



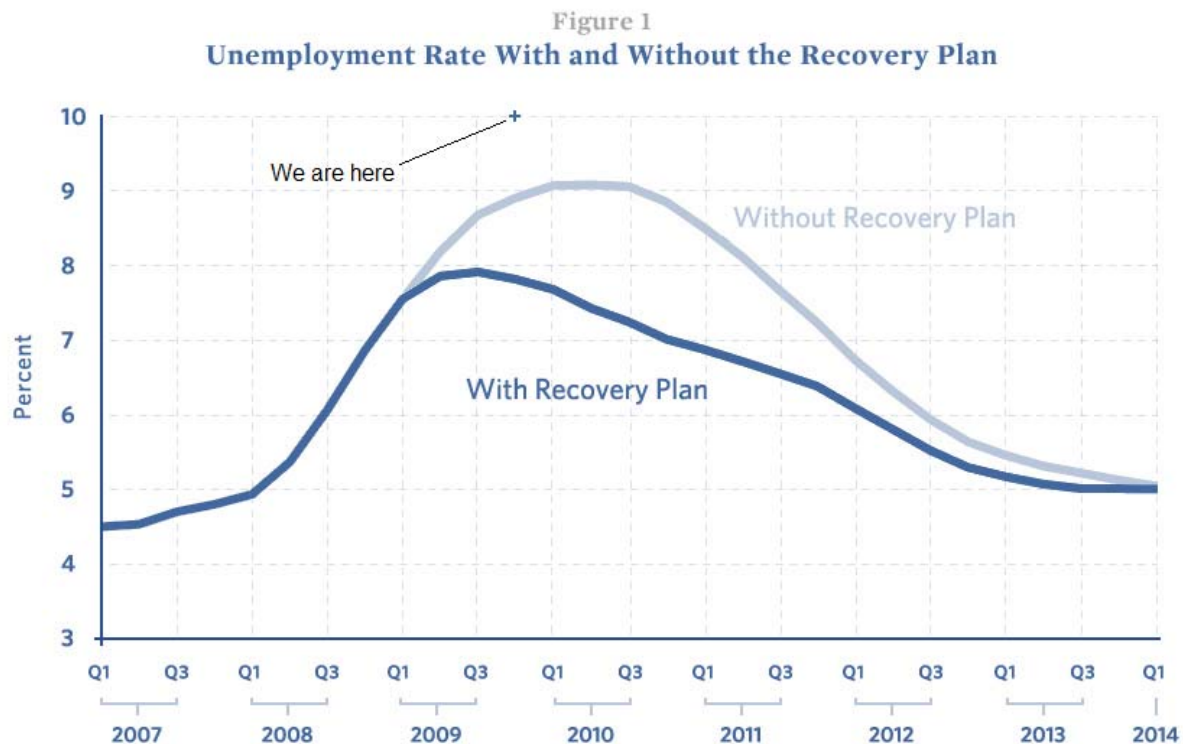
## Unemployment Arithmetic

December 7, 2009

“The basic assumption that jobs will eventually return when the economy recovers is probably wrong. Some jobs will come back, of course. But the reality that no one wants to talk about is a structural change in the economy that's been going on for years but which the Great Recession has dramatically accelerated.”

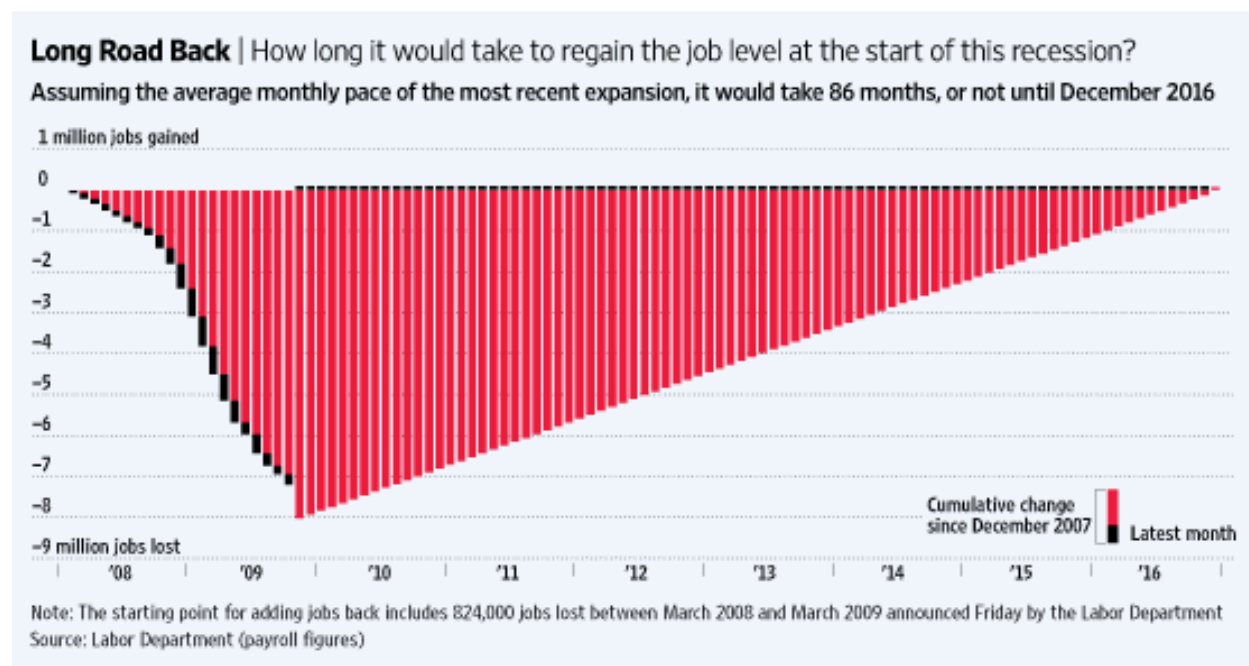
– Robert B. Reich, Former Secretary of Labor, Professor at Berkeley

