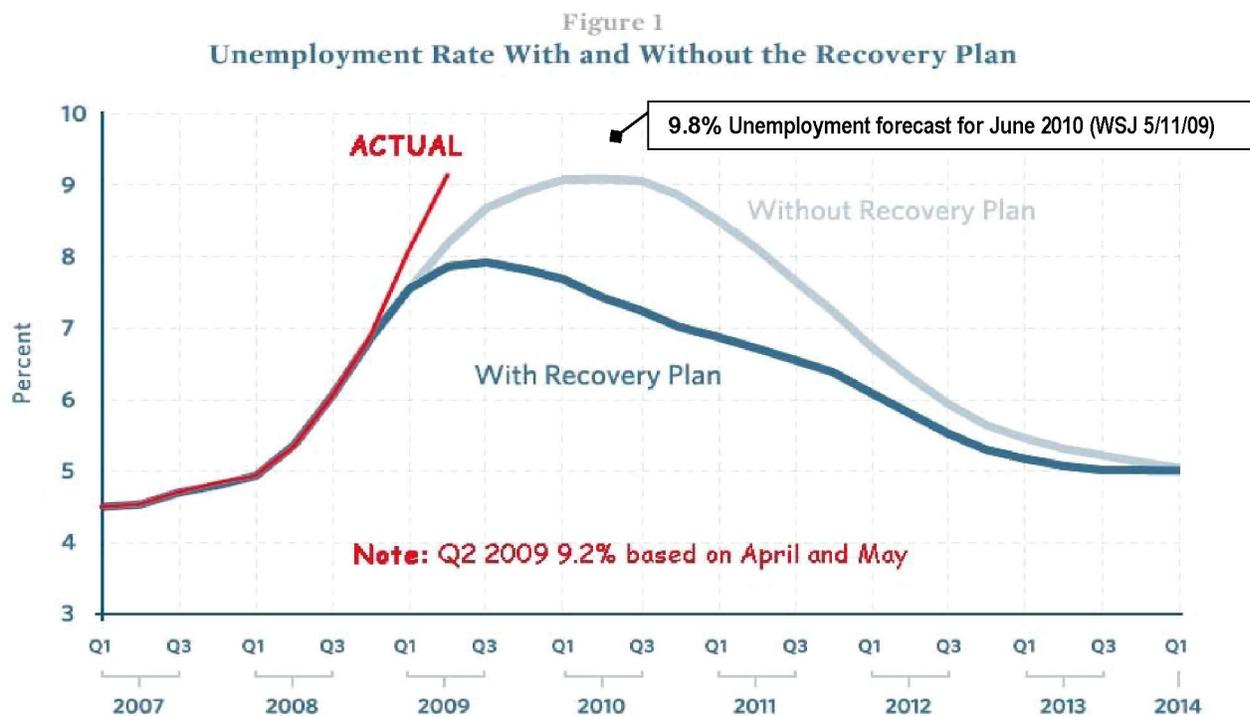


## How to Restore Animal Spirits and Reduce Unemployment: A Tax Credit for Employment Growth in Fiscal 2010 and 2011

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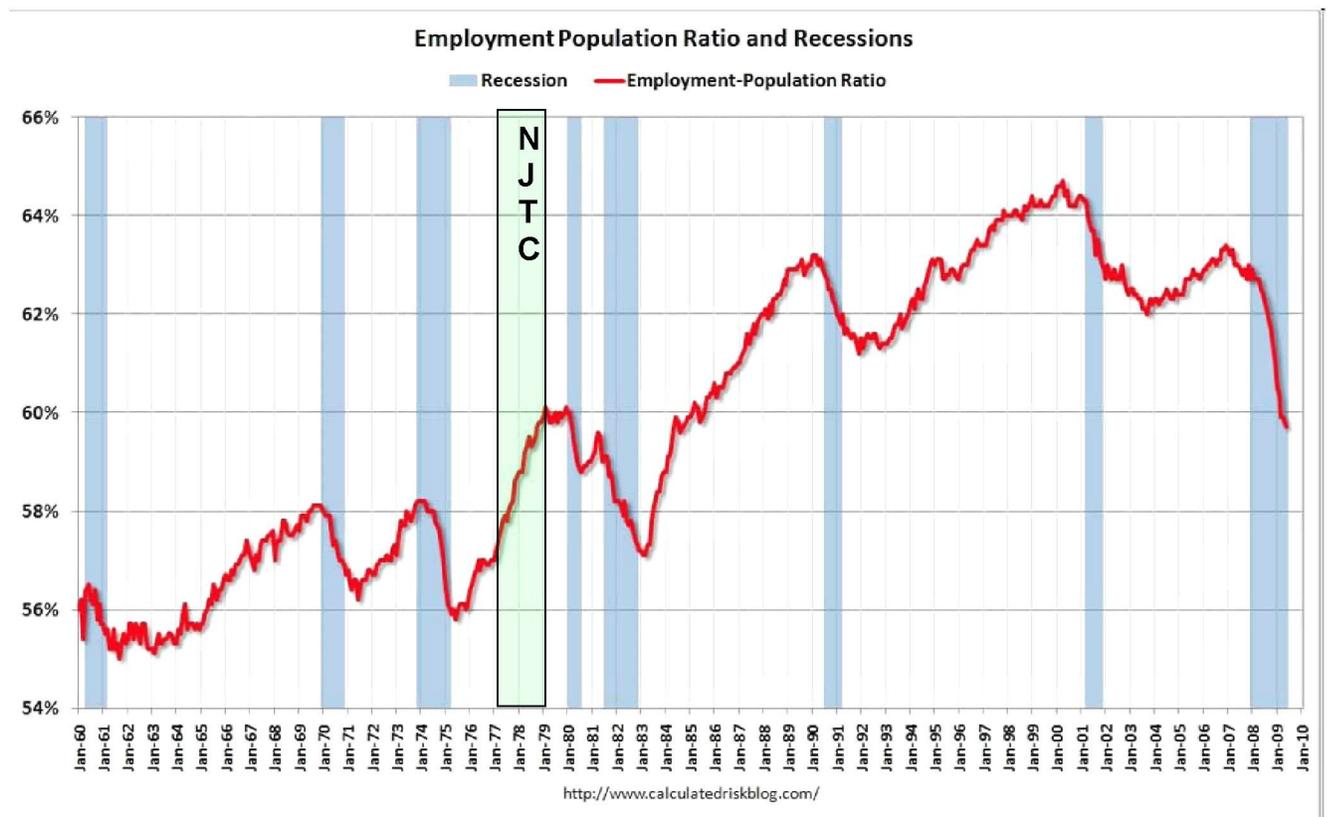
Non-farm payroll employment has fallen 5.25 million in just 12 months. Six million additional workers are unemployed and an extra 3.4 million have been forced to take part-time work because full-time work is not available. Freight rail car loadings are 20 percent below year ago levels. ATA's Truck Tonnage Index has fallen 15 percent since the recession started. Retail sales are down 9 percent ([www.census.gov/retail](http://www.census.gov/retail)). The recession has been much deeper than the administration was expecting



when the stimulus was being devised in early January (see figure 1). They have since lowered their forecast (NY Times 5/11/09). Independent forecasters have also become more pessimistic. The median forecast by the 61 economists surveyed by Bloomberg (5/12/09) predicted that unemployment will average 9.6 percent during 2010 and 8.5 percent in 2011. The Wall Street Journal June 5-9 survey of forecasters predicts unemployment will be 9.8 percent in June 2010 (Izzo, WSJ, 6/11/09). These forecasts incorporate the expected effects of the 3.5 million jobs created or saved by the \$787 billion stimulus plan already passed. Brad DeLong (June 17, 2009) now sees only a 30% chance of a rapid V shaped recovery. He concludes with **“I do not understand why the Obama administration is following policies that presume such a rapid recovery --a V rather than an L for the shape of the recession--is not just possible but probable.”** He recommends doubling the fiscal stimulus.

Clearly a second round of stimulus is needed. It should be temporary, simple to administer and leverage private resources to create millions of jobs at minimal federal expense. President Obama proposed a jobs credit during the campaign. Congress now needs to deliver on that promise.

