



# *Policy Note*

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## EMPLOYMENT RECOVERY(?) AFTER THE GREAT RECESSION

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### **Introduction**

This policy note discusses the prospects for job creation in the US based on the most recent Levy Economics Institute Strategic Analysis report, *Is the Link between Jobs and Output Broken?* (Papadimitriou, Hannsgen, and Nikiforos 2013). The results of our analysis confirm the continued weakness of the US economy in terms of job creation, a phenomenon that has come to be known as a “jobless recovery.” We argue that to understand the problem we must look beyond the unemployment rate, which can conceal changes in the labor force. A prolonged recession can discourage workers, causing them to drop out of the labor force, thus lowering the unemployment rate without increasing employment. Therefore, the total number of people employed should be considered in tandem with the unemployment rate.

### **Employment and Output**

The decline in unemployment during an economic recovery depends on two factors: how fast output (i.e., GDP) grows and the relationship between output growth and the unemployment rate. The latter is often referred to as Okun’s law, after Arthur Okun’s seminal paper of 1962.

However, because of the unemployment rate’s tendency to conceal changes in the labor force, a better measure of job creation is the total number of employed workers. In the economic literature,

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the relationship between output growth and employment growth is called the Kaldor–Verdoorn effect, after the contributions of Nicholas Kaldor (1957, 1961, 1966) and Johannes Verdoorn (1949), and can be stated as:

$$\text{Growth rate of employment} = a + \beta \times \text{Growth rate of real output}$$

The coefficient  $\beta$  expresses the effect of a 1 percent change in the growth rate of real output on the growth rate of employment. The higher the coefficient, the greater the number of jobs created from output growth.

Recent contributions to the economic literature show that in the aftermath of a financial crisis like the one experienced by the US economy in 2007–08, the recovery in output is slower and the relationship between output growth and employment becomes weaker. Expressed in terms of the Kaldor–Verdoorn effect, the growth rate of real output on the right-hand side of the equation is slow, and the transmission of this slow output growth to employment (through  $\beta$ ) is anemic. As a result, reducing unemployment becomes more difficult.

### Output Recovery after a Financial Crisis

A growing body of research shows that output recovery following a financial crisis is much slower compared to the recovery of output following a “normal” (i.e., nonfinancial) crisis.<sup>1</sup> One explanation for this pattern—in line with the stock-flow consistent approach of the Levy Institute Strategic Analysis series—is that, following the burst of a bubble and a financial crisis, the private sector seeks to minimize the debt it accumulated before the crisis. This leads to a large private sector financial surplus, which in turn weakens demand and thus output growth. Richard C. Koo (2008) coined the term “balance sheet recession” to describe this situation. In a balance-sheet recession, monetary policy is ineffective, and to the degree that the foreign sector does not provide additional demand, the only path to economic recovery is fiscal expansion.

### Jobless Recoveries

Economic recoveries of the last three decades have become increasingly slow in terms of employment growth. GDP growth in the recovery phase of the business cycle does not create jobs at the same pace as in the past. This is the much-discussed phe-

nomenon of the “jobless recovery.” In a forthcoming paper, Deepankar Basu and Duncan K. Foley (2013) show that the long-run effect of output growth on employment growth (the coefficient  $\beta$  in the equation above) has continuously decreased cycle after cycle in the last three decades.

Economists attribute this decline to a variety of factors. William Milberg and Deborah Winkler (2010) and Erica L. Groshen and Simon Potter (2003) refer to the global and domestic restructuring of production. Kathryn Koenders and Richard Rogerson (2005) argue that the recoveries of the 1990s and 2000s were jobless because they followed unusually long expansions, and therefore the economic slowdown was a chance for the firms to eliminate unneeded and inefficient labor hired during the expansion phase. Stacey L. Schreft, Aarti Singh, and Ashley Hodgson (2005) propose that improvements in the hiring process and greater labor flexibility explain the slower recovery in employment levels, while Ben Bernanke (2003) highlights the role of technological change. Finally, Basu and Foley (2013) raise issues related to the measurement of output. They argue that the increased share of the financial sector in GDP leads to overestimation of real GDP and real economic activity.

