August 09, 2012

Economics Group

Special Commentary

John E. Silvia, Chief Economist
john.silvia@wellsfargo.com • (704) 374-7034

Rocky Mountain Summit: July 2012[1]

If you keep getting the wrong answer, then maybe you are asking the wrong question.

For several years now, policymakers have been pursuing expansionary policy with the goal of significantly lower unemployment. Yet the wrong answer keeps popping up—high, persistent unemployment above eight percent. Perhaps the correct question might be why has the unemployment rate been so persistently high and what can be done about it? Our view is that the focus on macro stimulus is misplaced. The answer lies in addressing the structural challenges of the 21st century labor market and not the pursuit of more stimulus with the wrong 20th century framework for the labor market.

Consistent with output over the past two years, the pace of economic growth appears to be headed for 1.0 percent to 1.3 percent in the next few quarters. What you see is what you get; there is currently no sign of the economy accelerating to the pace of growth we have seen in past economic recoveries. A clear shift in policy, particularly labor market policy, is needed. This shift should focus on the microeconomics of the supply and demand in the labor market as opposed to the macroeconomics of stimulus.

Our baseline expectations for growth, illustrated in Figure 1, are for growth at 2.1 percent in 2012 and 1.5 percent in 2013, after a gain of 1.8 percent in 2011. Hence, the sense that the economy has settled in at a 2 percent growth pace—and that is the reality of the present at the macroeconomic level. Consumer spending and business equipment spending continue to add to growth, but the pace of contribution has slowed in recent years. Residential construction, particularly remodeling, has added to growth; this component was a large negative in the early years of the expansion. Federal and local government spending as well as net exports detract from growth, as budget issues affect government spending and slower foreign growth in Asia and an outright European recession hit exports.

The U.S. recovery follows the model of the deep 1973-1975 recession.

Finally, as we stated in our 2009 and again 2012 presentation at the Federal Reserve of Atlanta outlook conferences, the U.S. recovery was not a repeat of the 1930s Great Depression, but rather it follows the model of the deep 1973-1975 recession, a period that also dealt with an oil price shock, a housing collapse and a banking crisis (Figure 2). This has indeed been the correct approach, as the economic expansion appears on track but at a pace clearly below that of the earlier 1973-1981 expansion.

[1] **Presentation made at the Fourth Annual Rocky Mountain Summit, Jackson, WY, July 24, 2012. Special thanks to Sarah Watt and Kaylyn Swankoski for their invaluable research support for this presentation.**

Figure 1

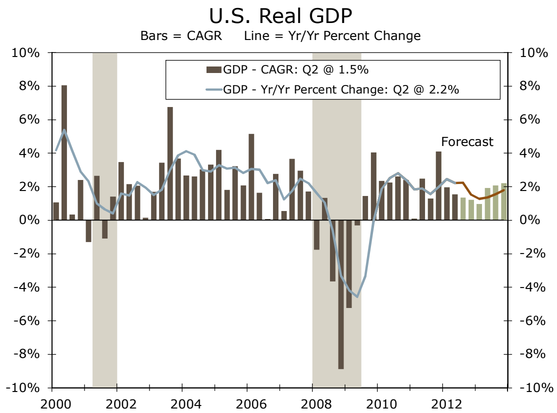
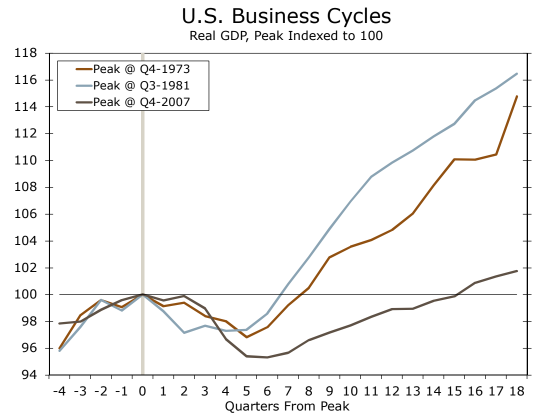


Figure 2



Source: U.S. Department of Commerce and Wells Fargo Securities, LLC

One must distinguish between the cyclical patterns of the expansion and the underlying structural changes.

As any economic expansion proceeds, the thoughtful observer must distinguish between the cyclical patterns of the expansion and the underlying structural or evolutionary changes in the economy; in this essay we particularly focus on the labor market. As shown in Figure 3, jobless claims have taken on their usual cyclical pattern and, as a leading indicator of both the economy and the job market, suggest continued growth, albeit at a subpar pace. However, beneath the cyclical expansion pattern lies the structural shift, Figure 4, in the employment-population ratio that is evident in many of the labor market indicators we will review. The pattern of the employment-population ratio is quite a break from the past and raises two fundamental economic challenges. First, the fewer workers, relative to the population, need to be more productive than in past economic recoveries to generate the pace of economic growth we would have expected in the past. Second, when we invert this ratio, we see that a greater share of the population is now dependent on a smaller workforce to pay the entitlements and public spending growth in the future. Both of these challenges represent a significant break from the patterns of the U.S. economy in the post-WWII era.

