October 12, 2015

Why have strong Legislative Acts had weak Economic Effects?

Douglas W MacKenzie, Ph.D.

Available at: https://works.bepress.com/douglas_mackenzie/1/
Why have strong Legislative Acts had weak Economic Effects?

ABSTRACT: Responses to the 2008 crisis were dramatic. Government officials enacted unprecedented acts of legislation and policies, with the intent of improving economic conditions. While measures taken to improve economic conditions were aggressive, the results of these measures have been disappointing. The aggressive and controversial nature of policy responses to the 2008 Crisis caused high levels of uncertainty about the public policy. There is correlation between levels of “economic policy uncertainty” and hiring of new employees. The statistical correlation between uncertainty and hiring is important in explaining the weak response of economic conditions to policies of the past eight years.

KEY WORDS: Economic Policy Uncertainty, Wages, Hiring

JEL CODES: D840, J230, J30, N120

CREATED ON: June 29th 2015

LAST REVISED ON: October 12th 2015

UNDER REVIEW AT: The Ohio Northern University Law Review

SUBMITTED ON: October 12th 2015
I Introduction

This paper investigates links between the effects of new legislative acts, and the use of old legislative acts, on general economic conditions. The Subprime Crisis of 2008 resulted in the worst unemployment and largest economic decline in decades. The slow pace of post crisis recovery has been unusual, practically without precedent. Why have economic conditions improved so slowly?

Federal involvement in the economy has increased over the past century, but not steadily. Normally, legislators enact relatively few large policy changes. Large changes in laws concerning economic conditions usually occur during or shortly after crises. The Employment Act of 1946 and the Federal Reserve Act of 1913 established legal responsibilities for Federal Officials to “manage the economy”. The 2008 Subprime Crisis prompted strong actions by Congress and the White House.

The specific actions taken by Federal Officials in response to the 2008 crisis are historic. Important new legislative acts were passed and put into action swiftly. The Troubled Assets Relief Program and Dodd-Frank bills were expected to have a major impact on financial and economic conditions\(^1\). Older acts of legislation provided the basis for other strong policy action. The American Recovery and Reinvestment Act of 2009 contributed to a rapidly rising national debt, which

\(^1\) The TARP program was a $475 billion dollar program which aimed at stabilizing the banking system during the 2008 Subprime Crisis. The Dodd-Frank bill reduced TARP from its original funding of $700 to $475 billion. Dodd-Frank altered Federal regulation. The Comptroller of the Currency, FDIC, Securities and Exchange Commission, and Federal Reserve gained additional powers. Dodd Frank also created the Consumer Financial Protection Agency.
has nearly doubled since the 2008 Crisis. Federal Reserve policies (Quantitative Easing, Operation Twist, and ZIRP-Zero Interest Rate Policy) have had strong effects on bank reserves and interest rates. Bank reserves have expanded at unparalleled rates and short term interest rates have been near zero for years, but positive results on GDP and employment are unclear.

The consequences of recent legislative and policy changes are dramatic in their weakness. Annual GDP growth has ranged from 1.5% to 2.5% since the crisis, and stalled in three quarters. Job growth has been unexpectedly slow. While the official unemployment rate (U-3) has in fact come down almost to 5%, the broad measure of unemployment (U-6) remains in double digits. Large numbers of working age Americans have either dropped out of the labor force or accepted part-time work reluctantly.

The weakness of the recent economic recovery cannot be attributed to a lack of effort by public officials. As suggested above, the Congress, Federal Reserve, Bush Administration, and Obama Administration all undertook strong actions to deal with the 2008 Subprime Crises and its aftermath. This paper proposes and tests the hypothesis that uncertainty over public policy has hindered economic recovery. Evidence shows a correlation between uncertainty felt over the form and outcomes of public policy with private hiring. Part two of this paper specifies and reports an empirical test. The last part of this paper analyzes the results of the middle section.

---

2 The American Recovery and Reinvestment Act was a deficit spending program. Deficit spending was intended to increase total spending in the economy, with the intention of increasing employment and GDP. The initial estimate for Federal borrowing in 2009 was $787 billion, but it ended up costing $830 billion. ARRA borrowing declined in 2010 and 2011, but debt has continued to accumulate rapidly.