The effect of output growth on employment is further weakened by business cycles that involve financial crises, asset bubbles busts (especially housing bubbles), and a high degree of uncertainty. All of these factors exert a negative influence on the employment recovery under current conditions.<sup>2</sup>

### The Strategic Analysis: Baseline+3 Scenarios

The Levy Institute’s most recent strategic analysis sheds some light on the implications of a weaker connection between output and employment growth, and on how this weaker connection affects our policy choices. The strategic analysis simulates a baseline and three scenarios. The baseline attempts to duplicate the growth rate and budget deficit projections in “The Budget and Economic Outlook: Fiscal Years 2013 to 2023,” issued by the Congressional Budget Office (CBO 2013). For the foreign sector, we use the January update (IMF 2013) of the 2012 International Monetary Fund *World Economic Outlook* (IMF-WEO) for the growth rate of US trading partners.

In scenarios 1 and 2, we estimate the level of fiscal stimulus necessary to achieve unemployment rates of 6.5 percent and 5.5 percent, respectively, by the end of 2014. We assume the performance of US trading partners to be consistent with the 2012

IMF-WEO forecast and that there will be a modest increase in private sector borrowing. In scenario 3, we assume the same level of fiscal stimulus as in scenario 1, but with more rapid increases in private sector borrowing and better foreign sector performance. The results of our simulations for the real GDP growth rate and unemployment rate are shown in Figures 1 and 2.

In the baseline scenario, despite the fact that the annual growth rate floats around 3.5 percent for the years 2014–16, the unemployment rate exceeds 6.5 percent for the whole period. This finding is confirmed by the forecasts of the CBO for the unemployment rate. It is also noteworthy that bringing unemployment below 6.5 percent and 5.5 percent in scenarios 1, 2, and 3 in the next two years requires very high growth rates. For example, in scenario 2, bringing unemployment down to 5.5 percent by the end of 2014 requires an annualized growth rate of 3.4 percent in 2013 and 6.3 percent the following year. These projections demonstrate the challenges the US economy faces in creating jobs.

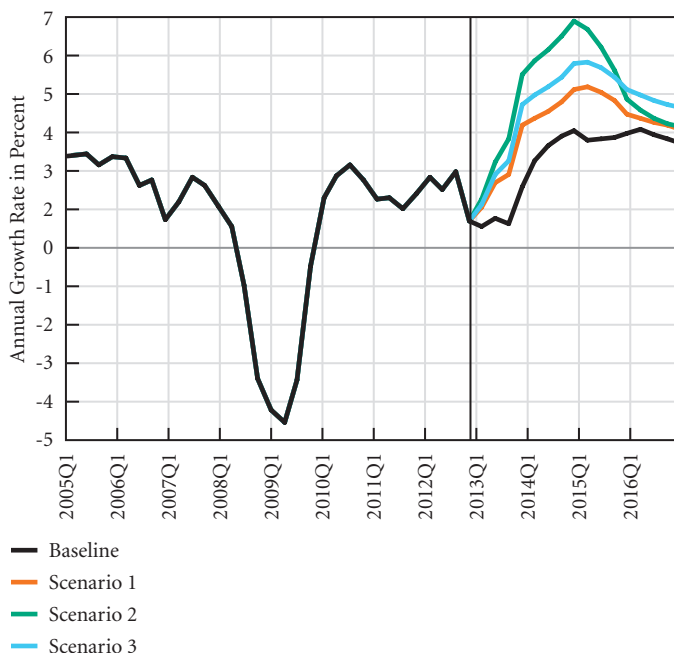
### Employment and the Labor Force

In this section, we develop estimates of the number of employed workers, using the same scenarios as above. The purpose of this exercise is to develop a clearer understanding of the level of employment and the changes in labor force participation associated with each of the scenarios (see Figure 3). Scenario 2, which has the highest growth rate, produces five million more jobs by 2016 compared to the baseline scenario. For scenarios 1 and 3, this difference from the baseline is approximately 2.5 million and 4 million jobs, respectively.