Figure 3

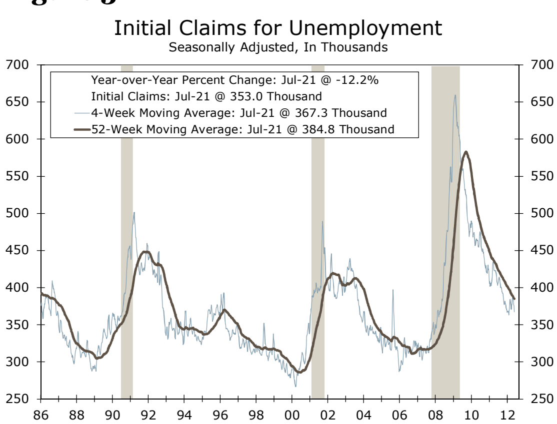
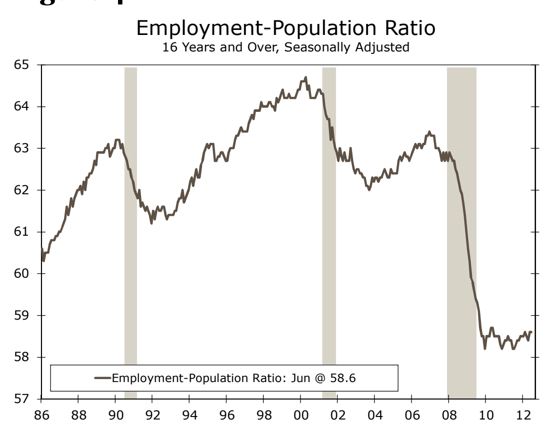


Figure 4



Source: U.S. Department of Labor and Wells Fargo Securities, LLC

This Expansion is Different, Really, for the Labor Market

Three patterns suggest that the labor market is acting differently than in prior expansions, and these patterns are a challenge to our view of the natural, sustainable, growth in jobs in the United States. In Figure 5, we see a noticeable downshift in the growth of jobs from the expansions of the 1990s and 2000s. Payrolls grew by 80,000 jobs in June, after gains in April and May averaged 73,000. June job gains were concentrated in business services, manufacturing and leisure and hospitality. Weak hiring in education and health services, as well as retail trade, suggests below-trend gains in employment going forward. Government sector job declines were concentrated in the federal government, supporting the case for ongoing restructuring in the federal sector.

On net, job gains remain positive; however, the private sector has added a modest average of 91,000 jobs over the past three months, and while the gains have been broad-based across major sectors, the pace of growth remains disappointing compared to prior economic recoveries. Moreover, the pace of job growth has never even closely matched that of the prior two expansions, and already has slowed further and gives no sign of accelerating to match the gains of prior expansions. Indeed, this cycle is very different. We remain of the view that the U.S. economy and the job market will continue to move forward but at a subpar pace of growth, and that this pace will continue to incentivize households, private businesses and governments at all levels to continue to restructure in order to be efficient at a slower pace of growth.

The pace of growth remains disappointing compared to prior economic recoveries.

Figure 5

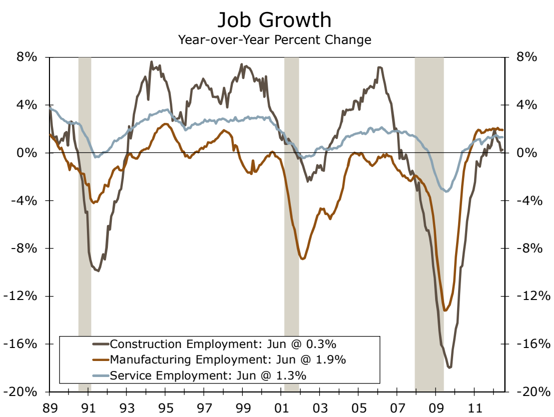
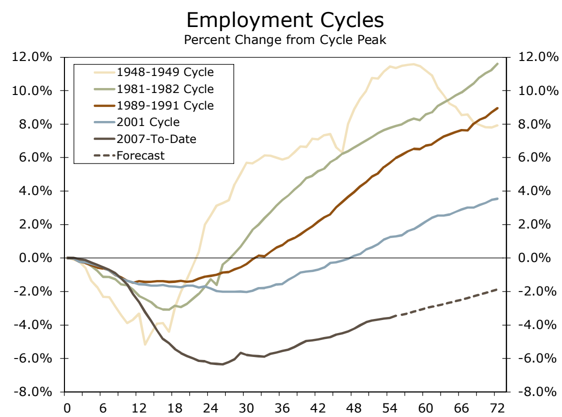


Figure 6



Source: U.S. Department of Labor and Wells Fargo Securities, LLC

The labor market cycle has been very disappointing, as evidenced further in Figure 6, which indexes this cycle and prior cycles to a single starting point and illustrates the pace of job gains across cycles. The graph presents two disturbing patterns. First, more than three years after the recession ended, the unemployment rate remains staggeringly high, at 8.2 percent, and the depth of employment losses, at 8.8 million jobs, has made for a lengthy period in which the job recovery has not yet brought us back to pre-recession levels. Only 3.8 million jobs have been recouped, leaving employment 3.6 percent below its prerecession level. This has not only cost workers in wages, but also in skills.

Moreover, the slope of the employment line for this cycle is flat, suggesting that we will not recover the jobs lost for several years to come. Yes, jobs are growing, but there has been no true recovery in the job market.

Jobs are growing, but there has been no true recovery in the job market.

Along with the subpar pace of job growth has been the disappointing gains in income for workers, as illustrated by the income proxy shown in Figure 7. Abnormal labor market behavior is characterized by wages as well as employment. In June, average hourly earnings for all workers were up 2.0 percent from a year earlier—an improvement over the past two months. Meanwhile, hours worked has also improved. Therefore, the outlook for income has improved although, once again, the pace of income growth, as illustrated in Figure 7, remains below the pace of prior recoveries.