On January 10, 2009 then-president-elect Barak Obama’s transition team published a report in support of the \$787 billion stimulus plan that would become law the following month. In their report, which included the graph below, authors Christina Romer and Jared Bernstein touted the recovery program’s job-creation potential. Presumably, the assumptions behind the graph’s “Without Recovery Plan” curve were the most dire they could imagine at the time. However, the 10% unemployment rate for November released last Friday demonstrates the extent to which, despite the recovery plan, current job losses have exceeded Romer and Bernstein’s worst-case scenario. The November data point has been plotted on the graph and labeled “We are here.”



## Nonfarm-Payroll Employment: Eight Million Jobs Lost

More recently, The Wall Street Journal published an interesting graph depicting job losses since the beginning of the recession. Unlike the Romer graph above, this one uses lost jobs rather than unemployed persons as its most basic unit. Specifically, it plots the loss of about 8 million nonfarm-payroll jobs according to the Bureau of Labor Statistics establishment survey employment series when the so-called “benchmark revision” of 824,000 is included.



The graph seeks to answer the question of how long it would take to regain the 8 million lost jobs. The answer given is 86 months, which works out to about 93,000 jobs per month. That assumed rate of job creation is stated to be “the average monthly pace of the most recent expansion” and is roughly in line with our own calculations.

