

Deficit Spending and Economic Growth: A Feder Growth Model Approach

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The choice is whether to put hard limits on economic growth, or hard limits on the size of government, Paul Ryan, GOP Convention, August 2012.

I will always vote what I have promised, and always vote the Constitution, as well as I will not vote for one single penny that isn't paid for, because debt is the monster, debt is what's going to eat us up and that is why our economy is on the brink, Ron Paul, 2012.

Larger deficits are necessary and proper means to mitigate unemployment as the far greater evil in terms of human welfare, William Vickrey

ABSTRACT

Deficit spending has both its supporters and detractors. Supporters argue that such spending stimulates the economy in a typical Keynesian way. Detractors assert that economic growth is hampered by persistent government deficits largely because of a crowding out effect. The current paper utilizes a Feder Growth Model approach to analyze the impact of deficit spending on economic growth.

INTRODUCTION

We have heard a lot about deficits in the last three decades. Positions on the nature and consequences of deficits range from the Chartalists who believe that large structural deficits are necessary to the continued successful functioning of capitalism to the Austrian school which believes deficits fuel run-away inflation. Keynesians believe that deficits are necessary as counter-cyclical policy and Post-Keynesians believe that deficits are neutral in their impact. Deficits are also considered “detrimental” from the Neo-classical perspective because they supposedly crowd out the private sector and place an undue tax burden on future generations.

It is an empirical question as to whether deficits harm, help, or are neutral with respect to economic growth. That is, we can econometrically measure the impact of deficits on economic growth. The current work utilizes a Feder sources of growth model to test the hypothesis that fiscal deficits impact growth. The study demonstrates that, in the case of the United States, 1949-2011, annual government deficits seem to have a positive impact on growth.

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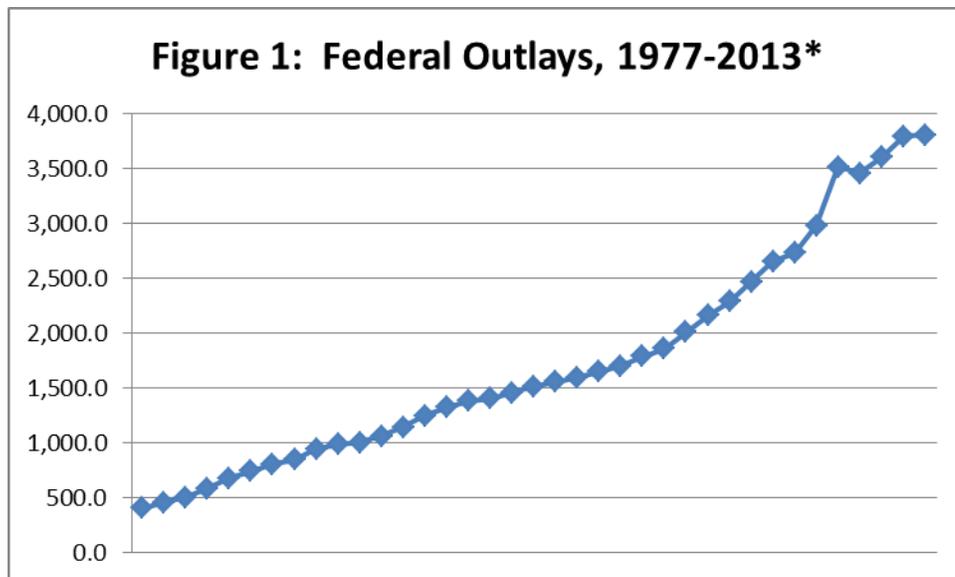
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We begin the paper with a discussion of the extent and causes of the Fiscal deficit. We then move on to how deficits are treated in economic theory and the work then reports the Feder growth model results. Lastly, the paper concludes with a note on further research.

THE EXTENT AND CAUSES OF THE US FISCAL DEFICIT

The magnitude of the US Fiscal deficit has indeed been growing over the past 35 years. Beginning in 1977 there is a marked and persistent increase in deficit spending with the rate of increase also accelerating, at least until 2009, at which time the rate of increase in deficit spending decreases.