This economic expansion has not behaved in a similar way to prior expansions, and this has led to disappointment, and in some cases anger, as individual workers and households are not seeing the type of economic expansion they had expected. The motivating factor in economics, as in baseball, is what you get relative to what you expect. In baseball, if the pitcher throws a slider when you expected a fastball, then you have a problem, but if that fastball arrives a bit high, the crowd cheers the home run. In economics, the gain in jobs, income and overall top-line revenue has not measured up to the expectations of many households and businesses. Therefore, decision makers are adjusting and currently the bias is toward caution given the level of uncertainty about growth and income expectations. It is no surprise, then, that consumer and business confidence has remained low and the economy subpar.

Figure 7

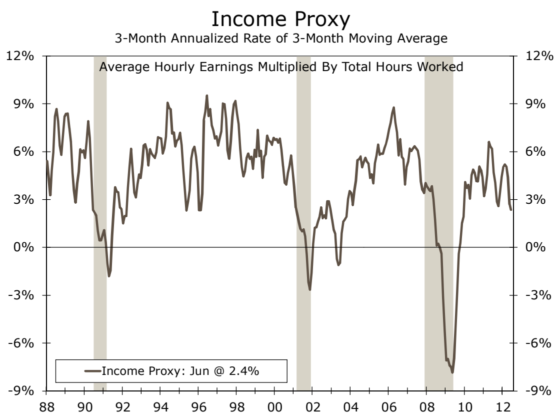
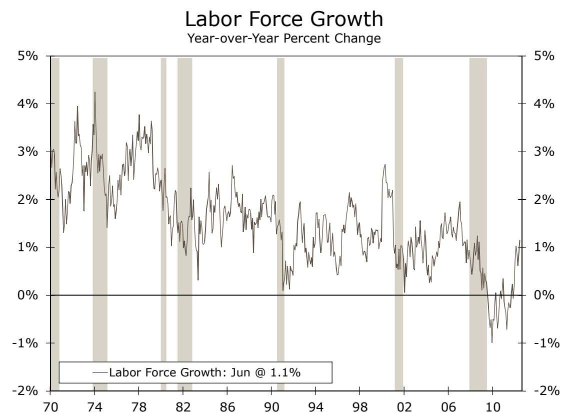


Figure 8



Source: U.S. Department of Labor and Wells Fargo Securities, LLC

The Supply Side of the Labor Market: The U.S. Workforce Takes a Turn

Where are the workers who will pay the taxes to support public spending in the future?

One relentless trend in the U.S. labor market has been the slowdown in the growth of the labor force, as illustrated in Figure 8. Since the 1970s, whether there have been Democratic or Republican administrations, there has been a pronounced slowdown in labor force growth. Labor force growth represents the supply side of the labor market equation and is often associated with the potential growth rate of any society. The baby boom gave rise to the rapid labor force growth rates of the 1970s, while the subsequent, smaller generations are consistent with slower gains. One common question today is who will replace the engineers of the baby boomer generation? Another question arises—where are the workers who will pay the taxes to support all the promised entitlements and other public spending in the future? Slower potential economic growth rates suggest slower government revenue streams and thereby, less potential to finance the current and future implied public sector spending. This slower labor force growth issue is a perfect illustration of how the changing microeconomic character of the U.S. workforce has significant, in this case negative, implications for the macro U.S. economy.

A second significant turn in the U.S. labor force has been the curious pattern of labor force participation rates by age, as illustrated in Figure 9.[2] In an odd twist to the expected pattern of the labor market, the participation rates of older workers has actually risen since 2002, while the rates of younger workers has declined. Older workers were expected to retire and start second careers, whereas younger workers were supposedly eager to start their careers. Well, it has not worked out that way. The decline in labor force participation of the young and an increasing participation rate of older workers is pronounced and is not likely a random event. Labor force participation of the youngest cohorts in the economy has been trending down over the past decade, but this downtrend accelerated during the latest recession and has continued in the current recovery. Part of the downturn can be attributed to a longer-term shift toward higher education, which should, hopefully, help the job prospects of those earning a degree over the long term, but even this is now being questioned. However, while the number of 16-24 year olds not looking for a job due to schooling has increased 80 percent since the recession began, discouraged workers in this age group increased by 100 percent. Indeed, the character of the U.S. labor force has turned.

---

[2] See our discussion, "The Evolution of the Economy, Credit and Economic Policy," presentation to the Federal Reserve Bank of Atlanta's 2012 Annual Banking Outlook Conference, March 1, 2012.

Figure 9

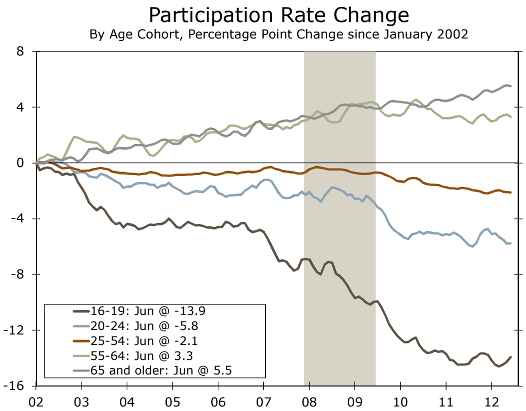
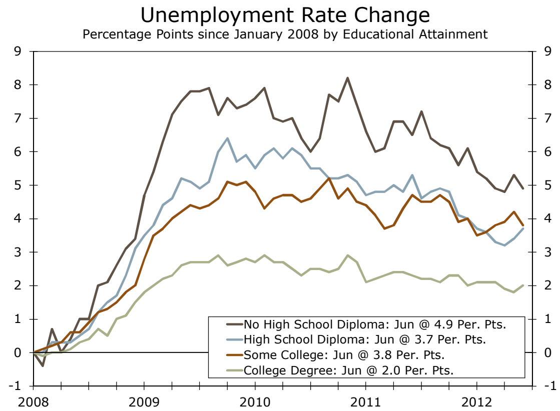


Figure 10



Source: U.S. Department of Labor and Wells Fargo Securities, LLC

Unemployment has been persistent across the educational spectrum.