In addition to employment levels, we estimate the total labor force for each of the scenarios (Figure 4). Our projections show that, the higher the scenario growth rate, the faster the increase in the size of the labor force. At the end of 2016, the number of workers in the labor force in the high-growth scenario 2 is more than 2 million larger than in the baseline scenario. In other words, not only are the unemployment rates in scenarios 1, 2, and 3 lower compared to the baseline scenario, but these lower unemployment rates are calculated on the basis of a larger labor force as well.

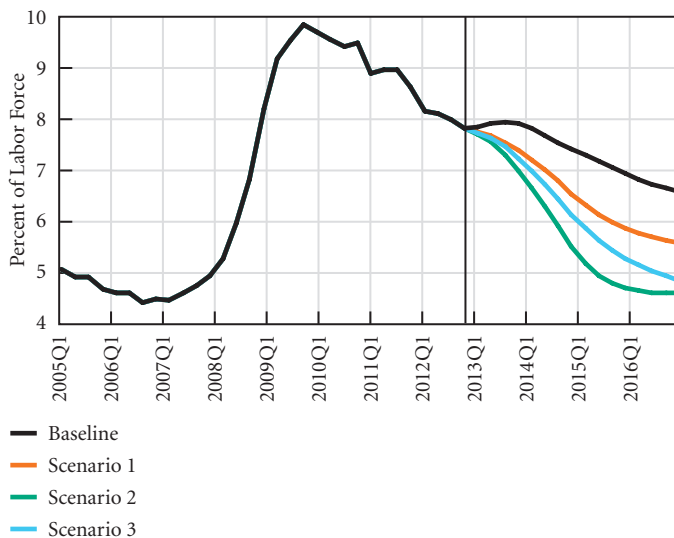
Another way to demonstrate this point is to calculate the coefficient of the Kaldor–Verdoorn effect. In Tables 1 and 2, we present the coefficients for the last five business cycles, calculated from trough to peak and from peak to peak. In the first row of

**Figure 1 Real GDP Growth, 2005Q1–2016Q4**



Sources: Bureau of Economic Analysis (BEA); author's calculations

**Figure 2 Unemployment Rate, 2005Q1–2016Q4**



Sources: BLS; author's calculations

**Table 1 Kaldor-Verdoorn Coefficients for the Last Five Business Cycles: Trough to Peak**

Period	Baseline	Scenario 1	Scenario 2	Scenario 3
1975Q1–1979Q4	0.714	0.714	0.714	0.714
1982Q4–1990Q2	0.528	0.528	0.528	0.528
1991Q1–2000Q4	0.382	0.382	0.382	0.382
2001Q4–2007Q3	0.420	0.420	0.420	0.420
2009Q2–2012Q4	0.288	0.288	0.288	0.288
2009Q2–2016Q4	0.258	0.283	0.301	0.294

Sources: BEA; BLS; author’s calculations

Table 1, we can see that, during the recovery in the second half of the 1970s, a 1 percent increase in output led to an increase in employment of 0.714 percent. This number has been decreasing since the late 1970s and stands at 0.288 in the current recovery (i.e., 2009Q2–2012Q4). The results are similar if we calculate the peak-to-peak coefficients.

It is important to note that the peak-to-peak coefficient for the current recovery remains negative. In other words, although output has passed its precrisis peak level, the number of people employed is still lower. Indeed, three million fewer people are employed today than at the beginning of the Great Recession five years ago (see Figure 3).