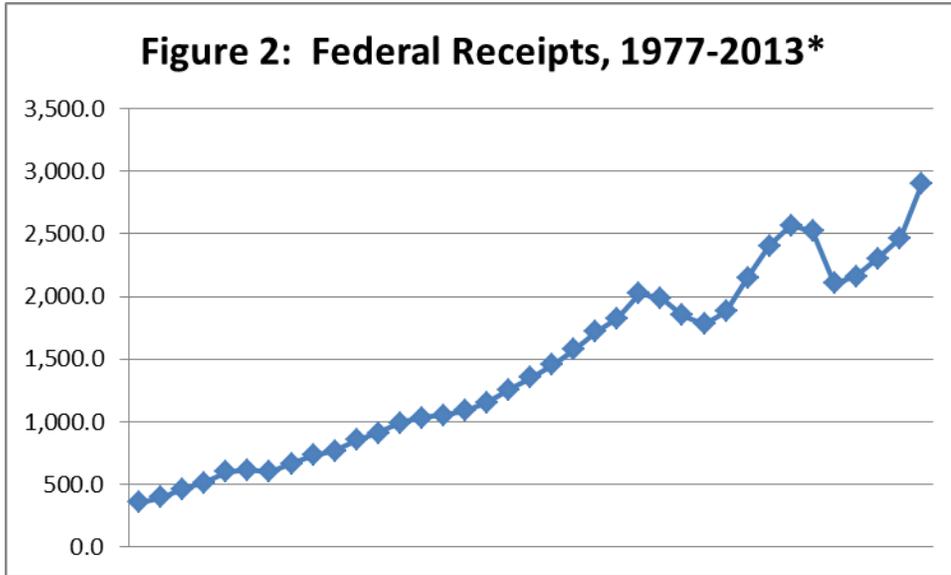
Recent hyperbole in the press has indicated that the cause of rising deficits was the “run-away spending” by the Federal government with special blame being given to Presidents Bush and Obama. Figure 1 indicates the growth in Fiscal Outlays from 1977 through the projected 2013 fiscal years. As is evident from the chart there has been a persistent increase in outlays in all years but one (2010) and that the spending increase has seemingly been largely increasing at an increasing rate until the past few years where the rate of increase has slowed. The growth is projected to be nearly zero in 2013.



Source: Economic Report of the President, 2012.

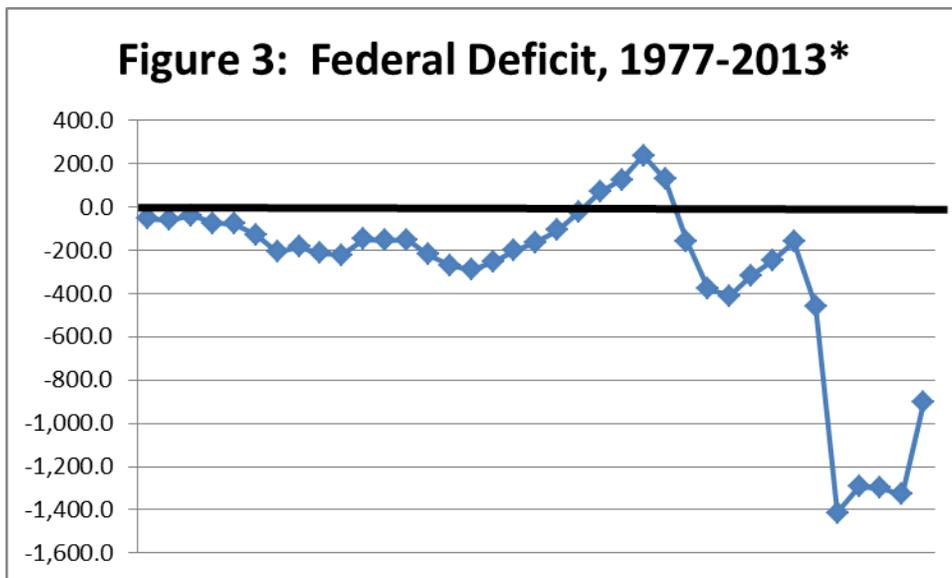
Looking at only one side of the equation, outlays, can be quite misleading. As indicated in Figure 2, Fiscal Receipts also increased over the time period with some notable exceptions. Fiscal Receipts fell between 2001 and 2004; perhaps a result of the combination of recession and tax cuts. Fiscal Receipts also fell during the Great Recession, 2007-2009. It is not uncommon for receipts to fall during recessions. During the 1982 recession, receipts fell from 618.8 billion dollars to 600.6 billion. Even though, at the time, the 1982 recession was considered the worst recession since the Great Depression, this decline in receipts was notably much smaller than what occurred under the two subsequent recessions. This fact

calls into doubt the idea that the decline in receipts is purely a result of recession and that other factors, namely tax cuts, must share in the blame.