Another odd turn in the U.S. labor force has been the persistence of unemployment across the educational spectrum, compared to prior recoveries, where unemployment rates have traditionally declined sharply after three years of economic expansion. Moreover, the differences in the unemployment rates between the levels of educated workers have persisted, raising the ominous outcome that unequal education is now associated with a persistent difference in an unequal economic recovery.

Is there a 21st century job for the 20th century worker? The severity of the past recession has had broad-based and unequal effects among workers. The rise in unemployment has been highly uneven across subgroups since the start of the recession, with educational attainment the driving factor for stark differences in joblessness. College-educated workers have fared significantly better than their less-educated counterparts in the 21st century job market. Unemployment for college graduates was 4.1 percent in June compared to 12.6 percent for workers without a high school diploma; this large gap has persisted between the two groups, averaging 10 percentage points since 2009. While unemployment has historically been higher for workers with less education, the marked widening between educational groups since the 2007 recession is a departure from the 2001 recession when unemployment rose by a similar magnitude across groups. As employers have had to make tough decisions about firing and hiring since the onset of the recession and continuing into recovery, the preference for higher educated workers has been clear. Bachelor's degree holders now account for 37 percent of employed workers compared to 34 percent at the start of the recession. Much of this shift has been driven by the need for well-educated workers in the industries that have been adding jobs during the recovery; half of the jobs added since employment bottomed have been in the professional & business services and education & health services industries. Even for manufacturing, many of us are familiar with the modern manufacturing worker in many industries that is more accustomed to working with laptops and computer screens than the hand tools of just twenty years ago.

The Hard Realities of the New U.S. Labor Force: Fewer Jobs for the 20th Century Less-Educated Worker

Employers will seek workers who add value in a more knowledge-based economy.

Fewer job prospects and lower wages for less-educated workers in the 21st century has been accompanied by higher rates of unemployment as well as lower rates of participation in the workforce (Figure 11). As employers continue to seek workers who are able to add value in a more knowledge-based economy, fewer opportunities will be available for low-skilled/semi-skilled workers—often associated with those without a high school diploma. Younger generations have a higher share of college graduates, but with only 30.5 percent of 25-34 year olds having college degrees, there is still great variation in educational attainment; this variation is a driving factor for rising income differences. The romance of the assembly line worker of the 1950s and 1960s has been replaced by the educated worker who is familiar with her laptop and her co-worker—the robot.

Figure 11

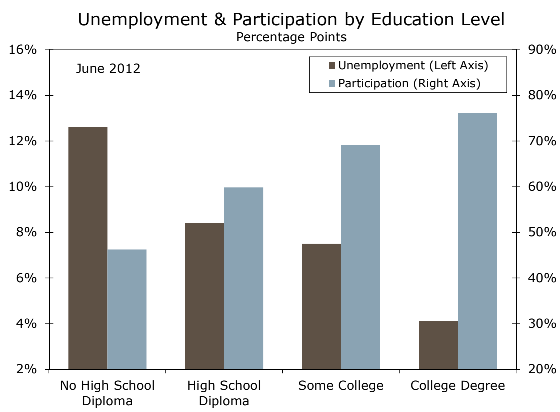
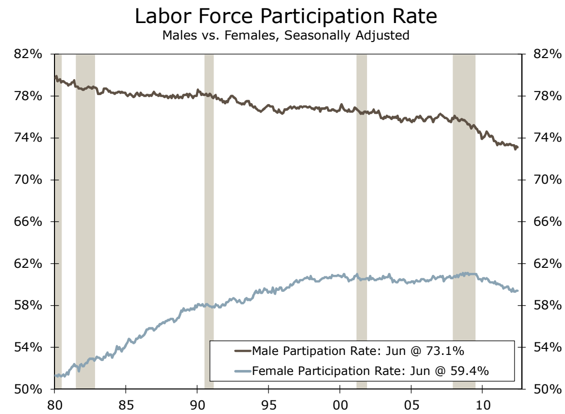


Figure 12



Source: U.S. Department of Labor and Wells Fargo Securities, LLC

Participation Rates: Yes, Men and Women Are Different

Men and women have changed over time with respect to their involvement in the workforce. As illustrated in Figure 12, the patterns of male and female participation in the workforce are different, with male participation higher. However, there are some developments since the past recession that bear watching. Male participation has been on the decline for decades, but note that since 2008, the trajectory of the decline has sharpened. For women, participation rates had been rising until about 2000, but then steadied before turning down in 2009.

Labor Compensation and the Unemployment Experience

Show Me the Money: Wages and Hours

Slow job growth has constrained total income growth.

