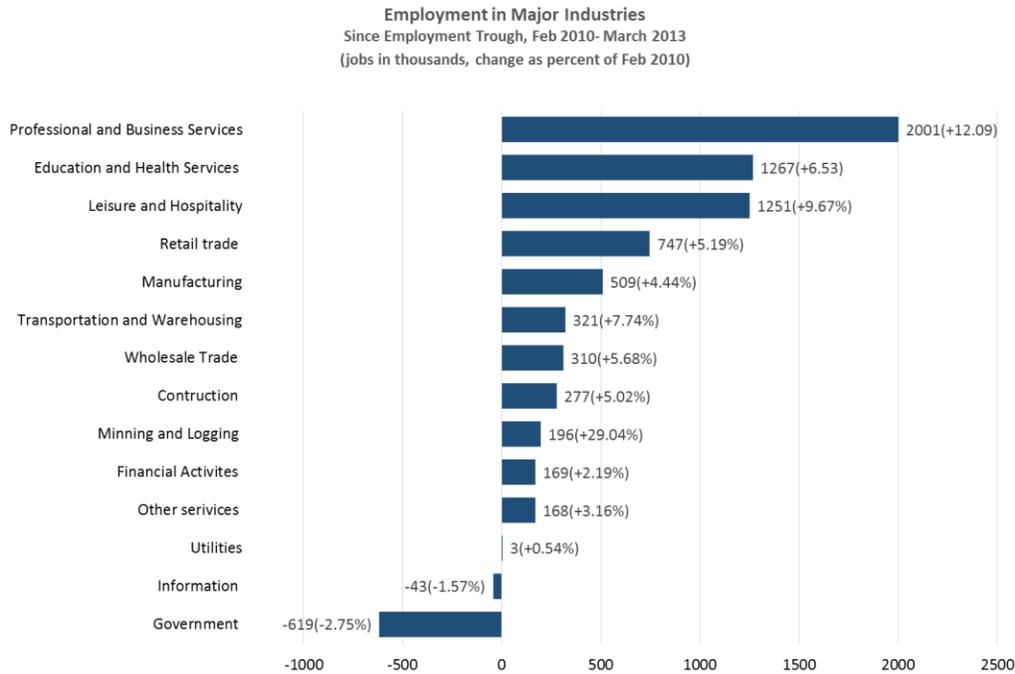
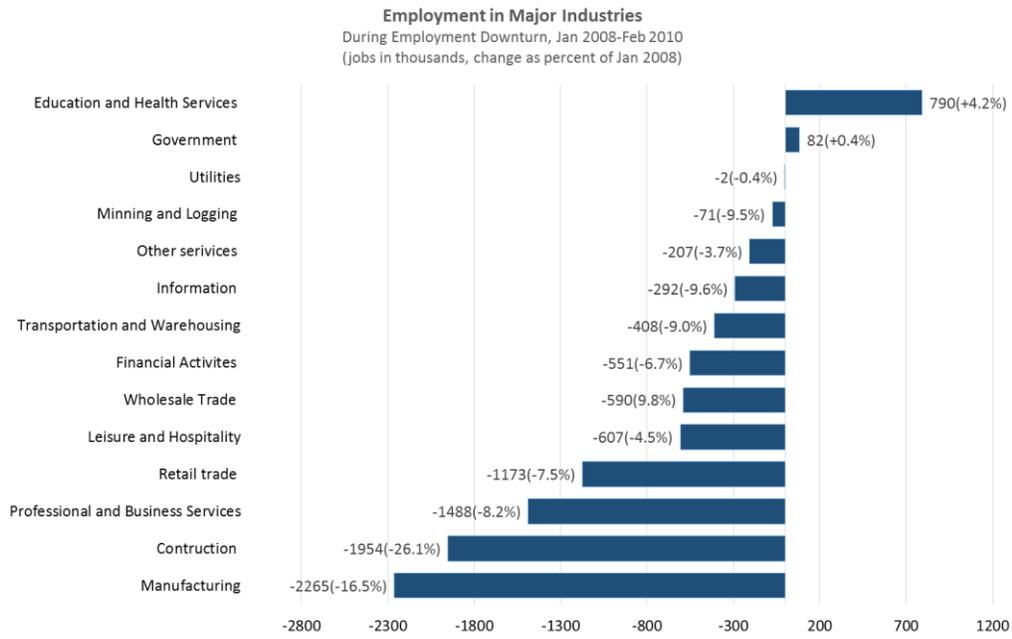