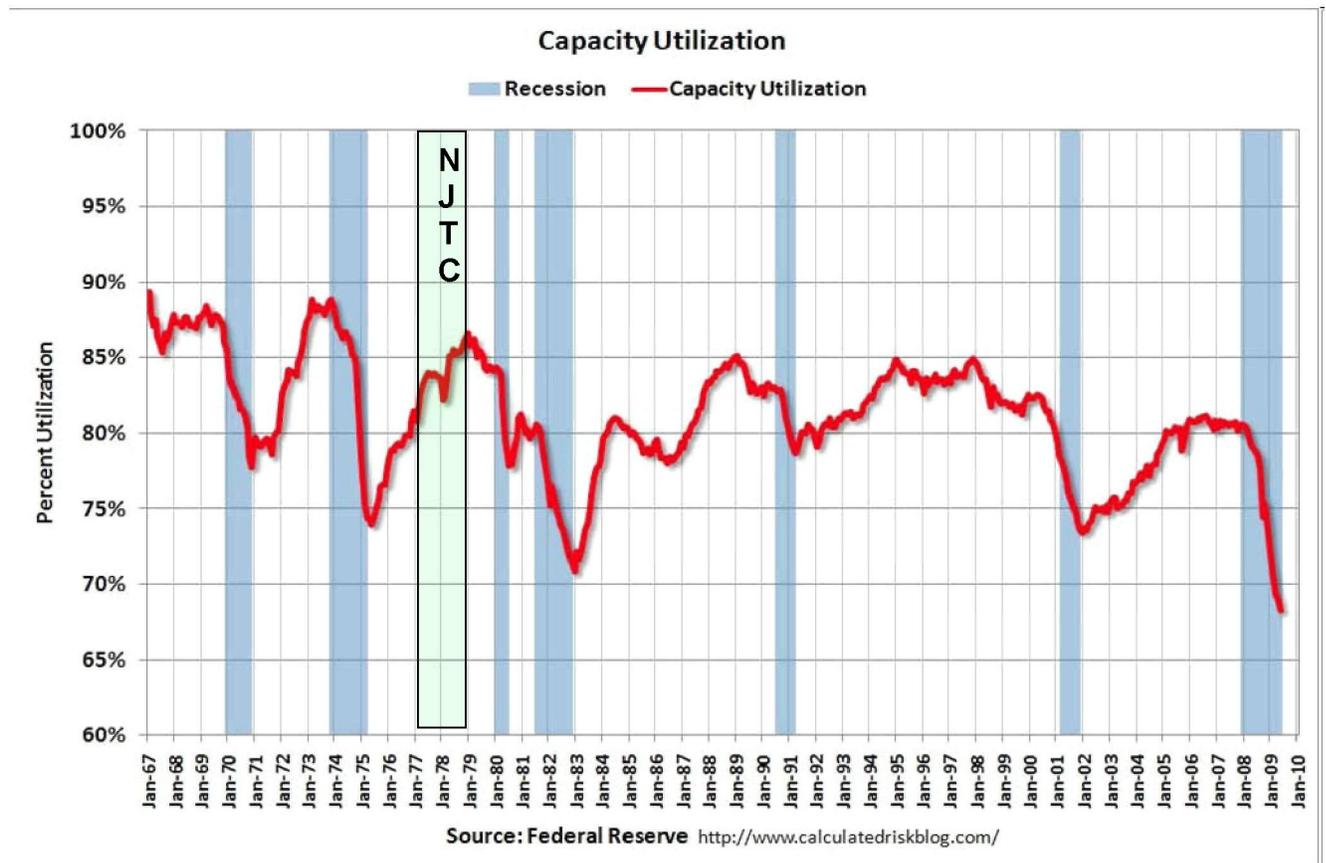
The Democratic Congress elected in 1976 faced a similar situation--high (7.5 to 7.9 %) unemployment and anemic (3.4% during 1976) employment growth. It responded with a temporary New Jobs Tax Credit (NJTC) for 1977 and 1978 that lowered the marginal cost of expanding your workforce by roughly 15 percent on average (more for low wage and high turnover firms). Despite foot dragging by the IRS, one third of the nation's private employers received NJTC credits that lowered their 1978 taxes by \$3.1 billion. By the final quarter of 1978, real output of non-farm business had grown 15 percent in two years and unemployment had dropped from 7.8 to 5.9 percent. Private employment rose 11.5 percent from January 1977 to January 1979. In the 70 years the BLS has collected monthly data on private employment, this growth rate over a 24 month period was exceeded only three times--entry into World War 2, demobilization after WW2 and entry into the Korean War. The two-year percentage increase in total hours worked in the non-farm economy also set a record for the past 50 years as did the increase in the employment-population ratio.