A job can provide many things, like work experience, to help build a career or a sense of self-worth. However, important to most of us who need to earn a living, it is a source of income. Wages and salaries account for the largest source of income in the United States, making up roughly half of personal income each month. The slow addition of jobs since the current expansion began has constrained total income growth as payrolls remain 3.6 percent below their pre-recession level. However, the level of jobs is not the only sign of labor market strains. Growth in average hourly earnings has not kept pace with inflation during the expansion (Figure 13), and the average number of hours worked each week has yet to return to where it was before the downturn. Fewer hours and below-inflation earnings growth has meant that real income growth for many workers has been flat or even negative; as such, there is a sense that running in place appears to be the best some workers have achieved.

Figure 13

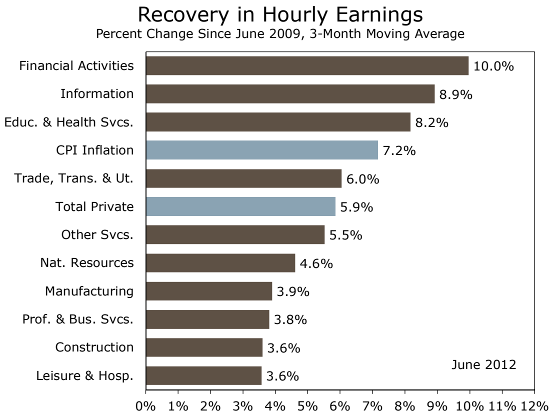
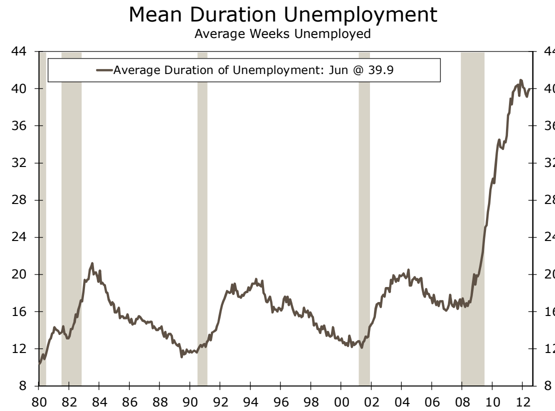


Figure 14



Source: U.S. Department of Labor and Wells Fargo Securities, LLC

Unemployment: The Long Hard Road and Character of Structural Unemployment

One outstanding difference in the unemployment experience of this economic expansion has been the high level of long-term unemployment and its persistence so far into the economic expansion (Figure 14). There is no sign of labor market recovery here.

Perhaps the most visible signal of economic expansion without a labor market recovery is the persistently long length of unemployment.[3] The average duration of unemployment continues to stand near the record high at 40 weeks. This data suggest many workers face severely long spells of unemployment, and that the headline unemployment rate, at 8.2 percent, does not fully capture the severity of the unemployment experience for millions of Americans. For the unemployed, the lack of job opportunities has not only cost workers in terms of lost wages, but also in skills that have atrophied over time. Employers are more apt to hire workers who have been recently employed, as their skills are thought to be more up to date and relevant to the current work environment. As a result, historically, workers with long durations of unemployment are less likely to find employment. Furthermore, as unemployment spells become increasingly long, job search networks also deteriorate for many workers and further constrict the additional avenues of finding employment.

The 8.2 percent unemployment rate does not fully capture the severity of the unemployment experience for millions of Americans.

Regional Disparities and Housing

Across the regions of the United States, the varied pace of the labor market improvement reflects the nature of the prior economic downturn. The past recession was largely driven by imbalances in the housing market and, as a result, areas that saw the most overbuilding have seen the largest declines in employment and the slowest job recoveries. For example, employment in the Mountain region, which includes Arizona and Nevada, remains 6 percent off its peak. In contrast, employment in the neighboring West South Central region, which saw more modest homebuilding activity, has already surpassed its pre-recession employment level. The housing bust not only took a toll on employment in the Mountain region by slashing jobs in the construction industry, but also by reducing demand for products and services provided by housing-related industries, such as real estate, finance and retail. In the long run, as these regions work through excess home inventories and see prices stabilize, new construction will become more attractive to builders and incite more homeowners to move as their housing needs change.

Areas that saw the most overbuilding have seen the largest declines in employment.

[3] Chen et. al, find that structural shocks are associated with a longer duration of unemployment during the latest recession. Chen, Kannan, Loungani and Trehan, "New Evidence on Cyclical and Structural Sources of Unemployment," Federal Reserve Bank of San Francisco, Working Papers Series, WP 2011-17, May 2011.

Figure 15

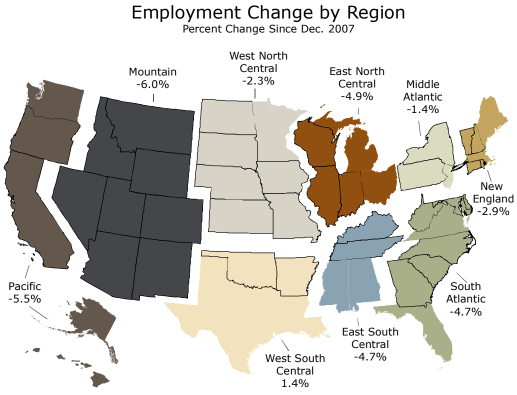
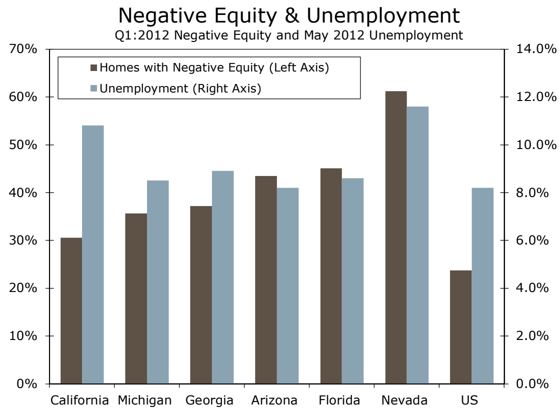


Figure 16



Source: U.S. Department of Labor, CoreLogic and Wells Fargo Securities, LLC

Compounding the housing/unemployment experience, the burden of losses in both home equity and jobs has made the transition to new employment even more difficult. This has given rise to a new U.S. workforce phenomenon we have not seen since the dustbowl era: constrained worker mobility at the national level (Figure 16).