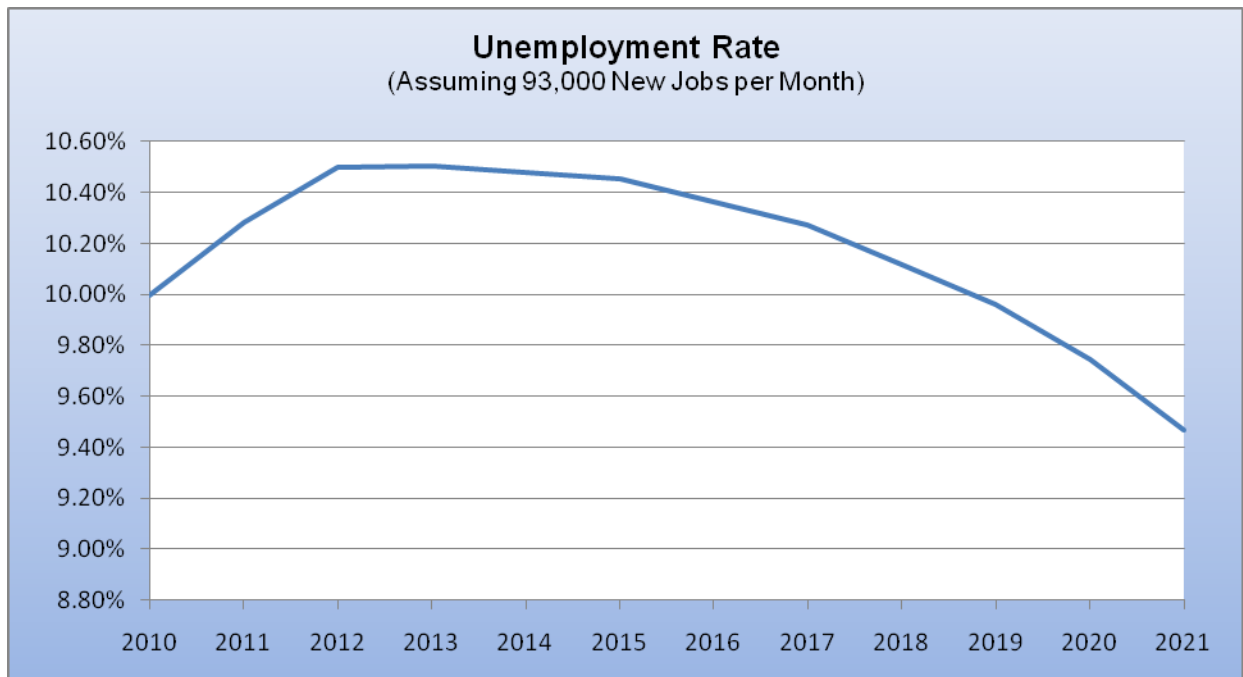
## Unemployment-Rate Projection

The preceding analysis is fine, as far as it goes. However, it begs the more-important question: “What would the unemployment rate look like if the U.S. economy were to create 93,000 jobs per month going forward?” To answer that we will use a method, suggested by John Mauldin and Michael Shedlock, which makes the simple assumption that one new nonfarm-payroll job equals one additional employed person. In other words, none of the 93,000 new jobs to be created each month will be taken as second jobs by someone who already is employed.

With this assumption the unemployment projection becomes a matter of simple arithmetic. For example, according to last Friday’s report the number of employed persons in November was 138,502,000. Adding 93,000 per month comes to 145,291,000 by the end of 2015. The BLS projects that the labor pool will have grown to about 164 million by then. But, to be conservative, let’s assume that the current high level of unemployment will result in a *permanent* downward reduction in the labor pool of about 2 million people from the BLS projections.

In other words, we will assume that about one-quarter of those who are currently unemployed will drop out of the labor force for good. This has the effect of reducing the unemployment rate, as fewer jobs are needed to employ a smaller pool of workers. Under this assumption our 2015 year-end labor-pool estimate is 162,087,000. Dividing this into the 145,291,000 total employed persons yields an employment rate of 89.64%, or an unemployment rate of 10.36%.

Note that the unemployment rate has increased rather than decreased. It turns out that 93,000 new jobs per month are not even enough to keep up with population growth. Even if we further assume the Baby Boomers will retire on or ahead of schedule in large enough numbers to drastically shrink the labor pool in the out years, the unemployment rate under this scenario still remains above 10% through 2018. The results are plotted in the graph below.



The Wall Street Journal's implicit assumption of 93,000 new jobs per month was not high enough to generate a pleasantly believable forecast. We are going to have to sharpen our pencils.

### A More Optimistic Projection

The table on the next page shows monthly job growth from 1999 through 2009. The last recession ended in November 2001. Job losses were 178,000 the following month and averaged 45,000 per month the following year. However, if we include those numbers the average will come out somewhere around The Wall Street Journal's figure of 93,000. So, let's throw them out and start with 2003 instead.

In the five years from 2003 through 2007 the chart shows that jobs were added at an average rate of 133,000 per month:  $(7 + 171 + 212 + 178 + 96) / 5 = 133$ . This period included unsustainable job growth in construction, real estate, finance and other areas related to the housing bubble and the commercial real-estate bubble.

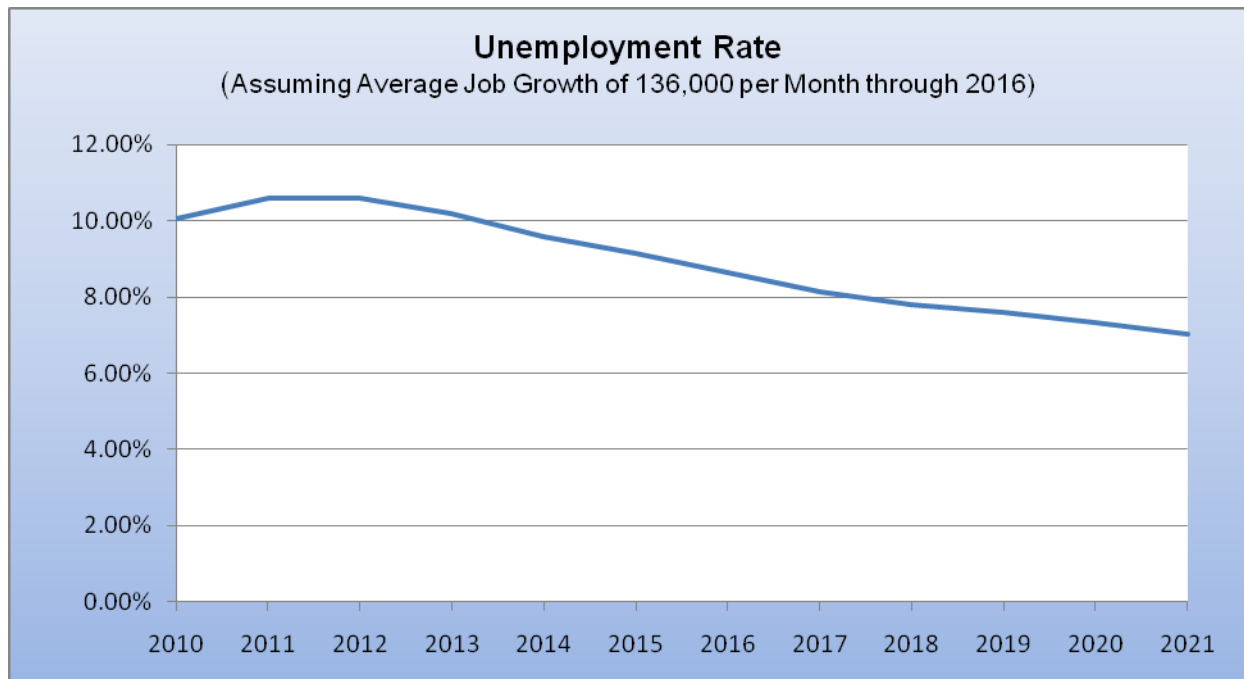
### Total Nonfarm Employment, One-Month Net Change (thousands)