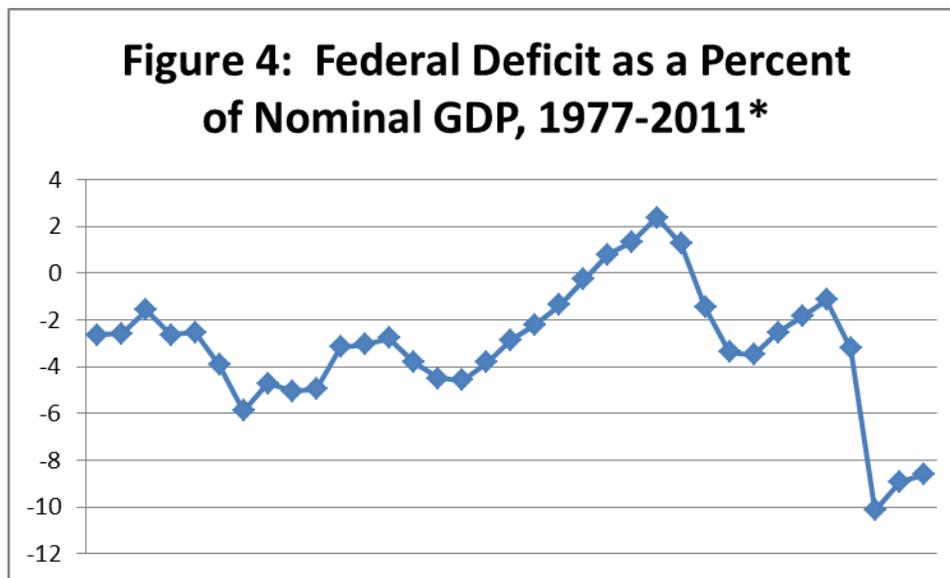
Source: Economic Report of the President, 2012.

Figure 3 shows the impact of the combination of rising spending and declining receipts had on the Fiscal Deficit. The last surplus year was 2000. After that, the deficit worsens between 2000 and 2004, showing improvement from 2004 to 2007 and then plunging between 2007 and 2009. Between 2009 and 2010 there was a slight improvement and then a leveling off until 2012. Finally, the deficit is projected to improve rather significantly in 2013.



Source: Economic Report of the President, 2012.

As a percent of GDP, the deficit shows improvement between 2009 and 2011.



Source: Economic Report of the President, 2012.

These plots help us to understand better the cause of the current Fiscal Deficit. Blame cannot alone be borne by “run-away” government spending even if such spending might be justified by economic conditions. The deficits worsen because of a combination of spending increases (some of this counter-cyclical), recessions (causing receipts to decline), and large tax cuts.

SCHOOLS OF THOUGHT

Now that we have established that the Fiscal deficit is real, and have provided some possible explanations as to the causes of the increased deficits, let us move to the consequences associated with deficit spending. Economic theory supports three views of the economic consequences of deficits. The Chartalists, such as William Vickrey, see deficit spending as necessary to achieving full employment.

Vickrey, the 1996 recipient of the Nobel Prize in economics, asserted that we needed to “...stop thinking of government deficits and inflation as prime evils; full employment will require large government deficits...” (Vickrey, 1997).ⁱ Furthermore, he also asserts that in a fiat monetary system, deficit spending is required in order to create money in the first place. To claim otherwise is to not understand how fiat money works.

It is an open question, perhaps, as to whether Vickrey would have held onto his argument given the realities of the current levels of deficit spending, but nothing in his modeling indicates he would have abandoned it. As stated above, deficit spending is required to create money. Money, according to the Chartalists, is a creation of the state and it is the state that determines the value of money. It can print as much as it needs to pay the deficit and debt.ⁱⁱ

John Maynard Keynes saw deficit spending as a counter-cyclical policy that was, at least in part, self-correct. The Keynesian multiplier impact is too familiar to need repeating here. There are only a couple of things that need reiterating. According to Keynesians, of various stripes, deficit spending can increase

growth not only by increasing consumer demand, but also by spurring business confidence. The stimulation of business confidence will generate increased business spending which can favorably impact GDP as well as potential GDP.ⁱⁱⁱ

Neo-classical and Austrian economists see deficits as having detrimental impacts on economic growth through, in the case of Neo-classical economists, a crowding-out effect and in the case of Austrians, causing harmful inflation pressures.

The Neo-classical economics assertion that deficit spending crowds out private spending through interest rate effects has received some empirical support in the literature. Sanders, 1986, for example, found that deficits did indeed harm capital formation because of the resulting rise in nominal interest rates. Allune and Belton, 1993 and Cebula, 1995 found similar results in their studies.