Workers' mobility has been severely constrained.

What makes this recovery particularly difficult for the labor market is that workers' mobility—key in reducing regional labor market differences in a large and mostly culturally homogenous labor market like the United States—has been severely constrained. While workers could (and did) move to areas recovering more quickly in previous economic cycles, the housing imbalances of this cycle have limited that option for many homeowners. Steep home price declines in some regions of the country have put many homeowners in a negative equity position and would lead to capital losses on home sales if owners sold their home at current market prices.

Furthermore, the opportunities for higher earnings in a new location have typically been a greater factor in labor migration than the desire to simply leave a low-wage, low-growth area. With weak income growth across the country and few areas attractive enough to "pull" workers away from their current locations, regional imbalances will likely persist until a stronger recovery takes hold in more markets.

A Tough Labor Market Even for the Employed

Labor market conditions have not only been hard on the 13 million unemployed, but also to many of those who are still working. The number of hours worked each week plays a crucial role in determining labor market earnings and can influence employers' decisions on whether to add additional employees. Hours worked per week have trended down over time as the share of workers in the service sector—which tends to hire more part-time workers—has grown. Despite having improved since the recession ended, average hours worked has not reclaimed its pre-recession peak (Figure 17). This limits near-term job growth as employers have the option to extend the hours of current employees before hiring new workers, which is a costly process even if wage pressures remain muted. For many workers the lower real wages earned are not made up by the volume of hours worked.

Figure 17

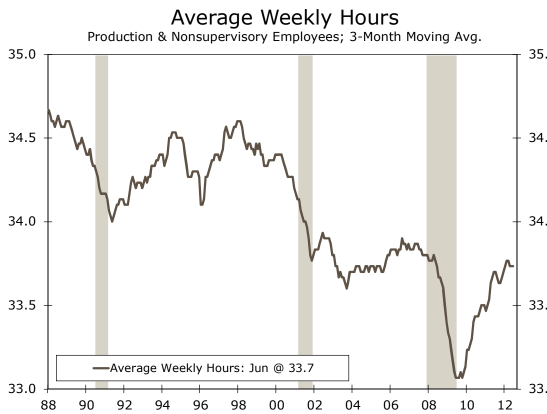
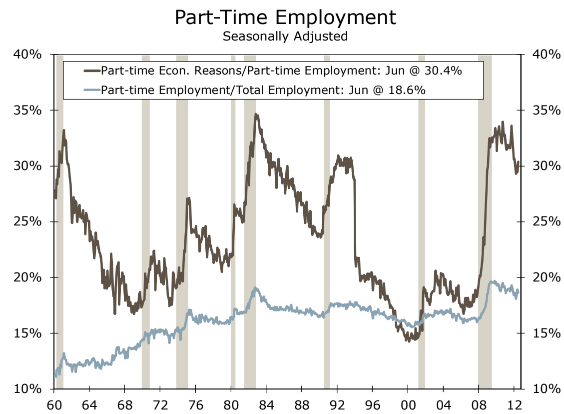


Figure 18



Source: U.S. Department of Labor and Wells Fargo Securities, LLC

Part-Time Employment: Becoming the Norm More Often for More Workers

Has part-time employment become the new full-time employment for many workers? This certainly seems so, as one significant change in the economy in recent years, evidenced in Figure 18, is the high rate of workers who are employed part time. While some workers continue to choose to work part time, a significant change in the labor market this cycle is the historically high share, about 30 percent, of workers at this advanced stage in the recovery who are employed part-time for economic reasons. This measure refers to people who work part time due to an inability to find full-time work or perhaps a seasonal decline in demand. Usually, the peaks in this series are very brief (1960, 1984, 1992) but then drop off quickly; however, today's still-elevated rate suggests continued slack in demand for the goods and services that we produce, but also reluctance for firms to hire the traditional full-time, permanent employee.

Second, there has been a gradual rise since 1960 in the percentage of total employment represented by part-time workers; this has jumped up to near 20 percent in the current expansion. Temporary help traditionally has been considered a springboard to a stable, permanent, full-time job, as temporary jobs are perceived to provide workers a means of building their human capital, networking and gaining better information about permanent job opportunities. Yet, for our purposes, the persistence of firms hiring temporary instead of permanent employees suggests a potential shift in the type of worker demanded by employers.

Teen Unemployment: A Higher Barrier to the Entry Level Work Experience

Teenagers traditionally face higher unemployment rates than the overall population.