3 Quantitative Easing is a policy of last resort, whereby Federal Reserve officials buy assets from banks that would normally not be purchased by the Fed. Operation Twist was a type of Quantitative Easing that focused on raising the price of short term bonds, relative to longer term bonds.


5 The U-3 unemployment rate for June and July 2015 was 5.3%. U-3 unemployment counts only working-age persons who are actively seeking employment. U-6 unemployment is a broader and more relevant measure of unemployment, which includes part time workers who wanted full time work, and people who have given up hope of finding work. The U-6 unemployment rate was 10.5% June 2015 and 10.4% in July.
II Measuring the Effects of Policy Uncertainty

In a previous edition of this journal Olson (2011) notes that people react to policy changes, and that reactions to policy changes have unintended consequences, results that are unforeseen by those who design policies\(^6\). Public officials should therefore respect their own limitations. Olson refers to the legend of Danish King Cnut: whereby even the most powerful officials can’t order the incoming tide to retreat. While it is certainly true that those who shape policy face limits and uncertainty, private citizens also face a degree of uncertainty with regards to policy.

A. The Economic Policy Uncertainty Index

Government policies will always generate some uncertainty because there are no reliable mechanisms for estimating real opportunity costs of government actions\(^7\). While uncertainty always exists, the degree of uncertainty felt by the public varies. Williamson (2015) discusses both the importance of clarity in announcing new policies and the lack of such clarity in recent Federal Reserve policy announcements\(^8\). How can private uncertainty regarding governmental policies be measured? Scholars at the University of Chicago have developed an economic policy uncertainty index (EPUI). The EPUI measures the degree to which people have difficulty ascertaining future effects of public policies. Information for the EPUI is drawn from newspapers, and includes differences in economic forecasts and impending changes in policy. The EPUI peaks typically during major political controversies and large policy changes. The degree to which uncertainty exists depends on how policies are announced and implemented.

---

\(^6\) Olson, Pamela 2011. And then Cnut told Reagan... Lessons from the tax reform act of 1986. Ohio Northern Law Review V38N1


\(^8\) See footnote #1.
EPIU uncertainty estimates come from three sources (see Baker, S. Bloom, N. Davis, S. 2015)\(^9\). First, news stories on policy uncertainty from ten major newspapers are tracked over time. Second, temporary tax codes set to expire within a decade are measured in an index. Third, the Federal Reserve survey of professional forecasters provides data on policy uncertainty. The survey of professional forecasters focuses on the effects of public spending and inflation on economic conditions. The size of discrepancies between professional forecasts provides an indication of the degree of policy generated uncertainty.

The EPIU has a variety of uses. Bjorn, B. and Pfeifer (2012) and Baker et al. (2012) use EPIU data to explain macro and financial activity\(^10\). Olson (2012) focuses on the effects of tax policy on job creation\(^11\). The EPIU does relate to job growth. This paper will focus on the effects of policy generated uncertainty on labor markets.

B. Theory

The theoretical basis for this paper is simple: employers hire employees according to their goals and expected market conditions. People have many goals in life, but employers seek profit. The profit maximizing quantity of commercial output will correspond to some demand for necessary labor (denoted as \(H\)). How are private hiring decisions made? Private employers consider both the cost of and benefit from hiring labor. In economics terminology, entrepreneurs hire labor up to the point where expected marginal revenue product of labor is equal to its’ expected marginal cost. Private and public sector employers work within budgets, and must subtract labor costs. Uncertainty regarding future public policies, tax revenues, and budgets,

\(^11\) See footnote #6.
may affect public hiring decisions. Labor costs and uncertainty can thus be assumed to affect both private and public hiring in similar ways.

Labor compensation (denoted as \( c \)) is a crucial determinant of hiring. Marginal revenue is simply defined as the expected price of whatever any entrepreneur plans to sell, denoted as \( P \). Both \( P \) and \( c \) are determined in markets, and are assumed to be beyond the control of any single entrepreneur. Entrepreneurs also react to uncertainty, denoted as \( x \), the \( x \)-factor in commercial decisions. Naturally, entrepreneurs will prefer more certain profit commercial opportunities over less certain opportunities. Uncertainty can affect both expected revenues and expected costs. However, we will assume that uncertainty mostly causes entrepreneurs to worry about future revenue streams. Uncertainty regarding how policies may affect economic conditions may cause employers to hesitate in hiring and paying new workers for new projects if the outcomes of these projects are in doubt.