The 1977-78 NJTC had particularly positive effects on small companies, startups and private sector share of total employment. Industries eligible for subsidy grew more rapidly during 1977 and 1978 than uncovered industries (eg. government and private colleges) Growth in 1977-78 was particularly

rapid in industries with many small firms: 18 percent in construction, 10.9 percent in retail trade, 10.8 percent in professional and business services and 11.2 percent in physicians offices. Industries dominated by large firms grew more slowly—eg. by 6.6 percent for utilities and 8 percent for manufacturing. (Bishop 2008)

A tax credit for increasing jobs in the U.S. encourages firms to use existing plant and equipment more intensively (eg. by staying open longer, increasing overtime or hiring additional workers).



And indeed capacity utilization did increase from 81.5 percent in December 1976 to 86.6 percent in December 1978 while the NJTC was in effect. That 86.6 percent rate of capacity utilization in manufacturing, mining and energy utilities has not been exceeded since. The jobs boom of 1988 and the late 1990s raised capacity utilization to 85 percent, but the average over the last 30 years has been 81.3 percent. In May 2009 the FRB capacity utilization index set a record low of 68.3 percent—substantially below the previous record low of 70.9 percent in December 1982.

What happens when a marginal employment tax credit expires? Do employers immediately reduce their work force? Apparently not. During the subsequent 12 months, output and payroll employment continued to grow albeit at a slower pace and the employment-population ratio and unemployment rate were stable. Manufacturing employment peaked in June 1979.<sup>1</sup> Industrial production was stable. Capacity utilization slowly declined as new capacity was brought on line.

Apparently, the temporary character of the employment subsidy induced some employers to expand now rather than later. When the subsidy ended, the new hires were retained and those who quit were replaced. Then two huge negative shocks hit the nation— the Iranian Revolution and the Iran/Iraq war caused oil import prices to increase by 160% and the Federal Reserve responded with a tough anti-inflationary monetary policy. These shocks caused the recessions in 1980 and 1982-83 (Hamilton 2003, 2009).

There were a number of important features of the 1977-78 NJTC that contributed to its success and need to be retained in a modern jobs credit. The 1977-78 NJTC was:

- (a) Temporary (scheduled to disappear by January 1979). Firms had to act quickly. Labor was on sale and employers responded by undertaking expansions now rather than later.
- (b) Easy to describe,
- (c) Cheap to administer and audit,
- (d) Directly related to measures of employment routinely reported to the IRS,
- (e) Generous [a substantial share of the cost of hiring additional low-wage high-turnover workers],
- (f) Limited to firms expanding their work force by at least 2 percent over the previous year
- (g) Could not be gamed by changing business ownership. (Firms buying ongoing businesses assumed the 1976 employment threshold of the acquired business. Startups got half the rate of subsidy of firms with a track record of employment prior to 1977.)

The research on the 1977-78 NJTC concluded that it was a remarkably cheap (only 0.13 percent of GDP and 0.3 percent of private sector wages and salaries) and effective way of boosting jobs (Perloff and Wachter 1979; Bishop 1981, Bishop and Haveman 1979, Bishop 2008). The job bang per deficit buck ended up being quite high.

### **A Fiscal 2010-2011 New Jobs Tax Credit Proposal**

Each month without a job depletes family savings, adds to credit card balances and increases the likelihood of foreclosure, bankruptcy and uninsured medical emergencies. It is therefore urgent to get a FY2010-2011 NJTC into operation during the fall of 2009 and persuade firms to add jobs during FY 2009 and 2011. The proposed NJTC would define the first six months of 2010 as the baseline employment level that firms must exceed in the fall of 2009, all of 2010 and 2011 to become eligible for the new Jobs Tax Credit. The quarterly data for making these calculations would come from the Employer's Quarterly Tax Return (Form 941) that employers file along with their quarterly social security withholding tax payments. Most small employers hire accountants and payroll processing services like ADP to do this work. The filing and payments to the IRS are handled electronically and are easily checked for accuracy and consistency by IRS computers.