For young people, starting that first job is an exhilarating experience but also a training ground for discipline and their initial savings for college and some discretionary spending. However, this expansion has seen a severe limit on that experience, especially for Hispanic teens relative to the past. One sharp structural shift in the labor market of this expansion has been the high rates of teenage unemployment, illustrated in Figure 19. Teenagers, as the least-experienced workers in the economy, traditionally face higher unemployment rates than the overall population. Yet unemployment even among teenagers varies widely, as evidenced by the jobless rates between teenagers of different races and ethnicities. The sharp jump in teenage unemployment among Hispanic and African-American workers during this economic cycle highlights two points. First, unemployment rose more severely for these groups than for white teens. Second, the gap between Hispanic and white teen unemployment remains notably wider than when the recession began. As teenage employment has been linked to higher earnings later in life, continued high unemployment for teenagers—particularly Hispanics and African Americans—is worrisome for acquiring well-needed basic work and budgeting skills.

Figure 19

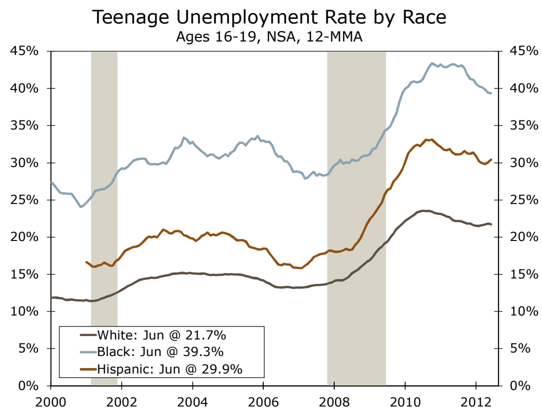
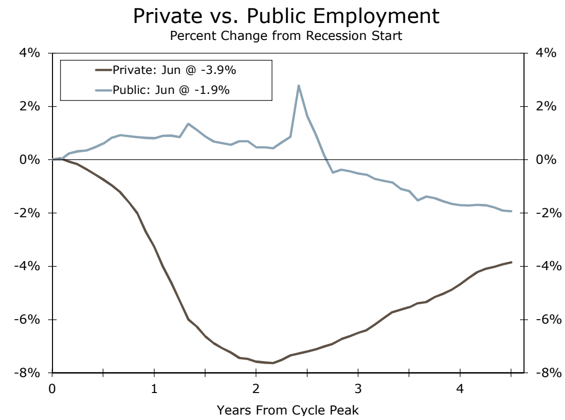


Figure 20



Source: U.S. Department of Labor and Wells Fargo Securities, LLC

Public and Private Sector Employment: Differences in Scale and Timing

The largest cuts in employment occurred in the private, not public, sector.

Contrary to popular perception, the largest cuts in employment during the recession and early recovery occurred in the private, not public, sector, as illustrated in Figure 20. Although both sector employment levels are down from the peak, the drop in the private sector was rapid and very deep. Public sector jobs held up for a short period, as many state and local governments were temporarily subsidized by the fiscal stimulus program. However, as the stimulus faded, the growth of revenues at the state and local level could not support such a large workforce and these jobs continue to be cut even at this stage of the economic expansion. The fiscal stimulus did not provide a sustained boost to public sector employment–only a temporary holding action. In recent months, the private sector has begun to show a rise in jobs but has not yet recovered to the pre-recession level of jobs.

The Beveridge Curve: One Indicator of a Structural Shift in the Labor Market

What is the relationship between job vacancies and the unemployment rate over time? In normal times, firms with job vacancies would find workers who are unemployed with relative ease if the labor market operated efficiently. However, if firms with vacancies have increased difficulty finding unemployed workers to fill current vacancies, we interpret this difficulty as a skills gap which represents an increase in structural unemployment in the economy. As illustrated in Figure 21, there has been a clear upward shift in the vacancy rate during the 2011-present period at the same unemployment rate, about 8 to 9 percent, as was present during the 2001-2010 period. In this case, we have some evidence to suggest that there has been a rise in structural unemployment during the current economic expansion.

Figure 21

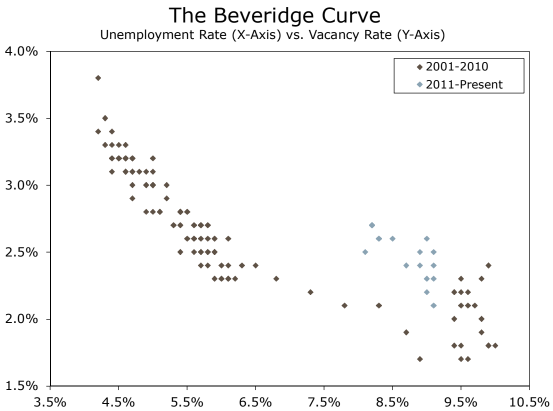
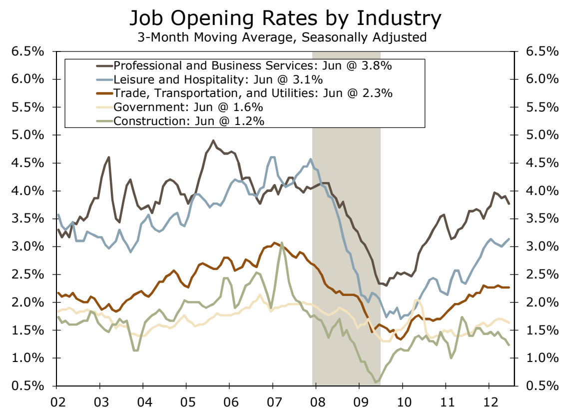


Figure 22



Source: U.S. Department of Labor and Wells Fargo Securities, LLC

So where are the job openings? As illustrated in Figure 22, there has been a clear increase in job openings in the professional & business services sectors as well as leisure & hospitality plus trade, transportation & utilities. In contrast, there has been limited gain in job openings in the government and construction sectors.[4] The last two sectors are no surprise, as the housing correction and the downsizing of state and local governments are two of the defining factors accounting for slow growth in the current expansion. Employees in the housing construction sector, for example, are likely to lack the skills for an easy move to the professional & business services sector. In this case, with so many workers in construction during the housing boom, it is likely that many are finding it difficult to transition to other employment, hence the likelihood of a significant skills mismatch which may account for the upward shift in the Beveridge Curve.