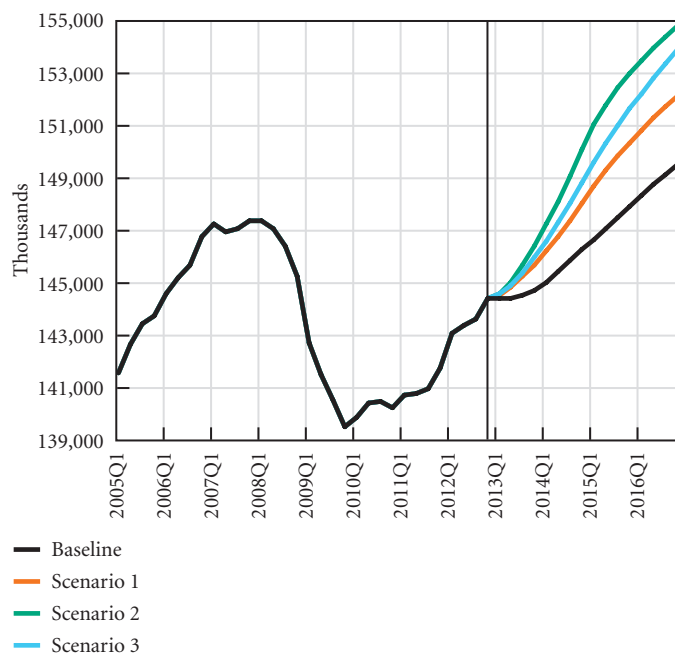
In the last row of the two tables we incorporate our projections for GDP and employment under the four different scenarios and calculate the coefficient of job creation until the fourth quarter of 2016. In each case, the coefficient of job creation remains much lower than in any other recovery during the last four decades. The projected coefficient rises with the projected rate of growth. Scenario 2 has the highest coefficient, followed by scenario 3, scenario 1, and, finally, the baseline scenario. This shows that higher growth not only decreases unemployment but also encourages labor force participation—a twofold effect.

**Table 2 Kaldor-Verdoorn Coefficients for the Last Five Business Cycles: Peak to Peak**

Period	Baseline	Scenario 1	Scenario 2	Scenario 3
1973Q3–1979Q4	0.810	0.810	0.810	0.810
1979Q4–1990Q2	0.520	0.520	0.520	0.520
1990Q2–2000Q4	0.367	0.367	0.367	0.367
2000Q4–2007Q3	0.357	0.357	0.357	0.357
2007Q3–2012Q4	-0.726	-0.726	-0.726	-0.726
2012Q4–2016Q4	0.098	0.163	0.205	0.191

Sources: BEA; BLS; author’s calculations

**Figure 3 Employment Level, 2005Q1–2016Q4**

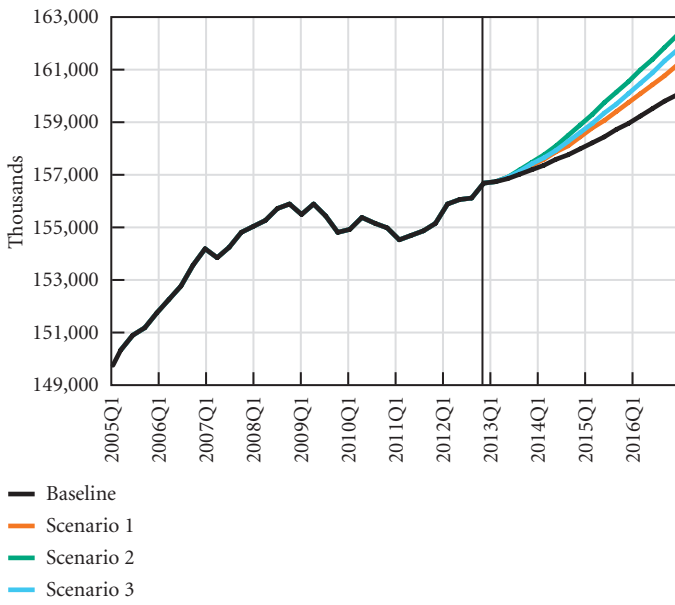


Sources: BLS; author’s calculations

## Epilogue

Our strategic analysis utilizes data through the last quarter of 2012. Since the publication of our analysis, the Bureau of Labor Statistics (BLS) has released new employment data that show a modest improvement in the unemployment rate, a decrease from 7.9 percent in January to 7.7 percent in February. In March, according to the most recently released data, the economy added