**Figure 8: Incidence of Long-term Unemployment**

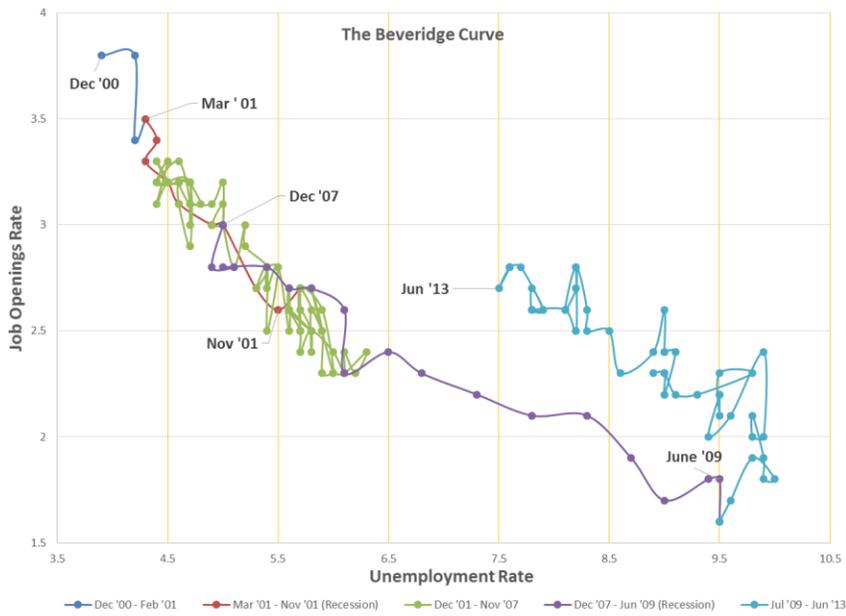


Source : Bureau of Labor Statistics, Current Population Survey

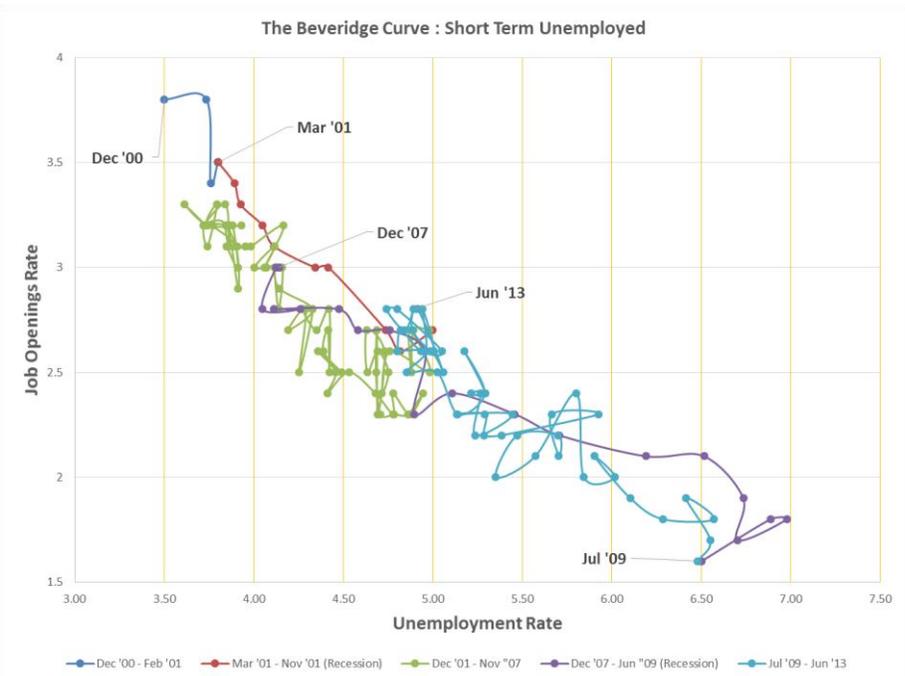
**Figure 9: Employment in Major Industries**



**Figure 10: The Beveridge Curve**



**Figure 11: The Beveridge Curve: Short Term Unemployed**



**Table 1: Relation between Wage Growth and the Unemployment Rate**

	Change in Wage Rate	
	(1) Recession	(2) Recovery
Change in Unemployment	0.0914 (1.29)	0.175** (2.14)
<i>Number of Industries</i>	259	259

Notes: this tables reports the coefficients of a regression of wage changes on unemployment rate changes using data from the CPS as the 3-digit industry level. Standard errors are in parenthesis.

\*: 1% significance level, \*\*: 5% significance level, and \*\*\*: 10% significance level.