The most comprehensive measure of employment and labor input available on Form 941 is line 2, total wages, tips and compensation paid during the quarter. It is a sum of compensation (including contributions paid for health insurance and pensions) paid all workers over the three-month period. Lets examine a hypothetical FY2010/2011 NJTC that starts in the third quarter of 2009 and expires at the end

of calendar 2011. The baseline threshold to which later compensation aggregates would be compared is a simple average of compensation in the first and second quarters of 2009 {**BASELINE** = (**COMP**<sub>2009Q1</sub> + **COMP**<sub>2009Q2</sub> )/2}. For the fourth quarter of 2009, a NJTC with a rate of subsidy of X% would then equal::

$$1) \text{ NJTC}_{2009Q4} = X\% * [\text{COMP}_{2009Q4} - \text{BASELINE}]$$

Since rising wage levels automatically boost aggregate quarterly compensation without actually changing real labor input, the threshold for subsidy eligibility (**BASELINE**) should rise each year. In 1977 Congress set a two percent per annum growth rate for employment threshold used in the 1977-78 NJTC. Since rising wage rates inflates total compensation I suggest raising that to three percent per year. A second decision Congress would need to make is whether to front-load the jobs stimulus by setting a higher X% in the first year than in the final year. For the year 2010 and 2011:

$$2) \text{ NJTC}_{2010Q_i} = X\% * [\text{COMP}_{2010Q_i} - (1.03)^i * \text{BASELINE}] \quad i \text{ indexes quarter } 1, 2, 3, 4$$

$$3) \text{ NJTC}_{2011Q_i} = Ph * X\% * [\text{COMP}_{2011Q_i} - (1.06)^i * \text{BASELINE}] \quad i \text{ indexes quarter } 1, 2, 3, 4$$

Where **Ph** is the ratio of the final year and 2010 subsidy rates.

If Congress wants to focus more of the NJTC subsidy on firms employing low wage and part time workers, it can do so by basing NJTC eligibility in part on increases in the number of employees on the firms payroll (reported on line 1 of Form 941). . All the formulas would be the same with the number of employees on the 12<sup>th</sup> day of the third month substituted for COMP. A number like \$250 or \$500 per quarter would replace X%. There is no guarantee, however, that each individual in a firm's head count does a significant amount of work during the quarter. Firms might be induced to turn full-time jobs into lots of part time jobs or reclassify independent contractors as temporary employees. If head counts were the sole basis for determining a NJTC, employers offering well paid fulltime jobs would be at a competitive disadvantage. The average annual compensation of full-time private sector employees is roughly \$60,000.<sup>2</sup> Even a \$1000 or \$2000 tax credit for hiring employees paid \$60,000 or more does not lower labor costs by enough to induce the firm to expand. I therefore recommend that a modern NJTC be based primarily on compensation (combining head counts with total compensation would also work). The tax credit percentage (X%) should be somewhere in the neighborhood of 10 or 15 percent of the additional compensation paid out. At a subsidy rate of 10%, hiring one additional \$60,000 per year worker in October 2009 and retaining her for 27 months will generate **\$13,500** of NJTC tax credits over the first 27 months of the workers tenure. Delaying the hiring by one year, lowers the NJTC tax credits generated to \$7500. In either case the firm receives significant benefits. We can be confident that employers will respond to such a NJTC by growing their domestic employment levels as they did 30 years ago. Table 1 presents a simulation of the employment, GDP and federal revenues impacts of the NJTC described above.