The labor hiring function is quite simple. Prices determine revenues, so each employer faces a different rate of revenue accrual. Normal changes in relative prices of goods sold will cancel out between all employers: increased hiring by those with higher expected prices will be offset by those with lower expected prices. Uncertainty and labor costs affect all employers in the same negative direction. Hiring is therefore a simple inverse function of uncertainty and labor cost. \( W \)

\[
H = f\left( x, c \right)
\]

Entrepreneurs maximize expected profits where uncertainty adjusted marginal revenue is equal to marginal labor cost. The math used here is simple, but need not be covered in the main
The main theoretical point is that Employers hire labor up to the point where the revenue they expect from the labor of an additional employee (given uncertainty) is equal to the extra labor cost of that employee. There are three statistics to look for: changes in uncertainty, labor costs, and employment. To what extent have $x$, $c$, and $H$ changed in recent years?

C. Testing the Uncertainty-Hiring Relation

The dependent variable used in this paper is total non-farm hiring, as previously mentioned. The JOLTS (Job Opening and Labor Turnover Survey) data set provides a measure of $H^{13}$. JOLTS data on nonfarm hiring is available on the Federal Reserve Economic Data website. Nonfarm hiring shows a key aspect of economic activity: willingness of employers to commit to adding new workers. Willingness to hire has economic meaning because there are real costs to hiring unnecessary labor: payroll costs and perhaps legal costs given labor laws and union contracts.

The first independent variable used in this test is inflation adjusted hourly compensation in the non-farm business sector ($c^{14}$). Hourly compensation and private hiring are inversely related, as higher wages reduce profits and lower wages increase profit (holding productivity constant). Business sector wages can be used as a proxy for public sector wages because public employers must compete with private employers for employees. This is not to say that private and public employees are paid the same, but that private and public recompense are systematically related. Data on real compensation is available on a quarterly basis, compiled by the Bureau of Labor Statistics, available at Federal Reserve Economic Data.

---

12 Hiring takes the form of the equation: $H = PQx - cQ$. Taking the derivative $\partial H/\partial Q$ of the hiring equation gives us $H^* = Px - c$. $P$ is irrelevant to our study, so it is left out of the test, as previously mentioned.

13 This data is from the US Bureau of Labor Statistics, downloaded from Federal Reserve Economic Data on August 8th, 2015.

14 This data is from the Bureau of Labor Statistics release on August 7th, 2015, downloaded from Federal Reserve Economic Data on August 8th, 2015.
The second independent variable used in this study is uncertainty over economic policy \((x)^{15}\). Uncertainty should have a negative effect on private hiring, as mentioned previously. Increased uncertainty causes some employers to hesitate in or delay the hiring additional employees. Employers who are unsure about future regulatory costs or government contracts will often adopt a cautious wait-and-see stance in labor markets.

JOLTS hiring data covers the 2001-2014 period. The EPUI and Real Compensation data sets go back further than 2001, but the 2001 limit of hiring data restricts the number of quarterly observations to 56. Available data is tested with a simple OLS regression, specified below.

\[
H = \beta_1 c + \beta_2 x + \epsilon
\]

The common sense behind the above question is that employers hired employees based on expected costs of employment and expected revenues from work done by additional employees. \(\beta_1\) and \(\beta_2\) estimate the effects of costs and uncertainty on hiring, respectively. Epsilon is just an error term, to account for statistical noise.

Tables 1 and 2 present the main results of the regression specified above.

<table>
<thead>
<tr>
<th>Table 1: Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Coefficients</strong></td>
</tr>
<tr>
<td>Intercept</td>
</tr>
<tr>
<td>(c)</td>
</tr>
<tr>
<td>(x)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 2: Statistical Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Regression Statistics</strong></td>
</tr>
<tr>
<td>Multiple R</td>
</tr>
<tr>
<td>R Square</td>
</tr>
<tr>
<td>Adjusted R Square</td>
</tr>
<tr>
<td>Standard Error</td>
</tr>
<tr>
<td>Observations</td>
</tr>
</tbody>
</table>

\(^{15}\)Downloaded from Federal Reserve Economic Data on August 8\(^{th}\) 2015. See footnote \#9 for the original source.
Regression results are clear: there is a seventy percent correlation of hiring with higher costs and policy generated uncertainty. The correlation reported just above provides solid support for the hypothesis that hiring is affected by both labor costs and uncertainty. Both the independent variables in the hiring function are inversely related to hiring. Each additional point on the EPUI corresponds to a loss of over nine thousand lost jobs. Each dollar per hour added to labor costs corresponds to a loss of almost 65,000 jobs. P-values seen above indicate that the effects of labor compensation and policy uncertainty on hiring are statistically significant, are unlikely to have occurred just by chance.