Small Business Hiring Plans: No Recovery Here

Small business hiring plans, as surveyed by the National Federation of Independent Businesses (NFIB), do not signal any rise in this expansion (Figure 23). This is a clear break from the recoveries of the 1990s and 2000s. Since small businesses, especially start-ups, account for a significant portion of job creation, the limited hiring plans in this sector suggest a structural break with the past.

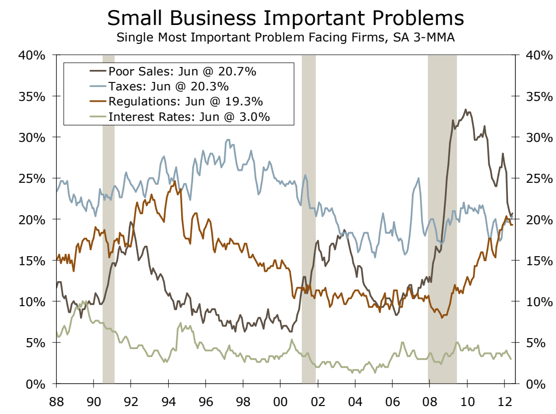
Small businesses, especially start-ups, account for a significant portion of job creation.

Why might small firms' hiring plans be significantly different than prior economic recoveries? One reason might be the problems that small firms see as barriers to growth and therefore to hiring new workers. In Figure 24, the NFIB survey asks small businesses to identify the single most important problem facing firms. In comparison to the prior two expansions, poor sales ranked very high in the first two years of the expansion; therefore, it would not be surprising that firms would be reluctant to hire given the uncertainty about final sales. In addition, the concerns about taxes and regulation have behaved very differently than in prior expansions. Concerns about taxes fell during the mid-1990s and again at the beginning of the last decade. During this cycle, the concern about taxes remains high and has not declined as it has in prior cycles. Meanwhile, concerns about regulation have actually risen steadily in direct contrast to the decline in the 1990s and the flat levels of concern last decade. At the firm level, therefore, the concerns about final sales, taxes and regulation appear to offset the focus on stimulus and special programs to create jobs at the macro level.

[4] Weidner and Williams suggest that the overexpansion of housing and finance may have led to a considerable time period for the excess labor and resources to be reabsorbed into other parts of the economy. Weidner, Justin and John C. Williams, "How Big is the Output Gap?" Number 2009-19, June 12, 2009, Federal Reserve Bank of San Francisco Economic Letter.

Figure 23

Figure 244



Source: National Federation of Independent Business and Wells Fargo Securities, LLC

Wrong Answers to the Wrong Question

In policy circles, the wrong answer has been the persistent high level of unemployment, even with the drop in the labor force participation rate, to the question of how effective fiscal stimulus and monetary ease have been to the economy. The expected answer was that stimulus would generate much lower unemployment rates at this stage of the cycle. Instead, the correct answer would have been the persistent high level of unemployment to the question of what has been the effect of structural shifts in the U.S. labor market.

Policymakers and economic analysts have spent too much time focusing on the effect of macro stimulus in an oversimplified model of the U.S. economy, which has failed to account for the underlying structural changes in the labor and credit markets in the United States. Rather than the grand schemes of big government policies, the issue is increasingly to be solved by the micro firm and household decisions made every day in the U.S. labor market of the 21st, not the 20th, century.

Wells Fargo Securities, LLC Economics Group

Diane Schumaker-Krieg	Global Head of Research & Economics	(704) 715-8437 (212) 214-5070	diane.schumaker@wellsfargo.com
John E. Silvia, Ph.D.	Chief Economist	(704) 374-7034	john.silvia@wellsfargo.com
Mark Vitner	Senior Economist	(704) 383-5635	mark.vitner@wellsfargo.com
Jay Bryson, Ph.D.	Global Economist	(704) 383-3518	jay.bryson@wellsfargo.com
Eugenio Aleman, Ph.D.	Senior Economist	(704) 715-0314	eugenio.j.aleman@wellsfargo.com
Sam Bullard	Senior Economist	(704) 383-7372	sam.bullard@wellsfargo.com
Anika Khan	Senior Economist	(704) 715-0575	anika.khan@wellsfargo.com
Azhar Iqbal	Econometrician	(704) 383-6805	azhar.iqbal@wellsfargo.com
Tim Quinlan	Economist	(704) 374-4407	tim.quinlan@wellsfargo.com
Michael A. Brown	Economist	(704) 715-0569	michael.a.brown@wellsfargo.com
Sarah Watt	Economic Analyst	(704) 374-7142	sarah.watt@wellsfargo.com
Kaylyn Swankoski	Economic Analyst	(704) 715-0526	kaylyn.swankoski@wellsfargo.com
Peg Gavin	Executive Assistant	(704) 383-9613	peg.gavin@wellsfargo.com
Cyndi Flowe	Administrative Assistant	(704) 715-3985	cyndi.h.flowe@wellsfargo.com

WELLS FARGO SECURITIES