**Table 1---Simulation of Cost and Impact of NJTC for 2009Q3&4, 2010 and 2011**

Year	Threshold and Standard Deviation of growth	GDP w/o stimulus (billions)	Baseline Nominal Private Industry Compensation	Baseline Nominal Private industry W & S	W & S Base for NJTC if is T % of 2009Q12	Revenue cost of NJTC %=-.122 recap=.3 (in billions)	Incr Priv Sector Compensa due to NJTC Elast =-.15 (in billions)	First Round Buck	Extra FTE Jobs in '000s	1st Round Cost per job. Cost is half this if Keynesian multiplier	Revenue cost of NJTC divided by baseline GDP	% Impact of NJTC on baseline GDP (Keynsian Multiplier =2)
column	1	2	3	4	5	6	7	8	9	10	11	12
2006	actual	13,178	6,105.1	5,004.2								
2007	actual	13,808	6,449.8	5,286.7								
2008	actual	14,265	6,610.6	5,418.5								
2009Q1&2	Q1	14,090	6,502.6	5,330.0								
an annual rate												
<b>Jobs Tax Credit = 10% of compensation growth and threshold grows 3% per year</b>												
2009Q3&4	σ=100 s=.10	14,090	6,502.6	5,330.0	311.765	26.625	58.475	2.196	974.6	\$27,319	0.189%	0.830%
2010	σ=103 s=.14	14,372	6,697.7	5,489.9	431.448	36.846	62.218	1.689	1016.6	\$36,243	0.256%	0.866%
2011	σ=106 s=.16	14,947	6,954.0	5,700.0	532.847	45.505	65.632	1.442	1051.8	\$43,264	0.304%	0.878%
<b>Jobs Tax Credit = 15% of compensation growth and threshold grows 4% per year</b>												
2009Q3&4	σ=100 s=.10	14,090	6,502.6	5,330.0	335.73	43.007	87.712	2.039	1461.9	\$29,419	0.305%	1.245%
2010	σ=104 s=.14	14,326	6,697.7	5,489.9	427.633	54.780	93.327	1.704	1525.0	\$35,922	0.382%	1.303%
2011	σ=108 s=.16	15,193	6,954.0	5,700.0	501.115	64.193	98.448	1.534	1577.7	\$40,688	0.423%	1.296%

**Source and Notes for Table 1.** The simulation results are for a marginal employment tax credit for October 2009 through December 2011 that is based on increases in the firm’s total compensation above a threshold calculated from aggregate compensation paid in the first half of 2009. The first panel presents results for a tax credit with a threshold growing 3% per annum after 2009 and a subsidy rate of 10% of the difference between quarterly compensation (line 2 Form 491) and the firm’s threshold. The second panel presents results for a credit whose threshold grows at 4% per annum and a subsidy rate of 15% of the difference between quarterly compensation (line 2 Form 491) and the threshold. Rates of growth and decline vary a good deal across firms and cost effectiveness falls as dispersion increases. I assume that the standard deviation of compensation growth will be .10 for growth through December 2009 (Comp2009Q4/Comp2009Q1&2). The assumed standard deviation is .14 for growth through 2010 and .16 for growth through 2011. Since the thresholds fall slightly below the expected mean growth of total compensation, 55% of private employment is in the zone of subsidy and assumed to potentially respond to it. The short run wage elasticity of labor demand was assumed to be **-.15** based on Hammermesh’s (1993) literature review. That means that a 10% of compensation jobs tax credit will induce firms in the zone of subsidy to increase private employment by 1.5 percent on average. A NJTC would also increase the number of new firms established but the workers they hire are not part of this simulation. Since predictions of impacts and costs are sensitive to assumptions that are difficult to check, readers are encouraged to modify the assumptions and calculate how the results change. (An Excel spreadsheet with my imbedded formulas is attached.)

A 10 percent marginal Jobs Credit is predicted to reduce tax revenue by \$36.8 billion (0.256 % of GDP) in 2010 and to increase labor compensation by a lot more (\$62.2 billion dollars). The first round bang per buck is 2.2 in the final quarter of 2009, 1.69 in 2010 and 1.44 in 2011. The added workers will spend up to half of their compensation on domestically produced goods and services and this creates still more jobs and so on. When these second round effects are included, the Keynesian GDP gain to tax expenditure multiplier ends up being around 3.0—considerably larger than the CEA’s estimate of the infrastructure multiplier. If the spending multiplier is 2.0 and there is no crowding out in capital markets, the jobs credit boosts GDP by roughly **0.87** percent in 2010 and 2011. Increasing the generosity of the NJTC raises impacts roughly in proportion to the size of the tax expenditure (see panel 2). Lowering the threshold to attract more employers to participate, however, reduces cost effectiveness.