**Figure 4 Civilian Labor Force, 2005Q1–2016Q4**

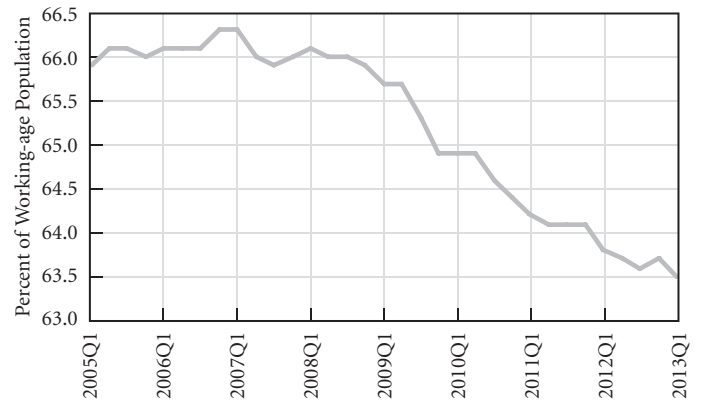


Sources: BLS; author's calculations

88,000 jobs and the unemployment rate edged down to 7.6 percent. Despite the fact that the increase in employment in February is at least partly related to temporary shocks,<sup>3</sup> at first glance this seems to be good news for the US economy.

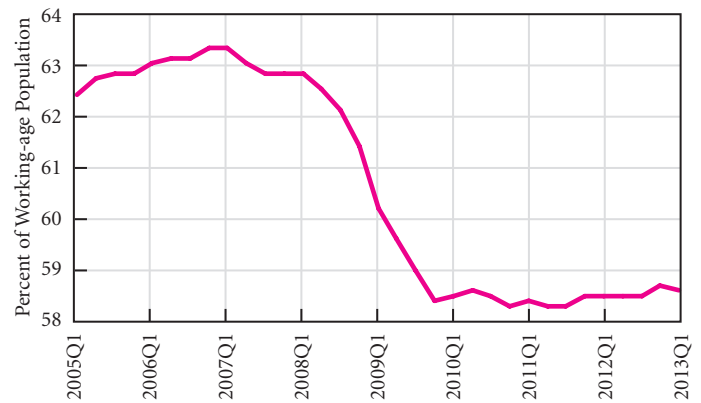
However, closer scrutiny of the data moderates our optimism regarding recent employment gains and the recovery in general. As argued above, we must go beyond the reported unemployment rate to examine the vitality (or lack thereof) of the economy and the labor market. According to the BLS data, the labor force decreased by half a million workers from February to March. Likewise, February—a month with a relatively high increase in employment—saw the labor force decline (by more than 100,000 workers) compared to January. In total, since the beginning of 2013, the labor force participation rate has decreased, from 63.6 percent in January to 63.3 percent in March. As shown in Figure 5, the total labor force participation rate in March was more than three percentage points below its precrisis level and shows no indication of improvement. To put this in historical context, the US labor force participation rate has not been this low since May 1979. It is this change in labor force participation, not job growth, that explains much of the recent “good news.” If the labor force participation rate had remained at the same level as before the crisis, the unemployment rate for March 2013 would be more than 11.5 percent.

**Figure 5 Civilian Labor Force Participation Rate, 2005Q1–2013Q1**



Source: BLS

**Figure 6 Employment–Population Ratio, 2005Q1–2013Q1**



Source: BLS

The same picture of stagnation emerges if we look at the employment-to-population ratio (see Figure 6). This ratio reached 63.3 percent at the beginning of 2007 and then plummeted to 58.4 at the end of 2009. It has remained more or less at this level for the last three years.

Our analysis confirms that job creation remains elusive in the current recovery, partly because of the anemic rate of growth of GDP but also due to the increasingly weak link between the growth in output and job creation. Much more must be done to stimulate GDP and to restore the link between output and jobs.

## Notes

1. Supporting empirical evidence is provided by Carmen M. Reinhart and Ken S. Rogoff (2009), Moritz Schularick and Alan M. Taylor (2012), and Òscar Jordà et al. (2011), among others.
2. The IMF's 2010 *World Economic Outlook*, among other sources, makes this point.
3. For example, a big part of the job creation in February took place in the construction sector, which should be positively affected by weather-related phenomena. The increase in the same sector in March was considerably smaller.

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