| Year | Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct     | Nov    | Dec  | Average |
|------|------|------|------|------|------|------|------|------|------|---------|--------|------|---------|
| 1999 | 121  | 410  | 106  | 376  | 213  | 266  | 291  | 192  | 202  | 408     | 294    | 294  | 264     |
| 2000 | 249  | 121  | 472  | 286  | 225  | -46  | 163  | 3    | 122  | -11     | 231    | 138  | 163     |
| 2001 | -16  | 61   | -30  | -281 | -44  | -128 | -125 | -160 | -244 | -325    | -292   | -178 | -147    |
| 2002 | -132 | -147 | -24  | -85  | -7   | 45   | -97  | -16  | -55  | 126     | 8      | -156 | -45     |
| 2003 | 83   | -158 | -212 | -49  | -6   | -2   | 25   | -42  | 103  | 203     | 18     | 124  | 7       |
| 2004 | 150  | 43   | 338  | 250  | 310  | 81   | 47   | 121  | 160  | 351     | 64     | 132  | 171     |
| 2005 | 182  | 221  | 121  | 312  | 212  | 259  | 322  | 190  | 87   | 98      | 380    | 160  | 212     |
| 2006 | 294  | 274  | 282  | 151  | 24   | 70   | 186  | 149  | 147  | 82      | 261    | 219  | 178     |
| 2007 | 180  | 36   | 184  | 35   | 156  | 54   | -65  | -28  | 100  | 165     | 215    | 120  | 96      |
| 2008 | -72  | -144 | -122 | -160 | -137 | -161 | -128 | -175 | -321 | -380    | -597   | -681 | -257    |
| 2009 | -741 | -681 | -652 | -519 | -303 | -463 | -304 | -154 | -139 | -111(P) | -11(P) | 0(E) | -340    |

P : preliminary      E : estimate

As Professor Reich noted in the opening quote, the sad truth is many of those bubble-related jobs are never coming back. But, let's assume they do anyway and use 133,000 as our average monthly job growth. Let's also assume recessions have been relegated to the annals of history, or at least that none occur before our forecast ends in 2021.

Instead of assuming constant job growth each month, let's try to generate a more realistic projection this time. Let's ramp up the numbers each year and then allow job growth to taper off gradually as the Baby Boomers retire. For 2010 through 2016 let's assume average monthly job growth (in thousands) of: 60, 120, 150, 170, 150, 150 and 150. The overall average works out to 136, which comfortably reaches our target of 133. The resulting unemployment rates are shown below.



Again, the arithmetic is very straightforward. Sticking with the previous example of 2015:

- Total job growth is:  $(60 + 120 + 150 + 170 + 150 + 150) \times 12 \times 1000 = 9,600,000$ .
- Adding these jobs to November 2009 employment of 138,502,000 results in 148,102,000 employed persons at year-end 2015.
- Dividing by the 2015 year-end labor force of 162,087,000 yields an employment rate of 91.37%, or an unemployment rate of 8.63%.

Note that even under this optimistic scenario featuring bubble-style job growth, the unemployment rate:

- peaks at 10.6% next year
- plateaus near that level through 2011
- does not drop below 10% until 2013
- remains above 7% through 2020.

Clearly, unemployment will continue to be an issue through at least the next presidential-election cycle. Unless the government somehow manages to engineer even larger bubbles than previously, the unemployment arithmetic indicates we may be in for an extended period of very rough sledding.

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