Probably the most important recommendation for maximizing the impact of a jobs tax credit is to pass it quickly and mount an effective marketing campaign. Inform employers that adding workers will not increase the social security taxes they must send to the IRS. These costs will be largely offset by the NJTC. A simple online simulator allowing proprietors to calculate how much tax credit they will get under different employment growth scenarios would be a helpful teaching tool.

These estimates of cost effectiveness would have to be reduced if the variation of growth rates across firms is greater than assumed and/or the wage elasticity of labor demand is lower than Hammermesh’s literature review concluded. On the other hand, these simulations are likely to be underestimating impacts because they do not model jobs tax credits effects on (a) employment after the tax credit’s expiration, (b) its effects on the formation of new firms and (c) its stimulus to more aggressive entrepreneurship. This results in the simulations understating the benefits of the jobs tax credit.

There is a crying need for a cost effective way of rekindling the animal spirits of the nation’s six million employers and fourteen million self-employed entrepreneurs. The marginal employment tax credit just described responds to this need. It offers much stronger incentives for new firm formation and job creation than alternative proposals such as accelerated depreciation of labor saving equipment or cuts in top marginal tax rates.

## References

- Bishop, John and Robert Haveman. "Selective Employment Subsidies: Can Okun's Law be Repealed?" American Economic Review Papers and Proceedings, May 1979. 124-130
- Bishop, John and Robert Lerman. "Wage Subsidies for Income Maintenance and Job Creation" (with In Job Creation: What Works, edited by Robert Taggart. (Salt Lake City: Olympus Publishing Company, 1977).
- Bishop, John "Employment in Construction and Distribution Industries: The Impact of the New Jobs Tax Credit." In Studies in Labor Markets, edited by Sherwin Rosen, Conference Report of Universities, National Bureau Committee for Economic Research. (Chicago: University of Chicago Press, 1981).
- Bishop, John and Charles Wilson. "The Impacts of Marginal Employment Subsidies on Firm Behavior" Jobs for Disadvantaged Workers, edited by Robert Haveman and John Palmer. (Washington, DC: The Brookings Institution, 1982).
- Bishop John H. "Can a Tax Credit for Employment Growth in 2009 and 2010 Restore Animal Spirits and Help Jump Start the Economy?" Dec (2008)  
<http://digitalcommons.ilr.cornell.edu/articles/184/>
- DeLong, Brad. "Five Lessons from 1937 and Otherwhen". June 17, 2009.  
<http://delong.typepad.com/sdj/2009/06/comment-for-the-economist-on-christina-romer-2009-the-lessons-of--1937.html>
- Hamilton, James D. 2003 "What is an Oil shock?" *Journal of Econometrics* 113(2) pp.363-398.,
- Hamilton, James D. 2009 "Causes and Consequences of the Oil Shock of 2007-08" paper presented at Brookings Institution, April 27, 2009 pp. 1-70.
- Hammermesh, Dan. S. Labor Demand, Princeton University Press, 1993.
- Perloff, Jeffrey and Michael Wachter, "The New Jobs Tax Credit: An Evaluation of the 1977-78 Wage Subsidy Program" American Economic Review Papers and Proceedings, Volume 69, March 1979, 173-79.

## Endnotes

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<sup>1</sup> Manufacturing employment reached an all time peak of 19,553,000 (seasonally adjusted) in June 1979. By the fourth quarter of 1982 capacity utilization in manufacturing had fallen to 68.6 percent, 15 percent of manufacturing jobs had been lost and unemployment had climbed to 10.6 percent. During the eight years of the Clinton presidency manufacturing jobs increased by 332,000. During the George Bush presidency manufacturing employment fell by 4,474,000 reaching 12,519,000 in January 2009.

<sup>2</sup> In 2007, full-time full-year private industry workers received on average \$57,600 in total compensation per year of which \$48,035 was wages and salaries (NIPA industry data). Salary levels have climbed about 4 percent since 2007, so \$60,000 is a good round number for 2009 compensation (including employer share of Social Security taxes) and \$50,000 is a rough estimate for 2009 wages and salaries per full time private sector employee.