While statistics tell us much about the explanatory powers of theoretical concepts, it often helps to visualize data. Tables three and four demonstrate the actual regression trend lines, for quarterly JOLTS data, from 2001 to 2015.

Table 3: the hiring-real compensation relation

![Real Comp vs. N-F Hires](chart1.png)

Table 4: the hiring-uncertainty relation

![EPUI vs. N-F Hires](chart2.png)

Each trend line shows a negative relation between non-farm hiring and each independent variable, just as one would expect.

Plotting actual and predicted values for $H$ provides additional clarification of how costs and policy uncertainty have affected total hiring. Table 5 shows predicted levels of hiring since 2000, as generated by the statistical model used in this paper.
Table 5: Quarterly hires, in thousands, 2001 to 2015

Visual inspection of the actual and predicted values is revealing. A short string of “outliers” emerged in 2009, during which time predicted values exceeded actual values. The specific causes of lower than predicted hiring in 2009 could be investigated, but it should be noted that if 2009 data points are dropped the correlation coefficient rises to seventy-five percent. One should be cautious about dropping suspected outliers, especially when starting with only 56 observations. However, correlations in the range of seventy to seventy-five percent do suggest that the relation examined in this paper is consistent enough to be taken seriously.

III Summary and Conclusion

The data reported in the previous section can explain why hiring has been sluggish during the past six years. Growing complexity of the legal regulatory framework and political fights over these laws has made many employers hesitant in their hiring decisions. One can debate the degree to which recent policies have failed to have a beneficial effect. Fiscal spending policies and Federal Reserve monetary policies are supposed to work is mechanical ways, according to multiplier effects, according to the sheer pressure of greater spending within the economy. Evidence reported in this paper suggests rather that reactions to policies by private employers (and reactions to political fights over polices) have had a depressing effect on private hiring.

One could also attribute slow hiring to “excessively high real compensation”. While lower compensation for labor could have compensated entrepreneurs for high levels of uncertainty,
this is not the most desirable solution to problems faced by unemployed (or underemployed) workers. Real compensation has already lagged behind labor productivity in recent decades. Workers should not be further penalized for chaos caused by politicians. The past six years are full of missed opportunities, more labor could have been hired, more income earned and spent, more goods made, bought, and put to use. More gains from trade could have been realized nationally merely with greater employer confidence.

No single test can prove a theory correct. However, the theoretical elements of this paper are common-sense and well-established. Economists recognized the depressing effects of elevated labor costs and uncertainty long ago. Consequently, the results reported above are neither revolutionary nor shocking, but are instead a reaffirmation of conventional economic thinking. The propositions advanced in this paper are, in fact, long standing. Economist Frank Knight emphasized the effects of uncertainty on commercial decisions in his 1921 book *Risk, Uncertainty and Profit*. Further tests of the effects of uncertainty on labor market conditions may provide more support for the hypothesis of this paper, as well as useful data for policy purposes.

The policy implications of this paper are fairly obvious: legislative and executive officials should be more careful with dramatic new legislative acts. Public officials should be more careful and cautious about making new dramatic uses of old pieces of legislation. Political controversy is to some degree inevitable, but legislative officials should be made aware of the negative effects of divisiveness. Officials may feel a need to use regulatory powers aggressively when faced with dire conditions, but they should be mindful of the depressing effects of the uncertainty that large unprecedented policy moves can cause.

---

Public officials responded to the Subprime Crisis of 2008 by increasing government powers, with bold new legislation and unprecedented uses of old laws. Experience over the last six years has raised doubts about use of regulatory powers. What can we learn from recent experience? Government officials should be more cautious and modest in how they deal with future crises. The case for Laissez-Faire economics and limited government should also be reexamined.