Austrians, as is widely recognized, argue that government attempts at stabilization are, by definition, destabilizing. Markets work well and do not require the intervention of government. When government mistakenly intervenes, instability results. The business cycle is, in effect, a result of government action. As the only cause of inflation, for Austrians, is when the money supply outpaces money demand, accommodating monetary policy would be inflation, generating rather than ameliorating economic instability.

THE MODEL

No matter to which school of thought you adhere, it is a testable hypothesis as to whether, what direction and by how much deficits impact growth. Gershon Feder, 1983, provided a useful model for testing this empirically.

Feder analyzed the impact of exports on economic growth with the use of a cross-sectional study of countries. His independent variable was the growth in GDP. The causal variables included changing labor force participation rates, gross private domestic investment and the rate of change in exports. His study found a statistically significant and positive relationship between export growth and economic growth.

We adapted the Feder model by using US data over time and replacing the growth in exports variable with the growth in deficit spending. Further, we lagged the deficit spending variable under the assumption that it is deficit spending three periods ago would impact growth in the current period. Model specification, then, is:

$$\dot{Y} = \beta_0 + \beta_1\dot{Z} + \beta_2K + \beta_3\dot{D}_{t-3} + e$$

Where \dot{Y} is the change in GDP, \dot{Z} is the change in labor force participation, K is the change in the capital stock (Gross Private Domestic Investment) and \dot{D} is the change in the Fiscal Deficit. The model asserts that the growth in GDP is a function of the growth in both labor and capital as well as the lagged growth in deficit spending.

REGRESSION ANALYSIS: % Change GDP versus % Change LFP, GPI, % Change S/D

The regression equation is:

$$\% \text{ Change GDP} = 0.0704 + 3.05 \% \text{ Change LFP} - 0.000009 \text{ GPI} + 0.00270 \% \text{ Change S/D}$$

Table 1

Predictor	Coef	SE Coef	T	P	VIF
Constant	0.040392	0.005198	13.54	0.000	
% Change LFP	3.0538	0.6972	4.38	0.000	1.247
GPI	-0.00000927	0.00000451	-2.05	0.045	1.234
% Change S/D	0.002698	0.001319	2.05	0.045	1.015

S = 0.0259661 R-Sq = 40.4% R-Sq(adj) = 37.4%

Table 2: Analysis of Variance

Source	DF	SS	mS	F	P
Regressions	3	0.0270033	0.0090011	13.35	0.000
Residual Error	59	0.0397802	0.0006742		
Total	62	0.0667835			

Table 3

Source	DF	Seq SS
% Change LFP	1	0.0214209
GPI	1	0.0027602
% Change S/D	1	0.0028222

Table 4: Unusual Observations

Obs	LFP	% Change	GDP	Fit	SE Fit Residual	ST Resid
2	0.0023	0.00663	0.06028	0.00913	-0.05365	-2.21R
3	0.0020	0.17246	0.06790	0.00586	0.10457	4.13R
13	-0.0015	0.02120	0.03246	0.01681	-0.01126	-0.57 X
33	0.0016	0.12216	0.07060	0.00348	0.05157	2.00R
66	-0.0093	-0.02769	0.02197	0.00955	-0.04966	-2.06R

R Denotes an observation with a large standardized residual

X denotes an observation whose X value gives it large leverage

We see in the results above that deficit spending does in fact have a statistically significant impact on growth and that the impact itself is positive. Looking also at the statistical variables above, we note that the model does seem to be somewhat accurate in its assumptions, based on a 40% R-squared being acceptable.

FURTHER RESEARCH

There are several routes we wish to take with this model in future research. We would like to determine if these results are generalizable by conducting a cross-sectional study which would include other economies. We would also like to determine if the cause of the deficit is instrumental in our results.

In other words, if we broke up the years to take account of what caused the deficit (war v. stimulus, for example), would we get different results? This might be accomplished through the utilization of indicator variables for war years. Finally, we would like to take into consideration the State budgetary stance in the analysis. It might be that deficits are indeed stimulative but the fact that states must maintain balanced budgets, which would largely contractionary in a recessionary setting, offset the fiscal budget.

ENDNOTES

ⁱ Also see Vickrey 1986.

ⁱⁱ For an interesting discussion of the limits, see Hannsgen and Papadimitriou, 2010.

ⁱⁱⁱ See Eisner, 1986

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